ALASKA DEPARTMENT OF FISH AND GAME

JUNEAU, ALASKA

STATE OF ALASKA
Jay S. Hammond, Governor

DEPARTMENT OF FISH AND GAME
Ronald O. Skoog, Commissioner

DIVISION OF GAME
Robert A. Hinman, Acting Director

ANNUAL REPORT OF SURVEY-INVENTORY ACTIVITIES PART IV. BISON, BEAVER, FURBEARER, WOLF, WOLVERINE, SEAL, WALRUS

Edited and compiled by
Robert A. Hinman, Acting Director

Volume VIII
Federal Aid in Wildlife Restoration
Project W-17-9, Jobs No. 7, 8, 9, 14, 15, and 22

(Printed September 1978)

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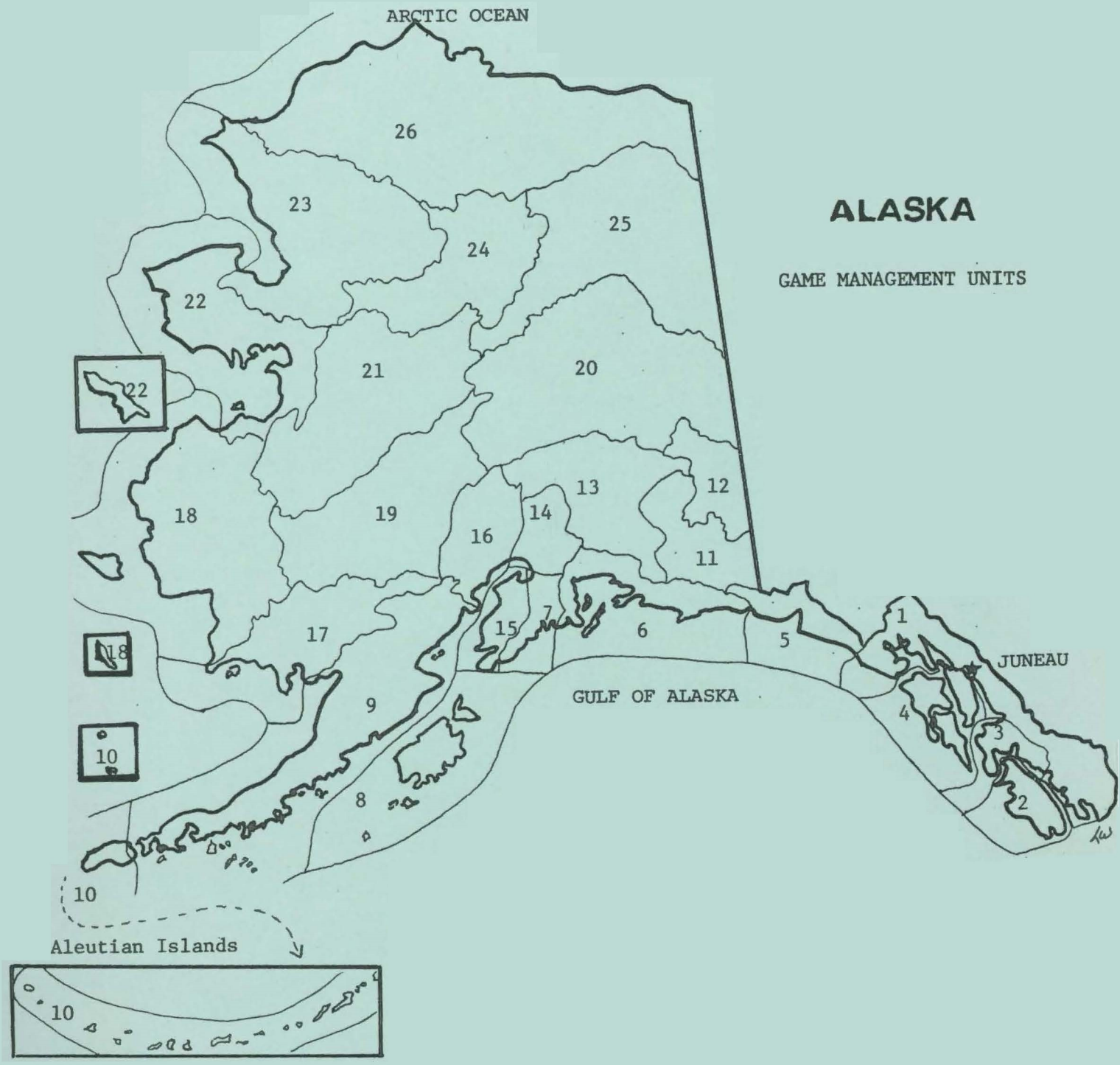
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STATEWIDE HARVESTS AND POPULATION STATUS

Bison

The 1976 harvest was 80 bison (9 from Copper River, 11 from Farewell, 51 from Delta, and, from the first hunt of the Chitina herd, 9 animals). Total population of the four herds is at least 603, an increase of at least 82 more than 1975. The Copper River herd appears to be stable and the other three herds are increasing and appear to be in good health and reproductive status.

Beaver

The beaver harvest declined for the third year to 5,641 in 1976. Only 770 trappers were active due to low pelt prices. The decline in both trapper numbers and beaver harvest reflect economic and cultural situations rather than fluctuations in beaver populations.

Furbearers

The statewide number of furbearers harvested increased slightly over 1975 with 89,790 pelts taken, having an estimated value of $2,612,480. Fluctuations are due to economic and cultural conditions and "outside" fur values and are not generally indicative of overall furbearer population status.

Wolf

The Statewide harvest of wolves in 1976-77 was 1,076, which is only slightly below the prior 10-year mean harvest of 1,143 animals. The Units having the highest harvests were 20 (197 animals), 23 (150), 25 (103), 13 (102) and 21 (100).

Wolf population levels continued to vary from one part of the State to another; southeastern harvests continue to decline as have harvests on the Alaska Peninsula and in Unit 20. On the other hand, the take in Units 21, 23 and 25 increased dramatically, due partly to excellent weather and snow conditions for trapping purposes and also because of special aerial wolf permits issued in Unit 23, where 35 animals were taken prior to a legal decision which closed hunting by such action.

Wolverine

The Statewide harvest of wolverines in 1976-77 was 939, just slightly above the prior 5-year mean harvest of 865. As expected, trapping again accounted for about three of every four animals harvested (72.5%), with ground shooting taking most of the remainder (21.2%). Unit 20 continued to be the prime producer with 157 animals taken.

No population estimates are available, but reports indicate that the population remains fairly high and stable.

were taken. In the spring 1977 hunt, there were 90 permit applicants with 45 permits issued; they took 39 males and 2 females. Prior to these hunts, 683 muskoxen were observed on the Island and 34 of these were transplanted to Unit 23 in April of 1977. In addition, an estimated 100 animals died as a result of deep snow and freezing rain during the 1976-77 winter. A further reduction of the Nunivak herd is recommended to ameliorate range damage.

On Nelson Island, 132 muskoxen were counted, which fits well with the desired carrying capacity of that Island's available range. Population manipulation will be required several years hence.

Seals

Seal hunting is closed except to Alaskan Natives under provision of the Marine Mammal Protection Act. Harvest figures for the past 4 years have been attained by sampling selected north coast hunter villages. Records indicate a combined species take in four selected villages of 1,357 seals; 57 percent were ringed seals, 25 percent were bearded seals, and 18 percent were spotted seals. In addition, three ribbon seals were reported.

Past data indicates that sample villages account for 25 to 30 percent of the total harvest, therefore, extrapolated figures indicate a total seal take in Units 18, 22, 23 and 26 of 4,970 to 5,970 seals.

At the present low rate of harvest, ringed, bearded and spotted seal populations are in no danger.

Walrus

Prior to April 16, 1976, Alaskan Natives were allowed to harvest walruses without limit under provisions of the Marine Mammal Protection Act. After that date, management authority was returned to the State. Department of Fish and Game surveys indicated the highest harvest in recent times (2,990 animals). The high level of harvest may necessitate the establishment of quotas and bag limits.

1976-77 WOLF & WOLVERINE HARVEST*

Unit	Wolf	Wolverine
1	41	39
2	25	0
3	15	6
4	0	0
5	7	1
6	4	13
7	3	6
8	0	0
9	8	46
10	0	0
11	15	21
12	39	36
13	102	85
14	15	14
15	9	13
16	27	78
17	45	53
18	2	1
19	68	74
20	197	157
21	100	83
22	10	20
23	150	52
24	55	42
25	103	82
26	35	17
Unknown	1	0
TOTAL	1,076	939

* Figures are taken from sealing documents and may differ slightly from figures given in the attached reports.

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BISON

SURVEY-INVENTORY PROGRESS REPORT - 1976

Game Management Unit 11 - Chitina River Herd

Seasons and Bag Limits

Unit 11	To be announced.	One bison every five regulatory years by permit only.

Harvest and Hunting Pressure

The first legal hunt on the Chitina River bison was held during September 1976. Although only 8 permits were issued, 9 bison were killed (Appendix II). The ninth bison was a wounded and lost animal that was found dead after the season. Six of the nine bison harvested were bulls and three of these bulls scored well above the minimum for Boone and Crockett.

All hunters were Alaskan residents and all used aircraft as the primary means of transportation (Appendix III).

Composition and Productivity

The Chitina River bison herd, relatively stable from 1964-1972, has rapidly increased during the past four years. Maximum numbers of bison observed during aerial counts from 1962 to 1976 are shown in Appendix I.

The highest number of bison recorded in the Chitina River herd was 52 (including calves), recorded on August 31, 1976. The composition was 22 cows (2 years and older), 13 bulls (2 years and older), 8 yearlings and 9 calves, indicating ratios of 41 calves per 100 cows (excluding yearlings) and 59 bulls per 100 cows (excluding yearlings). Yearlings represented 15 percent of the herd.

Management Summary and Conclusions

Nine of the 52 Chitina River bison were removed from the herd during the 1976 permit hunt. Other than the winter kill during the first few years after the original plant, only one mortality occurred, an aged bull that died during the winter of 1973.

Good calf survival and annual recruitment rather than emigration of bison from the Copper River herd probably account for the increase in herd size in recent years. Given the current productivity, if eight to ten animals are removed annually the range should be able to support the remaining bison during normal winters.

Recommendations

1. Continue hunting under a permit system to maintain low hunter density and desired harvest.
2. Maintain a check station at Glennallen office only.
3. Reevaluate optimum overwintering herd size by habitat studies.
4. Continue brucellosis and internal parasite investigations from harvested bison.

PREPARED BY:

Ted Spraker
Game Biologist II

SUBMITTED BY:

John S. Vania
Regional Management Coordinator

Appendix I. Maximum numbers of bison observed during aerial surveys of the Chitina River bison herd.

Year	Total	Calves	Adults
1962	35[a]	0	35
1963	28	--	--
1964	12	5	7
1965	No Data	--	--
1966	9	--	9
1967	12	2	10
1968	16	2	14
1965	15	--	--
1970	16	2	14
1971	16	3	13
1972	16	--	16
1973	23[b]	4	19
1974	32	6	26
1975	35	--	--
1976	52	9	43

a. Original transplant from the National Bison Range in Moese, Montana to Delta in 1928; in 1962, 29 cows and 6 bulls were transplanted from Delta to May Creek.

b. One large bull was found dead during this year.

Appendix II. Harvest data for the Chitina River bison herd.

Regulatory Year	No. of Permits Issued	Harvest Total	Harvest Males	Percent Males In Harvest	Number (percent) Bison through 4 Years of Age[c]. Males	Females	Sample
1976-1977[a]	8	9[b]	6	67%	4(67%)	3(100%)	9

a. First year the Chitina River bison were legally hunted (season Sept. 1 - Oct. 1, 1976).

b. One wounded bison was found dead after the season.

c. Bison ages were determined by tooth eruption and wear according to Fuller, 1959.

Prepared by: Ted Spraker, Game Biologist II

Appendix III. Residence and transportation means used by all hunters during the Chitina River Bison hunt.

	1976	
	No.	%
Residence,		
Anchorage vicinity:	4	(44%)
Fairbanks vicinity:	0	(-)
Copper River Valley:	4	(44%)
Other locations:	1	(11%)
Nonresidents	0	(-)
Unknown	0	(-)
Transportation Means,		
Aircraft:	9	(100%)
Boat:	0	(-)
Off-Road Vehicle:	0	(-)
Horses:	0	(-)
Unknown:	0	(-)

Prepared by: Ted Spraker, Game Biologist II

BISON

SURVEY-INVENTORY PROGRESS REPORT - 1976

Game Management Unit 11 - Copper River Herd

Seasons and Bag Limits

Unit 11	To be announced	One bison every five regulatory years by permit only

Abundance and Productivity

Maximum numbers of Copper River bison observed from 1950, 1961-1976 are shown in Appendix I. The 1976 ground and aerial census, revealing 78 bison (64 adults and 14 calves), was the lowest total estimate since 1967, when 51 bison were located.

Composition data from the 1976 ground census are as follows: 42 cows (2 yrs. and older), 12 bulls (2 yrs. and older), 8 yearlings and 14 calves. These figures give ratios of 33 calves per 100 cows and 29 bulls per 100 cows. Yearlings made up 10 percent of the bison.

Harvest and Hunting Pressure

Harvest data for the Copper River herd are shown in Appendix II. Hunter participation (100) during 1976 approximates the previous high of 1973 (101), when 16 bison were taken during a four-day hunt (Oct. 16-19).

Nine bison were harvested during the 30 day 1976 season. The desired harvest was 15. By the fourth day of the 1976 hunt, six of the nine bison were taken and 57 percent of the hunters were registered. These early harvested bison, plus an additional October 4th kill, were taken on or near the Copper River bluffs. As in the past, bison were pushed away from the bluffs and adjacent swamps by hunting pressure early in the season. Some of the animals retreated to their summer grounds at the head of the Dadina River, where they became extremely vulnerable. Each year that this has happened (1974 and 1976) harsh weather and low hunter interest has prevented overharvest.

Residence and transportaion means used by hunters during recent years are compared in Appendix III. Of the nine bison taken during 1976, only one was taken by a nonresident and only one other nonresident participated in the hunt. Fifty-eight percent of the successful hunters used river boats for access. Thirty-eight percent used aircraft. Aircraft have historically been the most important means of access for successful hunters.

Management Summary

The 78 bison counted during July of 1976 was low compared to counts

from recent years. However, the calf-cow ratio of 33 per 100, bull-cow ratio of 29 per 100 and yearling percentage of the herd of 10 percent appeared to be normal. No evidence of *Brucella* sp. or parasitosis has been found in this herd. Movement of bison from the Copper River area into the Chitina River herd may have occurred, but there are no data to support that hypothesis. Consequently, since it is felt that there were more than 78 Copper River bison, the 1976 harvest of 9 bison was lower than desired with regards to the management goals of 60 overwintering adults.

The total number of hunters registered was high, but numbers of hunters afield dwindled rapidly as the season progressed, weather patterns changed, and bison became increasingly wary.

Recommendations

1. Maintain the September 21-October 20 (or until the desired harvest is reached) season.

2. Maintain check station at Glennallen office only.

3. Re-evaluate optimum overwintering herd size by increased habitat studies.

4. Allow mechanized hunters to use only designated corridors, landing strips and lakes.

5. Continue brucellosis and internal parasite investigations from harvested bison.

PREPARED BY:

Ted Spraker
Game Biologist II

SUBMITTED BY:

John S. Vania
Regional Management Coordinator

Appendix I. Maximum number of calves and adults observed during aerial surveys of the Copper River Bison herd.

Year	Total	Calves	Adults[a]
1950[b]	17	0	17
1961	29	--	--
1962	74	13	61
1963	No Data		
1964	97	17	80
1965	84	19	65
1966	79	7	72
1967	51	14	37
1968	102	19	83
1969	100	18	82
1970	119	21	98
1971	87	11	76
1972	82	12	70
1973	97	18	79
1974	111	14	97
1975	89	13	76[c]
1976	78	14	64

a. The adult category includes yearling and older bison.

b. The Copper River herd resulted from a transplant of 17 bison to the Nabesna Road vicinity during 1950. By 1961, they had become established at their present home range.

c. An additional group of about 20 adults was reported from a different location by another observer.

PREPARED BY:

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Game Biologist II

Appendix II. Harvest data for the Copper River Bison herd.

Regulatory Year	Number of Registered Hunters	Harvest Total	Harvest Males	Percent Males In Harvest	Number (percent) Bison through 4 Years of Age[a]. Males	Females	Sample
1964-65	43	14	10	71%			
1965-66	42	11	9	82%			
1966-67	No Season						
1967-68	No Season						
1968-69	74	13	6	46%	1(8%)	4(33%)	12
1969-70	74	16	7	44%	4(27%)	4(27%)	15
1970-71	96	13	6	46%	1(8%)	5(38%)	13
1971-72	No Season						
1972-73	No Season						
1973-74	101	16	7	44%	1(6%)	3(19%)	16
1974-75	94	22	11	50%	7(30%)	5(20%)	22
1975-76	56	8	4	50%	3(38%)	1(13%)	8
1976-77	100	9	5	56%	2(22%)	3(33%)	9

a. Bison ages were determined by tooth replacement (Fuller, 1959). Age data for several hunts are not available.

PREPARED BY: Ted Spraker, Game Biologist II

Appendix III. Residence and transportation means used by all hunters during the 1973 through 1976 Copper River Bison hunts.

	1973		1974		1975		1976	
	No.	%	No.	%	No.	%	No.	%
Residence,								
Anchorage vicinity:	68	(67%)	39	(41%)	23	(41%)	34	(35%)
Fairbanks vicinity:	8	(8%)	8	(9%)	0	(-)	0	(-)
Copper River Valley:	19	(19%)	27	(29%)	33	(59%)	56	(58%)
Other Locations:	6	(6%)	20	(21%)	0	(-)	7	(7%)
Unknown:	0	(-)	0	(-)	0	(-)	3	(-)
Transportation Means, [a.]								
Aircraft:	52	(55%)	52	(55%)	28	(56%)	33	(38%)
Boat:	40	(42%)	39	(41%)	22	(44%)	48	(56%)
Off-Road Vehicle:	3	(3%)	0	(-)	0	(-)	4	(5%)
Horses:	0	(-)	3	(3%)	0	(-)	1	(1%)
Unknown:	7	(-)	0	(-)	6	(-)	14	(-)

a. Some hunters use more than one transportation means. Percentages are based on the total excluding the "unknown" category.

PREPARED BY: Ted Spraker, Game Biologist II

BISON

SURVEY-INVENTORY PROGRESS REPORT

Game Management Unit 19 - McGrath (Farewell Herd)

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

Seasons and Bag Limits

Unit 19	Sept. 10 - Oct. 10	One bison

Harvest and Hunting Pressure

The 1976 Farewell bison hunt opened September 10 and was to close October 10, but inclement weather necessitated extending the season for five additional days. Fifteen hunters and five alternates were drawn for the hunt. Eleven bison, one of which was an illegal overlimit, were known to have been taken. In addition, another bison was suspected to have been killed, but since the hunter did not report upon ending the hunt this could not be confirmed. All but two of the animals harvested were cows; the take of bulls included one yearling.

The Farewell hunt was originally designed to be an unaccompanied, open type of hunt with a minimum of permit conditions. However, changing hunter attitudes and perhaps the leniency given permittees has led to abuse of privileges associated with this hunt. Hunters used aircraft to harass bison; several bison were wounded, but not retrieved, and one hunter shot two animals. Another hunter shot a large, broomed bull, failed to retrieve it and then took a "better" animal. Most of these incidents were not detected in time to take legal action. Such behavior by hunters is esthetically displeasing and projects a poor Department image. To prevent similar incidents in the future, closer monitoring of the Farewell hunt will be required.

Herd Size, Composition and Productivity

Aerial surveys of the Farewell herd were conducted on May 19, 1976 and July 12, 1976 (Table 1). These counts suggested an overwintering population (minus the 10 animals harvested in 1975) of 87 adults and yearlings. Twenty-four calves observed on July 12 represented the best calf production since introduction of bison to the South Fork drainage. Productivity and survival continued to be excellent and the number of animals comprising the herd has increased 15 percent during the past few years.

Table 1. Bison observations on South Fork Kuskokwim River, 1976 and 1977.

Date	Observer	Bison Seen			Survey Conditions
		Adults & Yearlings	Calves	Total	
5/19/76	Shepherd	87	24	111	good
7/12/76	Shepherd	83	24	107	good
6/9/77	Shepherd	90	26	116	fair

On June 6, 1977 an aerial survey of the Farewell herd produced a count of 116 bison, including 26 calves (Table 1). In 1977 calf production exceeded the previous year's record production.

Range and Habitat

Range conditions were good throughout the winter of 1975-76 and, with the exception of heavy snowfall during February and March 1976, no adverse conditions prevailed.

Management Summary and Recommendations

Harvest levels have not been sufficient to reduce the Farewell herd to the desirable level of about 80 adult animals. There are now well over 100 bison in the herd. Continued healthy calf crops and good survival will certainly bring the herd size far above the estimated maximum carrying capacity of 100 animals. Therefore, a minimum of 30 permits should be issued for the 1977 fall season.

The larger number of permits will necessitate an earlier opening of the hunting season, perhaps as early as August 10. Hunters should be given at least one week to take a bison, and no more than five permittees should be allowed in the field at any given time. Check-in and check-out requirements should be rigidly enforced and citations issued for noncompliance with any stipulations of the hunt.

PREPARED BY:

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SUBMITTED BY:

Oliver E. Burris
Regional Management Coordinator

BISON

SURVEY-INVENTORY PROGRESS REPORT

Game Management Units 20A and 20D - Delta Junction

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

Seasons and Bag Limits

Units 20(A) and 20(D)	Sept. 8 - 26 Oct. 4 -24	One bison every five regulatory years by permit only; fifty bison may be taken

* Thirty-five bison permits were issued for the regular Delta bison hunt requiring the hunter be accompanied by a Department employee. An additional 15 permits were issued whereby the hunter received orientation prior to hunting, but was not accompanied by Department representatives.

Harvest and Hunting Pressure

Fifty hunters were drawn for the Delta bison hunts from a total of 3400 applicants. During the 1976 season 51 bison (26 bulls and 25 cows) were taken. Thirty-five bison (16 bulls and 19 cows) were taken during the accompanied hunt (September 8-26), and 15 animals (9 bulls and 6 cows) were taken during the unaccompanied hunt (October 4-24). In addition, one bull was taken by Department personnel when it was found to be crippled during the accompanied hunt.

The 15 hunters who drew permits for the unaccompanied hunt were divided into three groups (five hunters each) and each group had a one week period in which to take a bison. Each permit specified the sex of the bison to be taken. This was determined according to the hunter's choice on the permit application. Each hunter received a short orientation course which included such subjects as buffalo sex identification, buffalo habitat, bullet placement, hunter safety and land owner relations.

Complaints about the buffalo depredations made it necessary to commence the accompanied hunt two weeks early and this resulted in an extremely long season. The early opening effectively reduced depredations although one band of about 30 bison remained on farms during the hunt.

The attempt to take younger age class animals was successful. No large bulls were taken. Twenty of the bulls taken were in the yearling to three-year-old age class, and six were small but mature animals. Hunter success for both hunts was 100 percent, but one alternate was called when the scheduled hunter canceled due to sickness.

Composition, Productivity and Herd Size

Bison classification counts were conducted during late October 1976 after 25 bulls and 26 cows had been removed from the population during the hunting season. Three hundred and twenty-one bison were observed which accounted for nearly 95 percent of the estimated population. The composition of bison observed during the count was as follows: 94 cows, 65 bulls (69 per 100 cows), 70 yearlings (74 per 100 cows) and 92 calves (98 per 100 cows).

The known pre-hunt population in 1976 was 372 animals before any hunting mortality. The pre-calving population for the spring of 1977 was estimated at approximately 300 animals. In late June 1977, 302 yearlings and adults, and 73 calves (19% of the animals observed) were counted on the calving grounds. Although calving is usually not completed until mid-August, this count indicated that 1977 was another outstanding year for calf production.

Seasonal Distribution, Range Utilization and Conditions

In 1974 and 1975, range utilization test plots showed that 49 percent of the available forage had been removed by grazing. In 1976, 50 percent of the available forage was estimated to have been removed by bison. Therefore, range use must be rated at moderate to heavy. Although most bison habitat appeared in good condition, the long-term reduction in summer range continued through natural succession.

The salting operation continued in 1976. Beginning in June and continuing through August, a total of 1500 pounds of salt was used to delay the bison migration from the Delta drainage to the Clearwater farming area. In past years, bison had usually crossed the Delta River by the first week of August and arrived in the farming area during the peak of grain harvests. Since the salting program was started, bison have generally remained across the Delta River away from the farming area until the last week of August. Salt, in the form of 50 pound mineral trace element blocks, was dropped from low flying aircraft in such a way as to evenly distribute its utilization throughout the Delta River bar.

Management Summary and Recommendations

The Delta herd appeared to be in extremely good physical condition. Production and survival were very high. Adequate summer range and an excellent winter range have contributed toward good production. If the annual increment were not cropped the herd would continue on an upward population trend.

The immediate management plan for the Delta bison herd is to maintain a pre-calving population of 275 to 300 animals; a bull to cow ratio of 40 to 100; an average age of 8 years among bulls and 7 years

among cows; and a minimum harvest of 50 animals annually. In view of the excellent rates of production and survival, it will be necessary to take at least 70 bison (35 bulls and 35 cows) during the 1977 season.

To accomplish a harvest of this magnitude and to further the practice of unaccompanied hunting, a split season is recommended in which 40 bison are taken during an accompanied hunt and 30 taken during an unaccompanied hunt. The accompanied hunt should occur during the last two weeks of September with 20 bison being taken each week. The remaining 30 bison should be taken at a rate of 5 per week beginning the first week of October.

Bison harvests should be directed toward the young age classes (two- to three-year-olds) in the case of males and a random selection of cows should be taken. The accompanied hunt is very expensive and should be gradually replaced by unaccompanied hunting. This should be accomplished by applying knowledge acquired from previous hunts.

A free-ranging herd of bison in one of Alaska's farming areas creates some very unusual problems. Agriculture has temporarily created an increase in the amount of bison winter range. If a large amount of acreage was not planted, or if fields should be fenced, the bison would be faced with a serious winter food shortage.

The Department is proposing to establish a bison range in the Delta area. Habitat management on this range should serve to stabilize the amount of winter range available. Benefits will also accrue to other game species, especially moose, which use the area.

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SUBMITTED BY:

Oliver E. Burris
Regional Management Coordinator

BEAVER

SURVEY-INVENTORY PROGRESS REPORT

Statewide

Period Covered: 1973 - June 30, 1977

Techniques

Since 1967, the stretched pelts of beaver have been sealed and measured to enumerate the harvest and to determine the age composition of the catch. In Alaska, beaver hides are traditionally stretched round. Pelts are measured by adding the diameter from nose to the base of the tail (bottom of the pelt) to the medial diameter. These measurements are taken in inches and age classes are established on the following basis: young-of-the-year or kits (less than 53 inches), yearlings (53 to 59 inches), two-year-olds (60 to 64 inches), and adults (65 inches and larger).

Studies previously conducted at the Alaska Cooperative Wildlife Research Unit have determined the general relationship between the degree of exploitation and the percentage of various age classes in the harvest. A beaver population can be considered underharvested when the take is comrised of less than 15 percent kits. However, since 1957, when pelt measurement was added to the beaver sealing procedure, it has been learned that certain qualifications must be applied to this rule. For example, Game Management Units are generally large geographic areas, but a manageable population may consist of beavers inhabiting a relatively small tributary within a unit. Overharvests of drainages or tributaries within a unit are sometimes obscured by a large but conservative harvest in the remainder of the unit. Human populations are not evenly distributed within the units; therefore, trapping pressures are often disproportionately distributed in relation to beaver abundance and distribution. The potential for overharvest varies between units and involves such factors as quality of beaver habitat within the unit, economic status of trappers residing in the unit, and the trapping techniques employed. Whenever the catch exceeds 20 percent kits, a careful examination of the harvest by tributary or drainage should be made. When kits comprise 20 percent of the harvest in a unit it is highly likely that over-exploitation is occurring on some tributaries.

Findings

The beaver harvest has been separated into age classes since 1957 by the measurements recorded on beaver sealing documents. The harvest by game management unit and age class since 1973 is recorded in Appendix I. During 1973 the reported statewide beaver harvest was 10,864. In 1974 and 1975 harvests declined to 8,396 and 7,516, respectively. During 1976 the harvest further declined to 5,641 beaver with only 770

trappers active that year. However, pelt prices then started to increase and in 1977, 1,283 trappers took 11,033 beaver. The trend in the number of trappers has closely paralleled annual catches during the period 1973-77. The trend of declining harvest through 1976 and the dramatic increase in 1977 reflect economic and cultural situations within Alaska rather than fluctuations in beaver populations.

Management Summary and Conclusions

The beaver sealing program provides a sound basis for proper management of the beaver resource. It furnishes the information required to detect management problems. Aerial cache counts, analyses of the harvest by tributary, surveys of local economic situations, and an understanding of trapping techniques can provide information sufficient for positive management of the resource.

The 1977 beaver harvest data suggest that additional information may be needed in Units 2, 3, 6, 7, 9, 11, 14, 15, 16, and 18. In these units, kits comprised at least 20 percent of the harvest. Because of the very low harvests recorded in Units 3, 6, 7, and 11, additional field efforts are not justified at this time.

PREPARED BY:

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SUBMITTED BY:

Oliver E. Burris
Regional Management Coordinator

Appendix I. Reported beaver harvests, 1971-1977.

Unit	Year	Limit	Size Composition of Harvest (percent) (Under 54")	(Under 59")	(Over 59")	Related Take	No. of Trappers	Ave. catch/ Trapper
1	1973	No limit	7.3	20.0	80.0	169	18	9.4
	1974	No limit	11.7	22.1	77.9	168	13	12.9
	1975	No limit	9.4	28.3	71.7	154	19	8.1
	1976	No limit	14.1	29.6	70.4	81	14	7.8
	1977	No limit	20.3	38.0	62.0	163	21	7.8
2	1973	No limit	40.8	66.7	33.3	27	4	6.7
	1974	No limit	7.7	30.8	69.2	39	3	13.0
	1975	No limit	27.3	45.5	54.5	22	4	5.5
	1976	No limit	37.5	37.5	62.5	12	4	3.0
	1977	No limit	30.0	50.0	50.0	47	14	3.4
3	1973	No limit	44.5	44.5	55.5	9	5	1.8
	1974	No limit	No harvest reported					
	1975	No limit	No harvest reported					
	1976	No limit	No harvest reported					
	1977	No limit	25.0	31.3	68.7	16	3	5.3
4	1973	No limit*	0.0	100.0	0.0	1	1	1.0
	1974	No limit*	No harvest reported					
	1975	No limit*	-	-	-	1	1	1.0
	1976	No limit*	No harvest reported					
	1977	No limit*	12.5	25.0	75.0	8	2	4.0
5	1973	No limit	No harvest reported					
	1974	No limit	100.0	100.0	0.0	2	1	2.0
	1975	No limit	No harvest reported					
	1976	No limit	No harvest reported					
	1977	No limit	No harvest reported					

Appendix I. Continued.

Unit	Year	Limit	Size Composition of Harvest (percent) (Under 54")	(Under 59")	(Over 59")	Related Take	No. of Trappers	Ave. catch/ Trapper
6	1973	10 & no limit*	12.3	33.7	66.3	188	11	17.1
	1974	10 & no limit*	21.1	33.3	66.7	109	13	8.4
	1975	10 & no limit*	22.4	48.9	51.1	99	9	11.0
	1976	10 & no limit*	11.1	36.1	63.9	57	12	4.8
	1977	10 & no limit*	23.8	44.5	55.5	201	12	1.7
7	1973	20	27.8	51.6	48.4	126	12	10.5
	1974	20	28.1	45.6	54.4	57	6	9.5
	1975	20	25.8	38.7	61.3	37	9	4.1
	1976	20	29.0	57.9	42.1	76	13	5.8
	1977	20	36.1	57.4	42.6	87	12	7.3
8	1973	No limit	24.3	43.4	56.6	115	9	12.8
	1974	No limit	18.6	37.2	62.8	220	16	13.8
	1975	No limit	13.2	39.6	60.4	129	13	9.9
	1976	No limit	24.0	48.0	52.0	30	10	3.0
	1977	No limit	33.0	52.7	47.3	131	29	4.5
9	1973	40 and 20*	19.7	35.4	64.6	726	57	12.7
	1974	40 and 20*	18.8	37.6	62.4	212	28	7.6
	1975	40 and 20*	23.8	43.0	77.0	439	35	12.5
	1976	40 and 20*	22.2	33.6	66.4	451	43	10.5
	1977	40 and 20*	23.9	54.3	45.7	686	65	10.6
11	1973	No limit	0.0	16.7	83.3	6	3	2.0
	1974	No limit	0.0	33.4	66.6	3	1	3.0
	1975	No limit	8.3	8.3	91.7	12	5	2.4
	1976	No limit	8.3	8.3	91.7	12	4	3.0
	1977	No limit	26.3	31.6	68.4	20	4	5.0

Appendix I. Continued.

Unit	Year	Limit	Size Composition of Harvest (percent) (Under 54")	(Under 59")	(Over 59")	Related Take	No. of Trappers	Ave. catch/ Trapper
12	1973	15	13.6	28.4	71.6	81	16	5.1
	1974	15	6.7	20.0	80.0	31	6	5.2
	1975	15	0.0	40.0	60.0	5	4	1.3
	1976	15	20.0	20.0	80.0	5	2	2.5
	1977	15	15.2	39.4	60.6	35	8	4.4
13	1973	20	17.1	30.8	69.2	117	25	4.7
	1974	20	18.6	49.1	50.9	59	17	3.5
	1975	20	26.3	42.6	57.4	80	14	5.7
	1976	20	8.7	32.6	67.4	56	15	3.7
	1977	20	19.0	40.3	59.7	175	26	6.8
14	1973	40	18.6	35.0	65.0	159	37	4.3
	1974	40	29.2	50.9	49.1	106	21	5.0
	1975	40	17.0	41.5	58.5	153	30	5.1
	1976	40	24.6	52.1	47.9	70	25	2.8
	1977	40	20.4	48.2	51.8	236	25	9.6
15	1973	40	24.2	46.0	54.0	133	20	6.6
	1974	40	12.4	44.9	55.1	92	13	7.1
	1975	40	48.5	57.6	42.4	33	5	6.6
	1976	40	24.6	38.8	61.2	136	17	8.0
	1977	40	20.0	40.8	59.2	131	17	7.7
16	1973	40	19.7	39.8	60.2	620	58	10.7
	1974	40	14.6	38.2	61.8	377	39	9.7
	1975	40	18.4	41.5	58.5	783	74	10.6
	1976	40	17.7	39.2	60.8	267	35	7.6
	1977	40	25.2	52.9	47.1	531	59	9.0

Appendix I. Continued.

Unit	Year	Limit	Size Composition of Harvest (percent) (Under 54")	(Under 59")	(Over 59")	Related Take	No. of Trappers	Ave. catch/ Trapper
17	1973	15	23.9	35.8	64.2	1849	163	11.3
	1974	15	23.9	38.6	61.4	1681	169	9.9
	1975	15	15.8	27.1	72.9	929	85	10.9
	1976	15	22.2	33.0	67.0	637	66	9.6
	1977	15	17.7	32.3	67.7	766	73	10.5
18	1973	10	24.4	38.0	62.0	1769	230	7.7
	1974	10	25.8	40.4	59.6	684	95	7.2
	1975	10	20.7	36.7	63.3	1389	181	7.7
	1976	10	18.3	35.4	64.6	1350	180	7.5
	1977	10	20.2	37.7	62.3	2209	258	8.6
19	1973	25 and 10*	12.9	29.7	70.6	1089	155	7.0
	1974	25 and 10*	10.5	25.3	74.7	808	129	6.3
	1975	25 and 10*	9.8	24.0	76.0	1188	150	7.9
	1976	25 and 10*	12.7	27.8	72.2	806	120	6.7
	1977	25 and 10*	14.6	28.3	71.9	1668	196	8.5
20	1973	25 closed*	10.3	24.1	75.9	1523	170	9.0
	1974	25 closed*	8.0	24.6	75.4	1183	133	8.9
	1975	25 closed*	9.2	24.6	75.4	685	89	7.7
	1976	25 closed*	5.6	20.2	79.8	812	106	7.7
	1977	25 closed*	8.6	22.8	77.2	1281	156	8.2
21	1973	15	11.3	28.3	71.7	1558	171	9.1
	1974	15	10.0	26.7	73.3	1608	166	9.7
	1975	15	5.8	20.5	79.5	753	96	9.8
	1976	15	12.9	28.4	71.6	618	76	8.1
	1977	15	8.6	24.9	75.1	1794	198	9.1

Appendix I. Continued.

Unit	Year	Limit	Size Composition of Harvest (percent) (Under 54")	(Under 59")	(Over 59")	Related Take	No. of Trappers	Ave. catch/ Trapper
22	1973	50	22.9	48.6	51.4	35	4	8.8
	1974	50	32.8	42.6	57.4	61	11	5.5
	1975	50	8.1	32.4	67.6	37	7	5.3
	1976	50	No harvest reported					
	1977	50	16.7	50.0	50.0	12	1	12.0
23	1973	20	45.4	54.5	45.5	11	4	2.8
	1974	20	28.6	28.6	71.4	7	1	7.0
	1975	20	20.0	33.3	66.7	15	1	15.0
	1976	20	0.0	0.0	100.0	8	1	8.0
	1977	20	No harvest reported					
24	1973	20	8.9	22.3	77.7	305	45	6.8
	1974	20	5.3	22.5	77.5	572	66	8.6
	1975	20	7.9	24.7	75.3	295	37	8.0
	1976	20	24.2	54.5	45.5	52	8	6.5
	1977	20	6.8	19.2	80.8	579	60	9.7
25	1973	20	23.0	37.9	62.1	248	30	8.3
	1974	20	12.4	33.0	67.0	317	55	5.7
	1975	20	18.5	35.2	64.8	281	31	9.1
	1976	20	12.4	23.8	76.2	105	19	5.5
	1977	20	17.0	31.6	68.8	247	43	5.7
Statewide Total	1973		17.8	33.0	67.9	10,864	1,248	8.7
	1974		15.1	31.6	68.4	8,396	1,003	8.4
	1975		15.0	31.5	68.5	7,516	899	8.4
	1976		15.7	31.2	68.8	5,641	770	7.3
	1977		16.3	33.2	62.8	11,033	1,283	8.6

*Unit was divided with different bag limits in the subdivisions and/or closed areas.

5 year average (1973-77) harvest = 8,690
5 year range (1973-77) harvest = 5,641-11,033
5 year average (1973-77) no. of trappers = 5,203

BEAVER

SURVEY-INVENTORY PROGRESS REPORT - 1976

Game Management Units 7 and 15 - Kenai Peninsula

Seasons and Bag Limits

Unit 7	Feb. 1 - March 31	20 per season
Unit 15	Feb. 1 - April 30	40 per season

Harvest and Trapping Pressure

In 1976, 76 beavers were taken by 13 trappers in Unit 7, an average of 5.8 per trapper (Appendix I). The total take was a 10 year high, although 12 trappers took 126 beavers in 1973. Five trappers took 47 beavers from Twenty Mile Creek and Placer River; the remainder of the harvest was well distributed.

In Unit 15, 17 trappers harvested 136 beavers, a mean of 8.0 per trapper (Appendix II). Over a 10-year span, the number of trappers in 1976 was second only to 20 recorded in 1973; the beaver total of 136 was three higher than 1973. Almost one-half (64) of the 1976 total was taken by two trappers on the Anchor River.

Composition and Productivity

In Unit 7, Twenty Mile Creek and Placer River show signs of overharvest with 71.5 percent and 53.9 percent, respectively, in the kit and yearling category (less than 59 inches). Overall, Unit 7 figures show only 42.1 percent adults (greater than 59 inches) in the catch.

Unit 15 harvest was 61.2 percent adult, indicative of a moderate harvest level.

Management Summary and Conclusions

In the past, declines in trapping pressure followed 1 or 2 years of low catch ratios and small hide sizes. In this manner, the harvest may be self-limiting. Whether this holds true for the increasing number of recreational trappers is not known.

Unit 7 sustains a higher harvest rate than Unit 15. The percentage of kits in the harvest has remained relatively constant, averaging 27.7 percent over the past 4 years. This exceeds the optimum take of less than 20 percent kits. The current rate of harvest in Unit 7 is not conducive to sustained yield of large beavers, and should be watched closely.

The 40 beavers taken from the upper Anchor River comprised 67.5

percent adults. This area is seldom trapped because of overflow conditions impeding access by snow machine. The 1975-76 winter was unusual in that the river iced early and stayed frozen, allowing winter-long access. Future harvests should be closely monitored along the Anchor River.

Recommendations

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

PREPARED BY:

David M. Hardy and Paul A. LeRoux
Game Biologist II and Game Biologist II

SUBMITTED BY:

John S. Vania
Regional Management Coordinator

Appendix I

BEAVER SEALING DATA
Unit 7

Year	Limit	% under 54"(Kits)	% under 59"(Kits&Ylgs)	% over 59" Adults	Total No. Beaver	Number Trappers	Beaver/ Trapper
1957	20	22.7	48.0	52.0	75	14	5.4
1958	20	15.7	34.8	65.2	89	18	4.9
1959	20	34.0	52.3	47.7	44	8	5.5
1960	15	17.2	35.4	64.6	393	67	5.9
1961	15	15.8	22.4	66.0	236	39	6.0
1962	15	17.3	36.0	64.+	259	57	4.5
1963	20	24.5	45.2	54.7	106	15	7.1
1964	20	30.8	61.5	38.5	13	4	3.2
1965	20	31.7	51.2	48.8	41	9	4.6
1966	20	12.0	44.0	56.0	25	10	2.5
1967	20	7.1	28.5	71.5	14	2	7.0
1968	20	23.6	45.8	54.2	72	10	7.2
1969	20	50.0	0	50.0	2	3	0.7
1970	20	25.0	54.2	45.8	24	4	6.0
1971	20	11.8	35.3	64.7	17	3	5.7
1972	20	10.0	23.3	76.7	30	5	6.0
1973	20	27.8	51.6	48.4	126	12	10.5
1974	20	28.1	45.6	54.4	57	6	9.5
1975	20	25.8	38.7	61.3	37	9	4.1
1976	20	29.0	52.9	42.1	76	13	5.8

PREPARED BY: David M. Hardy, Game Biologist II and Paul A. LeRoux, Game Biologist II

Appendix II

BEAVER SEALING DATA

Unit 15

Year	Limit	% under 54"(Kits)	% under 59"(Kits&Ylgs)	% over 59" Adults	Total No. Beaver	Number Trappers	Beaver/ Trapper
1957	20	17.2	37.9	62.1	303	26	11.6
1958	40	16.4	27.5	72.5	360	30	12.0
1959	40	29.8	46.4	53.6	168	15	11.2
1960	40	17.5	35.3	64.7	379	20	19.0
1961	40	15.1	33.9	66.1	438	20	21.9
1962	40	17.7	33.9	66.1	180	14	12.8
1963	40	18.1	33.2	66.8	254	25	10.2
1964	40	19.4	36.3	63.7	237	24	9.9
1965	40	23.8	52.4	42.8	21	4	5.2
1966	40	20.0	44.0	56.0	25	7	3.6
1967	40	24.0	34.0	66.0	50	8	6.2
1968	40	10.5	36.8	63.2	38	5	7.6
1969	40	39.3	54.9	45.1	135	14	9.6
1970	40	25.0	58.3	41.7	73	15	4.9
1971	40	20.7	34.5	65.5	29	7	4.1
1972	40	41.5	58.7	41.3	29	5	5.8
1973	40	24.2	46.0	54.0	133	20	6.6
1974	40	12.4	44.9	55.1	92	13	7.1
1975	40	48.5	57.6	42.4	33	5	6.6
1976	40	24.6	38.8	61.2	136	17	8.0

PREPARED BY: David M. Hardy, Game Biologist II and Paul A. LeP ..x, Game Biologist II

BEAVER

SURVEY-INVENTORY PROGRESS REPORT REGULATORY YEAR - 1976-77

Game Management Unit 17 - Bristol Bay

Seasons and Bag Limits

Feb. 1 - Feb. 28	15 per season; that portion of the Mulchatna River drainage upstream from the confluence of the Stuyahok River into the Mulchatna River and including the drainages of the Stuyahok River. That portion of the Mulchatna River drainage entering the river from the north between its confluences with the Stuyahok River and the Nushagak River. That portion of the Nushagak River drainage upstream from the confluence of the Nuyakuk River into the Nushagak River and including the drainage of the Nuyakuk River. That portion of the Nushagak River drainages entering the river from the north between its confluences with the Nuyakuk River and the Mulchatna River. That portion of the Wood River drainage upstream from the outlet of Lake Beverly.
	Remainder of Unit 17 No open season.

Trapping and Harvest Pressure

The reported harvest for the 1976-77 season was 637 beaver (Appendix I). A total of 66 trappers sealed beaver for Unit 17 (an average of 9.7 beaver per trapper). The percentage of kits in the harvest under 54 inches (22.9 percent) was slightly less than the total mean average of 23.5.

Composition and Productivity

Cache surveys conducted during the fall of 1976 concentrated on the drainages close to villages (Appendix II). Overall there was a slight percentage decrease in stream miles per cache over the 1975 data. In 1976 active caches occurred on an average of 1.09 miles of stream

surveyed as compared with every 1.32 miles in 1975. As in past years, the greatest distances between caches occurred on drainages near villages.

Management Summary and Conclusions

During the 1977 spring season, not all portions of Unit 17 were open to trapping. Harvest data and fall cache surveys supported the need for the closure to prevent further harvest on an already heavily exploited resource. Only the remote drainages of the upper Nushagak and the Mulchatna and Nuyakuk Rivers were left open to trapping. Reduced trapping pressure resulted from the closure. Many trappers were unwilling to combat the rigors involved in winter trapping away from their village. Trappers that traveled to the open area worked a less exploited beaver population with a greater than the mean percentage of older age class animals present.

The fall cache surveys did not indicate significant increases in the number of beaver in the closed area. Increases in the number of active houses are expected in the next year. When surveys indicate the resource is sufficiently recovered to sustain harvest, the area should be reopened to trapping.

Public acceptance of the closure has been good because the need for restrictive measures were generally recognized. Before reopening the area to trapping, future beaver regulations should be developed with the aid of the local Advisory Committee and village representatives. The only way to prevent the reoccurrence of past abuses will be to develop a resource management program that has local support.

Recommendations

The trapping closure effected by 1976-77 regulation should be maintained for a period of two to four years. Unit 17 should be broken down to three subunits to facilitate management of the species. The area should not be reopened to trapping until the data indicates there are sufficient beaver resources to withstand harvest pressure.

PREPARED BY:

James B. Faro
Game Biologist IV

SUBMITTED BY:

James B. Faro
Regional Management Coordinator

Beaver - GMU 17 - Bristol Bay

Appendix I

Historical Beaver Harvest for Unit 17

Game Mgmt. Unit	Year	Limit	Percent Kits (Under 54")	Percent Kits and Yearlings (Under 59")	Percent Adults (Over 59")	Total No. of Beaver	No. of Trappers	Avg. No. Beaver/ Trapper
17	1957	10	22.9	36.8	63.2	367	46	8.0
	1958	15	19.1	33.0	67.0	3,165	263	12.0
	1959	10	19.6	29.4	70.6	3,245	369	8.8
	1960	15	24.3	34.2	65.8	3,721	279	13.3
	1961	15	23.1	24.7	65.2	2,849	230	12.3
	1962	15	29.5	41.5	58.5	1,903	175	10.8
	1963	15	23.3	36.8	63.2	2,172	189	11.5
	1964	15	28.4	38.4	61.6	1,766	180	9.8
	1965	15	22.1	34.9	65.1	957	97	9.9
	1966	15	25.2	37.9	62.1	1,424	143	10.0
	1967	15	25.3	37.0	63.0	2,711	215	12.6
	1968	20	25.7	36.4	63.6	3,158	198	15.9
	1969	15	No Harvest reported			Est. 1,750	Est. 150	Est. 11.6
	1970	15	22.6	34.1	65.9	1,190	118	10.1
	1971	15	27.5	41.0	59.0	824	80	10.3
	1972	15	20.5	34.0	66.0	762	70	10.9
	1973	15	23.9	35.8	64.2	1,849	163	11.3
	1974	15	23.9	36.6	63.4	1,681	169	9.9
	1975	15	15.8	27.2	72.8	928	85	10.9
	1976	15	22.9	32.2	67.0	637	66	9.7

PREPARED BY: James B. Faro, Game Biologist IV

Aerial Beaver Cache Surveys, GMU 17, Bristol Bay, 1974, 1975 and 1976.

Appendix II

River	Miles	1976 Caches	1976 M/Cache	1975 M/C	1974 M/C	% Change in M/C From 1975	1976 Time (min.)	1975 Time (min.)
Klutck	47	47	1.00	1.38	2.5	-38	27	24
Kokwok*	30	28	1.07	1.25	.7	-18	30	26
Iowithla	62	48	1.29	1.29	1.72	0	30	38
Sunshine	12	N/C	N/C	1.47	1.14	-	-	-
Togiak	60	N/C	N/C	3.04	-	-	-	-
Ongivinuk	32	N/C	N/C	1.28	1.03	-	-	-
Harris	29	20	1.45	1.38	1.5	+ 7	15	12
Mosquito	29	36	.81	.63	.66	+18	15	18
Mulchatna	65	81	.80	.51	.44	+29	42	46
Stuyahok	40	21	1.9	.93	.63	+97	30	22
N. Fork Napotoli	30	23	1.3	-	-	-	15	-
S. Fork Napotoli	27	32	.84	-	-	-	12	-
King Salmon	72	52	1.38	-	-	-	19	-
Tikchik	70	76	.92	-	-	-	20	-
Nushagak	87	-	-	-	-	-	-	-

M/C = Miles per cache

N/C = No cache

Average M/C 1976 = 1.09

Average M/C 1975 = 1.32

Average M/C 1974 = 1.15

PREPARED BY: Nick Steen, Game Biologist II

* Increased to 47 miles for 1976 only.

FURBEARER

SURVEY-INVENTORY PROGRESS REPORT

Statewide

Period Covered: July 1, 1975 - June 30, 1977

Techniques

The techniques and procedures employed to estimate the harvest of furbearers and derive the approximate value of the furbearer resource are detailed in the annual furbearer report, Annual Project Segment Report, Volume IX, Job 2 (printed June 1971).

Findings

The estimated furbearer harvest and its approximate value for 1972-73 through the 1976-77 season are presented in Appendix I. The average value per pelt is listed in Appendix II.

Management Summary and Conclusions

Overall harvests have fluctuated as a result of changing economic and cultural conditions. Furbearer populations throughout the state have generally been unaffected by hunting and trapping. For more information refer to the Game Management Unit and species of interest.

PREPARED BY:

Jeannette R. Ernest
Game Biologist II

SUBMITTED BY:

Oliver E. Burris
Regional Management Coordinator

Appendix I. Furbearer harvest and approximate value.

	1972-73		1973-74		1974-75		1975-76		1976-77	
	Number	Approx. Value $	Number	Approx. Value $	Number	Approx. Value $	Number	Approx. Value $	Number	Approx. Value $
Beaver	10,860	380,000	8,400	294,000	7,520	300,800	8,040	321,600	11,033	551,650
Muskrat	31,900	79,750	40,278	100,695	34,920	104,760	41,310	165,240	59,065	265,800
Mink	7,680	268,800	10,700	321,000	6,540	261,600	9,135	365,400	14,704	735,200
Marten	8,710	217,750	17,970	539,100	11,350	397,250	11,620	464,800	22,711	1,022,000
Land Otter	2,570	141,350	2,540	114,300	2,010	120,600	2,100	105,000	3,355	218,080
White Fox	1,790	53,700	2,340	81,900	730	29,200	3,225	129,000	4,261	213,050
Other Fox	5,310	185,850	14,580	583,200	5,680	340,800	10,570	528,500	11,007	990,630
Lynx	5,130	589,950	8,970	1,121,250	5,100	765,000	3,040	532,000	2,252	450,400
Weasel	800	800	2,470	2,964	940	1,410	500	750	1,120	1,960
Squirrel	2,170	1,085	1,700	1,275	260	195	250	190	610	460
Total No.	76,920		109,948		75,050		89,790		130,118	
Total Value		$1,919,135		$3,159,684		$2,321,615		$2,612,480		$4,449,230

Appendix II. Approximate average value per pelt for all sizes and qualities, based on fur market reports, fur auction reports and occasional reports from trappers and dealers.

	1972-73 Season	1973-74 Season	1974-75 Season	1975-76 Season	1976-77 Season
Beaver	35.00	35.00	40.00	40.00	50.00
Muskrat	2.50	2.50	3.00	4.00	4.50
Mink	35.00	30.00	40.00	45.00	50.00
Marten	25.00	30.00	35.00	40.00	45.00
Land Otter	55.00	45.00	60.00	60.00	65.00
White Fox	30.00	35.00	40.00	45.00	50.00
Other Fox	35.00	40.00	60.00	75.00	90.00
Lynx	115.00	125.00	150.00	175.00	200.00
Weasel	1.00	1.20	1.50	1.75	1.75
Squirrel	.50	.75	.75	.75	.75

FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT - 1976

Game Management Units 1(A) and 2

Seasons and Bag Limits

Species	Season	Bag Limits
Beaver	December 1-May 15	No Limit
Coyote	December 1-April 30	No Limit
Red Fox	December 1-January 31	No Limit
Lynx	December 1-February 15	No Limit
Marten	December 1-February 15	No Limit
Mink	December 1-February 15	No Limit
Weasel	December 1-February 15	No Limit
Muskrat	December 1-May 15	No Limit
Otter	December 1-February 15	No Limit

Harvest and Hunting Pressure

Tabulation of the 1976-1977 fur harvest from fur dealer records and fur export reports is not complete at this time but data for 1972 through 1975 are presented in the Appendix.

The 1976-1977 season should have produced higher harvests for most species than the preceding four years. Prices were generally higher for mink, marten and otter and the winter was exceptionally mild throughout the trapping season with very little snow and freezing weather. The heads of almost all bays remained ice free throughout the season; logging roads in almost all areas were passable and the ground remained unfrozen, all of which produced much better trapping conditions than in normal winters.

Beaver:

Beavers occur in low numbers throughout most of Units 1(A) and 2 with the exception of the Unuk and Chickamin Rivers. Only slight interest has been shown in beaver trapping in recent years and only 22 were trapped in Unit 1(A) and 49 in Unit 2 last year. Poor prices are the apparent reason for the lack of interest.

Marten:

Marten populations appeared to be above average in most of Unit 2 and average in Unit 1(A), with the exception of local areas around Ketchikan where the population was low. Most of the trapping pressure on marten seemed to occur along the logging road system in Unit 2 by home-guard loggers. At least one trapper was reported to have taken over 100 marten. Small mammal populations were exceptionally high in 1975 and 1976 and combined with the open winter last year could produce high marten populations in 1977.

Prices paid locally were averaging about $28.00 to $30.00 while one fur auction house reported an average of $44.00 for Southeast marten with a top price of $70.00.

Mink:

Mink populations appear high in most areas and particularly in Unit 2. Interest has been low the past several years because of poor prices. Quite a few of the mink taken were caught by trappers concentrating on otter. While prices paid by local buyers for mink were low, several fur auction houses reported prices similar to those paid for marten.

Otter:

Otter populations appeared to be about average for the 1976-1977 season, but catches were generally above average because of the high prices and exceptional trapping weather. Most serious trappers appeared to be concentrating their efforts on otter and four trappers were known to have averaged over 60 otter each. Local buyers were paying prices averaging $100.00 to $105.00 while one auction house reported an average of $76.00 with a top price of $118.00.

Weasels and Muskrats:

Weasels and muskrats are the only other furbearers that occur in any number in Units 1(A) and 2 and no effort is expended on these species. Some weasels are taken incidentally in mink and marten traps and muskrats are found primarily along the Chickamin and Unuk Rivers and then only in small numbers.

Management Summary and Conclusions

A sealing program should be initiated for all furbearers to provide accurate harvest data. These data appear necessary now to combat restrictions initiating from the Federal Government.

PREPARED BY:

Robert E. Wood
Game Biologist III

SUBMITTED BY:

Jack W. Lentfer
Regional Supervisor

APPENDIX

Furbearer harvests from fur dealer records and fur export reports for Units 1A and 2, 1972-1975.

Unit 1A 1972-73

	Beaver	Mink	Muskrat	Marten	Otter	Weasel	Lynx
Dealer Purchases	8	38	0	106	108	0	0
Personal Use	0	8	0	5	0	0	0
Trapper Exports	47	33	0	411	62	0	2
Dealer Exports	16	76	0	325	268	0	0

Unit 1A 1973-74

Dealer Purchases	0	220	0	128	93	0	0
Personal Use	0	3	0	48	0	11	1
Trapper Exports	91	117	0	154	58	2	0
Dealer Exports	3	248	0	210	98	1	0

Unit 1A 1974-75

Dealer Purchases	12	226	0	266	171	18	0
Personal Use	0	0	0	0	0	0	0
Trapper Exports	11	123	0	144	37	2	0
Dealer Exports	14	303	0	444	232	22	0

Unit 1A 1975-76

Dealer Purchases	0	179	0	123	89	0	0
Personal Use	0	7	0	18	7	0	0
Trapper Exports	0	2	0	2	0	0	0
Dealer Exports	0	607	0	813	307	10	0

Unit 2 1972-73

	Beaver	Mink	Muskrat	Marten	Otter	Weasel	Lynx
Dealer Purchases	2	38	0	236	78	0	0
Personal Use	0	0	0	0	0	0	0
Trapper Exports	0	6	0	43	25	0	0
Dealer Exports	0	0	0	0	0	0	0

Unit 2 1973-74

Dealer Purchases	2	220	0	203	121	1	0
Personal Use	0	0	0	0	0	0	0
Trapper Exports	0	84	0	21	18	0	0
Dealer Exports	0	34	0	3	0	0	0

Unit 2 1974-75

Dealer Purchases	0	32	0	46	23	2	0
Personal Use	0	0	0	0	2	0	0
Trapper Exports	0	55	0	140	4	0	0
Dealer Exports	0	234	0	159	14	0	0

Unit 2 1975-76

Dealer Purchases	0	280	1	319	75	0	0
Personal Use	0	0	0	0	0	0	0
Trapper Exports	0	103	0	18	8	0	0
Dealer Exports	107	69	0	77	16	0	1

SURVEY-INVENTORY PROGRESS REPORT - 1973-1976

Game Management Units 1(B) and 3, Petersburg-Wrangell Area

Seasons and Bag Limits

	Trapping		Hunting
Beaver	Dec. 1-May 15	No limit	No open hunting season
Coyote	Dec. 1-Apr 30	No limit	Sep 1-Apr 30 3 coyotes
Red Fox	Dec. 1-Jan 31	No limit	Sep 1-Feb 15 2 foxes
Lynx	Dec. 1-Feb 15	No limit	Sep 1-Mar 31 2 lynx
Marmot	No closed season	No limit	No open hunting season
Marten	Dec. 1-Feb 15	No limit	No open hunting season
Mink & Weasel	Dec. 1-Feb 15	No limit	No open hunting season
Muskrat	Dec. 1-May 15	No limit	No open hunting season
Otter, Land	Dec. 1-Feb 15	No limit	No open hunting season
Raccoon	No closed season	No limit	No closed season/no limit
Squirrel (Red)	No closed season	No limit	No closed season/no limit

Harvest and Hunting Pressure

The fur export permit is the only record of furbearer harvest (except for beaver which must be sealed). Unfortunately, data from the fur export permit cannot be used to accurately determine the location from which the furs were taken. The mailing addresses of trappers exporting, and of fur dealers purchasing, were used to estimate harvest levels and location by Game Management Unit for the various furbearers (App. I).

Beaver:

Trapping pressure on beaver populations in Units 1(B) and 3 has been light and similar each year since 1972-73. The numbers of reported pelts for both Units have ranged from 10 in 1972-73 to 39 in 1975-76. Except for a few areas near human population centers, the trapping effort has had little impact on beaver populations in these Units.

Lynx:

Lynx are found on the mainland in Subunit 1(B) but are never abundant. Lynx have not been reported taken since 1972-73. Lynx are not known to exist in Unit 3; however, one trapper, who is also a fur dealer, exported nine pelts in 1972-73. It is likely that these lynx were taken in some other Unit.

Marten:

Trapper export and fur dealer purchase information indicated 142 marten were exported in 1975-76 compared to 174 in 1974-75 from Units 1(B) and 3. The highest number recorded since 1972-73 was 414 in 1973-74. This valuable furbearer was trapped by 62 percent of the 37 reporting individuals in 1975-76.

Mink and Weasel:

Twenty-six trappers reported taking 476 mink in both Units in 1975-76 compared to 13 trappers reporting taking 287 in 1974-75. Higher fur prices in 1975-76 was the incentive for the greater trapping effort. Mink population levels are moderate in most areas of Units 1(B) and 3.

Land Otter:

Available information indicates that catches were up in 1975-76 from the previous years. Good fur prices led to more trapping effort in the 1975-76 season. The number of trappers taking otter in 1975-76 was higher than in any of the previous three years. Twenty-four trappers reported 227 otters taken during the 1975-76 season compared to 15 trappers taking 123 otters the previous year.

Composition and Productivity

No data collected.

Management Summary and Conclusions

Current seasons and bag limits appear to be adequately meeting the needs of most trappers. Trapping and hunting pressure at its present levels have not shown any adverse effects on furbearer populations.

Recommendations

No regulatory changes are recommended at this time.

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APPENDIX I

Furbearer Harvest From Fur Export Reports* And Dealer Purchases From Trappers By Unit And Year.

Harvest Year	Game Management Unit 1B							No. of Reporting Trappers
	Beaver No.(**)	Mink No.(**)	Muskrat No.(**)	Marten No.(**)	Otter No.(**)	Weasel No.(**)	Lynx No.(**)	
1972-73	-	-	-	10(1)	80(1)	4(1)	-	2
1973-74	28(2)	5(1)	-	84(3)	10(4)	-	-	7
1974-75	13(2)	41(2)	-	109(4)	23(3)	2(1)	-	5
1975-76	2(1)	108(6)	-	76(8)	132(9)	-	-	9

Harvest Year	Game Management Unit 3								No. of Reporting Trappers
	Beaver No.(**)	Mink No.(**)	Muskrat No.(**)	Marten No.(**)	Otter No.(**)	Red Fox No.(**)	Weasel No.(**)	Lynx No.(**)	
1972-73	19(3)	162(17)	3(1)	139(15)	89(15)	-	7(5)	9(1)	19
1973-74	4(2)	596(23)	15(3)	330(23)	87(17)	1(1)	46(5)	-	40
1974-75	3(2)	246(11)	2(1)	65(11)	100(12)	-	36(3)	-	19
1975-76	37(3)	368(20)	-	66(15)	95(15)	-	17(5)	-	28

* Includes furs exported by trappers and for personal use. Figures do not include furs exported by dealers.

** Number of trappers reporting.

PREPARED BY: David Zimmerman, Game Biologist II

SURVEY-INVENTORY PROGRESS REPORT THROUGH 1976

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

Seasons and Bag Limits

Beaver-Admiralty Island only	Dec. 1-May 15	No limit
Beaver-Remainder Unit 4	No open season	
Coyote[1,2]	Nov. 10-Apr. 30	No limit
Coyote-Remainder Unit 4	Dec. 1-Apr. 30	No limit
Fox (Red)[1,2]	Nov. 10-Jan. 31	No limit
Fox (Red)-Remainder Unit 4	Dec. 1-Jan. 31	No limit
Lynx[1,2]	Nov. 10-Feb. 15	No limit
Lynx-Remainder Unit 4	Dec. 1-Feb. 15	No limit
Marten[1]	Nov. 10-Feb. 15	No limit
Marten-Remainder Unit 4	Dec. 1-Feb. 15	No limit
Mink & Weasel[1]	Nov. 10-Feb. 15	No limit
Mink & Weasel-Remainder Unit 4	Dec. 1-Feb. 15	No limit
Muskrat[1,2]	Nov. 10-May 15	No limit
Muskrat-Remainder Unit 4	Dec. 1-May 15	No limit
Otter (Land)[1]	Nov. 10-Feb. 15	No limit
Otter (Land)-Remainder Unit 4	Dec. 1-Feb. 15	No limit
Otter (Sea)	No open season	
Raccoon	No closed season	No limit
Squirrel (Red Squirrel only) & Marmot[2]	No closed season	No limit
Wolf	No closed season	No limit
Wolverine[1,2]	Nov. 10-Jan. 31	No limit
Wolverine-Remainder Unit 4	Dec. 1-Jan. 31	No limit

[1] That portion of Admiralty Island including all drainages from Point Marsden north to Point Retreat, thence all drainages on the east, south to Point False Pybus.

[2] Do not occur in Unit 4

Harvest and Hunting Pressure

Much of the information contained in this report came from interviews.

Beaver: There are no records of any beaver having been taken during the last five years from Unit 4.

Marten: From 1925 until 1948 a marten trapping season was provided for the ABC Islands even though the species did not occur there (see below). When marten trapping again became legal on Baranof and Chichagof Islands in the 1960's, marten furs were in low demand. Marten were generally taken incidental to mink trapping. In later years, marten have been the target species.

Harvests have been relatively low in recent years except for local situations. This has been the result of relatively low fur prices, high operating costs, retirement of old-time trappers, and wintertime employment opportunities. Most communities have one or two old-time "professional" trappers who still practice their trade. In the Sitka and Hoonah areas, most trapping is done by high school age people. During the past two years, there has been an increase in trapper interest due to increased fur prices and abundant marten. Current prices on large male marten average about $30. Harvests for Unit 4 for 1972-1976 are shown in Appendix I.

Mink and Weasel: During earlier times, mink trapping was a major industry. Records of eary 1day catches are impressive. One old-time Sitka resident reports that during the 1934-1935 season, he caught 120 mink in 19 days in Kelp Bay on Baranof Island. He was paid an average of $44 per mink.

Presently, mink are trapped in conjunction with marten. Most weasels are taken when they are caught in sets made for other species. Trapping pressure, as noted above under marten, is relatively low with local exceptions. Currently, most trapping is done by high school age people. In 1976, male mink averaged about $15 per skin. Harvest data for the years 1972-1976 are shown in Appendix I.

Land Otter: This species requires special trapping techniques and few people today know them. Consequently, there is not a great deal of effort on this species. That effort might be expected to decline. The price of otter pelts has generally remained quite high. As otters are either trapped or shot on an opportunistic basis, there has been a fairly constant harvest. In 1976, large otter were worth about $80. Harvest data for the years 1972-1976 are shown in Appendix I.

Raccoon: There are no reports to indicate that any raccoon have been taken for many years by trappers in Unit 4.

Red Squirrel: There is no information available.

Composition and Productivity

No studies have been conducted in recent years on furbearers in southeastern Alaska.

Historical Background

Beaver: Beaver were introduced to Baranof Island in 1927 (Burris and McKnight, 1973); but those introductions apparently have failed, for I know of no beaver colonies on Baranof. There are several small colonies of beaver of unknown origin on Chichagof Island. I have observed fresh beaver cuttings in Pavlov River, and beaver have been reported by employees of the U.S. Forest Service in the Kook Lake system. Commercial Fisheries biologists have observed beaver sign in Kadashan River and in Mud Bay. Beaver are reportedly present in minor numbers at scattered locations on Admiralty Island. It is surprising that beaver have not colonized some of the extensively clear-cut river systems where alder has become the dominant vegetation.

Marten: Marten are not native to most of Unit 4. They were released on Baranof Island in 1934 at Sitka (7 animals) and on Chichagof Island near Pelican in 1949, 1951 and 1952 (15 animals (Burris and McKnight, 1973). They apparently occupied all suitable habitat on Baranof, Chichagof, Kruzof, and adjacent islands by about the 1950's.

My field observations, those of thers, and high trapping success, indicates that marten are currently at high population levels on the islands of Unit 4 west of Chatham Straits.

It is not known when or how marten became established on Admiralty Island. There are no records of transplants. Holzworth (1930) fails to mention them as part of the fauna present on Admiralty in the 1920's. Some old timers report them to have been absent or extremely rare prior to 1950. They were apparently abundant until about 1975 at which time population declines have been reported. One Juneau fur buyer reports that Admiralty Island marten possess very low-quality fur, whereas those introduced populations on Baranof and Chichagof possess very high-quality fur. He suggests that this may be a nutritional response, as red squirrels do not occur on Admiralty.

Until 1962, trapping seasons were normally open only on alternate years. Other than that semiannual closure, it is interesting that the introduced marten population on Baranof Island received no furhter protection through season closures except for a specific one-year closure in 1948-1949. Chichagof was closed to marten trapping in 1948 and remained so until 1962. No specific closure was ever in effect for Admiralty Island.

It is interesting to examine the seasons whcih have been established for trapping in southeast Alaska. I have included the marten trapping

seasons for Fur District I (later Game Management Units 1-5) as Appendix III.

Mink and Weasel: Discussions with trappers of the area (those cited above under marten) and my observations of mink and mink sign throughout the Unit, suggest that populations are high. A trapper from the Pelican area reports that mink numbers have declined on the northwestern portion of Chichagof in recent years. That report is not consistent with reports of residents of Idaho Inlet, Mud Bay, or Hoonah, who all feel mink are currently in "normal" abundance.

Weasel are seldom seen but are present in low numbers over most of the Unit. There appeared to be a minor population eruption in the Sitka area in 1975, but numbers were again low in 1976. These observations are based on the numbers of weasel taken incidentally by mink and marten trappers.

Red Squirrel: This species was introducted to Baranof Island in 1930 and 1931 as a food source for the marten intorductions (Burris and McKnight, 1973). They have become widespread and are abundant on all islands west of Chatham Straits. However, squirrels are not known to occur on Admiralty Island.

Many residents of the Unit attribute the introduction of red squirrels and/or marten to the nearly total disappearance of grouse and ptarmigan from Baranof and Chichagof Islands. However, ptarmigan seem to be showing a good recovery on Baranof Island at this time.

Raccoon: The raccoon is another of the species introduced to Unit 4 (Burris and McKnight, 1973). This release reportedly came about by the escape of some individuals in 1950 on Japonski Island near Sitka. They apparently flourished for a while, but I have received no reports of sightings of live raccoons since about 1973. A freshly dead raccoon was found by a deer hunter in the fall of 1976 near Still Harbor, 40 air miles southeast of Sitka. A viable population of raccoons probably no longer exists in Unit 4, which is perhaps fortunate.

Management Summary and Recommendations

Populations of mink, marten and otter appear to be at high levels over most of the Unit. Trapping pressure is low and is concentrated near human population centers. Any population fluctuations are probably not man induced.

The Admiralty Island exception was adopted for regulatory year 1974-1975 by the Alaska Board of Fish and Game to test the value of fur taken early in the season. To my knowledge, no such tests have been conducted nor are any contemplated. That area should have the same opening date as the remainder of the Unit. Harvest data and the current methods of obtaining such data are poor. In addition, use of this data for management decisions has been minimal, nor has there been much attempt to refine the data or the methods of obtaining it. Reliable harvest data would be beneficial to assist in land use planning. In retrospect, reliable

harvest data for otter would be extremely beneficial at this time to help resolve the question of its population status. Therefore, it is further recommended that a sealing program for mink, marten and land otter be initiated.

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APPENDIX I

FUR HARVESTS*
GAME MANAGEMENT UNIT 4

	Beaver	Mink	Marten	Otter	Weasel	Squirrel
1972-1973**	0	121	301	90	0	7
1973-1974**	0	408	662	121	0	0
1974-1975**	0	167	458	44	0	0
1975-1976	0	256	797	113	0	0

*These harvests computed by adding Dealer Purchases From Trappers to Personal Use Export to Trapper Export reports.
**Compiled by Robert E. Wood.

Literature Cited

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Holzworth, J.M. 1930. The Wild Grizzlies of Alaska. G.P. Putnam's Sons. New York. 417 p.

FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT - 1973-1976

Game Management Unit 5 - Yakutat

Seasons and Bag Limits

Beaver	Nov. 10 - May 15	No limit
Coyote	Nov. 10 - Apr. 30	No limit
Red Fox	Nov. 10 - Jan. 31	No limit
Lynx	Nov. 10 - Feb. 15	No limit
Marten	Nov. 10 - Jan. 31	No limit
Mink & Weasel	Nov. 10 - Jan. 31	No limit
Muskrat	Nov. 10 - May 15	No limit
Otter	Nov. 10 - Feb. 15	No limit
Squirrel	NO CLOSED SEASON	No limit
Wolf	Nov. 10 - Apr. 30	No limit
Wolverine	Nov. 10 - Jan. 31	No limit

Harvest and Trapping Pressure

Trapping in the Yakutat area is primarily a recreational pastime with trappers keeping their furs for personal use. During the 1976-77 season 8 to 10 individuals trapped part-time in the vicinity of Yakutat or along Yakutat Bay and made small catches of mink, marten, weasels, land otters, and wolves. Occasionally, individuals will harvest enough pelts for small sales; however, fur exports from Unit 5 have been reported since the 1973-1974 season, when trappers exported 10 mink, 27 marten, 6 land otters, and 3 weasels. During the 1972-1973 seasons 40 mink, 2 muskrat, 9 marten, 36 land otter and 21 weasel pelts were exported.

Distribution and Abundance

Beaver - Beavers are numerous and increasing rapidly between Dry Bay and the Dangerous River. North of the Dangerous River, beavers are established in several of the headwaters of tributaries of the Ahranklin River and Seal Creek, and the population is expected to increase because of the presence of numerous small streams and an abundance of forage plants.

Coyote - Coyotes reportedly expanded their range into Unit 5 during the 1920's or 1930's. Populations are moderate to high along the beaches and in the adjacent open habitats.

Red Fox - Red fox were reportedly abundant in the Yakutat area 30 to 40 years ago, but populations are now low, probably as a result of competition with coyotes. A few red fox are present in the vicinity of Yakutat and along the south shore of Yakutat Bay, and foxes have been reported in the Dry Bay area.

Lynx - The lynx population is low on the Yakutat Forelands. It is not known whether lynx inhabit the Malaspina Forelands.

Snowshoe Hare - Snowshoe hares are present but populations are very low. Snowshoe hares are reported to cyclically abundant.

Marten - There are moderate numbers of martens throughout the timbered portions of the Yakutat Forelands. In the past, good catches were made in the upper portions of the Situk and Ahranklin River drainages. The status of martens on the Malaspina Forelands is undetermined.

Mink - Mink occur throughout Unit 5. Data from field studies and interviews with local trappers indicate that populations are currently low to moderate.

Muskrat - Historical reports indicate that muskrats were formerly numerous along the North Gulf Coast, including the Yakutat area. I have had no reports or muskrat sightings anywhere in Unit 5 in recent years. Possibly the species no longer inhabits the Yakutat area.

Land Otter - Land otters are numerous throughout Unit 5 and utilize both freshwater and marine habitats. Well-worn trails are present where otters travel from saltwater to inland freshwater systems and between freshwater drainages.

Squirrels - Red squirrel populations exist throughout Unit 5. No flying squirrels or ground squirrels are known to inhabit the Unit.

Weasel - Weasels are abundant in the Yakutat area and possibly throughout the Yakutat Forelands. Beach trappers were catching 6-8 weasels for every mink taken during last year's season.

Wolf - Refer to Wolf Survey and Inventory Report 1976 for information on distribution and populations in Unit 5.

Wolverine - Wolverines are present throughout Unit 5. Populations are moderate to high, possibly due to the abundance of spawning salmon and the availability of carrion along the beaches.

Management Summary and Recommendations

The Board of Game has recently extended the trapping season for red fox, mink, weasels, marten, land otter and wolverine to February 15. This action adds considerable uniformity to closing dates and provides more opportunity afield for individuals primarily interested in recreational trapping.

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FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT

Game Management Units 12, 20, and 25

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

Trapper Questionnaire

The Trapper Questionnaire was sent to 480 trappers in Units 12, 20, and 25 during the spring of 1977 (Table 1). About 32 percent of the questionnaires were returned initially and a reminder letter increased the returns to a total of 56 percent (267 questionnaires). Of these, about 80 replied that they did not trap and provided no other information. Approximately 180 questionnaires provided the following data (Table 2).

Questionnaire Results - Harvest and Population Levels

Lynx - The average number of lynx harvested in the Fairbanks area was 4.8 per trapper. This was a decline from the 8.3 lynx taken per trapper during the 1975-76 season. Fort Yukon trappers averaged 7.9 lynx each, Venetie trappers averaged 5.8 lynx, Eagle trappers averaged 2.8 lynx, and Circle and Central trappers averaged 5.7 lynx. These data were lumped under "Fort Yukon" in the 1975-76 report and the average catch per trapper for the entire area was 7.3 lynx during that season.

Lynx were still considered to be at a low population level throughout the Interior in 1976-77 with no apparent increase in numbers. In some areas there may have been a decrease in abundance.

Red Fox - (including silver and cross phases). Trappers in the Interior reported an average harvest of 5.3 fox per trapper, compared to 8 per trapper during 1975-76. In most areas the average catch of fox declined.

Fox populations were reported moderately low to low over most of the Interior, and many trappers reported that foxes had declined in abundance since the 1975-76 season.

Marten - The marten harvested in the Interior, as reported by questionnaire cooperators, averaged 34 per trapper in 1976-77. This was an increase from 20 per trapper in 1975-76. Fort Yukon trappers reported an average take of 54 marten each and Fairbanks trappers averaged 31 marten each. Trappers in every area reported moderate to high marten populations with a definite increase in abundance since the 1975-76 season.

Muskrat - Trappers indicated that muskrat populations were at moderate levels throughout the Interior in 1976-77 and that numbers had increased since the 1975-76 season. Similarly, Fairbanks area trappers reported a high and increased abundance of muskrats.

Mink - Mink populations were reported moderately low, with little change from the 1975-76 season. Trappers in the Fairbanks area did not seem very interested in catching mink. This may have been because mink were not abundant in this area. Fort Yukon trappers felt that local mink populations were improving and coupled with increased fur prices this may result in more trapping effort being directed toward mink.

Beaver - The beaver sealing program gives much better data on beaver harvest than the trapper questionnaire (see Beaver Survey and Inventory Report).

Most trappers considered beaver populations to be stable and dependent on wise harvest practices. Some Fort Yukon trappers felt that beaver populations had increased but were still at a moderate level in that area.

Land Otter - Land otter populations in the Interior were reported to be at moderately low levels during 1976-77. Otter numbers were reported to have changed very little since the 1975-76 season. Otter are not taken as frequently as fox, lynx, and marten by trappers in the Interior. Better harvest figures can be obtained from the Fur Export-Fur Dealer Reports than from the Trapper Questionnaire.

Wolverine - Wolverine sealing provides fair harvest information although many wolverine hides are never sealed. While the trapper questionnaire does not provide as much harvest information as the sealing forms, it does yield some indication of wolverine abundance. Trappers in the Brooks Range (not included in the Questionnaire distribution) and in Unit 20A south of Fairbanks reported an apparent increase in the wolverine abundance. Most areas reported little change in wolverine numbers.

Coyotes - Few trappers reported catching coyotes and only about half of the trappers reporting on furbearer populations had comments regarding coyote abundance. Most felt that the population was low and little changed from last year. Harvest information on coyotes is difficult to obtain because they are not included on the Fur Export Printout, and there is no sealing program for this species.

Wolf - Wolf sealing provides more information on wolf harvests than do Trapper Questionnaires, but comments on wolf populations by trappers are very informative. Fairbanks, Nenana, and Tanana area trappers reported moderate wolf population levels with little change since the 1975-76 season. Compared to 1975-76 responses, trappers from Tok, Healy, and McKinley areas reported high and increasing wolf populations. In other areas, wolf abundance was reported as moderate to moderately low and somewhat decreased from that of 1975-76.

Squirrel - Several areas reported high squirrel populations although when averaged, responses indicated moderate populations of squirrels in the Interior, with little change in numbers since 1975-76. Squirrel populations were considered high in the Fairbanks, Nenana, Healy, Eagle, and Beaver Creek areas, and moderately high in the vicinity of Tok,

Tanana, Delta, and Venetie. In most other areas squirrel populations were reported to be at moderate levels. Little change in abundance from that in 1975-76 was reported.

Snowshoe Hare - Snowshoe hare populations were generally low in the Interior. The Fairbanks area and most areas north and east of Fairbanks reported a population increase. In some cases, hares were reported to have declined in abundance south of Fairbanks.

Grouse - Grouse populations were reported to be moderately low to moderate throughout the Interior with a definite increase since the 1975-76 season. Trappers in the Manley, Tanana, and Livengood areas reported moderately high grouse populations, while trappers in Delta and Healy felt that grouse populations were low, but increasing in abundance.

Ptarmigan - Ptarmigan populations in the Interior were reported at generally moderate levels, with an increase in abundance since the 1975-76 season. Trappers in Delta and Tok reported moderately low numbers of ptarmigan, while those from Livengood, Manley, Tanana, and Venetie indicated moderately high ptarmigan populations. Most cooperators indicated that ptarmigan abundance had increased since last year.

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Table 1. Summary of replies to the trapper questionnaire, 1976-77.

Area	No. of Trappers*	Average** Trapline Length	Lynx Taken	Lynx/ Trapper*	Fox Taken	Fox/ Trapper*	Marten Taken	Marten/ Trapper*
Eagle, Chicken Boundary	9	37	14	2.8	7	2.3	159	22.7
Fairbanks	31	35	82	4.8	75	3.9	438	19.9
Fort Yukon	15	53	63	7.9	62	6.2	650	54.2
Circle, Central	4	32	17	5.7	8	4.0	40	16.0
Beaver Creek	6	56	18	4.5	20	5.0	335	55.8
Venetie	7	49	23	5.8	9	2.3	43	10.8
Delta	15	58	56	5.1	98	8.2	90	10.9
Tok	20	65	55	6.9	54	6.8	214	30.6
Healy, McKinley Park	6	25	19	4.8	21	7.0	4	4.0
Lake Minchumina, Kantishna	9	47	3	1.0	8	2.0	183	36.6
Nenana	9	29	18	3.0	30	5.0	21	7.0
Manley area	8	52	2	1.0	1	1.0	180	25.7
Livengood Area	6	103	11	2.8	22	7.3	764	127.3
Tanana	7	52	7	3.5	4	1.3	141	35.3
Brooks Range (Arctic Village , Sheenjek, Hughes, Bettles)	7	48	12	2.4	24	4.8	369	73.8

* Not all trappers trapped for lynx, fox and marten, and some did not indicate their catch. Therefore these figures represent only the harvest indicated on the questionnaires divided by the number of trappers listing any catch.

**Traplines covered from 1-200 miles in length, so the "Average" may not mean much.

Table 2. Interior Alaska furbearer population abundance and trend indices by species based on trapper questionnaire.

SPECIES/ Area	Abundance in 1976-77 season				Compared with 1975-76			
	Low	Med.	High	Index	Fewer	Same	More	Index
GROUSE								
Fairbanks	11	11	8	4.6	1	6	21	7.9
Fort Yukon	4	6	3	4.8	1	7	5	6.2
Eagle	0	7	3	6.2	0	4	6	7.4
Circle, Central	2	2	0	3.0	0	1	3	8.0
Beaver, Beaver Creek	0	4	1	5.8	0	2	3	7.4
Venetie	3	1	0	2.0	1	2	0	3.7
Delta	10	4	1	2.6	0	4	10	8.0
Tok	10	2	4	4.0	3	6	6	5.8
Healy, McKinley Park	3	1	2	4.3	0	1	5	8.3
Lake Minchumina, Kantishna	4	1	0	1.8	0	4	1	5.8
Nenana	2	4	1	4.4	0	2	5	7.9
Manley	1	2	3	6.3	0	0	6	9.0
Livengood	0	2	2	7.0	0	1	3	8.0
Tanana	1	4	3	6.0	0	3	4	7.4
Brooks	2	3	1	4.3	1	4	1	5.0
Interior Totals	53	53	32	4.4	7	48	79	7.1

Table 2. Interior Alaska furbearer population abundance and trend indices by species based on trapper questionnaire.

SPECIES/ Area	Abundance in 1976-77 season				Compared with 1975-76			
	Low	Med.	High	Index	Fewer	Smae	More	Index
PTARMIGAN								
Fairbanks	8	11	4	4.5	2	5	17	7.5
Fort Yukon	4	8	3	4.7	2	6	6	6.8
Eagle	2	6	2	5.0	0	6	4	6.6
Circle, Central	2	2	0	3.0	0	1	3	8.0
Beaver, Beaver Creek	1	4	0	4.2	1	2	2	5.8
Venetie	1	1	2	6.0	1	2	2	5.8
Delta	6	5	1	3.3	3	6	3	5.0
Tok	16	2	0	1.4	7	3	5	4.5
Healy, McKinley Park	1	5	1	5.0	0	2	4	4.2
Lake Minchumina, Kantishna	1	2	1	5.0	0	2	2	7.0
Nenana	2	2	1	4.2	0	2	4	7.7
Manley	1	1	3	6.6	0	2	2	7.0
Livengood	0	1	3	8.0	0	1	3	8.0
Tanana	1	3	4	6.8	0	3	5	7.5
Brooks	0	3	3	7.0	0	3	3	7.0
Interior Totals	38	57	34	4.9	11	52	61	6.6

Table 2. Interior Alaska furbearer population abundance and trend indices by species based on trapper questionnaire.

SPECIES/ Area	Abundance in 1976-77 Season				Compared with 1975-76			
	Low	Med.	High	Index	Fewer	Same	More	Index
COYOTE								
Fairbanks	12	3	0	1.8	3	9	0	4.0
Fort Yukon	4	0	0	1.0	1	3	0	4.0
Eagle	4	0	0	1.0	2	2	1	4.2
Circle, Central								
Beaver, Beaver Creek								
Venetie	2	0	0	1.0	1	1	0	3.0
Delta	9	4	0	2.2	3	6	2	4.6
Tok	7	5	2	3.4	2	8	2	5.0
Healy, Mt. McKinley Park	2	2		3.0	2	2	0	3.0
Lake Minchumina Kantishna								
Nenana	3	1	0	2.0	2	2	0	3.0
Manley	5	0	0	1.0	1	3	0	4.0
Livengood	3	0	0	1.0	2	1	0	2.3
Tanana	6	0	0	1.0	1	4	0	4.2
Brooks	4	0	0	1.0	1	3	0	4.0
Interior Totals	61	15	2	2.0	21	44	5	4.1

Table 2. Interior Alaska furbearer population abundance and trend indices by species based on trapper questionnaire.

SPECIES/ Area	Abundance in 1976-77 Season				Compared with 1975-76			
	Low	Med.	High	Index	Fewer	Same	More	Index
LYNX								
Fairbanks	29	0	0	1.0	20	9	0	2.2
Fort Yukon	12	3	1	2.2	7	5	2	3.6
Eagle	10	0	0	1.0	5	4	1	3.4
Circle, Central	5	0	0	1.0	2	2	1	4.2
Beaver, Beaver Creek	5	0	0	1.0	2	3	0	3.4
Venetie	5	1	0	1.7	2	3	0	3.4
Delta	13	2	0	1.5	7	5	0	2.5
Tok	16	2	0	1.5	15	1	0	1.3
Healy, Mt. McKinley Park	5	0	0	1.0	5	0	0	1.0
Lake Minchumina Kantishna	7	0	0	1.0	4	1	2	3.9
Nenana	8	0	0	1.0	6	1	0	1.7
Manley	7	0	0	1.0	4	3	0	4.0
Livengood	5	0	0	1.0	4	3	0	4.0
Tanana	7	2	0	1.9	3	4	0	3.3
Brooks	6	0	0	1.0	3	2	0	2.6
Interior Totals	140	10	1	1.3	91	42	6	2.6

Table 2. Interior Alaska furbearer population abundance and trend indices by species based on trapper questionnaire.

SPECIES/ Area	Abundance in 1976-77 season				Compared with 1975-76			
	Low	Med.	High	Index	Fewer	Same	More	Index
RED FOX								
Fairbanks	20	6	0	1.9	19	10	1	2.2
Fort Yukon	9	3	1	2.5	6	5	1	3.3
Eagle	6	2	0	2.0	1	6	0	4.4
Circle, Central	2	3	5	3.4	1	2	2	5.8
Beaver, Beaver Creek	3	3	0	3.0	2	3	0	3.4
Venetie	3	2	0	2.6	2	3	0	3.4
Delta	7	8	0	3.2	7	5	1	3.3
Tok	8	8	0	3.0	8	6	1	3.1
Healy, Mt. McKinley Park	2	2	1	4.2	2	2	1	4.2
Lake Minchumina Kantishna	3	5	0	2.9	2	4	0	3.7
Nenana	4	3	0	2.0	4	4	0	3.0
Manley	7	1	0	1.5	5	2	0	2.1
Livengood	4	0	0	1.0	3	1	0	2.0
Tanana	7	0	1	2.0	4	1	0	1.8
Brooks	3	4	0	3.3	2	2	1	4.2
Interior Totals	88	49	3	2.6	68	57	8	3.2

Table 2. Interior Alaska furbearer population abundance and trend indices by species based on trapper questionnaire.

SPECIES/ Area	Abundance in 1976-77 Season				Compared with 1975-76			
	Low	Med.	High	Index	Fewer	Same	More	Index
MARTEN								
Fairbanks	8	14	5	4.6	5	13	11	5.8
Fort Yukon	1	6	8	6.9	1	4	9	7.3
Eagle	0	7	2	6.0	0	3	6	7.7
Circle, Central	2	1	2	5.0	0	1	4	8.2
Beaver, Beaver Creek	0	2	3	7.4	1	0	3	7.0
Venetie	2	0	4	6.3	2	1	3	5.7
Delta	4	6	3	4.7	1	5	5	6.4
Tok	8	8	0	3.0	8	6	1	3.1
Healy, Mt. McKinley Park	3	1	1	3.4	1	3	1	5.0
Lake Minchumina	0	3	6	7.7	1	3	5	6.8
Nenana	2	3	0	3.4	1	1	4	4.3
Manley	5	0	0	1.0	1	3	0	4.0
Livengood	0	3	3	7.0	0	1	5	8.3
Tanana	0	7	2	5.9	1	3	3	6.2
Brooks	0	4	3	6.7	0	3	2	6.6
Interior Totals	29	64	48	5.5	18	43	74	6.7

Table 2. Interior Alaska furbearer population abundance and trend indices by species based on trapper questionnaire.

SPECIES/ Area	Abundance in 1976-77 Season				Compared with 1975-76			
	Low	Med.	High	Index	Fewer	Same	More	Index
MINK								
Fairbanks	7	5	1	3.2	3	7	2	4.7
Fort Yukon	5	9	1	3.9	2	6	5	5.9
Eagle	1	1	0	3.0	1	1	0	3.0
Circle, Central	3	1	0	2.0	0	3	1	6.0
Beaver, Beaver Creek	2	2	1	4.2	0	1	2	6.3
Venetie	3	0	1	3.0	2	1	1	4.0
Delta	7	1	0	1.5	3	3	5	3.0
Tok	9	2	1	2.3	3	7	1	3.4
Healy, Mt. McKinley Park	4	0	0	1.0	1	2	0	3.7
Lake Minchumina Kantishna	3	3	0	3.0	2	3	1	4.3
Nenana	3	3	0	3.0	3	3	0	3.0
Manley	4	2	0	2.3	1	4	0	4.2
Livengood	3	0	0	1.0	1	2	0	3.7
Tanana	3	3	0	3.0	1	3	0	4.0
Brooks	3	3	0	3.0	0	5	0	5.0
Interior Totals	60	35	5	2.8	22	73	13	4.7

Table 2. Interior Alaska furbearer population abundance and trend indices by species based on trapper questionnaire.

SPECIES/ Area	Abundance in 1976-77 Season				Compared with 1975-76			
	Low	Med.	High	Index	Fewer	Same	More	Index
MUSKRAT								
Fairbanks	0	8	3	5.7	2	6	5	5.9
Fort Yukon	5	4	5	5.0	5	5	4	4.7
Eagle	0	2	0	5.0	0	1	0	5.0
Circle, Central	3	0	0	1.0	0	2	1	6.3
Beaver, Beaver Crek	0	1	4	8.2	0	1	2	6.3
Venetie	1	1	2	6.0	0	2		7.0
Delta	6	1	1	2.5	1	2	3	6.3
Tok	5	2	10	6.2		6	10	5.6
Healy, Mt. McKinley Park	2	0	0	1.0	0	1	0	5.0
Lake Minchumina Kantishna	1	2	3	3.2	1	3	2	5.7
Nenana	2	3	0	3.4	1	3	2	5.7
Manley	1	3	0	4.0	1	2	1	5.0
Livengood	0	1	0	5.0	0	1	0	5.0
Tanana	2	4	1	4.4	1	1	3	6.6
Brooks	3	0	2	4.2	0	3	2	6.6
Interior Totals	31	33	27	4.8	12	39	38	6.2

Table 2. Interior Alaska furbearer population abundance and trend indices by species based on trapper questionnaire.

SPECIES/ Area	Abundance in 1976-77 Season				Compared with 1975-76			
	Low	Med.	High	Index	Fewer	Same	More	Index
BEAVER								
Fairbanks	3	8	6	6.0	2	12	4	5.4
Fort Yukon	4	6	5	5.3	1	6	6	6.5
Eagle	1	2	0	3.7	0	3	0	5.0
Circle, Central	2	2	0	1.8	0	3	1	6.0
Beaver, Beaver Creek	1	2	1	5.0	0	3	1	6.0
Venetie	2	2	1	4.2	2	2	1	4.2
Delta	8	2	0	1.9	4	4	0	3.0
Tok	7	4	2	3.5	1	9	1	5.0
Healy, Mt. McKinley Park	1	3	0	4.0	1	2	3	3.7
Lake Minchumina Kantishna	2	3	1	4.3	2	3	1	4.3
Nenana	0	4	2	6.3	6	7	6	5.0
Manley	3	3	1	3.9	0	6	0	5.0
Livengood	0	3	0	5.0	0	2	1	6.3
Tanana	3	3	1	3.9	1	2	2	5.8
Brooks	2	3	0	3.4	0	4	1	5.8
Interior Totals	37	46	20	4.4	14	66	19	5.2

Table 2. Interior Alaska furbearer population abundance and trend indices by species based on trapper questionnaire.

SPECIES/ Area	Abundance in 1976-77 Season				Compared with 1975-76			
	Low	Med.	High	Index	Fewer	Same	More	Index
WOLF								
Fairbanks	10	9	9	4.9	9	12	5	4.4
Fort Yukon	7	4	4	4.2	7	5	2	3.2
Eagle	4	3	2	4.1	4	5	6	3.2
Circle, Central	]	1	2	5.0	0	3	2	3.4
Beaver, Beaver Creek	3	3	0	3.0	2	3	0	3.4
Venetie	3	0	0	1.0	2	1	0	2.3
Delta	5	4	4	4.7	6	5	2	3.6
Tok	2	6	8	6.5	1	8	6	6.3
Healy, Mt. McKinley Park	0	1	4	8.2	0	2	2	7.0
Lake Minchumina Kantishna	4	2	0	2.3	2	3	0	3.4
Nenana	2	4	1	4.4.	3	3	2	4.5
Manely	6	0	1	2.1	3	3	0	3.0
Livengood	2	0	0	1.0	1	1	0	3.0
Tanana	1	6	2	5.4	1	4	1	5.0
Brooks	4	3	0	2.7	3	1	1	3.4
Interior Totals	55	47	37	4.5	21	59	23	5.1

Table 2. Interior Alaska furbearer population abundance and trend indices by species based on trapper questionnaire.

SPECIES/ Area	Abundance in 1976-77 season				Compared with 1975-76			
	Low	Med.	High	Index	Fewer	Same	More	Index
WOLVERINE								
Fairbanks	4	11	2	4.5	2	7	7	5.9
Fort Yukon	4	6	2	4.3	3	7	1	4.3
Eagle	3	3	0	3.0	0	5	1	5.7
Circle, Central	3	5	1	1.2	0	4	1	4.2
Beaver, Beaver Creek	3	2	1	3.7	2	2	1	4.2
Venetie	4	0	0	1.0	2	1	0	2.3
Delta	7	4	1	3.2	0	9	2	5.7
Tok	6	9	1	4.8	4	9	2	4.5
Healy, McKinley Park	0	4	0	5.0	0	4	0	5.0
Lake Minchumina, Kantishna	1	6	0	4.4	0	7	0	5.0
Nenana	2	2	0	3.0	1	3	1	5.0
Manley	5	2	0	2.1	0	6	0	5.0
Livengood	0	2	2	7.0	0	1	3	8.0
Tanana	2	5	1	4.5	1	3	2	5.7
Brooks	1	3	2	5.7	1	3	2	5.7
Interior Totals	45	61	13	3.9	16	71	23	5.3

Table 2. Interior Alaska furbearer population abundance and trend indices by species based on trapper questionnaire.

SPECIES/ Area	Abundance in 1976-77 season				Compared with 1975-76			
	Low	Med.	High	Index	Fewer	Same	More	Index
OTTER								
Fairbanks	6	9	0	3.4	2	10	2	5.0
Fort Yukon	6	3	2	3.5	4	5	1	3.8
Eagle	1	0	0	1.0	0	1	0	5.0
Circle, Central	3	0	0	1.0	0	2	1	6.3
Beaver, Beaver Creek	2	0	0	1.0	1	1	0	3.0
Venetie	5	0	0	1.0	2	1	0	2.3
Delta	5	2	0	2.1	0	5	0	5.0
Tok	9	0	1	1.8	2	7	1	4.6
Healy, McKinley Park	2	0	1	3.7	2	0	1	3.7
Lake Minchumina, Kantishna	1	6	0	4.4	0	6	0	5.0
Nenana	2	2	0	3.0	1	3	1	5.0
Manley	2	3	0	3.2	0	4	0	5.0
Livengood	1	1	0	3.0	0	2	0	5.0
Tanana	6	1	0	1.6	2	2	1	4.2
Brooks	5	1	0	2.3	0	4	1	5.8
Interior Totals	54	26	5	2.7	16	53	9	4.6

Table 2. Interior Alaska furbearer population abundance and trend indices by species based on trapper questionnaire.

SPECIES/ Area	Abundance in 1976-77 season				Compared with 1975-76			
	Low	Med.	High	Index	Fewer	Same	More	Index
SQUIRREL								
Fairbanks	2	11	10	6.5	3	14	5	5.4
Fort Yukon	7	7	0	3.0	5	6	2	4.1
Eagle	0	5	4	6.8	0	5	4	6.8
Circle, Central	1	1	0	3.0	0	1	1	7.0
Beaver, Beaver Creek	0	1	1	7.0	0	1	1	7.0
Venetie	2	2	0	3.0	1	3	0	4.0
Delta	1	6	3	5.8	2	7	1	4.6
Tok	2	5	8	6.6	1	8	4	5.9
Healy, McKinley Park	2	0	1	8.2	0	1	4	8.2
Lake Minchumina, Kantishna	1	4	2	5.6	1	4	1	5.0
Nenana	2	2	0	3.0	1	3	1	5.0
Manley	1	4	0	4.2	1	3	0	4.0
Livengood	1	0	1	5.0	0	1	1	7.0
Tanana	1	3	2	5.7	0	2	1	6.3
Brooks	3	3	0	3.0	1	3	1	5.0
Interior Totals	22	66	28	5.2	15	65	26	5.4

Table 2. Interior Alaska furbearer population abundance and trend indices by species based on trapper questionnaire.

SPECIES/ Area	Abundance in 1976-77 season				Compared with 1975-76			
	Low	Med.	High	Index	Fewer	Same	More	Index
SNOWSHOE HARES								
Fairbanks	25	5	0	1.6	4	11	15	6.5
Fort Yukon	4	9	2	4.5	3	5	7	5.7
Eagle	7	3	0	2.2	2	1	6	6.7
Circle, Central	4	1	0	1.8	1	1	3	6.6
Beaver, Beaver Creek	4	0	0	1.0	2	1	1	4.0
Venetie	4	0	1	2.6	2	2	1	4.2
Delta	14	2	0	1.5	1	4	8	7.2
Tok	16	2	0	1.4	7	3	5	4.5
Healy, McKinley Park	5	0	0	1.0	2	3	0	3.4
Lake Minchumina, Kantishna	7	0	1	2.0	2	5	1	4.5
Nenana	6	1	0	1.7	1	2	3	6.3
Manley	7	0	0	1.0	0	2	3	7.2
Livengood	2	1	0	2.3	1	2	0	3.7
Tanana	9	0	0	1.0	5	2	0	2.2
Brooks	6	0	0	1.0	0	2	4	7.7
Interior Totals	120	24	4	1.9	33	46	57	5.8

FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT

Game Management Unit 18 - Yukon-Kuskokwim Delta

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

Harvest and Hunting Pressure

Beaver

One-hundred eighty beaver trappers took 1,350 beaver during the 1975-76 season; virtually the same number of trappers (181) caught 1,389 beaver the previous season. During the 1976-77 season, 258 trappers took 2,209 beaver which represented the largest number of trappers and highest catch during the last five years. Trapping effort increased considerably during the past two seasons. Pelt measurements also suggested a continuing high level of utilization. Kits have comprised approximately 20 percent of the catch during the last three seasons. This level of exploitation was readily noticeable on several drainages which were heavily trapped. Such areas were most often near villages.

Red Fox

Red fox were prime targets for hunting and trapping activities during the 1976 season. Fox were apparently abundant and the fur prices were the highest in several years. Considerable effort was expended by delta residents to take red fox and the total catch for Unit 18 possibly exceeded 1000.

Lynx

Lynx were reported as very uncommon throughout the delta area during 1976, although a few were taken in the Marshall and Russian Village areas. The total lynx catch probably did not exceed 25.

Mink

Mink trapping pressure and success on the lower delta was higher than during any season since 1971. One furbuyer was reported to have bought over 1000 mink from tundra village trappers.

Marten

Normally marten are not taken in significant numbers in Unit 18, but trappers along the Kuskokwim as far downriver as Akiak were catching fair numbers of marten. Lower Yukon residents also made fair catches and reported taking marten on the tundra in mink traps.

Muskrat

Muskrat populations did not seem to be thriving on the Yukon-Kuskokwim Delta; however, interest in harvesting muskrat was high due to the excellent price being paid for pelts.

Land Otter

Land otter received considerable attention from trappers during 1976. The estimated otter catch for Unit 18 may have reached 500.

Abundance and Productivity

Beaver cache counts were conducted on the Kwethluk, Akulikitak, Eek (North Fork), Kisaralik, and Kasigluk Rivers during the fall of 1976. Two-hundred one live colonies were mapped on approximately 200 lineal units of river. All the drainages surveyed appeared to have good to excellent habitat. In the headwaters of streams surveyed beaver were numerous, but along the lower, more accessible portions of streams beaver were noticeably absent. Illegal hunting by boat during ice free periods is suspected to be the prime factor responsible for the low abundance of beaver in accessible areas.

Management Summary and Recommendations

Beaver cache surveys should be extended to some of the more heavily trapped streams north of the Kuskokwim River. Continued increases in trapping pressure on several delta drainages will ultimately result in severe population declines.

PREPARED BY:

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SUBMITTED BY:

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FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT

Game Management Unit 19 - McGrath

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

Harvest and Hunting Pressure

Beaver

The beaver catch for Unit 19 declined from 1,188 beaver taken by 150 trappers (1974-75) to 806 beaver caught by 120 trappers (1975-76). Specific reasons for the decline of trapping pressure were not known, but low pelt values in comparison with other furs, coupled with heavy ice and deep snow, may have been largely responsible. Lack of early snow during the fall of 1975 led to heavy ice formation early in the season. Nevertheless, a few trappers took advantage of the early season and caught several hundred beaver.

During the 1976-77 season, 196 trappers took 1,668 beaver. This marked the highest number of trappers and beaver catches during the last five years.

Coyote

No coyote were reported taken during 1976.

Red Fox

Red fox were not plentiful in Unit 19, except along the lower Middle Kuskokwim. Very high pelt values encouraged trappers to seek red fox at every opportunity. Average pelt values were around $80 and high quality fur brought $110 to $120. The estimated red and cross fox catch for Unit 19 was 200.

Lynx

Practically no lynx were taken during the 1976 season, despite record prices for this fur. About 30 lynx, which came from the Aniak and Sleetmute areas, were caught in Unit 19.

Marten

Marten populations remained at a high level throughout most of Unit 19, but to the west and northwest of McGrath trappers reported very poor catches. Conversely, trappers to the east and south made good marten catches. Pelt values reached a high of $50 for large males and many lots averaged about $36 to $42 per hide. The estimated marten catch for 1976 was 3000 or more pelts.

Mink

Mink were not abundant except in a few scattered locations. Moreover, mink spent very little time above the ice during the winter of 1976, which is unusual in mild winters. The mink market improved considerably this season and good quality males brought up to $45 each. The estimated mink catch for Unit 19 during 1976 was 250.

Muskrat

Muskrat abundance varied from moderate to high depending upon the area, but probably less than 1000 muskrat were taken in Unit 19. The price for muskrats from the Middle Kuskokwim averaged $3 to $4.

Land Otter

Otter in the Upper Kuskokwim were fairly scarce, but middle river populations appeared abundant. The overall otter catch for Unit 19 probably was lower than that of 1975. The unit harvest was estimated at somewhat over 100 pelts.

Abundance and Productivity

Marten track counts suggested a population decline in the McGrath area, and most catches from this area consisted of many small immature animals. Since other areas continued to support dense marten populations, the decrease may have been related to overtrapping in the McGrath area.

Beaver cache counts have been discontinued on all Unit 19 drainages except for the Holitna, Titnuk, and Hoholitna Rivers. Lack of trapping pressure on the Takotna and Nixon Fork Rivers has allowed beaver numbers to increase to a point where monitoring of populations through cache counts is no longer necessary.

Beaver appeared to be increasing slowly in the Holitna, despite a fair amount of trapping pressure. This drainage has now had three years of trapping since it was reopened in 1974 (Table 1). Beaver populations still appeared to be increasing on the Hoholitna River. Heavy trapping pressure and overflow during 1975 in the North and South Forks severely reduced the number of live colonies on these tributaries. Gains elsewhere on the drainage, however, made up for these declines. A substantial increase in beaver colonies was evident on the Titnuk River and this was largely the result of little or no trapping since 1973.

Table 1. Beaver cache counts on the Hoholitna River drainages, Unit 19.

	1974	1975	1976
Holitna	96	99	110
Hoholitna	143	158	158
Titnuk	50	76	85

Management Summary and Recommendations

Beaver populations over most of the unit continued to flourish, and present trapping pressure does not seem adequate to slow this increase. Continued liberalization of the bag limit is advisable.

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FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT

Game Management Unit 21 - Middle Yukon

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

Harvest and Hunting Pressure

Beaver

Beaver trapping pressure and catches continued to decrease from the 753 beaver taken by 96 trappers during the 1974-75 season to 616 beaver caught by 76 trappers during 1975-76. This drop occurred despite the November opening in effect during the fall of 1975. Although beaver prices dropped slightly during this period, trapping conditions were excellent during the spring of 1976. Trappers reported cutting through very thin ice in many drainages of Unit 21. However, late snowfall occurring in January and February left up to four and five feet of snow in much of the unit, which made access between beaver lodges difficult.

During the 1976-77 season 198 trappers took 1,794 beaver which marked the greatest number of trappers and harvest recorded during the last five years.

Beaver population surveys were not conducted in Unit 21 during the fall of 1975, but reports from trappers suggested that good beaver populations existed.

Red Fox

Red fox were moderately abundant over most of Unit 21 during this reporting period. Populations were especially dense in the lower Yukon floodplain and in the Innoko River valley. The estimated catch for this area was 300 to 400 fox. Fox pelts were averaging over $60 with better quality fur bringing $100 or more per skin.

Lynx

Lynx were extremely scarce over most of Unit 21 except along the islands of the Yukon River where snowshoe hare populations remained fairly dense. Few lynx were trapped and the total catch did not exceed 25 animals. Lynx pelts from this area averaged $250 to $300.

Marten

Marten were very abundant in most of Unit 21 and trappers took large numbers of these animals throughout the season. Large male marten brought over $50 per skin and many trappers received $38 to $42 per hide for good lots. The estimated catch of marten in Unit 21 was 2000 or more.

Mink

Mink populations were apparently high in some areas of Unit 21 during the 1976 fall season, but few trappers took advantage of this. Those trappers who did make fair catches of mink received up to $50 per skin for large males. Less than 200 mink were taken in Unit 21 this season.

Otter

Otter received little trapping pressure despite high populations and excellent fur prices. It is estimated that the unit catch was under 100 animals.

Muskrat

High fur prices encouraged some trapping and hunting of muskrat in Unit 21. However, trappers reported only fair populations and catches of over 100 muskrat were rare. Trapped muskrats brought up to $6 for large undamaged pelts. The estimated harvest in Unit 21 was 1000 pelts.

Management Summary and Recommendations

The beaver catch has continued to decline despite liberal trapping seasons and bag limits, but this should not be interpreted as an indication of population decline. Continued liberal seasons and bag limits for beaver are advisable.

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FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT

Game Management Unit 22 - Seward Peninsula

Period Covered: July 1, 1976 to June 30, 1977

Harvest and Hunting Pressure

Premium fur prices for lynx, fox and wolf hides coupled with a strong demand for other furbearers resulted in increased trapping effort throughout Unit 22. One or two "full-time" trappers resided in most villages, but for the second consecutive year there was a noticeable increase in the number of recreational trappers who took fur on an incidental basis. In general, trappers concentrated their efforts on long-haired furs and, with the exception of lynx, excellent catches were recorded. Lack of snow during November and December created transportation difficulties and hampered some trappers, but conditions improved considerably in late January.

Beaver

Reports of knowledgeable village residents and aerial observations indicated that beaver have continued to increase numerically and to expand their range from the eastern portion of Unit 22. Beaver now occur as far west as the Kwiniuk River near Elim, and in the near future will likely move west into the Fish River drainage if they have not already done so. Trapping effort has not kept pace with this expanding population; in fact there are few trappers living in these areas who are experienced in taking beaver. The only area where beaver have been taken in any substantial number is the southeastern portion of the unit near Stebbins and St. Michael. Trapping effort occurred principally on drainages flowing into Norton Sound from Point Romanof to Cape Stebbins, and of these the Pikmiktalik River received the heaviest use. In general, beaver trapping pressure was light throughout Unit 22 and the harvest probably did not exceed 250 animals.

Arctic Fox

Commonly, white fox are caught within 10 miles of the mainland coast in the northwestern portion of the unit and St. Lawrence Island. During the 1976-77 season it was not uncommon to catch white fox 50 miles inland, and some were taken over 100 miles from the coast. The white fox population appeared to be as abundant as anyone can remember in recent years, and good catches were recorded both on islands and the mainland.

The greatest success per unit effort occurred on St. Lawrence Island. Several good trappers took nearly 100 foxes, though the average appeared to be about 20 per trapper. A partial survey in the spring revealed a minimum winter catch of 776 animals. The total island take probably did not exceed 1500 white fox. The majority of the white fox on the mainland were taken by trappers from the villages of Wales and Shishmaref. The average take by mainland trappers was about 15 fox, although some trappers took as many as 50. The total catch for the entire unit was estimated to be less than 3000.

Red Fox

Following a moderate increase last year, the red fox population appeared to be very high. Red fox were commonly seen throughout the unit in all habitats from interior mountain valleys to the coastal plains. Serious trappers in almost every location terminated the season with good catches. The average take per trapper was about 25, but a few "full-time" trappers took as many as 80 red fox. During late winter, three cases of rabies were diagnosed in red foxes in Unit 22, and this supported the hypothesis that this population was at a high level.

Lynx

Even though lynx pelts continued to bring record prices, the harvest remained low for the second consecutive year. A few animals were taken by trappers from the villages of White Mountain, Elim and Koyuk, but the average catch seldom exceeded two. The best trapper in the area who specialized in taking lynx caught 19 during the season. Several areas, especially drainages of the Kuzitrin, exhibited rather high numbers of snowshoe hare, but there was very little indication of lynx in the area. The signs of increasing prey were encouraging and suggest lynx may be on the increase in the near future.

Mink and Weasel

The harvest of these animals continued to remain low. Corresponding to a noticeable increase in the microtine population, both mink and weasel density appeared to be up, though there were few if any full-time trappers who took advantage of the situation.

Land Otter

Trapping effort directed toward this species was almost nonexistent; most animals were killed by persons traveling on snow machines. The total otter harvest was probably less than 25.

Abundance and Productivity

The Arctic fox population on both the mainland and St. Lawrence Island increased by more than 25 percent over that of last year. In general, populations were judged to be moderately high.

Red fox were very common throughout the entire unit, and exhibited a marked increase from the year before.

Lynx numbers remained low for the fourth consecutive year. The population was down over the entire unit, but may not have been much lower than a year ago.

Aerial observation indicated land otter were common in all the major drainages, and most of the larger tributaries. The population appeared relatively dense, which probably resulted from light trapping pressure.

Ground squirrel populations may have remained stable, but if any change occurred it was a slight decrease.

Management Summary and Recommendations

Fur prices have remained high for four consecutive years but there has been only a moderate increase in trapping pressure. Only a few trappers in Unit 22 depend on fur catches for a significant portion of their income, and the vast majority of people who trap do so primarily as a winter recreational activity. Even though there has been a recent revival in trapping interest, it is quite apparent that populations of furbearers could withstand a substantial increase in harvest. Beaver trapping should be encouraged throughout Unit 22, particularly in the eastern portion. Considering the relatively low harvest, liberal seasons and bag limits should be retained.

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FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT

Game Management Unit 23 - Kotzebue Sound

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

Seasons and Bag Limits

Species	Trapping Season	Bag Limit
Beaver	Nov. 1 - Apr. 15	20 per season
Arctic fox	Nov. 10 - Apr. 15	No limit
Red fox	Nov. 10 - Apr. 15	No limit
Lynx	Nov. 1 - Mar. 31	No limit
Mink and weasel	Nov. 1 - Jan. 31	No limit
Muskrat	Nov. 1 - June 10	No limit
Land otter	Nov. 1 - Apr. 15	No limit
Ground squirrel	No closed season	No limit

Harvest and Hunting Pressure

Beaver

Beaver have historically been taken by shooting during the spring immediately after breakup until late June. Such harvests occur during the closed season and by illegal means; consequently, many of the beaver taken in Unit 23 are not sealed. Both the hide and meat of beaver are locally utilized. Because most hides are also tanned locally, there is no need to ship pelts out of state. This further complicates collecting accurate harvest data through a sealing program.

The beaver population seems to be expanding.

Muskrats

Muskrats were noticed on the Noatak River during 1977, suggesting that their range is continuing to expand.

Red and Arctic Fox

Red fox were very abundant and were frequently observed during fall and spring moose surveys along the Noatak, Kobuk, and Selawik Rivers. The following lists animals that tested positive for rabies during 1976-1977: arctic fox, Kivalina, January 10, 1977; red fox, Kotzebue, April 4, 1977; red fox, Buckland, April 7, 1977; arctic fox, Kotzebue, April 8, 1977; and red fox, Noorvik, May 31, 1977.

Land Otters

Land otters were present in all drainages between the Noatak and Buckland Rivers.

Management Summary and Recommendations

It is evident that the taking of beavers by shooting has not affected the population. The local utilization of beaver meat and hide will continue to be important to residents of Unit 23. Therefore, shooting should be legalized as a method of taking beaver, and the season should occur during the period May 1 - June 30 with a bag limit of two beaver.

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WOLF

SURVEY-INVENTORY PROGRESS REPORT - 1976-77

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

Seasons and Bag Limits

Hunting	No closed season	No limit
Trapping	Nov. 1 - Apr. 30	No limit

Harvest and Hunting Pressure

The wolf harvest in subunit 1A dropped 44 percent from 34 in 1975-76 to 19 this year. The harvest in Unit 2 also declined, 25 wolves taken this year compared to 44 reported for 1975-76, a 43 percent decrease. These decreases follow the other Units in Southeast, all of which declined with the exception of Subunit 1D.

While the total harvest from subunit 1A decreased, the take from the Revilla Island part of the subunit remained about the same, 15 this year compared to 16 in 1975-76. Eighteen wolves were taken from the mainland area of 1A in 1976-76 and only 4 this year. Most of the decline in the harvest on the mainland was probably due to lack of trapping effort rather than a decline in the wolf population.

The harvest from subunit 1A again peaked in March when 37 percent of the take occurred. Twenty-six percent were taken in January and the rest of the harvest was distributed throughout the year. In Unit 2, most of the harvest occurred earlier than it did in 1975-76. December was the peak month with 32 percent of the harvest, followed by 20 percent in November and 16 percent in each of January and February.

Trapping accounted for 63 percent of the wolves taken in subunit 1A and 52 percent of those from Unit 2. These figures are similar to those from 1975-76. The more extensive road system and logging activity in Unit 2 is the most apparent reason for the higher percent of wolves taken in this Unit by shooting.

Black wolves made up 16 percent of the harvest in 1A, but 8 percent of those taken in Unit 2. The rest were of the brown-grey color phase.

Age ratios of the wolves, as determined from examination of the fusing ends of the radius and ulna bones, indicated 76 percent of the wolves from subunit 1A and 45 percent of those from Unit 2 were juveniles.

Composition and Productivity

No aerial surveys to ascertain wolf numbers were flown in 1975-76 because of the lack of suitable snow conditions throughout the winter.

Management Summary and Conclusions

The winter of 1976-77 was exceptionally mild and at no time during the winter was there snow cover sufficient to conduct aerial surveys. The open winter may also have contributed to the lowered wolf harvest throughout Southeast, as there were no concentrations of prey species along the lower elevations and beach areas where most trapping of wolves occurs.

Recommendations

No changes are recommended in either hunting or trapping seasons or bag limits.

PREPARED BY:

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Robert E. Pegau
Regional Research/Management Coordinator

WOLF
SURVEYINVENTORY PROGRESS REPORT 1976

Game Management Units 1B and 3 Petersburg, Wrangell Area

Seasons and Bag Limits

Hunting	No closed season	No limit
Trapping	Nov. 1 - Apr. 30	No limit

Harvest and Hunting Pressure

Sealing certificate data indicate seven wolves (5 males and 2 females) were taken in Subunit 1B in 1976-77, compared to 16 in 1975-76. Ground shooting accounted for 43% of the total harvest, trapping 29%, snaring 14%, and one wolf was run over by a pickup truck.

The reported 1976-77 harvest for Unit 3 was 15 wolves, consisting of 7 males, 6 females and two unknown sex. Four of these were taken under a Department-sponsored trapping program. In comparison, 24 wolves (12 males and 12 females) were taken in 1975-76. Chronology of the harvest showed that 80% (12) of the wolves were taken in January and February. Two were taken by shooting, eight by trapping and five by snaring.

Composition and Productivity

Aerial surveys were not flown in either unit due to lack of snow in 1976-77. Tracks and other signs observed by Department trappers, during trapping efforts in parts of Unit 3, indicate that wolves were only about half as numerous as in 1975-76.

Ages of wolves (as determined by examining the radius and ulna bones) sealed in 1976-77 in Unit 3 indicated that 47% were pups. This compares with 29% found in 1975-76. Of seven wolves in Unit 1B, 29% were pups in 1976-77, compared with 25% in 1975-76.

Management Summary and Conclusions

Wolf populations have continued to decline in both Units 1B and 3 since 1968-69. The increase in the percentage of pups in the harvest may reflect a change in this downward trend, particularly in Unit 3. Until Sitka black-tailed deer increase in Unit 3, wolf populations will probably remain low. Wolf numbers in Subunit 1B were reportedly lower than in 1975-76, but still are probably higher than in Unit 3.

Recommendations

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

Wolf numbers should be maintained at their present low levels to encourage the recovery of the low deer populations.

Wolf numbers should be maintained at their present low levels to encourage the recovery of the low deer populations.

PREPARED BY:

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SUBMITTED BY:

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Regional Research/Management Coordinator

WOLF

SURVEY-INVENTORY PROGRESS REPORT - 1976

Game Management Unit 5 - Yakutat

Seasons and Bag Limits

Hunting	No closed season	No limit
Trapping	Nov. 10-April 30	No limit

Harvest, Hunting, and Trapping Pressure

Six wolves (5 males, 1 female) were taken in 1976. Four wolves were taken near Yakutat and two were taken from the Alsek River area. One wolf was trapped, one was snared, and 4 were taken by ground shooting.

There was very little hunting or trapping pressure on wolves. Four individuals trapping part-time near Yakutat made specific attempts to trap of snare wolves, and two people trapped by ground shooting after landing a light aircraft but their efforts were hampered by lack of snow during much of the winter.

Distribution

Wolves are numerous on the Yakutat Forelands from Yakutat Bay south to the Unit 5 boundary and the headwaters of Russell Fjord. No wolves are known to inhabit the remainder of the area, which drains into Russell and Nunatak Fjords; possibly the low populations of large prey species and the lack of major salmon spawning streams in this region discourages wolf habitation. On the Malaspina Forelands (Icy Bay to Hubbard Glacier) tracks of several wolves have been reported near Fountain Stream. No wolf sign has been observed near Icy Bay or east of Sudden Stream along the north shore of Yakutat Bay. It is still not known whether a breeding population of wolves is present on the Malaspina Forelands. In addition, there are no wolves known to be present in the adjoining portion of Game Management Unit 6 from Icy Bay west to Cape Yakatoga.

Population Composition and Productivity

No wolf surveys were conducted in Fall 1976 or winter and spring 1977 Because of the unseasonably mild weather and lack of adequate snow. However, many observations of wolves and wolf sign were recorded during aerial surveys for other species and during field studies. In addition, I recorded observations of wolves on the Yakutat Forelands from several reputable individuals.

A minimum of six different wolf packs used the Yakutat Forelands. Geographically these include the Situk River pack, the Ahranklin River pack, the Dangerous-Italio River pack, the Auke River pack, the Tanis Mesa-East Alsek pack, and the Doame River-Clear Creek pack. Minimum numbers of individuals in these packs were 9, 7, 6, 3, 5, and 6, respectively, for a minimum Yakutat Forelands wolf population of 36, including those harvested. With the addition

of other pack members, plus the singles and pairs separate from the main packs, my best estimate of the total wolf population on the Yakutat Forelands would be 45-50 animals. The resulting density would be approximately one wolf per 15 mi^2.

The distribution of wolves on the Yakutat Forelands appears to be related to the occurrance of major salmon rivers and spawning areas. Spawning salmon constitute an important seasonal food source for wolves, as well as for a number of other species. Salmon are normally available from mid-July to February. Sockeye and pink salmon are abundant in certain localities early in the season, but the most important species for predators and scavengers is silver salmon. Silver salmon spawn throughout the Yakutat Forelands in most of the clear feeder streams from September throughout the fall and, in certain streams, to early winter.

Management Summary and Conclusions

The wolf population remained stable and high on the Yakutat Forelands. Hunting and trapping pressure was low. No changes in seasons and bag limits are recommended at this time.

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WOLF

SURVEY-INVENTORY PROGRESS REPORT - 1976

Game Management Unit 6

Season and Bag Limits

Hunting	Aug.10-Apr.30	Two wolves
Trapping	Mar.10-Mar.31	No limit

Harvest and Hunting Pressure

Four wolves were taken in Unit 6 during the 1976-77 hunting and trapping seasons (Appendix I). Trapping effort east of the Copper River was minimal due to lack of snow. The three wolves which were trapped were taken from one pack utilizing the western fringe of the Copper River.

Composition and Productivity

No data available.

Management Summary and Conclusions

The status of wolves in Unit 6 is unknown. Survey conditions the previous winter were never satisfactory for conducting aerial surveys.

In the past, wolves have primarily utilized the area east of the Copper River to Cape Yakataga. This is the first time in recent years that wolves have been taken west of the Copper River.

Wolf predation on moose last winter was not noted, probably because of the absence of snow. A pack of six wolves were observed feeding upon three freshly killed mountain goats in the Martin Glacier area during March 1977. Recent goat survey data indicates that wolf predation may be seriously affecting local goat populations.

The annual harvest of wolves from Unit 6 is shown in Appendix II.

Recommendations

Retain the current seasons and bag limits.

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APPENDIX I

Wolf Sealing Data 1976-77

Unit 6

HARVEST

Male	Female	Unknown	Total
4	0	0	4

CHRONOLOGY

	Date	Number	Percent
1976	Sept.	1	25.0
	Oct.	0	0
	Nov.	1	25.0
	Dec.	1	25.0
1977	Jan.	0	0
	Feb.	1	25.0
	Total	4	100.0

METHOD OF TAKE

	Number	Percent
Ground shooting	1	25.0
Trapping	3	75.0
Total	4	100.0

COLOR OF WOLVES TAKEN

	Number	Percent
Gray	2	50.0
Black	2	50.0
Total	4	100.0

Prepared by: Jerome Sexton, Game Biologist II
Julius Reynolds, Game Biologist III

APPENDIX II

WOLF HARVEST DATA

Unit 6

Year	Number
1963 - 1964*	1
1964 - 1965*	1
1965 - 1966**	5
1966 - 1967*	0
1967 - 1968*	0
1968 - 1969*	0
1969 - 1970**	1
1970 - 1971**	0
1971 - 1972***	0
1972 - 1973***	3
1973 - 1974***	6
1974 - 1975***	4
1975 - 1976***	7
1976 - 1977***	4
Total	32
Average	2.3

* Bounty records.
** Bounty records and aerial permits.
*** Mandatory sealing.

PREPARED BY: Jerome Sexton, Game Biologist II
Julius Reynolds, Game Biologist III

WOLF

SURVEY-INVENTORY PROGRESS REPORT - 1976

Game Management Units 7 and 15 - Kenai Peninsula

Seasons and Bag Limits

Hunting	Aug.10-April 30	Two wolves
Trapping	Nov.10-March 31	No limit

Harvest and Hunting Pressure

The 1976 hunting and trapping season resulted in the harvest of 12 wolves in Game Management Units 7 and 15 (Appendices I and II). Trapping and snaring accounted for 42 percent of the harvest compared to 57 percent in 1975. The 1976 harvest was down 43 percent from the 1975 level of 21.

The harvest was composed of 10 females and 2 males. One male and 2 females were taken in Unit 7 and 1 male and 8 females in Unit 15. Of 11 known age animals 6 (55%) were pups and 5 (45%) were adults.

Composition and Productivity

Wolf surveys were conducted on March 7 and 8 following a general snowfall that ended on March 5. Results from this survey and other observations indicate a minimum of 18 packs totaling 116 to 142 wolves, with 4 packs totaling 21-22 wolves in Unit 7 and 14 packs totaling 95-120 wolves in Unit 15.

Management Summary and Conclusions

The winter of 1976-77 was one of the mildest ever recorded. Rains and constant freezing and thawing conditions made trapping extremely difficult and many trappers pulled their traps part way through the season. Poor trapping conditions appear to have been responsible for the lower percentage of the harvest taken by trapping and the lower overall harvest.

The 1976-77 harvest of 12 wolves was well below the desired level of harvest.

Recommendations

Wolves should be harvested at a level to provide a spring breeding population of approximately 50 wolves in Unit 15 and 20 in Unit 7. Approximately 50 wolves should be harvested during the 1977-78 season.

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WOLF 1976-1977

APPENDIX I

Unit 7

Harvest

Males - 1 Females - 2 Unknown - 0 Total - 3

Chronology by Month

Month	Number	Percent	Month	Number	Percent
July	-	-	January	-	-
August	-	-	February	-	-
September	-	-	March	1	33.3
October	1	33.3	April	-	-
November	-	-	May	-	-
December	1	33.3	June	-	-
			Unknown	-	-
			Total	3	99.9

Method of Take	Number	Percent
Ground Shooting	3	100.0
Trapping	-	-
Snaring	-	-
Other	-	-
Total	3	100.0

Color of Wolves Taken	Number	Percent
White	-	-
Brown	-	-
Gray	2	66.7
Black	1	33.3
Unknown	-	-
Total	3	100.0

Age (Determined by Examining the Fusing Ends of Radius and Ulna Bones)

	Number	Percent
Pup	1	33.3
Adult	1	33.3
Unknown	1	33.3
Total	3	99.9

PREPARED BY: Jerome J. Sexton, Game Biologist II

WOLF 1976-1977

APPENDIX II

UNIT 15
(including all Subunits)

Harvest

Males - 1 Females - 8 Unknown - 0 Total - 9

Chronology by Month

Month	Number	Percent	Month	Number	Percent
July	-	-	January	1	11.1
August	-	-	February	1	11.1
September	1	11.1	March	1	11.1
October	-	-	April	1	11.1
November	2	22.2	May	-	-
December	2	22.2	June	-	-
			Total	9	99.9

Method of Take	Number	Percent
Ground Shooting	4	44.4
Trapping	5	55.6
Snaring	-	-
Other	-	-
Total	9	100.0

Color of Wolves Taken	Number	Percent
White	-	-
Brown	2	22.2
Gray	5	55.6
Black	2	22.2
Unknown	-	-
Total	9	100.0

Age (Determined by Examining the Fusing Ends of Radius and Ulna Bones)

	Number	Percent
Pup	5	55.6
Adult	4	44.4
Unknown	-	-
Total	9	100.0

PREPARED BY: Jerome J. Sexton, Game Biologist II

WOLF

APPENDIX III

GMU's 7 & 15 - KENAI PENINSULA

Wolf Observations and Population Estimates

Year	Unit 7	Unit 15	Remarks
1961	?	?	1 wolf observed by Dept. Biologist on moose surveys.
1962-67	?	?	Occasional reports of wolves or wolf tracks but most thought to be non-reliable reports.
1968-69	?	10	One pack of 10 wolves observed by Dept. Biologist while surveying moose.
1969-70	?	10-15	One pack of 9 observed near Fox River and tracks of a pack of 4 observed at head of Tustumena Lake.
1970-71	2	15-25	Numerous reports and observations of wolves and tracks sough of Kenai River.
1971-72	2-4	25-35	Numbers about the same of slightly higher south of Kenai River spreading into Unit 15 (A) and Unit 7.
1972-73	5-11	35-60	Wolves appear to be well established in all of Unit 15 and northwest part of Unit 7.
1973-74	10-20	70-80	Based on expansion of survey data.
1974-75	12-25	90-105	Based on expansion of previous data by 25%.
1975-76	21-40	95-120	Based on surveys.

PREPARED BY: Paul A. LeRoux, Game Biologist III

WOLF

SURVEY-INVENTORY PROGRESS REPORT - 1976

Game Management Unit 9 - Alaska Peninsula

Seasons and Bag Limits

Hunting Season	Aug. 10-April 30	Two wolves
Trapping Season	Oct. 1-April 30	No limit

Hunting, Trapping and Harvest Pressure

The reported harvest of 8 wolves (6 males and 2 females) during the 1976-77 season was one of the lowest in the unit's history (Appendix I and II). Ground shooting accounted for 6 of the wolves, with two wolves taken by traps. Only one of the wolves was a pup-of-the-year.

Composition and Productivity

No data are available.

Management Summary and Conclusions

Travel with ski-equipped aircraft or snow mchine was impossible because of the exceptionally mild winter weather during 1976-1977. The lack of adequate snow severely restricted harvesting opportunity. Historically, large wolf harvests have occurred only during winters with above average snowfall (Appendix II). Because of the small sample size, meaningful conclusions cannot be made concerning sex or age composition of the harvest (Appendix I). The 1976-1977 harvest level is only 25 percent of the average for the previous five years.

Recommendations

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

PREPARED BY:

James B. Faro
Game Biologist III

SUBMITTED BY:

John S. Vania
Regional Management Coordinator

WOLF 1976-77

UNIT 9

APPENDIX I

Harvest

Males - 6 Females - 2 Unknown - 0 Total - 8

Chronology by Month

Month	Number	Percent	Month	Number	Percent
July	--	--	January	--	--
August	--	--	February	1	12.5
September	--	--	March	5	62.5
October	--	--	April	--	--
November	1	12.5	May	--	--
December	1	12.5	June	--	--
			Unknown	--	--
			Total	8	100.0

Method of Take	Number	Percent
Ground Shooting	6	75.0
Trapping	2	25.0
Snaring	--	--
Other	--	--
Total	8	100.0

Color of Wolves Taken	Number	Percent
White	--	--
Brown	--	--
Gray	5	62.5
Black	3	37.5
Unknown	--	--
Total	8	100.0

Age (Determined by Examining the Fusing Ends of Radius and Ulna Bones)

	Number	Percent
Pup	1	12.5
Adult	7	87.5
Unknown	--	--
Total	8	100.0

Prepared By:

Jerome J. Sexton
Game Biologist

Wolf - G.M.U. 9 - Alaska Peninsula

APPENDIX II

Historical Wolf Harvest, 1961-1977

Year	Harvest
1961-62 1/	4
1962-63 1/	9
1963-64 1/	16
1964-65 1/	44
1965-66 1/	27
1966-67 1/	51
1967-68 1/	24
1968-69 1/	22
1969-70 2/	26
1970-71 2/	7
1971-72 3/	24
1972-73 3/	24
1973-74 3/	31
1974-75 3/	52
1975-76 3/	27
1976-77 3/	8

1/ Data from bounty analysis
2/ Data from aerial permits - should be considered incomplete
3/ Data from hide sealing program

Prepared by: James B. Faro, Game Biologist III

WOLF

SURVEY-INVENTORY PROGRESS REPORT - 1976

Game Management Unit 10 - Aleutian Islands

Seasons and Bag Limits

Hunting Season	Aug.10-April 30	Two wolves
Trapping Season	Oct.1-April 30	No limit

Hunting, Trapping and Harvest Pressure

No wolves were reported taken during the 1976-77 season from this unit.

Composition and Productivity

No data are available.

Management Summary and Conclusions

Wolves in Unit 10 occur only on Unimak Island. Hunting pressure on the species is light; since 1962 only two animals have been reported taken, one in 1972 and one in 1974.

Recommendations

No changes in seasons or bag limits are recommended.

PREPARED BY:

James B. Faro
Game Biologist III

SUBMITTED BY:

John S. Vania
Regional Management Coordinator

WOLF

SURVEY-INVENTORY PROGRESS REPORT FOR REGULATORY YEAR 1976-77

Game Management Unit 11 - Wrangell Mountains-Chitina River

Seasons and Bag Limits

Hunting	Aug. 10 - April 30	Two wolves
Trapping	Oct. 1 - April 30	No limit

Harvest and Hunting Pressure

Fifteen wolves were reported harvested during the 1976-77 season. Harvest data from 1966-67 through 1976-77 are summarized in Appendix I. During recent years most wolves were taken by trapping and snaring; however, in 1976-77 53 percent (8) were taken by ground shooting. Data from the 1976-77 harvests indicate that 40 percent (6) of the harvest were adults, 47 percent (7) were pups and 13 percent (2) were of an undetermined age. No increasing or decreasing trends are apparent in percentage of males in the harvest. A tabulation of the harvest location (not shown) reveals that the 1975-76 harvest was dispersed over the drainages of Unit 11.

Abundance, Composition and Productivity

The collection of data relating to pack size was eliminated from sealing certificates during 1975-76. This information together with wolf observation reports was used to determine an estimated mean pack size and number of wolf packs for Game Management Unit 11. Previous data (now shown) illustrates a decreasing pack size over the three year period from 1971 through 1974. The sample size for 1974-75 to 1976-77 was too small to be meaningful; however, information from reliable local sources indicates that wolves are still abundant.

Data pertaining to composition and productivity are not available.

Management Summary and Conclusions

Besides harvest data, there has been little information obtained about wolves in Unit 11. Indications are that wolves are abundant.

Recommendations

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

PREPARED BY:

Ted Spraker
Game Biologist II

SUBMITTED BY:

John S. Vania
Regional Management Coordinator

APPENDIX I. Wolf Harvest Data from 1966-67 through 1976-77 for GMU 11.

	1966-67[a]	1967-68[a]	1968-69[a]	1969-70[b]	1970-71[b]
Total Wolf Harvest:	70	40	7	10	23
Percent Males in Harvest, (Number)[d]:	51%(36)	53%(21)	86%(6)	50%(5)	61%(14)
Number Sex Unknown:	0	1	0	0	0
Ratio Blacks to 100 Grays:	43	29	17	--	--
Method of Kill, Percent (Number):					
Aerial Shooting:	80%(56)	55%(22)	0%(0)	100%(10)	100%(23)
Ground Shooting:	7%(5)	30%(12)	0%(0)	--	--
Trapping/Snaring:	13%(9)	15%(6)	100%(7)	--	--
Other:	0%(0)	0%(0)	0%(0)	0%(0)	0%(0)
Age Structure of Harvest[f]:					
Adult	--	--	--	--	--
Pup	--	--	--	--	--
Unknown	--	--	--	--	--

	1971-72[c]	1972-73[c]	1973-74[c]	1974-75[c]	1975-76[c]	1976-77[c]
Total Wolf Harvest:	56	48	28	34	18	15
Percent Males in Harvest, (Number)[d]:	57%(32)	42%(20)	71%(20)	53%(18)	50%(9)	77%(10)
Number Sex Unknown:	1	1	0	0	0	2
Ratio Blacks to 100 Grays:	59	26	35	45	42	36
Method of Kill, Percent (Number):						
Aerial Shooting:	30%(17)	0%(0)	0%(0)	0%(0)	0%(0)	0%(0)
Ground Shooting:	18%(10)	8%(4)	18%(5)	27%(9)	33%(6)	53%(8)
Trapping/Snaring:	52%(29)	92%(44)	82%(23)	73%(25)	45%(8)	47%(7)
Other:	0%(0)	0%(0)	0%(0)	0%(0)	22%(4)[e]	0%(0)
Age Structure of Harvest[f]:						
Adult	--	--	--	--	33%(6)	40%(6)
Pup	--	--	--	--	17%(3)	47%(7)
Unknown	--	--	--	--	50%(9)	13%(2)

a. Harvest figures are based on the number of wolves submitted for bounty.
b. Harvest figures are based on returned aerial wolf hunting permits alone. The bounty was discontinued during 1970 and mandatory sealing of wolf pelts was not required until July 1971.
c. Harvest figures are based on mandatory wolf sealing records.
d. Percentage males are based only on wolves whose sex was specified in the data.
e. Four wolves taken by unreported method in 1975-76.
f. Determined by examining the fusing end of radius and ulna bones, initiated in 1975-76.

WOLF

SURVEY-INVENTORY PROGRESS REPORT

Game Management Unit 12 - Upper Tanana-White Rivers

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

Seasons and Bag Limits

Hunting	Aug. 10 - Apr. 30	Two wolves
Trapping	Oct. 1 - Mar. 31	No limit

Harvest, Trapping and Hunting Pressure

According to sealing documents received at the Tok office, the wolf harvest in Unit 12 during the 1976-77 season was 35 animals, consisting of 11 males, 22 females and 2 of undetermined sex. This harvest was about the same as that of the past several years but represented a decline from annual harvests reported prior to 1973.

Sealing data indicated that 63 percent of the harvest was comprised of adults and that trapping accounted for 20 percent of the take. Twenty percent of the wolves harvested were snared. Sixty-three percent of the wolves taken were of the gray color phase and 36 percent were black.

The number and location (by drainage) of wolves harvested during the 1976-77 season was as follows: Chisana, 14; Tanana, 4; White, 4; Tok, 3; Nabesna, 3. One wolf was taken along the lower Taylor Highway and six were taken from unspecified locations.

Management Summary and Recommendations

Wolves were moderately abundant in Unit 12 during this reporting period, but numbers were somewhat lower than they had been in recent years. Trapping has had little effect on wolf abundance. Because trapping effort is not evenly distributed throughout Unit 12, harvest data do not provide a sound basis for determining trends in wolf numbers.

No changes in seasons or bag limits are recommended.

PREPARED BY:

Larry Jennings
Game Biologist III

SUBMITTED BY:

Oliver E. Burris
Regional Management Coordinator

WOLF

SURVEY-INVENTORY PROGRESS REPORT FOR REGULATORY YEAR - 1976-77

Game Management Unit 13 - Nelchina, Upper Susitna, and Upper Copper River Basin.

Seasons and Bag Limits

Hunting	Aug. 10-April 30	No limit
Trapping	Oct. 1-April 30	No limit

Wolf hunting and trapping seasons since statehood are shown in Appendix I. Unit 13 and portions of Unit 14 had been closed to the taking of wolves subsequent to an intensive predator control program conducted by the Federal government. The wolf trapping and hunting seasons were opened in 1965 and limited aerial permits were allowed from 1967 until 1972.

In 1975 a portion of Unit 13 was designated as an experimental area to observe changes in moose population indicators and calf survival under a relatively wolf free environment. At the same time, intensive research of wolf ecology began in other portions of Game Management Unit 13. These studies are continuing and results will be available under research reporting schedules.

Harvests and Hunting Pressure

Appendix II shows reported harvests of wolves from Game Management Unit 13 since 1965. Total harvests have varied from 1 to 120 with the highest harvest occurring in 1967-68 when aerial hunters reported killing 78 wolves. During the past three years, wolf harvests have exceeded 100 wolves per year with sport hunting and trapping accounting for 101, 84, and 74 wolves respectively. During the last two years a portion (approximately 3,000 square miles) of Unit 13 has been kept relatively free of wolves as part of the intensive wolf research project. As a part of this study, 29 during 1975-76 and 24 during 1976-77 wolves were killed by Department personnel and are included in Appendix II.

Abundance, Composition and Productivity

Population estimates and productivity are being reported under Job. No. 14.3R. Harvest data, incidental observation and trapper reports indicate that the wolf population is relatively stable in Unit 13 except in that area where wolves have been deliberately removed as a part of the wolf research project and in the specific pack areas where heavy hunting pressure was exerted.

Unit 13 harvests by the public and wolf abundance have been somewhat reduced by a combination of removal of wolves in the experimental area and intensive hunting pressure exerted in a specific area. Harvests in the remainder of Unit 13 are probably lower than net productivity. Further management conclusions may be made after ongoing research is completed.

Recommendations

1. No changes in seasons and bag limits are proposed.

2. Continue wolf research and apply findings when they become available.

PREPARED BY:

Sterline Eide
Game Biologist III

SUBMITTED BY:

Jim Faro
Regional Management Coordinator

APPENDIX I

Wolf Hunting and Trapping Seasons and Bag Limits in Game Management Unit 13, 1960-1976.

1960-61	No open season - no bag limit			
1961-62	"	"		
1962-63	"	"		
1963-64	"	"		
1964-65	"	"		
	Trapping		Hunting	
1965-66	Nov. 10-30	No limit	Oct. 1-Nov. 30	1 wolf
1966-67	Nov. 10-Jan. 31	No limit	Oct. 1-Nov. 30	1 wolf
1967-68	Nov. 10-Mar. 31	No limit	Oct. 1-Mar. 31	No limit
1968-69	No closed season -	No limit	No closed season	No limit
1969-70	Oct. 1-Apr. 30	No limit	Oct. 1-Apr. 30	No limit
1970-71	Oct. 1-Apr. 30	No limit	Sept. 1-Apr. 30	No limit
1971-72	Oct. 1-Apr. 30	No limit	Sept. 1-Apr. 30	2 wolves
1972-73	Oct. 1-Apr. 30	No limit	Sept. 1-Apr. 30	2 wolves
1973-74	Oct. 1-Apr. 30	No limit	Sept. 1-Apr. 30	2 wolves
1974-75	Oct. 1-Apr. 30	No limit	Aug. 10-Apr. 30	2 wolves
1975-76	Oct. 1-Apr. 30	No limit	Aug. 10-Apr. 30	2 wolves
1976-77	Oct. 1-Apr. 30	No limit	Aug. 10-Apr. 30	No limit

APPENDIX II

Wolf Harvest Data from 1965-66 through 1975-76 - Game Management Unit 13.

	1965-66[a]	1966-67[a]	1967-68[b]	1968-69[c]	1969-70[c]	1970-71[c]
Total Wolf Harvest:	64	31	120	1	41	91
Males in Harvest,* Percent (No.):	68%(43)	65%(20)	56%(67)	--	39%(16)	49%(44)
Unknown Sex:	1	0	1	0	0	1
Number Blacks/ Number Grays:	32/26	16/15	45/69	--	--	--
Ratio Blacks to 100 Grays:	123	107	65	--	--	--
Method of Kill, Percent (No.):						
Aerial Shooting:	0	--	65%(78)	--	100%(41)	100%(91)
Ground Shooting:	3%(2)	13%(4)	8%(9)	--	--	--
Trapping/Snaring:	97%(62)	84%(26)	28%(33)	100%(1)	--	--
Other:	0	3%(1)	--	--	--	--

	1971-72[d]	1972-73[e]	1973-74[e]	1974-75[e]	1975-76[e]	1976-77[e]
Total Wolf Harvest:	111	80	75	103	110	102
Males in Harvest,* Percent (No.):	58%(61)	44%(35)	54%(40)	52%(54)	55%(61)	55%(54)
Unknown Sex:	5	0	1	0	0	4
Number Blacks/ Number Grays:	11/68	16/58	23/49	20/77	38/64	23/77
Ratio Blacks to 100 Grays:	16	28	47	26	59	30
Method of KIll, Percent (No.)						
Aerial Shooting:	41%(46)	--	--	--	--	--
Ground Shooting:	20%(22)	25%(20)	29%(22)	40%(41)	33%(36)	48%(49)
Trapping/Snaring:	39%(43)	71%(57)	71%(53)	58%(60)	44%(48)	25%(25)
Other (including scientific collecting)	--	4%(3)	--	2%(2)	24%(26)**	27%(28)***

a Harvest figures are based on the number of wolves submitted for bounty. Only ground hunting and trapping were authorized. The reporting method of kill was probably incorrect.
b Harvest figures are based on the number of wolves submitted for bounty. A limited aerial hunt, in addition to ground hunting and trapping was authorized.
c Bounty discontinued and harvest data was based on aerial permits only.
d Harvest figures are based on mandatory wolf sealing records.
e Harvest figures are based on mandatory wolf sealing records. No aerial wolf hunting permits were issued to the public during this period.
* Percentage of males in the harvest is based on wolves whose sex was specified in the data.
** Twenty-nine wolves (25%) were taken by Dept. personnel on scientific collecting permits. Only 25 were sealed; 4 (unsealed) were irretrievable kills.
***Twenty-four wolves were taken by Dept. personnel on scientific collecting permits. Two wolves were road killed, one was killed by a train and one wolf was found dead.

PREPARED BY: Sterling Eide, Game Biologist III

WOLF

SURVEY-INVENTORY PROGRESS REPORT FOR REGULATORY YEAR 1976-77

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

Seasons and Bag Limits

Hunting	Aug. 10 - April 30	Two wolves
Trapping	Oct. 1 - April 30	No limit

Harvest and Hunting Pressure

Fifteen wolves were harvested from Unit 14 during 1976-77 (Appendix I). In the past 10 years, an average of 12.1 wolves were taken in Unit 14. However, comparisons throughout this period should be made cautiously because the data have been compiled in a variety of ways.

The harvests in Subunits 14A and 14B by month and by method of take during 1976-77 is shown in Appendix II. Forty-seven percent of the wolves were taken by ground shooting compared to 12.5 percent taken in 1975-76 by the same method. Forty percent of the harvest occurred in March. Age data (not shown in Appendices) based on epiphyseal closures of 15 wolves from these Subunits reveals that pups comprised 40 percent and adults 53.3 percent of the harvest while one unknown sex animal made up 6.7%.

Composition and Productivity

Pack observations have been insufficient to provide composition information. No productivity information is available. Although wolves are relatively common reports from the public on pack information are rare.

Management Summary and Conclusions

Six of the nine wolves taken in Subunit 14A, a rural area, were taken by trapping. The harvest of six wolves in Subunit 14B was doubled from the 1975-76 harvest possibly indicating more interest, primarily by ground shooters. Trapping is practiced by only a small segment of the human population, and the catch per unit effort is low. Some livestock-wolf problems exist at various times but are usually taken care of by directing trappers and/or hunters to the vicinity.

Recommendations

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

PREPARED BY:

Jack C. Didrickson
Game Biologist III

SUBMITTED BY:

John S. Vania
Regional Management Coordinator

Appendix I. Wolf Harvest from Bounty Records, Aerial Wolf Permit Returns and Wolf Sealing Certificates for the Entire Game Management Unit 14, 1962-63 through 1976-77 and Game Management Subunits 14A and 14B, 1972-73 through 1976-66.

Regulatory Year	Game Management Unit 14				Game Management Subunits 14A and 14B Only			
	Male	Female	Unknown	Total	Male	Female	Unknown	Total
1962-63*	3	0	0	3				
1963-64*	4	4	0	8				
1964-65*	6	5	0	11				
1965-66**	9	6	4	19				
1966-67*	15	15	0	30				
1967-68*	7	10	0	17				
1968-69*	0	1	0	1 1/				
1969-70***	1	0	0	1				
1970-71***	5	3	0	8				
1971-72****	5	3	4	12				
1972-73****	9	5	2	16	8	4	2	14
1973-74****	7	1	0	8	6	1	0	7
1974-75****	13	10	1	24	13	10	1	24
1975-76****	11	8	0	19	9	7	0	16
1976-77****	7	7	1	15	7	7	1	15

* Harvest data compiled from bounty records.

** Harvest data compiled from bounty records through June 1, 1966.

*** Harvest data compiled from returned aerial wolf permits.

**** Harvest data compiled from wolf sealing certificates.

1/ Effective July 21, 1968 no bounty was paid on wolves in Game Management Unit 14.

PREPARED BY: Jack C. Didrickson
Game Biologist III

Appendix II. Wolf Harvest by Sex, Chronology, and Method of Take in Alaska's Game Management Subunits 14A and 14B During the 1976-77 Season.

HARVEST	14A No.	14A %*	14B No.	14B %*	Total 14A & B No.	Total 14A & B %*
Males	4	50.0	3	50.0	7	50.0
Females	4	50.0	3	50.0	7	50.0
Unknown Sex	1	0.0	0	0.0	1	0.0
TOTAL	9	100.0	6	100.0	15	100.0
CHRONOLOGY BY MONTH						
September	0	0.0	0	0.0	0	0.0
October	2	22.2	0	0.0	2	13.3
November	0	0.0	1	16.7	1	6.7
December	1	11.1	0	0.0	1	6.7
January	1	11.1	1	16.7	2	13.3
February	2	22.2	0	0.0	2	13.3
March	2	22.2	4	66.7	6	40.0
Unknown	1	11.1	0	0.0	1	6.7
TOTAL	9	99.9	6	100.1	15	100.0
METHOD OF TAKE						
Ground Shooting	3	33.3	4	66.7	7	46.7
Trapping	4	44.4	2	33.3	6	40.0
Snaring	2	22.2	0	0.0	2	13.3
TOTAL	9	99.9	6	100.0	15	100.0

* Percentage based on known sex wolves.

PREPARED BY: Jack C. Didrickson
Game Biologist III

WOLF

SURVEY-INVENTORY PROGRESS REPORT - 1976

Game Management Unit 16 - West Side of Cook Inlet

Seasons and Bag Limits

Hunting	Aug.10-April 30	Two wolves
Trapping	Oct.1-April 30	No limit

Harvest and Hunting Pressure

Two hunters and 10 trappers reported taking a total of 27 wolves (13 males and 14 females) in Game Management Unit 16 during the 1976-1977 season (Appendix I). This was slightly below the average annual harvest during the period 1962-63 through 1975-76 which was 29.9 wolves. None of the wolves reported taken during the 1976-77 season came from Subunit 16A (Appendix II). All wolves were taken by ground shooting. Chronology of harvest data indicate the two wolves (7%) taken by hunters were harvested in August by nonresidents. Ten wolves (37%) were taken during March, seven (26%) during February and four (15%) during the months of January and April.

Composition and Productivity

Very little data are available for wolf composition and productivity during 1976-77 in Unit 16 (Appendix III). Two observations of wolves were recorded during November, 1976 moose composition counts in 16B. Sealing data revealed 17 adults and 10 pups in the 1976-77 harvest.

Management Summary and Conclusions

Recorded wolf harvest data prior to 1971-72 are not comparable with subsequent data obtained from sealing records. The below average harvest for 1976-77 was probably a result of poor weather conditions for trapping. Temperatures were very mild all winter. Many rivers and creeks did not freeze, making transportation difficult for trappers. No wolves were reported taken in Subunit 16A, an area that normally supports several trap lines. All wolves were reported to have been ground shot. None was taken by either trap or snare. More than a third of the wolves were pups.

Recommendations

No changes in bag limits or season lengths are recommended. Efforts to gather observations of wolf packs should be increased.

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. Wolf Harvest from Bounty Records, Aerial Wolf Permit Returns, and Wolf Sealing Certificates for Alaska's Game Management Unit 16, 1962-63 through 1975-76.

Regulatory Year	Male	Female	Unknown	Total
1962-63*	-	-	-	5
1963-64*	-	-	-	21
1964-65*	-	-	-	37
1965-66**	-	-	-	84
1966-67*	-	-	-	36
1967-68*	-	-	-	66
1968-69*	-	-	-	6[1/]
1969-70***	-	-	-	2
1970-71***	-	-	-	21
1971-72****	18	18	4	40
1972-73****	9	4	0	13
1973-74****	6	6	1	13
1974-75****	20	18	3	41
1975-76****	15	19	0	34
1976-77****	13	14	0	27

* Harvest data compiled from bounty records.

** Harvest data compiled from bounty records through June 1, 1966.

*** Harvest data compiled from returned aerial wolf permits.

**** Harvest data compiled from wolf sealing certificates.

1/ Effective July 21, 1968 no bounty was paid on wolves in Game Management Unit 16.

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

Appendix II. Wolf Harvest by Sex, Chronology and Method of Take in Alaska's Game Management Subunits 16A and 16B during the 1976-77 Season.

HARVEST	16A No.	16A %	16B No.	16B %	Total Unit 16 No.	Total Unit 16 %
Males	0	0.0	13	48.1	13	48.1
Females	0	0.0	14	51.9	14	51.9
Unknown	0	0.0	0	0.0	0	0.0
TOTAL	0	0.0	27	100.0	27	100.0
CHRONOLOGY BY MONTH						
August	0	0.0	2	7.4	2	7.4
Sept.-Dec.	0	0.0	0	0.0	0	0.0
January	0	0.0	4	14.8	4	14.8
February	0	0.0	7	25.9	7	25.9
March	0	0.0	10	37.0	10	37.0
April	0	0.0	4	14.8	4	14.8
TOTAL	0	0.0	27	99.9	27	99.9
METHOD OF TAKE						
Ground Shooting	0	0.0	27	100.0	27	100.0
Trapping	0	0.0	0	0.0	0	0.0
Snaring	0	0.0	0	0.0	0	0.0
Other	0	0.0	0	0.0	0	0.0
TOTAL	0	0.0	27	100.0	27	100.0

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

Appendix III. Wolf Pack Sizes* as Reported by Successful Hunters and Field Observations by Fish and Game Personnel in Alaska's Game Management Unit 16, 1971-72 through 1976-77.

Year	Number of Packs in Sample	Range of Pack Sizes	Average Pack Size	Percent of Lone Wolves in Sample
1971-72	19	1 - 15	414	26.3%
1972-73	7	1 - 10	4.7	14.3%
1973-74	7	1 - 7	2.0	71.4%
1974-75	36	1 - 18	5.9	8.3%
1975-76	5	2 - 7	4.4	0.0%
1976-77	2	1 - 2	1.5	33.3%

* Includes single wolves.

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

WOLF

SURVEY-INVENTORY PROGRESS REPORT - 1976

Game Management Unit 17 - Bristol Bay

Season and Bag Limits

Hunting Season	Aug. 10-April 30	Two wolves
Trapping Season	Oct. 1-April 30	No limit

Hunting, Trapping and Harvest Pressure

A total of 45 wolves (31 males, 12 females and 2 unknown) were sealed from Unit 17 during the 1976-77 season (Appendix I). This represents a harvest decline of 2 animals over the previous year (Appendix II). Ground shooting accounted for 40 wolves of the harvest, with the remaining five wolves taken by traps. The harvest was 69 percent males, 27 percent females and 4 percent unknown sex. Young-of-the-year comprised 13.9 percent of the harvest for which age data were obtained.

Composition and Productivity

No data are available.

Management Summary and Conclusions

Mild weather characterized the winter of 1976-77 and the lack of snow cover restricted travel by snow machine or ski-equipped aircraft. As a result, 88.9 percent of the harvest occurred during the last three months of the season when suitable snow conditions were present. During the fall sport hunting period, three wolves were taken. The remainder of the wolves (40 wolves) were taken during the winter months when wolves are primarily harvested as furbearers. The existing harvest level is not considered biologically detrimental to the population.

Recommendations

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

PREPARED BY:

James B. Faro
Game Biologist III

SUBMITTED BY:

John S. Vania
Regional Management Coordinator

WOLF, 1976-77

UNIT 17

APPENDIX I

Harvest

Males - 31 Females - 12 Unknown - 2 Total - 45

Chronology by Month

Month	Number	Percent	Month	Number	Percent
July	--	--	January	--	--
August	--	--	February	19	42.2
September	2	4.4	March	16	35.6
October	1	2.2	April	5	11.1
November	--	--	May	--	--
December	2	4.4	June	--	--
			Unknown	--	--
			Total	45	99.9

Method of Take	Number	Percent
Ground Shooting	40	88.9
Trapping	5	11.1
Snaring	--	--
Other	--	--
Total	45	100.0

Color of Wolves Taken	Number	Percent
White	--	--
Brown	1	2.2
Gray	34	75.6
Black	10	22.2
Unknown	--	--
Total	45	100.0

Age (Determined by Examining the Fusing Ends of Radius and Ulna Bones)

	Number	Percent
Pup	5	11.1
Adult	31	68.9
Unknown	9	20.0
Total	45	100.0

Prepared by: Jerome J. Sexton, Game Biologist

Wolf - G.M.U. 17 - Bristol Bay

APPENDIX II

Historical Wolf Harvest, 1961-1977

Year	Harvest
1961-62 1/	0
1962-63 1/	15
1963-64 1/	14
1964-65 1/	1
1965-66 1/	18
1966-67 1/	26
1967-68 1/	24
1968-69 1/	15
1969-70 2/	3
1970-71 2/	13
1971-72 3/	28
1972-73 3/	20
1973-74 3/	20
1974-75 3/	111
1975-76 3/	47
1976-77 3/	45

1/ Data from bounty analysis
2/ Data from aerial wolf permits should be considered incomplete
3/ Data from hide sealing program

Prepared by: James B. Faro, Game Biologist III

WOLF

SURVEY-INVENTORY PROGRESS REPORT

Game Management Unit 18 - Yukon-Kuskokwim Delta

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

Seasons and Bag Limits

Hunting	Aug. 10 - Apr. 30	Two wolves
Trapping	Oct. 1 - Apr. 30	No limit

Harvest, Trapping and Hunting Pressure

A harvest of two adult female wolves, one taken in January and the other in April, was reported during the 1976-1977 season. One wolf was taken by ground shooting and the other by trapping. The recorded harvest for the previous 17 years has ranged from none to four with an average annual take of slightly more than one.

Wolves continued to be relatively uncommon in Unit 18 except near the boundaries of Units 19 and 21.

Management Summary and Recommendations

No change in seasons or bag limits is recommended.

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DeeDee A. S. Jonrowe
Game Biologist I

SUBMITTED BY:

Oliver E. Burris
Regional Management Coordinator

WOLF

SURVEY-INVENTORY PROGRESS REPORT

Game Management Unit 19 - McGrath

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

Harvest and Hunting Pressure

During the 1976-77 season 68 wolves were taken in Unit 19 (29 males, 35 females and 4 wolves of unknown sex). Ground shooting by hunters utilizing aircraft again was responsible for a large percentage of the harvest (Table 1). Aerial hunters were aided by generous amounts of new snow during February and March of 1977. The warm weather, clear skies, and excellent tracking conditions following periods of heavy snowfall provided incentive to aerial hunters.

Wolf populations in the McGrath area seemed to have declined over the past several years. Packs sighted by pilots and hunters were smaller than those recorded four to five years ago. During the 1976-77 season the largest packs observed were comprised of 13 and 18 wolves, but most packs averaged between 5 and 6 individuals.

PREPARED BY:

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Game Biologist III

SUBMITTED BY:

Oliver E. Burris
Regional Management Coordinator

Table 1. Summary of the 1976-77 wolf harvest, Unit 19.*

Chronology by month

Month	Number	Percent
October	1	1.5
November	5	7.3
December	5	7.3
January	5	7.3
February	15	22.1
March	29	42.7
April	8	11.8
Total	68	100.0

Method of take	Number	Percent
Ground shooting	54	79.4
Trapping	10	14.7
Snaring	4	5.9
Total	68	100.0

Color of wolves taken	Number	Percent
White	1	1.5
Brown	2	2.9
Gray	53	77.9
Black	12	17.7
Total	68	100.0

Age**	Number	Percent
Pup	28	41.2
Adult	36	52.9
Unknown	4	5.9
Total	68	100.0

* Data from sealing certificates.
**Determined by examining the fusing ends of radius and ulna bones.

WOLF

SURVEY-INVENTORY PROGRESS REPORT

Game Management Unit 20 - Fairbanks, Central Tanana Valley

Period Covered: July 1, 1975 - June 30, 1977

Seasons and Bag Limits

1975-76 Hunting	Aug. 10 - Apr. 30	Two wolves
1976-77 Hunting	Aug. 10 - Apr. 30	Two wolves
1975-76 Trapping	Oct. 1 - Mar. 31	No limit
1976-77 Trapping	Nov. 1 - Mar. 31	No limit

Harvest

The number of wolves presented for sealing indicated harvests in Unit 20 of 335 animals during the 1975-76 hunting/trapping season and 197 animals during the 1976-77 season. These totals include animals taken by Department personnel in Subunit 20A and an adjacent portion of Subunit 20C. Thus, the number of wolves taken by hunters and trappers continued to decline from the last recorded high in 1973-74. Appendices I and II summarize the harvest information by sex, age, color, time of year and method of take.

Hunting and trapping efforts were widespread throughout Unit 20 and wolves were taken from virtually every major drainage. Harvest pressure appeared similar to previous years, and the highest yields came from traditional areas in the central Alaska Range and the Fortymile drainage.

Productivity

Pups comprised 37 percent of the harvest by hunters and trappers in Unit 20 during the 1975-76 season (Appendix I) and 29 percent of the 1976-77 harvest (Appendix II). This compares with an average of 43 percent pups in the harvest during the period 1959-1966 for interior Alaska (Units 17-21).

Seventy-six wolf carcasses from Subunit 20A were examined by Department personnel during the winter of 1975-76, thus more specific information is available for wolves in this area than elsewhere in Unit 20. Ninety-three percent were less than 6 years of age and 29 percent were pups. The latter figure is probably more representative of the population than the 37 percent derived from sealing certificates since the wolves were taken nonselectively during the Department's control program. Trapping efforts usually take pups in a higher proportion than they exist in the population.

Among the 19 adult females examined for reproductive activity 74 percent were either visibly pregnant or had corpora lutea which indicated that ovulation had taken place. These results will be discussed in detail at a later date (Stephenson, in prep.); however, productivity appeared lower than that recorded in the early 1960's.

Population Trends

Information on the wolf population in Unit 20 is limited to Subunit 20A where extensive surveys have been conducted during the course of implementing a moose rehabilitation program. Since moose are the principal prey for wolves inhabiting Subunit 20A, data reflecting changes in moose survival are discussed concurrently.

Surveys conducted prior to, and during, wolf reduction efforts indicated a fall (prehunting/trapping season) 1975 population of 237 wolves in that portion of Unit 20A and 20C between the Delta and Nenana Rivers. This represents a density of one wolf per 25 square miles. From February 24 to April 17, 1976, Department personnel removed 66 wolves, while trappers harvested an additional 78 wolves between September 1975 and March 1976. The remaining population numbered 60-80 animals, some 30-50 wolves in excess of the desired number necessary to achieve a wolf to moose ratio of 1:100. The wolf to moose ratio after the reduction effort was about one per 36-48 compared to one per 16 prior to the reduction program.

Within the reduction area, wolf density was lowered significantly on the Tanana Flats, where the combined harvests totaled 51 wolves. Although 93 wolves were removed from the foothills and mountainous portion of the reduction area, wolf densities remained relatively high in areas lightly hunted or trapped.

Moose surveys were conducted in May and June 1976 to determine calf production and survival following reduction in wolf numbers. Results indicated high initial calf production, similar to that during periods of the most recent moose population increase (1968-1969), and increased yearling survival. Low wolf densities on the Tanana Flats calving area maximized survival opportunity for most calves during summer and throughout the year for moose remaining on the Flats. Fall 1976 surveys also revealed a relatively high survival rate of calves born the previous summer. The 1976 calf to cow ratio of 42 per 100 indicated only 7 percent mortality, compared to a 68 percent loss in 1975.

Wolf surveys covering approximately 80 percent of the reduction area were conducted from January 30 to March 16, 1977, and revealed that approximately 100 wolves (16 packs) remained. Therefore, the earlier post-reduction population estimate of 60-80 wolves plus pups born in 1976 had been fairly accurate. Approximately 35 wolves were associated with the Tanana Flats in the northern half of the area, while the remaining wolves were located in the foothills and mountains. Evidence of a large wolf population was lacking in the Yanert drainage during March 1977,

although 1976 wolf surveys suggested that approximately 16 wolves occupied this drainage. The 1975-76 trapper harvest from the Yanert was 10 wolves; therefore, predation on moose in this area may have diminished. Emigration of wolves south and west from this drainage may have also occurred.

Reduction efforts resumed during late winter 1977 in Subunit 20A and part of adjoining Subunit 20C and resulted in the removal of 27 wolves. The majority of these were taken during February and March. An additional 26 wolves were taken by hunters and trappers. The remaining wolf population was estimated to contain 40-60 animals (one wolf per 50-80 moose) prior to the production of offspring.

Spring (March 1977) moose surveys on the Flats and foothills indicated 24 and 14 percent, respectively, of the population were calves. The combined calf survival rate in those areas suggested a possible net gain of approximately 500 moose. One notable exception was the Yanert drainage where only nine percent of the population was comprised of calves. Apparently this population was still declining, but probably not at the rate observed in 1975 when few if any calves survived through November.

Management Summary

Removal of wolves from Unit 20A appears to have arrested a declining moose population. Depressed wolf numbers on the Tanana Flats undoubtedly contributed to the improved survival of moose calves in this area. Departmental reduction efforts plus the take by trappers resulted in the removal of 43 wolves from that portion of the Flats lying north of Blair Lakes between the Tanana and Wood Rivers during 1976 and 1977. Management of wolves in this subunit should be directed toward achieving and maintaining the desired wolf to adult moose ratio of 1 to 100. Since the current trapping and hunting effort may be insufficient to maintain the wolf population at a level that would minimize the impact of predation on the moose population, Departmental reduction efforts should continue to supplement more traditional methods of harvest in that portion of Unit 20 bounded by the Nenana, Tanana and Delta Rivers.

A declining wolf population and/or reduced trapping effort may account for the 37 percent decrease in the 1976-77 wolf harvest from that of the previous hunting/trapping season. The percentage of pups in the current harvest is not indicative of an increasing wolf population. Information on variations in trapping effort and success in most of the unit is not available.

Except for Subunit 20A, survey information suggested that moose numbers in Unit 20 were low enough that losses to wolf predation equaled or exceeded the annual increment. Although wolf distribution and abundance data are lacking for many areas, it appears that an increased wolf harvest would be desirable. Despite the high market value of wolf pelts, the harvest of wolves during the past two seasons has declined

from the average annual take of 300 wolves for the period 1972-74. Therefore, less conventional methods of harvesting wolves, as demonstrated in Subunit 20A, may be the only means of achieving the desired predator to ungulate ratio. However, public opposition to this management technique may delay rehabilitation of depressed ungulate populations in these areas.

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SUBMITTED BY:

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Regional Management Coordinator

Appendix I. Wolf harvest data for Game Management Unit 20, 1975-76.

	20A	20B	20C	20D	Total Unit 20
Males	56	15	82	7	161
Females	50	21	87	8	167
unknown sex	0	0	7	0	7
Adult*	76	22	75	8	183
Pup*	28	11	63	7	109
unknown age	2	3	38	0	43
white	5	2	3	1	11
brown	2	1	5	-	8
gray	75	24	119	14	232
black	24	9	48	-	83
July	-	-	-	-	-
August	-	2	-	-	-
September	4	3	6	-	13
October	-	2	6	3	11
November	3	8	19	4	34
December	14	2	27	4	47
January	10	1	23	1	35
February	23	7	39	-	71
March	49	7	51	1	108
April	3	4	2	2	11
May	-	-	-	-	-
June	-	-	-	-	-
Ground shooting	5	14	21	4	46
Trapping	25	17	87	9	138
Snaring	19	5	58	2	84
other**	57	-	10	-	67
Total harvest	106	36	176	15	335

* Determined by examination of the radius and ulna bones.
** Sixty-four (64) wolves taken on scientific collecting permit; 3 not retrieved.

Appendix II. Wolf harvest data for Game Management Unit 20, 1976-77.

	20A	20B	20C	20D	Total Unit 20
Males	8	6	67	5	86
Females	24	5	75	1	110
unknown sex	0	0	1	0	1
Adult*	27	5	75	6	113
Pup*	5	4	43	5	57
unknown age	0	2	25	0	27
white	1	0	8	0	9
brown	2	2	4	1	9
gray	21	7	94	8	130
black	8	2	37	2	49
July	0	0	0	0	0
August	0	0	3	0	3
September	0	1	4	1	6
October	0	1	5	0	6
November	1	3	21	2	27
December	0	4	23	2	29
January	13	1	17	2	33
February	1	0	21	1	23
March	16	1	43	1	61
April	1	0	6	2	9
May	0	0	0	0	0
June	0	0	0	0	0
Ground shooting	0	2	30	2	34
Trapping	3	5	76	4	88
Snaring	5	4	33	5	47
other**	24	0	4	0	28
Total harvest	32	11	143	11	197

* Determined by examination of the radius and ulna bones.
** Twenty-seven (27) wolves taken on scientific collecting permit; one road kill.

WOLF

SURVEY-INVENTORY PROGRESS REPORT

Game Management Unit 21 - Middle Yukon

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

Harvest and Hunting Pressure

Excellent weather and snow conditions, along with an abundant supply of wolves, provided wolf hunters throughout Unit 21 with better than average hunting opportunities in the spring of 1977. During the 1976-77 season 100 wolves were taken (52 males, 47 females and 1 wolf of undetermined sex.) Other aspects of the harvest are summarized in Table 1.

Wolves were primarily hunted along the Koyukuk and Innoko Rivers where they appeared to be the most abundant. Another area of high wolf abundance which appeared to receive little hunting pressure was the Nowitna River. Vegetative cover along many portions of this drainage is dense and hampers the taking of wolves by hunters using aircraft.

Wolf populations throughout Unit 21 were moderate to high. While landing and shooting is an effective means of harvest in some areas, aerial shooting is preferable in other drainages. The overall wolf harvest is still considered low in most of the unit.

PREPARED BY:

Peter E. K. Shepherd
Game Biologist III

SUBMITTED BY:

Oliver E. Burris
Regional Management Coordinator

Table 1. Summary of the 1976-77 wolf harvest, Unit 21.*

Chronology by month

Month	Number	Percent
September	2	2.0
November	4	4.0
December	9	9.0
January	15	15.0
February	8	8.0
March	47	47.0
April	15	15.0
Total	100	100.0

Method of take	Number	Percent
Ground shooting	86	86.0
Trapping	9	9.0
Snaring	5	5.0
Total	100	100.0

Color of wolves taken	Number	Percent
White	1	1.0
Brown	2	2.0
Gray	68	68.0
Black	29	29.0
Total	100	100.0

Age**	Number	Percent
Pup	19	19.0
Adult	77	77.0
Unknown	4	4.0
Total	100	100.0

* Data from sealing certificates.
**Determined by examining the fusing ends of radius and ulna bones.

WOLF

SURVEY-INVENTORY PROGRESS REPORT

Game Management Unit 22 - Norton Sound-Seward Peninsula

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

Seasons and Bag Limits

Hunting	Aug. 10 - Apr. 30	Two wolves
Trapping	Oct. 1 Apr. 30	No limit

Harvest, Trapping and Hunting Pressure

Based on data from sealing certificates, 10 wolves were taken during the 1976-77 season. The annual take for the last 15 years has averaged 9, and ranged from 2 (1975) to 28 (1967-68). Although the reported harvest of 10 is near the 15 year average, wolf abundance on the Seward Peninsula has increased. The actual Unit 22 kill was probably somewhat higher than reported here because many rural residents have been reluctant to submit hides for sealing. The actual harvest was estimated to be 15 to 20 wolves.

All of the reported wolves were taken by ground shooting, but 6 of the 10 were killed by a hunter that used aircraft. The remaining four were shot by hunters using snow machines, and it is likely that most of the unreported take occurred in the same manner. Hide color was evenly divided between black and gray phase wolves. Five of the wolves taken were adults, four were pups and one was of undetermined age.

Seasonal Distribution, Migration and Concentration

Reports from village residents and trappers plus aerial observations indicated that wolves in Unit 22 were gradually increasing in number and apparently expanding their range westward. Wolf sign was fairly common in all the major drainages from the Shaktoolik River and westward to the Kuzitrin River. Wolves were seen occasionally as far west as Shishmaref, but generally they occurred as single groups of two or three. During aerial moose surveys in March 1977, evidence of at least one pack of five to eight wolves was observed along the Kuzitrin River where wintering moose were most abundant. Sign of another pack of 8 to 10 individuals was found in McCarthy's Marsh (upper Fish River). This pack also frequented an area where moose were wintering. In both cases few moose were actually seen but tracks indicated that moose had recently concentrated in the vicinity of major willow stands. It appeared that wolves had taken some moose in this area and forced others into the foothills. In the latter part of March, carcasses of several moose that had apparently been killed by wolves were observed along the Kuzitrin River.

Based on these observations and sightings from other observers, the wolf population in Unit 22 was estimated at 50 to 100 individuals.

Management Summary and Recommendations

The history of wolf management on the Seward Peninsula has been one of intensive predator control, primarily in conjunction with the reindeer industry. Since 1972 predator control has not been effective primarily because of regulations regarding use of aircraft by hunters. Consequently, the wolf population has increased. During recent years there probably has been an increase in the harvest of wolves in rural areas, but this has not been documented. Typically, wolf hides are cut up for domestic purposes rather than being presented for sealing. It would be desirable to document trends in wolf numbers, and to direct more effort toward gaining compliance with the sealing regulations among villagers.

A realistic estimate of the wolf population should be obtained, as well as the impact of wolves upon ungulate populations. No changes are recommended in seasons and bag limits.

PREPARED BY:

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SUBMITTED BY:

Oliver E. Burris
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WOLF

SURVEY-INVENTORY PROGRESS REPORT

Game Management Unit 23 - Kotzebue Sound

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

Seasons and Bag Limits

Hunting	Aug. 10 - Apr. 30	No limit
Trapping	Oct. 1 - Apr. 30	No limit

Harvest, Trapping and Hunting Pressure

The reported Unit 23 wolf harvest during the 1976-77 season was 150 animals (67 males, 76 females, and 7 wolves of unknown sex). The color of the wolves taken was as follows: white, 1; brown, 3; gray, 113; and black, 28. In five cases color was not determined. Ages as determined from examination of radius and ulna bones were as follows: pup, 48; adult, 94; and 8 wolves of unknown age.

On November 23, 1976 the Department began issuing aerial wolf hunting permits for Unit 23. No more than 15 permits were to be in force at any one time, and efforts of aerial wolf hunters were restricted to wintering areas of the Western Arctic caribou herd. Because of poor light conditions during December and January, permits were valid only until December 10, 1976. Permits were to again be issued for the period January 20 - March 31, 1977. On February 17, 1977, aerial hunters were notified that all permits were invalid as a result of the Judge Gasch decision. Hence, the wolf control effort ended at that time. Aerial wolf hunters had taken 35 wolves prior to termination of the program.

The methods of take for the additional harvest (115 wolves) were ground shooting (80) and trapping (35).

Population Trends

Aerial surveys were conducted by Robert Stephenson and Peter Shepherd during late winter in the following areas: 1) the Noatak drainage upstream from its confluence with the Nimiuktuk River; 2) the drainages north of the Kobuk River including the Kaluluktok, Kogalluktuk, Ambler, Redstone, Akillik, and Hunt Rivers; and 3) the drainages on the south side of the Kobuk River including the Selawik drainage east of Selawik Lake. Following the 1976-77 hunting season, the estimated Unit 23 population was 670 wolves. This corresponds to a density of one wolf per 68 mi^2. Available data reflecting the age composition of the population

suggest that 35 percent of the winter population was comprised of pups. Assuming that reproduction during 1977 will be similar to that in 1976, the autumn 1977 population would number 1,037 wolves, including 364 pups produced during 1977. This would be a density of one wolf per 44 mi^2.

Management Summary and Recommendations

The caribou population was down from approximately 240,000 to approximately 75,000 animals; moose densities in some areas were decreasing at a noticeable rate, and sheep populations were sparse and seemingly below the carrying capacity.

Ground hunting and trapping have not substantially reduced wolf numbers in Unit 23; consequently, an increased harvest of wolves remains desirable. Aerial permits should be issued as soon as the temporary injunction is lifted and hunter effort should be directed to those areas having the largest caribou, moose, and sheep populations.

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WOLF

SURVEY-INVENTORY PROGRESS REPORT

Game Management Unit 24 - Koyukuk drainage

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

Seasons and Bag Limits

Hunting	Sept. 1 - Apr. 30	Two wolves
Trapping	Oct. 1 - Apr. 30	No limit

Harvest, Trapping and Hunting Pressure

The total harvest of wolves in Unit 24 during the 1976-77 season was 55 (23 males, 31 females and 1 of unknown sex). Traditional trapping methods accounted for only 13 percent of the harvest and ground shooting accounted for 64 percent. Thirteen wolves were taken by hunters operating under terms of aerial wolf hunting permits.

The total number of wolves taken in Unit 24 during the 1975-76 season, as indicated by sealing records, was 45 (25 males and 20 females). Traditional trapping methods accounted for 58 percent of the harvest and ground shooting for 38 percent.

Management Summary and Recommendations

There is a very limited amount of information on wolves in this unit. Results of surveys conducted during the Western Arctic wolf control effort will be used to formulate management recommendations in the future. No changes in seasons or bag limits are recommended at this time.

PREPARED BY:

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SUBMITTED BY:

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WOLF

SURVEY-INVENTORY PROGRESS REPORT

Game Management Unit 25 - Fort Yukon area

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

Seasons and Bag Limits

Hunting	Aug. 10 - Apr. 30	Two wolves
Trapping	Oct. 1 - Apr. 30	No limit

Harvest, Trapping and Hunting Pressure

Data compiled from sealing certificates indicated that during the 1976-77 season 103 wolves were taken in Unit 25. This is almost double the average annual take reported for the preceding three seasons. Traditional trapping methods accounted for 72 percent of the harvest, and ground shooting accounted for 28 percent.

Thirty-six percent of the reported wolf harvest occurred during March. The remainder of the take occurred throughout the period November through April.

Population Trends, Composition and Productivity

Of the 103 wolves reported taken, 56 (54%) were males. The age composition of the wolves killed was 72 percent adults, 11 percent pups and 17 percent of unknown age. The low proportion of pups in the harvest suggests a stable population capable of sustaining the present level of take.

Management Summary and Recommendations

More information regarding the status of wolves and wolf prey needs to be gathered. Seasons and bag limits should remain unchanged.

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WOLF

SURVEY-INVENTORY PROGRESS REPORT

Game Management Unit 26 - Arctic Slope

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

Seasons and Bag Limits

Hunting	No open season	
Trapping	Oct. 1 - Apr. 30	No limit

Harvest, Trapping and Hunting Pressure

In the 1976-77 regulatory year, 35 wolves were killed in Unit 26 and presented for sealing. Thirty-four were taken in 1975-76, 6 were taken in 1974-75, and 46 were taken in 1973-74. These records do not accurately reflect the number of wolves actually killed by trappers because there is a high local demand for wolf hides to be used for garments and trappers do not usually present hides for sealing.

Population Trends, Composition and Productivity

Wolves in Unit 26 appeared to be at low densities; however, moderate densities existed near caribou wintering areas and in some portions of the foothills.

Of the 35 wolves reported taken, 16 (46%) were males. The age composition of the wolves killed was: adults, 63 percent; pups, 26 percent; unknown age, 11 percent.

Management Summary and Recommendations

The population level of wolves in this area has appeared to be increasing very slowly from the low in 1970. Wolves may be approaching the "normal" density for Arctic Slope habitat. It is recommended that the hunting season be open from September 1 through April 30 with a limit of two wolves. The prohibition of trapping with the aid or use of an aircraft should remain in effect.

PREPARED BY:

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SUBMITTED BY:

Oliver E. Burris
Regional Management Coordinator

WOLVERINE

SURVEY-INVENTORY PROGRESS REPORT - 1976

Game Management Units 1 through 5 - Southeast Alaska

Seasons and Bag Limits

Hunting		
Units 1 - 5	Dec. 1 - Jan. 31	One wolverine
Trapping		
Units 1(C) and 4, that portion of Admiralty Island, including all drainages from Point Marsden north to Point Retreat, thence all drainages on the east, south to Point False Pybus.	Nov. 10 - Jan. 31	No limit
Remainder of Units 1 and 4 and Units 2 and 3	Dec. 1 - Jan. 31	No limit
Unit 5	Nov. 10 - Jan. 31	No limit

Harvest and Hunting Pressure

Forty-six wolverine were taken in southeast Alaska in 1976-1977, an increase of 28 percent over last year (Appendix I). Forty-four were taken by trapping and two were shot. Most of those taken in traps are apparently trapped in sets made for other species as not many trappers make sets specifically for wolverine.

Almost all the wolverine from Southeast are taken on the mainland in GMU 1. No wolverine were taken in Units 2 and 4 and it is likely that there are no wolverines present on the islands in Units 2 and 4. Six wolverine were taken in Unit 3. Most of those taken in Unit 3 over the past few years seem to have been taken in areas adjacent to the mainland and probably represent movement from the mainland.

The sex ratio of all wolverine taken in Units 1 through 5 was more evenly balanced this year than for the past several years. Fifty-five percent of this year's harvest was males.

Composition and Productivity

No data collected.

Recommendations

No changes in seasons and bag limits are recommended.

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SUBMITTED BY:

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APPENDIX I

1976-77 Wolverine Harvest Data, GMU's 1 through 5

Unit	Sex				Method of Take		Month Taken			
	Male	Female	Unknown	Total	Trapping	Shooting	November	December	January	March
1A	5	1	0	6	6	0	0	2	4	0
1B	4	5	2	11	11	0	1	6	4	0
1C	3	5	0	8	7	1	0	6	2	0
1D	7	6	1	14	14	0	0	8	6	0
Total Unit 1	19	17	3	39	38	1	1	22	16	0
3	3	2	1	6	6	0	0	1	4	1
5	1	0	0	1	0	1	0	0	0	1
Total SE	23	19	4	46	44	2	1	23	20	2

WOLVERINE

SURVEY-INVENTORY PROGRESS REPORT - 1976

Game Management Unit 6

Season and Bag Limits

Hunting	Sept. 1-Mar. 31	One Wolverine
Trapping	Nov. 10-Mar. 31	No Limit

Harvest and Hunting Pressure

The wolverine harvest in Unit 6 was 13 animals: eight males and five females. Trapping accounted for 92 percent of the harvest and 61 percent were taken in January (Appendix I).

A total of four trappers were successful. One trapper accounted for 62 percent (8 of 13) of the total harvest.

One wolverine was taken in Prince William Sound (ground shooting), one west of the Copper River (trapping) and eleven trapped east of the Copper River.

The 1976-77 harvest of 13 wolverine is below the 15 year average of 19.4 and is less than half of the previous year's harvest (Appendix II).

Composition and Productivity

No data available.

Management Summary and Conclusions

The modest harvest of 13 wolverine in Unit 6 during the 1976-77 season is a reflection of poor trapping conditions. Lack of snow throughout the winter allowed the animals to remain scattered in the higher elevations and prevented an airborne trapper from setting preferred locations.

The current seasons and bag limits are not adversely affecting the wolverine resource in Unit 6.

Recommendations

Retain the present hunting and trapping regulations.

PREPARED BY:

Julius Reynolds
Game Biologist III

SUBMITTED BY:

John Vania
Regional Management Coordinator

APPENDIX I

Wolverine Sealing Data 1976-77

Unit 6

Harvest

	Males	Females	Unknown	Total
No.	8	5	0	13
%	61.5	38.5	0	100.0

Chronology

	Date	Number	Percent
1976	Sept.	1	7.7
	Oct.	0	0
	Nov.	0	0
	Dec.	1	7.7
1977	Jan.	8	61.5
	Feb.	0	0
	Mar.	3	23.1
Total		13	100.0

Method of Take

	Number	Percent
Ground shooting	1	7.7
Trapping	12	92.3
Total	13	100.0

Prepared by: Jerome Sexton, Game Biologist II
Julius Reynolds, Game Biologist III

APPENDIX II

Wolverine Harvest Data

Unit 6

Year	Number
1961 - 1962*	14
1962 - 1963*	3
1963 - 1964*	9
1964 - 1965*	12
1965 - 1966*	16
1966 - 1967*	26
1967 - 1968*	8
1968 - 1969*	13
1969 - 1970	UNK
1970 - 1971**	18
1971 - 1972***	21
1972 - 1973***	33
1973 - 1974***	55
1974 - 1975***	20
1975 - 1976***	30
1976 - 1977***	13
Total	291
Average	19.4

* Bounty records.
** Cordova trapper questionnaire.
*** Sealing records.

Prepared by: Julius Reynolds, Game Biologist III

WOLVERINE

SURVEY-INVENTORY PROGRESS REPORT FOR REGULATORY YEAR 1976-77

Game Management Unit 7 - Eastern Kenai Peninsula

Seasons and Bag Limits

Hunting	Sept. 1 - March 31	One Wolverine
Trapping	Nov. 10 - March 31	No Limit

Harvest and Hunting Pressure

Six wolverine were reported harvested during the 1976-77 season (Appendices I and II). The harvest was composed of 5 males and 1 female. Five wolverine were taken by trapping and 1 by snaring.

Composition and Productivity

Techniques for collecting composition and productivity data have not been developed. Sex data collected at the time of sealing traditionally show a very high percentage of males in the harvest. The high percent of males in the harvest is believed to be due to their habits of ranging over much larger areas than females.

Management Summary and Conclusions

The 1976-77 harvest was down 75% from the 1975-76 level. Much of the reduction in the harvest was probably due to the extremely warm winter. Temperatures throughout the season generally ranged above freezing during the day and below freezing at night. Most of the precipitation received at the elevations where trapping takes place came either as rain or very wet snow. These conditions generally render traps inoperable.

The high percentage of males in the harvest suggests that trapping is having very little effect on wolverine numbers and that fluctuations in the harvest are most likely related to effort, trapping conditions and normal fluctuations in numbers.

Recommendations

No changes are recommended.

PREPARED BY:

Paul A. LeRoux
Game Biologist III

SUBMITTED BY:

John S. Vania
Regional Management Coordinator

APPENDIX I

WOLVERINE 1976-77

UNIT 7

Harvest

Males - 5 Females - 1 Unknown - 0 Total - 6

Chronology by Month

Month	Number	Percent	Month	Number	Percent
July	-	-	January	3	50.0
August	-	-	February	1	16.7
September	-	-	March	2	33.3
October	-	-	April	-	-
November	-	-	May	-	-
December	-	-	June	-	-
			Unknown	-	-
			Total	6	100.0

Method of Take	Number	Percent
Ground Shooting	-	-
Trapping	5	83.3
Snaring	1	16.7
Other	-	-
Total	6	100.0

PREPARED BY:

Jerome J. Sexton
Game Biologist

APPENDIX II

UNIT 7

Wolverine Bounty and Sealing Records - Unit 7

Year	Males	Females	Unknown	Total
1961-62[1]	-	-	1	1
1962-63[1]	-	-	5	5
1963-64[1]	-	-	16	16
1964-65[1]	-	-	20	20
1965-66[1]	-	-	11	11
1966-67[1]	-	-	17	17
1967-68[2]	-	-	-	-
1968-69[2]	-	-	-	-
1969-70[2]	-	-	-	-
1970-71[2]	-	-	-	-
1971-72[3]	10	11	2	23
1972-73[3]	16	5	3	24
1973-74[3]	7	5	0	12
1974-75[3]	10	9	0	19
1975-76[3]	13	9	2	24
1976-77[3]	5	1	0	6

[1] Data from bounty records.
[2] Bounty discontinued, no record of harvest.
[3] Data from sealing records.
- Zero Data.

PREPARED BY: Paul A. LeRoux, Game Biologist III and David M. Hardy, Game Biologist II.

WOLVERINE

SURVEY-INVENTORY PROGRESS REPORT - 1976

Game Management Unit 9 - Alaska Peninsula

Seasons and Bag Limits

Hunting Season	Sept.1-Mar.31	One wolverine
Trapping Season	Nov.10-Mar.31	No limit

Hunting, Trapping and Harvest Pressure

The reported harvest for GMU 9 during the 1976-77 season was 46 wolverine (Appendix I). This was the lowest reported harvest in recent years, matching that reported for the first year of the sealing program. Trapping accounted for the majority of the harvest (traps - 33 wolverine, snares - 3, and ground shooting - 10). The composition of the harvest was 32 males, 13 females, and 1 unknown sex.

Composition and Productivity

No data are available.

Management Summary and Conclusions

The winter of 1976-77 was extremely mild and lacked adequate snowfall for transportation by snow machine or ski-equipped aircraft. The low harvest level reflects the lack of the necessary snow to facilitate harvest rather than a decline in wolverine abundance. Harvest during the fall hunting period was only 3 animals, with the remainder taken later in the season.

Recommendations

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

PREPARED BY:

James B. Faro
Game Biologist III

SUBMITTED BY:

John S. Vania
Regional Management Coordinator

WOLVERINE, 1976-77

Unit 9

APPENDIX I

Harvest

Males - 32 Females - 13 Unknown - 1 Total - 46

Chronology by Month

Month	Number	Percent	Month	Number	Percent
July	--	--	January	7	15.2
August	--	--	February	7	15.2
September	1	2.2	March	10	21.7
October	2	4.4	April	--	--
November	--	--	May	--	--
December	19	41.3	June	--	--
			Unknown	--	--
			Total	46	100.0

Method of Take	Number	Percent
Ground Shooting	10	21.7
Trapping	33	71.7
Snaring	3	6.5
Other	--	--
Total	46	99.9

Prepared By:

Jerome J. Sexton
Game Biologist II

Wolverine - G.M.U. 9 - Alaska Peninsula

APPENDIX II

Historical Wolverine Harvest 1962-1977

Year	Harvest
1962-63 1/	14
1963-64 1/	34
1964-65 1/	39
1965-66 1/	40
1966-67 1/	63
1967-68 1/	43
1968-69 1/	10
1969-70 2/	5
1970-71 3/	--
1971-72 4/	46
1972-73 4/	71
1973-74 4/	89
1974-75 4/	72
1975-76 4/	115
1976-77 4/	46

1/ Data from bounty analysis

2/ Data from harvest report cards

3/ No data available

4/ Data from hide sealing program

Prepared By:

James B. Faro
Game Biologist III

WOLVERINE

SURVEY-INVENTORY PROGRESS REPORT - 1976

Game Management Unit 10 - Aleutian Islands

Seasons and Bag Limits

Hunting Season	Sept.1-Mar.31	One wolverine
Trapping Season	Nov.10-Mar.31	No limit

Hunting, Trapping and Harvest Pressure

No wolverine were reported taken during the 1976 season from this unit.

Composition and Productivity

No data are available.

Management Summary and Conclusions

Wolverine in Unit 10 are restricted to Unimak Island. Hunting pressure on the species is light.

Recommendations

No changes in seasons or bag limits are recommended.

PREPARED BY:

James B. Faro
Game Biologist III

SUBMITTED BY:

John S. Vania
Regional Management Coordinator

WOLVERINE

SURVEY-INVENTORY PROGRESS REPORT FOR REGULATORY YEAR 1976-77

Game Management Unit 11 - Wrangell Mountains, Chitina River

Seasons and Bag Limits

Hunting	Sept. 1- March 31	One wolverine
Trapping	Nov. 10-March 31	No limit

Harvest and Hunting Pressure

Twenty-one wolverine (10 males, 11 females) were taken in the 1976-77 season. The average annual harvest has been 36 wolverines from Unit 11 since the 1971-72 season, with the highest annual harvest in 1973-74 of 55 wolverines (Appendix I). Additional harvest data from the winter 1971-72 through 1976-77 are shown in Appendix II. The percentage of males in the harvest has declined steadily since the 1971-72 season (71%) until 1974-75 (52%). The 1975-76 percentage of males in the harvest approximates the 1974-75 percentage at 53 percent and 52 percent, respectively. The 1976-77 percentage of males in the harvest showed further decline at 48 percent. Chronology of the 1976-77 harvest, Appendix II, indicates that 57 percent (12) of the harvest occurred during November and December. For the past six years, of the 216 wolverines taken in Unit 11, 92 percent were reported taken in steel traps.

Composition and Productivity

No information is available.

Management Summary and Conclusions

The wolverine harvest for Game Management Unit 11 has remained relatively low when compared to the vast area of the unit. However, the percentage of males in the harvest has declined steadily since the 1971-72 season, and has remained nearly equal with the female percentage for the past three seasons. If the sample size is sufficient, this ratio would be expected in a heavily trapped area since males are more vulnerable to trapping, or an area with little reproduction. At present, sufficient biological data are not available to determine productivity.

Harvest locations do not reveal concentrated harvesting over a large area. Consequently, the low sample size has either produced a biological artifact, reproduction has been low, or heavy harvesting has occurred in localized areas such as the Lakina River and Long Lake.

Recommendations

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

2) Trapping effort vs. success on the Lakina River and the Long Lake area should be monitored to prevent local overharvests.

PREPARED BY:

Ted Spraker
Game Biologist II

SUBMITTED BY:

John S. Vania
Regional Management Coordinator

APPENDIX I. Comparison of Annual Wolverine Harvests from 1961-62 through 1976-77 - GMU 11.

Year	Harvest	Year	Harvest
1961-62	1[a]	1969-70	No data[b]
1962-63	7[a]	1970-71	No data[b]
1963-64	38[a]	1971-72	28[c]
1964-65	12[a]	1972-73	48[c]
1965-66	30[a]	1973-74	55[c]
1966-67	33[a]	1974-75	29[c]
1967-68	22[a]	1975-76	35[c]
1968-69	22[a]	1976-77	21[c]

[a] Harvest figures are from bounty records.

[b] The bounty was discontinued on wolverine, and no harvest data are available.

[c] Harvest figures are from sealing records.

APPENDIX II. Wolverine Harvest Data from 1971-72 through 1976-77 - GMU 11[a].

	1971-72	1972-73	1973-74
Total Wolverine Harvest:	28	48	55
Percent (No.) Males in Harvest[b]:	71%(20)	70%(33)	62%(32)
Harvest Chronology, Percent (No.):			
November:	-(-)	-(-)	2% (1)
December:	-(-)	38%(18)	20%(11)
January:	4% (1)	33%(16)	43%(24)
February:	25% (7)	17% (8)	22%(12)
March:	67%(19)	10% (5)	7% (4)
Other Months:	4% (1)	2% (1)	6% (3)
Unknown:	-(-)	-(-)	-(-)
Method of Take, Percent (No.):			
Ground Shooting:	4% (1)	2% (1)	-(-)
Trapping:	96%(27)	92%(44)	92%(51)
Snaring:	-(-)	6% (3)	6% (3)
Other:	-(-)	-(-)	2% (1)

	1974-75	1975-76	1976-77
Total Wolverine Harvest:	29	35	21
Percent (No.) Males in Harvest[b]:	52%(15)	53%(18)	48%(10)
Harvest Chronology, Percent (No.):			
November:	7% (2)	11% (4)	24% (5)
December:	21% (6)	34%(12)	32% (7)
January:	21% (6)	38%(13)	5% (1)
February:	21% (6)	14% (5)	19% (4)
March:	27% (8)	-(-)	10% (2)
Other Months:	3% (1)	3% (1)	10% (2)
Unknown:	-(-)	-(-)	-(-)
Method of Take, Percent (No.):			
Ground Shooting:	7% (2)	3% (1)	14% (3)
Trapping:	93%(27)	91%(32)	86%(18)
Snaring:	-(-)	6% (2)	-(-)
Other:	-(-)	-(-)	-(-)

a. Harvest data are based on sealing data only.

b. Percentage males are based only on animals where sex was known.

PREPARED BY: Ted Spraker, Game Biologist II

WOLVERINE

SURVEY-INVENTORY PROGRESS REPORT

Game Management Unit 12 - Upper Tanana-White Rivers

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

Seasons and Bag Limits

Hunting	Sept. 1 - Mar. 31	One wolverine
Trapping	Nov. 1 - Mar. 31	No limit

Harvest, Trapping and Hunting Pressure

Sealing information indicated that 35 wolverines were harvested in Unit 12 during the 1976-77 season. The harvest, consisting of 19 males and 16 females, was lower than that of recent years. Most of the wolverines taken (33) were trapped, while only two were snared.

The major harvests came from the Nabesna and Tok River drainages, where 43 and 29 percent of the harvest occurred, respectively. The remainder of the take was from the Chisana drainage (14%), the Tanana Valley (8%) and the White River drainage and Taylor Highway area (3% each).

Management Summary and Recommendations

The wolverine harvest in Unit 12 has averaged about 43 animals annually since the 1971-72 season. During the past two seasons it has fallen below this number, which may have resulted from a combination of factors including weather, trapping conditions, trapping effort and the abundance of wolverine. Nevertheless, the decline in harvests has been insignificant and is not cause for concern at this time. Except for local instances, trapping probably has little overall influence on wolverine numbers.

No changes in seasons or bag limits are recommended.

PREPARED BY:

Larry Jennings
Game Biologist III

SUBMITTED BY:

Oliver E. Burris
Regional Management Coordinator

WOLVERINE

SURVEY-INVENTORY PROGRESS REPORT - FOR REGULATORY YEAR 1976-77

Game Management Unit 13 - Nelchina, Upper Susitna, and Upper Copper River Basins

Seasons and Bag Limits

Hunting	Sept. 1-Mar. 31	One Wolverine
Trapping	Nov. 10-Mar. 31	No limit

Harvest and Hunting Pressure

Sealing information for 1976-77 indicates that 85 wolverines were taken. The annual wolverine harvests from 1962-63 through 1976-77 are shown in Appendix I. The high harvests during recent years are probably a result of increased trapping effort following the upswing in fur prices during 1972. Harvest data from 1971-72 through 1976-77, based on sealing data, are shown in Appendix II. The percentage of males in the harvest has been relatively high and a high percentage (79-88%) was taken by trapping.

Composition and Productivity

No information is available.

Management Summary and Conclusions

Only indirect information based on harvest data is available for wolverines. The total harvest appears small compared to the size of Unit 13.

Recommendations

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

PREPARED BY:

Ted Spraker
Game Biologist II

SUBMITTED BY:

James B. Faro
Regional Game Supervisor

APPENDIX I

Comparison of Annual Wolverine Harvests from 1962-63 through 1976-77 - GMU 13

Year	Harvest	Year	Harvest
1962-63	37*	1969-70	No Data**
1963-64	32*	1970-71	No Data**
1964-65	65*	1971-72	75 ***
1965-66	102*	1972-73	140 ***
1966-67	132*	1973-74	121 ***
1967-68	86*	1974-75	96 ***
1968-69	No Data**	1975-76	105 ***
		1976-77	85 ***

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* Harvest figures are from bounty records.
** The bounty was discontinued on wolverine during this period, and no information on the harvest is available.
*** Harvest figures are from sealing records.

PREPARED BY: Ted Spraker, Game Biologist II

APPENDIX II

Wolverine Harvest Data from 1971-72 through 1976-77 - GMU 13[a]

	1971-72	1972-73	1973-74
Total Wolverine Harvest:	75	140	121
Percent (No.) Males in Harvest[b]:	57%(40)	65%(89)	63%(76)
Harvest Chronology, Percent (No.):			
November:	4% (3)	14%(20)	17%(21)
December:	12% (9)	23%(32)	20%(24)
January:	9% (7)	19%(27)	23%(28)
February:	21%(16)	26%(36)	23%(28)
March:	41%(31)	15%(21)	15%(18)
Other Months:	1% (1)	3% (4)	2% (2)
Unknown:	11% (8)	- (-)	- (-)
Method of Take, Percent (No.):			
Ground Shooting:	20%(15)	9%(13)	8%(10)
Trapping:	80%(60)	86%(121)	88%(106)
Snaring:	- (-)	4% (5)	4% (5)
Other:	- (-)	1% (1)	- (-)

	1974-75	1975-76	1976-77
Total Wolverine Harvest:	96	105	85
Percent (No.) Males in Harvest[b]:	61% (59)	55%(58)	58%(49)
Harvest Chronology, Percent (No.):			
November:	4% (4)	10%(11)	6% (5)
December:	9% (9)	25%(26)	28%(24)
January:	20%(19)	16%(17)	22%(19)
February:	31%(30)	27%(28)	17%(14)
March:	29%(28)	13%(14)	25%(21)
Other Months:	5% (5)	9% (9)	2% (2)
Unknown:	1% (1)	- (-)	- (-)
Method of Take, Percent (No.):			
Ground Shooting:	14%(13)	11%(12)	21%(18)
Trapping:	84%(81)	87%(91)	79%(67)
Snaring:	2% (2)	1% (1)	- (-)
Other:	- (-)	1% (1)	- (-)

a Harvest data are based on sealing data only.

b Percentage males are based only on animals where sex was specified.

PREPARED BY: Ted Spraker, Game Biologist II

WOLVERINE

SURVEY-INVENTORY PROGRESS REPORT FOR REGULATORY YEAR 1976-77

Game Management Unit 14 - Upper Cook Inlet

Seasons and Bag Limits

Subunits 14A, 14B and 14C (except Chugach State Park)		
Hunting	Sept. 1- Mar. 31	One wolverine
Trapping	Nov. 10 - Mar. 31	No limit
Subunit 14C in Chugach State Park		
Hunting and Trapping		No open season

Harvest and Hunting Pressure

Fourteen wolverines were taken in Unit 14 during the 1976-77 hunting-trapping season (Appendix I). The harvest has fluctuated since the mid-1960's without an apparent trend, but is probably dependent upon trapper effort. Since 1972 wolverine trapping and hunting have been prohibited in Chugach State Park.

Four wolverine were taken in Subunit 14A, nine from Subunit 14B and one from Subunit 14C (Appendix II). Of 13 wolverine of known sex 61.5 percent were males. Seventy-nine percent of the harvest occurred in January through March and 64 percent of the harvest was taken by trapping; both trends are similar to last year's data.

Composition and Productivity

No population composition information is available.

Management Summary and Conclusions

Fluctuating fur prices and closures of large areas such as Chugach State Park, reduces the usefulness of harvest reports as an index of population size. The available data indicate that the population is not being altered by hunting or trapping to any great degree.

Recommendations

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

PREPARED BY:

Jack C. Didrickson
Game Biologist III

SUBMITTED BY:

John S. Vania
Regional Management Coordinator

Appendix I. Wolverine Harvest from Bounty Records and Wolverine Sealing Data in Alaska's Game Management Unit 14, 1962-63 through 1967-68 and 1971-72 through 1976-77.

	Harvest*	
Regulatory Year	Total Unit 14	Subunits 14A and 14B
1962-63	9	Breakdown Not Available
1963-64	10	Breakdown Not Available
1964-65	15	Breakdown Not Available
1965-66	37	Breakdown Not Available
1966-67	27	Breakdown Non Available
1967-68	21	Breakdown Not Available
1968-69 through 1970-71	No Data	No Data
1971-72	12	Breakdown Not Available
1972-73	36	22
1973-74	16	16
1974-75	22	22
1975-76	24	22
1976-77	14	13
Average number bountied or sealed; 1962-63 through 1967-68	19.8	

* 1962-63 through 1967-68 data from bounty records.
1971-72 through 1976-77 data from wolverine sealing records.

PREPARED BY: Jack C. Didrickson
Game Biologist III

Appendix II. Wolverine Harvest by Sex, Chronology and Method of Take in Alaska's Game Management Unit 14 During the 1976-77 Season.

HARVEST

AREA	MALES	FEMALES	UNKNOWN	TOTAL
Combined Subunits 14A and 14B	8	5	0	13
14A	2	2	0	4
14B	6	3	0	9
14C	0	0	1	1

Including all Subunits

Males - 8 Females - 5 Unknown - 1 Total - 14

Chronology by Month

Month	Number	Percent	Month	Number	Percent
July	--	---	January	4	28.6
August	--	---	February	4	28.6
September	1	7.1	March	3	21.4
October	1	7.1	April	--	----
November	1	7.1	May	--	----
December	--	---	June	--	----
			Unknown	--	----
			Total	14	99.9

Method of Take	Number	Percent
Ground Shooting	4	28.6
Trapping	9	64.3
Snaring	-	----
Other*	1	7.1

* Subunit 14C - One wolverine hide was dragged into a yard by dogs.

PREPARED BY: Jack Didrickson, Game Biologist III.

WOLVERINE

SURVEY-INVENTORY PROGRESS REPORT FOR REGULATORY YEAR 1976-77

Game Management Unit 15 - Western Kenai Peninsula

Seasons and Bag Limits

Hunting	Sept. 1-March 31	One Wolverine
Trapping	Nov.10-March 31	No Limit

Harvest and Hunting Pressure

Thirteen wolverine were reported harvested in Unit 15 during the 1976-77 season (Appendices I and II). The harvest was composed of 10 males, 2 females and 1 sex unknown. A breakdown of the harvest by Subunit is provided in Appendices III, IV and V.

The continued low percentage (17%) of females in the harvest implies that trapping is not a major factor in limiting wolverine numbers.

Composition and Productivity

Techniques for collecting composition and productivity data have not been developed. Sex data collected at the time of sealing traditionally show a high percentage of males in the harvest. The high percentage of males in the harvest is believed to be due to their habit of ranging over larger areas than females.

Management Summary and Conclusions

The 1976-77 harvest of 13 wolverine was up sharply from the very low harvest of 8 in 1975-76 and broke a downward trend in the harvest begun in 1973-74.

The increase in the harvest may reflect an increase in wolverine numbers that is a function of normal population fluctuations; however, trapping pressure and comparative success rates are unknown.

Recommendations

No changes are recommended.

PREPARED BY:

Paul A. LeRoux
Game Biologist III

SUBMITTED BY:

John S. Vania
Regional Management Coordinator

APPENDIX I

WOLVERINE 1976-77
UNIT 15
(including all Subunits)

Harvest

Males - 10 Females - 2 Unknown - 1 Total - 13

Chronology by Month

Month	Number	Percent	Month	Number	Percent
July	-	-	January	6	46.2
August	-	-	February	6	46.2
September	1	7.7	March	-	-
October	-	-	April	-	-
November	-	-	May	-	-
December	-	-	June	-	-
			Unknown	-	-
			Total	13	100.1

Method of Take	Number	Percent
Ground Shooting	1	7.7
Trapping	12	92.3
Snaring	-	-
Other	-	-
Total	13	100.0

PREPARED BY:

Jerome J. Sexton
Game Biologist

APPENDIX II

Wolverine Bounty and Sealing Records - Unit 15

Year	Males	Females	Unknown Sex	Total
1961-62[1]	-	-	1	1
1962-63[1]	-	-	-	-
1963-64[1]	-	-	3	3
1964-65[1]	-	-	13	13
1965-66[1]	-	-	15	15
1966-67[1]	-	-	16	16
1967-68[1]	-	-	19	19
1968-69[2]	-	-	-	-
1969-70[2]	-	-	-	-
1970-71[2]	-	-	-	-
1971-72[3]	18	7	0	25
1972-73[3]	14	6	0	20
1973-74[3]	11	3	1	15
1974-75[3]	10	3	1	14
1975-76[3]	4	2	2	8
1976-77[3]	10	2	1	13

[1] Data from bounty records.
[2] Bounty discontinued, no record of harvest.
[3] Data from sealing records.
- Zero Data

Prepared By: Paul A. LeRoux, Game Biologist III

APPENDIX III

WOLVERINE 1976-77
Subunit 15 (A)

Harvest

Males - 1 Females - 0 Unknown - 1 Total - 2

Chronology by Month

Month	Number	Percent	Month	Number	Percent
July	-	-	January	1	50.0
August	-	-	February	1	50.0
September	-	-	March	-	-
October	-	-	April	-	-
November	-	-	May	-	-
December	-	-	June	-	-
			Unknown	-	-
			Total	2	100.0

Method of Take	Number	Percent
Ground Shooting	-	-
Trapping	2	100.0
Snaring	-	-
Other	-	-
Total	2	100.0

PREPARED BY:

Jerome J. Sexton
Game Biologist

APPENDIX IV

WOLVERINE 1976-77
Subunit 15 (B)

Harvest

Males - 1 Females - 0 Unknown - 0 Total - 1

Chronology by Month

Month	Number	Percent	Month	Number	Percent
July	-	-	January	-	-
August	-	-	February	1	100.0
September	-	-	March	-	-
October	-	-	April	-	-
November	-	-	May	-	-
December	-	-	June	-	-
			Unknown	-	-
			Total	1	100.0

Method of Take	Number	Percent
Ground Shooting	-	-
Trapping	1	100.0
Snaring	-	-
Other	-	-
Total	1	100.0

Prepared by:

Jerome J. Sexton
Game Biologist

APPENDIX V

WOLVERINE 1976-77
Subunit 15 (C)

Harvest

Males - 8 Females - 2 Unknown - 0 Total - 10

Chronology by Month

Month	Number	Percent	Month	Number	Percent
July	-	-	January	5	50.0
August	-	-	February	4	40.0
September	1	10.0	March	-	-
October	-	-	April	-	-
November	-	-	May	-	-
December	-	-	June	-	-
			Unknown	-	-
			Total	10	100.0

Method of Take	Number	Percent
Ground Shooting	1	10.0
Trapping	9	90.0
Snaring	-	-
Other	-	-
Total	10	100.0

Prepared by:

Jerome Sexton
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WOLVERINE

SURVEY-INVENTORY PROGRESS REPORT - 1976

Game Management Unit 16 - West Side of Cook Inlet

Seasons and Bag Limits

Hunting	Sept. 1- Mar. 31	One wolverine
Trapping	Nov. 10-Mar. 31	No limit

Harvest and Hunting Pressure

Seventy-eight wolverines were sealed from Unit 16 during the 1976-77 season (Appendix I). This is above the 1971-1977 average annual harvest (63) and above the 1962-1969 average of 40 wolverines bountied per year (Appendix II).

Six of the wolverines were taken in Subunit 16A and 72 in Subunit 16B. The harvest level in Subunit 16A dropped substantially from the previous 4 year average harvest of wolverines, while the 16B harvest was greater than the previous 4 year average of 55.

Thirty-five (45%) of the wolverines harvested in Unit 16 were taken by ground shooting. The percentage taken by ground shooting has steadily increased since 1973 when 4 of 52 (8%) were taken in this manner.

Chronology of harvest data indicates that 77 (98%) of the wolverines were taken from November through March. One was taken during September by a nonresident.

Composition and Productivity

Of the 78 wolverines harvested, 50 (64%) were males, 27 (35%) were females and one was of unknown sex.

Management Summary and Conclusions

The reported harvest was 78 wolverines from Unit 16 during the 1976-77 season. This slight drop in harvest is probably due to the mild weather experienced in this area last winter which left many streams and rivers unfrozen, making it extremely difficult for trappers to run their lines.

The primary method of take has been shifting from trapping or snaring to ground shooting. Trapping or snaring accounted for 92 percent of the 1973-74 harvest. Comparisons of trap line pressure on wolverines from year to year are presently unavailable.

Recommendations

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

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Game Biologist III and Game Biologist II

SUBMITTED BY:

John S. Vania
Regional Management Coordinator

Appendix I. Wolverine Harvest by Sex, Chronology and Method of Take in Alaska's Game Management Unit 16 during the 1976-77 Season.

HARVEST

AREA	MALES	FEMALES	UNKNOWN	TOTAL
16A	3	2	1	6
16B	47	25	0	72
Total Unit	50	27	1	78

CHRONOLOGY BY MONTH

Month	16A	16B	Total Unit
September	-	1	1
October	-	-	-
November	-	7	7
December	1	10	11
January	1	12	13
February	1	18	19
March	3	24	27
TOTAL	6	72	78

METHOD OF TAKE

Ground Shooting	4	31	35
Trapping	2	41	43
Snaring	0	0	0
Other	0	0	0
TOTAL	6	72	78

PREPARED BY: Jack C. Didrickson, Game Biologist III
Kenton P. Taylor, Game Biologist II

Appendix II. Wolverine Harvest from Bounty Records and Wolverine Sealing Data in Alaska's Game Management Unit 16, 1962-63 Through 1968-69 and 1971-72 Through 1976-77.

	Harvest*			
Regulatory Year	Total Unit 16	16A	16B	Unknown Unit
1962-63	13	Breakdown Not Available		
1963-64	43	Breakdown Not Available		
1964-65	34	Breakdown Not Available		
1965-66	58	Breakdown Not Available		
1966-67	51	Breakdown Not Available		
1967-68	44	Breakdown Not Available		
1968-69	15	Breakdown Not Available		
1969-70 through 1970-71	No Data			
1971-72	51	Breakdown Not Available		
1972-73	67	5	59	3
1973-74	52	10	42	0
1974-75	45	11	34	0
1975-76	86	15	71	0
1976-77	78	6	72	0
Average number bountied 1962-63 through 1968-69	36.9			

* 1962-63 through 1968-69 data from bounty records.
1971-72 through 1976-77 data from wolverine sealing records.

PREPARED BY: Jack C. Didrickson, Game Biologist III
Kenton P. Taylor, Game Biologist II

WOLVERINE

SURVEY-INVENTORY PROGRESS REPORT - 1976

Game Management Unit 17 - Bristol Bay

Seasons and Bag Limits

Hunting Season	Sept. 1 - Mar. 31	One wolverine
Trapping Season	Nov. 10 - Mar. 31	No limit

Hunting, Trapping and Harvest Pressure

During the 1976-77 seasons, 53 wolverine were harvested (37 males, 15 females, and 1 unknown) (Appendices I and II). As in past years, approximately half (28 wolverine) were taken by ground shooting, with the remainder (25 wolverine) by traps or snares. No animals were reported taken during the fall sport hunting period.

Composition and Productivity

No data are available.

Management Summary and Conclusions

Snow conditions during the 1976-77 seasons did not encourage extensive use of snow machines or ski-equipped aircraft. The majority of the harvest (79%) occurred during February and March when conditions were finally satisfactory. Harvest of wolverine in GMU 17 is essentially as a furbearer, with only occasional sport harvest by recreational hunters. The present wolverine harvest levels are not detrimental to the Unit's population.

Recommendations

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

PREPARED BY:

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Game Biologist III

SUBMITTED BY:

John S. Vania
Regional Management Coordinator

WOLVERINE 1976-77

Unit 17

APPENDIX I

Harvest

Males - 37 Females - 15 Unknown - 1 Total - 53

Chronology by Month

Month	Number	Percent	Month	Number	Percent
July	--	--	January	6	11.3
August	--	--	February	17	32.1
September	--	--	March	25	47.2
October	--	--	April	--	--
November	1	1.9	May	--	--
December	4	7.5	June	--	--
			Unknown	--	--
			Total	53	100.00

Method of Take	Number	Percent
Ground Shooting	28	52.8
Trapping	24	45.3
Snaring	1	1.9
Other	--	--
Total	53	100.0

Prepared By:

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Game Biologist II

Wolverine - G.M.U. 17 - Bristol Bay

APPENDIX II

Historical Wolverine Harvest, 1962-1977

Year	Harvest
1962-63 1/	8
1963-64 1/	70
1964-65 1/	7
1965-66 1/	27
1966-67 1/	31
1967-68 1/	35
1968-69 1/	24
1969-70 2/	--
1970-71 2/	--
1971-72 3/	21
1972-73 3/	45
1973-74 3/	22
1974-75 3/	78
1975-76 3/	51
1976-77 3/	53

1/ Data from bounty analysis

2/ Data not available

3/ Data from hide sealing program

Prepared By: James B. Faro, Game Biologist III

WOLVERINE

SURVEY-INVENTORY PROGRESS REPORT

Game Management Unit 18 - Yukon-Kuskokwim Delta

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

Seasons and Bag Limits

Hunting	Sept. 1 - Mar. 31	One wolverine
Trapping	Nov. 10 - Mar. 31	No limit

Harvest, Trapping and Hunting Pressure

The reported 1976-77 harvest of wolverine in Unit 18 was one female taken by trapping during February. The recorded harvest in Unit 18 for the previous 5 years has ranged from 3 to 29, and averaged 11 per year. The 1976-77 harvest of one animal was the lowest on record. It is likely that more animals were harvested but not sealed. Unit 18 residents often utilize wolverine hides for ruffs and trim on parkas without having the pelts sealed.

Management Summary and Recommendations

Efforts should be made to obtain greater compliance with the sealing requirement.

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Regional Management Coordinator

WOLVERINE

SURVEY-INVENTORY PROGRESS REPORT

Game Management Unit 19 - McGrath

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

Harvest and Hunting Pressure

Seventy-four wolverine (41 males and 33 females) were reported to have been taken in Unit 19 during the 1976-77 season (Table 1). This was an increase in harvest from the previous season. The increase was related to both high fur values and an abundance of wolverine in the area. In addition, there were increases in the number of trappers and the number of wolverine taken incidental to other furbearers.

PREPARED BY:

Peter E. K. Shepherd
Game Biologist III

SUBMITTED BY:

Oliver E. Burris
Regional Management Coordinator

Table 1. Chronology and method of the 1976-77 wolverine harvest, Unit 19.*

Chronology by month

Month	Number	Percent
November	14	18.9
December	6	8.1
January	15	20.3
February	17	23.0
March	22	29.7
Total	74	100.0

Method of take	Number	Percent
Ground shooting	20	27.0
Trapping	49	66.2
Snaring	5	6.8
Total	74	100.0

*Data from sealing forms.

WOLVERINE

SURVEY-INVENTORY PROGRESS REPORT

Game Management Unit 20 - Fairbanks, Central Tanana Valley

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

Seasons and Bag Limits

Hunting	Sept. 1 - Mar. 31	One wolverine
Trapping	Nov. 1 - Mar. 31	No limit

Harvest, Hunting and Trapping Pressure

Sealing data indicate a harvest of 157 wolverines (Table 1) in Unit 20 during the 1976-77 hunting/trapping season, which represented a nine percent increase over the previous harvest. The sex composition of the harvest (81 males, 75 females and 1 of unknown sex) showed a slight increase in the number of females taken. Females comprised 48 percent of the take.

Table 1. Wolverine harvest in Unit 20, 1976-77 season.

Subunit	Number Taken	% of Unit 20 Take
20A	29	18
20B	10	6
20C	112	71
20D	6	4
	157	99

Subunit 20A accounted for the increased take during the 1976-77 season. The harvest increased from 16 (1975-76) to 29 (1976-77) in the subunit. It is not known whether the higher harvest reflected an increase in wolverine abundance or greater trapping effort and success. The number of trappers and areas trapped (Tanana Flats and foothill portions of the Healy, Wood and Dry Creek drainages) in 20A were not thought to have changed. Harvests in the other subunits were little changed from the previous season.

Trapping continued to account for the majority of the harvest (85%), while eight percent were taken by snaring.

Harvest chronology indicated a fairly uniform distribution of the trapping effort and success during the five-month season. By month the known-date harvest was as follows: November, 19 percent; December, 24 percent; January, 25 percent; February, 18 percent; March, 13 percent.

Management Summary and Conclusions

Unit 20 has sustained an annual harvest in excess of 100 wolverines for five of the six seasons since the establishment of the sealing program. Since 1972-73 annual harvests have ranged from a low of 122 to the current high of 157 and have averaged 140 animals. Despite the localized harvest within traditional trapping areas, wolverine populations throughout the unit appear capable of supporting the current level of exploitation.

There has been a gradual increase in the proportion of females harvested. Despite the fact that nearly as many females are taken as males in current harvests, recruitment of harvestable animals to the population does not appear to have been affected. However, current data on movements and reproductive biology of wolverines are lacking for Unit 20.

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WOLVERINE

SURVEY-INVENTORY PROGRESS REPORT

Game Management Unit 21 - Middle Yukon

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

Harvest and Hunting Pressure

The wolverine harvest more than doubled, from 32 in 1975-76 to 83 (53 males, 27 females and 3 wolverine of undetermined sex) during the 1976-77 season (Table 1). High wolverine populations and extraordinary pelt values contributed to the increased harvest. Also, during the 1976-77 season more trappers were in the field both in early winter and later during the beaver season.

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Table 1. Chronology and method of the 1976-77 wolverine harvest, Unit 21.*

Chronology by month

Month	Number	Percent
September	1	1.2
November	8	9.6
December	16	19.3
January	9	10.8
February	13	15.7
March	27	32.5
April	5	6.0
Unknown	4	4.8
Total	83	99.9

Method of take	Number	Percent
Ground shooting	20	24.1
Trapping	56	67.5
Snaring	7	8.4
Total	83	99.9

*Data from sealing forms.

WOLVERINE

SURVEY-INVENTORY PROGRESS REPORT

Game Management Unit 22 - Seward Peninsula

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

Seasons and Bag Limits

Hunting	Sept. 1 - Mar. 31	One wolverine
Trapping	Nov. 1 - Mar. 31	No limit

Harvest, Trapping and Hunting Pressure

Based on sealing certificates, there was a reported harvest of 20 wolverine in Unit 22. During the six year period since sealing has been required, an average of 18 wolverine have been reported taken annually, but yearly harvests have ranged from 8 (1974-75) to 26 (1975-76).

It is a common practice in rural areas to cut up hides for "home use" without first having them sealed. Therefore, the harvest reported here is probably low. The actual harvest for the 1976-77 season was estimated to be 25 to 30 wolverine. Sealing data suggested a slight increase in harvest which probably reflected: 1) more trapping effort in response to high fur prices and 2) increased compliance with sealing requirements.

Wolverine were taken every month during the open season, but success was highest early in the season and in midwinter. Six wolverine were taken in November and six in February. Ten of the wolverine were taken by ground shooting and the remainder were trapped.

Seasonal Distribution, Migration and Concentration

Currently there is limited information on the population status of wolverine in Unit 22. The animal's small size and solitary habits, combined with a relatively low abundance, have made it difficult to conduct accurate ground or aerial surveys, but knowledge of trends in wolverine abundance and geographical distribution has been obtained from incidental observations. In general, the wolverine population appeared to be stable in Unit 22. However, aerial observations under ideal tracking conditions indicated relatively high numbers of wolverines in remote areas, and relatively low numbers near villages.

Aerial observations in conjunction with sealing records indicated that the larger river drainages of the Seward Peninsula provide the most important habitat. Such areas include the Kuzitrin, Koyuk, Unalakleet, Fish and Serpentine Rivers. Minimum density in these areas was estimated to be one wolverine per 100 square miles.

Management Summary and Recommendations

The primary management effort to date has been to obtain accurate harvest data. Even though this has been successful to some extent, considerable improvement is needed. Employing sealing agents in villages improved the program considerably, but satisfactory compliance with the regulations will probably be attained only by increasing public contact in villages and emphasizing the enforcement and management benefits of the sealing program.

Trappers and hunters have taken approximately the same number of wolverine year after year within a 30 mile radius of villages. Near population centers, wolverine harvests have probably exceeded the level of maximum sustained yield. However, areas of high density and/or high reproduction appear to be acting as reservoirs and serve as a source for replacing harvested animals. Wolverine density in remote areas appeared to be stable or increasing.

The price of pelts doubled during the last four years and it has become profitable for some individuals to use aircraft as a means of hunting wolverine. During ideal tracking conditions, this method can be very efficient on the open tundra, and if this practice becomes widespread, it may be necessary to implement restrictive regulations. At the present time no changes in seasons and bag limits are recommended.

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WOLVERINE

SURVEY-INVENTORY PROGRESS REPORT

Game Management Unit 23 - Kotzebue Sound

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

Seasons and Bag Limits

Hunting	Sept. 1 - Mar. 31	One wolverine
Trapping	Nov. 1 - Mar. 31	No limit

Harvest, Trapping and Hunting Pressure

The 1976-1977 reported wolverine harvest based on sealing data was 52 animals. In addition, a considerable number of animals were probably taken and not presented for sealing because of the high local demand for wolverine fur. Past harvests were as follows: 1971-72, 8; 1972-73, 55; 1973-74, 28; 1974-75, 11; and 1975-76, 50. The chronology of the 1976-77 harvest was as follows: November, 6; December, 6; January, 8; February, 9; March, 21; and April, 1. In one case the date of take was not determined. Ground shooting and trapping accounted for 25 and 27 animals, respectively.

Management Summary and Recommendations

Wolverines are subjected to considerable pressure by hunters using snow machines and aircraft. Wolverine populations in the vicinity of villages and near well-traveled snow machine trails are probably being overharvested, while in the remainder of Unit 23 very little harvest occurs. No changes in seasons or bag limits are recommended.

If more accurate harvest figures are to be obtained, the number of village agents must be increased.

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WOLVERINE

SURVEY-INVENTORY PROGRESS REPORT

Game Management Unit 24 - Koyukuk Valley

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

Seasons and Bag Limits

Hunting	Sept. 1 - Mar. 31	One wolverine
Trapping	Nov. 1 - Mar. 31	No limit

Harvest, Trapping and Hunting Pressure

The reported Unit 24 wolverine harvest for the 1976-77 hunting and trapping season was 42 (30 males, 11 females and 1 unknown). This was more than twice the reported harvest in 1975-76, which was 20 (19 males and 1 female).

Methods used to take wolverine were little changed from the previous season. In the 1975-76 season, 5 percent were taken by ground shooting, 60 percent by trapping and 35 percent by snaring. In the 1976-77 season, 7 percent were taken by ground shooting, 83 percent by trapping and 10 percent by snaring. The harvest occurred throughout the period November through March.

Management Summary and Recommendations

It is unlikely that the present sealing program accurately reflects the Unit 24 harvest. Local utilization of wolverines for ruffs and garment trim results in many skins not being sealed. In Unit 24 most wolverine are trapped or snared, unlike Units 22 and 23, where a much higher percentage of the wolverine take is by ground shooting. Despite the continued high value of wolverine pelts, the total trapping effort has not increased greatly. It is unlikely that there will be any management problems caused by excessive harvests of wolverines in the near future.

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WOLVERINE

SURVEY-INVENTORY PROGRESS REPORT

Game Management Unit 25 - Ft. Yukon area

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

Seasons and Bag Limits

Hunting	Sept. 1 - Mar. 31	One wolverine
Trapping	Nov. 1 - Mar. 31	No limit

Harvest, Trapping and Hunting Pressure

The reported Unit 25 wolverine harvest during the 1976-77 hunting and trapping season was 82 (45 males, 36 females and 1 of unknown sex). This was an increase from the 1975-76 harvest (66 wolverines of which 28 were females). All wolverines taken in Unit 25 were trapped. Traditionally, trapping has been the primary method used for harvesting wolverines in Unit 25.

Neither the accuracy nor the completeness of the sealing program in Unit 25 has been determined, but it is unlikely that all wolverines taken were sealed. However, harvest figures taken from the number of skins sealed in Unit 25 probably provide a better measure of harvest than in units where there is a high local utilization of wolverine skins for garment trim.

Recommendations

Harvests are not thought to have a significant impact on wolverine abundance in this unit. No changes in season or bag limit are recommended at this time.

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WOLVERINE

SURVEY-INVENTORY PROGRESS REPORT

Game Management Unit 26 - Arctic Slope

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

Seasons and Bag Limits

Hunting	Sept. 1 - Mar. 31	One wolverine
Trapping	Nov. 1 - Mar. 31	No limit

Harvest, Trapping and Hunting Pressure

The reported Unit 26 wolverine harvest from the 1976-77 season was 17 (10 males and 7 females). The harvest from the 1975-76 season was 16 (10 males and 6 females).

The method of harvesting wolverines in Unit 26 was generally the same as that used in Units 22 and 23, where wolverines are hunted and shot. This is usually done with the aid of a snow machine. Very few wolverine are taken by traditional trapping techniques. During the 1976-77 season, 65 percent of the harvest resulted from shooting, while during the previous season, shooting accounted for 88 percent of the take.

Management Summary and Recommendations

The apparent increase in harvest reported during the last two seasons may simply reflect greater compliance with the sealing requirement. Prior to the cancellation of the wolverine bounty it was felt that the bounty system did not provide an accurate measure of the wolverine kill in Unit 26. The very high local utilization of wolverines for parka ruffs and other garment trim resulted in few wolverines being held for the bounty. This situation has not changed under the sealing program; therefore, it is likely that the wolverine harvest in Unit 26 has been grossly underestimated for many years. Nevertheless, harvests are not thought to have significantly influenced wolverine abundance. No changes in season or bag limit are recommended.

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MUSKOXEN

SURVEY-INVENTORY PROGRESS REPORT

Game Management Unit 18 - Yukon-Kuskokwim Delta

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

Seasons and Bag Limits

Unit 18, except Nunivak Island	No open season	
Nunivak Island	Aug. 1 - Sept. 30	One bull, to total 30 bulls by permit only; 5 cows may be included at the discretion of the commissioner
	Feb. 15 - Mar. 30	One bull, to total 40 bulls by permit only; 5 cows may be included at the discretion of the commissioner

Harvest and Hunting Pressure

Forty-seven applicants applied for the fall 1976 muskox hunt, and 35 permits were issued. Twenty-eight bulls and three cows were taken by 21 resident and 10 nonresident hunters. Four permittees did not hunt.

This was the first hunt in which female muskox were legally harvested. Of the three cows taken during the hunt, one was a subadult. Five muskox were taken by unguided hunters using private aircraft, and 17 hunters employed residents of Mekoryuk for guiding. Seven hunters employed a registered guide from the Fairbanks area as their primary guide, but in these cases some assistance from various local residents was provided. The hunters generally were pleased with their experience.

Ninety applications were received for the spring 1977 hunt, and 45 permits were issued. Forty-one permittees actually hunted, taking 39 bulls and two cows. Twenty-two of the hunters were residents and 19 were nonresidents.

Although most hunters reported enjoyable and ethical hunting experiences, several complained about the brief duration of the hunt and the apparent unwillingness of their guides or transporters to provide the opportunity to observe a large number of animals prior to making a selection. The amount of hunter dissatisfaction has increased since 1976.

Composition, Productivity, Transplants and Mortality

Nunivak Island Herd - During an aerial survey in August 1976, 683 musk oxen were counted, including 132 (14%) calves. Composition surveys were made using snow machines in February 1977 and 176 adult males, 157 adult females, 44 subadult males, 79 subadult females, 36 two-year-old males, 48 two-year-old females and 111 short yearlings were classified.

Nineteen males and 15 females were transplanted to Cape Thompson (Unit 23) during April 1977. Three muskox were given to the Portland Zoo and one to the Anchorage Zoo. Thirty-one winter-killed muskox were observed during composition surveys, but it was estimated that approximately 100 animals were lost as a result of deep snow and freezing rain during the winter of 1976-77.

Nelson Island Herd - During a survey from the ground during April 4-8, 1977, 132 muskox were counted. Animals in this sample were classified as follows: 11 adult males, 17 adult females, 6 subadult males, 3 two-year-old males, 3 two-year-old females, 4 yearlings of undetermined sex. Eighty-eight muskox were not classified. No winter mortality was documented, but residents of Nelson Island indicated that possibly 10 animals may have been lost during the winter. In April a very hard snow pack existed on Nelson Island. This was similar to snow conditions at Nunivak Island where a considerable mortality occurred; therefore, it is likely that the Nelson Island herd also sustained some winter losses.

Management Summary and Recommendations

Nunivak Island - The population on Nunivak Island should be further reduced. In the Cooperative Agreement between the USFWS and ADF&G, transplants to traditional ranges are of high priority. A plan for transplants should be developed that would detail the locations of future transplants; the number, age and sex of animals to be transplanted; and the responsibilities of each agency involved. Based on information from Lensink (1975), it appears that the most successful procedure would be to make transplants to a given location in two consecutive years after which further releases should be unnecessary. This method was used when establishing the Nelson Island herd which currently appears to be the most productive group of muskox in the state.

Based on past harvest information, it appeared that the cow hunt was unpopular. There have been 15 cow permits available since 1976, and only four have been used. In one case the holder of a cow permit harvested a three-year-old bull by mistake. Therefore, only three cows have been removed from the Nunivak herd. To adjust the sex ratio of the Nunivak herd, it would be advisable to select adult cows and two- and three-year-old bulls for transplants. A reduced resident tag fee for cow muskox might encourage more hunters, particularly local residents, to apply for these permits.

Nelson Island - The estimated carrying capacity of Nelson Island is approximately 100 to 150 muskoxen. At its present rate of growth, the herd will soon approach carrying capacity, at which time it will require population management through regulated hunting and transplanting.

Literature Cited

Lensink, C. J. 1975. Environmental assessment, proposed management of muskox on Nunivak National Wildlife Refuge, Alaska. U.S. Fish and Wildlife Service.

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MUSKOXEN

SURVEY-INVENTORY PROGRESS REPORT

Game Management Unit 22 - Seward Peninsula

Period Covered: January 1 - December 31, 1976

Seasons and Bag Limits

No open season

Herd Size, Composition, Productivity and Mortality

Thirty-six muskoxen from Nunivak Island were introduced into Unit 22 during 1970. Most of the animals released were yearlings. The success of this transplant was marginal because the release site at Feather River (40 miles NW of Nome) contained no prominent natural barriers. With no dominant adults to maintain herd integrity, many of the animals scattered widely throughout the Seward Peninsula. Harassment from interested spectators on snow machines also contributed to this dispersal. Individual muskox were sighted as far away as 300 miles to the east of the release site. Eventually two small groups became established in the York Mountains on the western end of the Seward Peninsula.

Since 1973 one of these groups has remained in the vicinity of Black Mountain approximately 12 miles northwest of Brevig Mission. On April 13, nine adults and three yearlings were observed feeding near the mountaintop. During the summer of 1976, this group was seen in the same area on several occasions, and each time it was accompanied by at least five calves of the year. The second group has been more mobile, but it has exhibited a preference for a 400 square mile area of marshy plains and tundra foothills between Ear Mountain and the drainages of the Pinguk River. Although this group has been difficult to locate, it was sighted by residents of Wales and Shishmaref on several occasions. During 1976, the herd was reported to contain 18 adults and 6 calves of the year.

Together these two groups totaled about 40 animals as of December 1976. Each herd has produced two or more calves for the last four years, but the herds have not increased in proportion to the observed productivity. Two factors may account for this: a rather high calf mortality (perhaps associated with grizzly bear predation) and/or emigration from the herd. The latter may be a significant factor because single muskox have been reported at several locations on the Seward Peninsula. As green vegetation becomes abundant during the summer, there appears to be a tendency for adults, especially bulls, to leave the nucleus herd, and it is unlikely that any of these "strays" rejoin that herd. No mortalities were documented during 1976.

Management Summary and Recommendations

Although muskox numbers have not increased as rapidly as expected, calf production for the last three years has been encouraging. Assuming this does not change, the two groups now residing on the western end of the Seward Peninsula have the capability to increase substantially during the next few years providing that they receive proper protection. At the present time both herds are too small to warrant a hunting season. Further herd growth should be monitored closely.

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SUBMITTED BY:

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MUSKOXEN

SURVEY-INVENTORY PROGRESS REPORT

Game Management Unit 23 - Kotzebue Sound

Period Covered: January 1 - December 31, 1976

Seasons and Bag Limits

No open season

Herd Size, Composition, Productivity and Mortality

After the last naturally occurring muskox were extirpated from the North Slope in the early 1900's, muskox were introduced into northwestern Alaska in 1970. Thirty-six animals (mostly yearlings) were captured on Nunivak Island, transported to a point near Cape Thompson and released. The animals were not released under ideal conditions, and many of the muskox moved eastward through the Brooks Range. Only one small group of approximately 8-10 animals became established as a cohesive herd. These animals have occupied the lower portion of the Kukpuk drainage (near Point Hope) for the last six years.

During a caribou reconnaissance survey on June 28, 1976, the herd was sighted approximately 15 miles east of Point Hope on a tundra covered bench above the river. This group contained 24 adults and 6 calves of the year. Point Hope residents observed the herd several times in the same area during the summer and fall of 1976.

Sightings of single muskox at scattered locations were reported in Unit 23, but other than the Kukpuk group there have been no indications of other herds in Unit 23.

Management Summary and Recommendations

The Kukpuk herd contained approximately 11 animals in 1972 and first produced calves in the summer of 1973. Three or more calves have been produced annually since this time. The herd has more than doubled in size in four years, and now numbers about 30 individuals. Considering the relatively small number of breeding adults, production and survival have been good. There does not appear to be a great deal of emigration by single adults. This, coupled with the fact that the herd has remained in the same area for several consecutive years, suggests that it has the potential for considerable growth. A hunting season is not warranted at this time, but further herd growth should be monitored closely. Any future transplants should occur in the area north of Cape Thompson.

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MUSKOXEN

SURVEY-INVENTORY PROGRESS REPORT

Game Management Unit 26

Period Covered: January 1, 1975 - June 30, 1977

Seasons and Bag Limits

No open season

Composition and Productivity

Few observations were recorded during the reporting period. Twenty-five animals, including 1 calf, were seen in the Canning River group during 1977, while 22 adults and 4 calves were seen during 1976. Observations conducted in the Sadlerochit valley herd accounted for 19 adults and 8 calves during 1976 and 33 adults in 1977. In the Jago River valley, 12 to 13 adults and 3 calves were seen in 1976 and 11 adults and 4 calves were observed during 1977.

Records of most observations were incomplete and were made by non-Departmental personnel. Animals classified as adults included some subadults.

Management Summary and Recommendations

In 1974, Griffin reported that observations of muskox in Unit 26 indicated a minimum population of 40 animals. Observations during 1977 revealed a minimum population of 73 animals. Muskox occupy a vast area in Unit 26 and the number of observations has been small. Consequently, the estimates presented here must be considered as minimums.

On July 19, three subadult muskox were shot in defense of life by a Barrow resident along the Sinaruak River about 20 miles southwest of Barrow.

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SEALS

SURVEY-INVENTORY PROGRESS REPORT

Game Management Units 18, 22, 23 and 26 - Western and Arctic Alaska

Period Covered: January 1 - December 31, 1976

Seasons and Bag Limits

Closed; except Alaskan Natives, under provision of the Marine Mammal Protection Act, can take seal throughout the year with no limit.

Harvest and Hunting Pressure

For the past four years annual harvest figures for these game management units were derived from samples obtained from selected villages. In 1976, Hooper Bay, Gambell, Savoonga and Shishmaref were used as sample villages and harvests are summarized in Appendix I. Local residents hired to record harvests by species reported a combined take of 1,357 seals (Table 1). This harvest was comprised of 57 percent ringed seals, 25 percent bearded seals, 18 percent spotted seals and 3 ribbon seals. Based upon periodic surveys by Department personnel, it was estimated that reported harvests were generally 10 percent below the actual take. Therefore, the 1976 harvest for the sample villages was estimated to be 1,492 seals. Past data indicated the sample village harvest represented approximately 25 to 30 percent of the total seal take in Units 18, 22, 23 and 26. The total harvest therefore was estimated to be 4,970 to 5,970 seals. Using the observed species composition from the sample villages, 2,835 to 3,400 ringed seals, 1,290 to 1,495 bearded seals and 895 to 1,075 spotted seals were estimated to have been taken. In the overall harvest approximately 12 ribbon seals were estimated to have been taken.

Hunting pressure as reflected by harvest levels appeared to have declined from that of the early 1960's. In the early 1960's, bounties and the lack of alternate food sources provided local hunters with the incentive to take a large number of animals. At that time annual harvests approached 30,000 animals. Much of the present harvest results from two factors: 1) the use of seal skins in production of clothing and novelty items for sale; and 2) the urge to continue traditional activities even though much of the actual need for seals as food is gone.

Composition and Productivity

As might be expected, the bulk of the harvest (57%) was comprised of ringed seals, but this harvest did not accurately reflect the relative abundance of ringed seals. Recent surveys indicated that the ringed seal population may exceed one million animals while bearded and spotted

Diomede - The timing of harvests varied among villages. At Diomede the bulk of the annual kill was taken during spring and only one percent during the summer, fall and winter. In the spring of 1976 hunters at Diomede hunted on 17 days beginning May 12 and retrieved a total of 732 walrus. Walrus were taken throughout this period, but success increased toward the end of the season (mid-June) as ice conditions improved. During the last week of May, wind and ice conditions prevented boat hunting although large pods of walrus could be seen and heard moving north with the drifting pack ice. Between June 6 and 15, 72 percent (529 walrus) of the annual harvest was taken. Ninety-nine percent of the annual take occurred during the period May 12 and June 20.

It was estimated that at best 70 percent of the walruses killed were retrieved. Continuous records from one boat indicated a loss rate of 29 percent. This minimum figure was probably typical of all boats. Losses were difficult to assess because the number of animals wounded probably equaled or even exceeded those lost outright. When 10 to 15 rounds of ammunition are fired by each member of a 12-man crew into a herd of 250-300 walrus and only 25 are retrieved, one must assume that a large number of animals are wounded. Lack of organized shooting methods and improper discipline of young hunters were major factors contributing to high rates of loss and wounding.

Utilization of meat was relatively low during the spring. Early in the season fresh meat was welcome in the village and female hides were selected for boat skins. After a supply of fresh meat and skins was secured, and as more seals were taken, utilization of walrus dropped to near zero. In one 18-hour period a single crew retrieved 100 walrus, but other than the ivory, they saved only two hearts and one stomach. Much of the meat that was brought to the village was stored on the beach in temporary caches. Following the cessation of hunting, strong winds pushed high waves onto the beach with accompanying garbage from the dump. This ruined several of the meat caches. Discounting this loss, I estimated that less than 30 animals (or their meat equivalent) were returned to the village. Hence, less than five percent of the meat from the walrus harvest was salvaged for human consumption.

Gambell - At Gambell the annual kill was distributed over a longer portion of the year, but the greatest take occurred during spring. A total of 674 walruses, 91 percent of the total annual harvest, were taken during 19 days of hunting during May and June. The spring harvest traditionally begins after the whaling season, usually the first part of May depending upon ice conditions. This year 78 percent of the annual harvest at Gambell (580 walrus) was taken in one week beginning May 23. By the first week of June the pack ice had moved north and soon it became necessary to travel long distances to find walrus. This eventually made it impractical to continue hunting.

Retrieval rates were estimated at 55 percent, although no actual observations were made from hunting boats. Utilization of the harvest was better than most villages. This probably resulted from the demand for meat by Gambell's relatively large human population. The fact that calves are preferred for dry meat was reflected in the large number of calves taken by Gambell hunters (Table 1).

Savoonga - As at Gambell, the annual walrus harvest at Savoonga was distributed throughout the year. However, as at most villages where walrus are regularly taken, the bulk of the harvest occurred during the spring and early summer. Ninety-four percent of the harvest at Savoonga occurred during this period. Unlike at Gambell, however, the spring harvest was spread more evenly over the 13 days of hunting (May 1 to June 19). The highest weekly kill accounted for only 49 percent of the spring harvest. The highest daily kills occurred between June 2 and 9. This was approximately a week later than at Gambell and reflected adverse weather and shore ice conditions. After 13 days of hunting, 94 percent (617 walrus) of the annual harvest at Savoonga was completed.

Retrieval and utilization rates were similar to those at Gambell, although the demands for female hides tended to be greater. Hunters at Gambell have experienced a trend toward the more "efficient" wood and aluminum boats, while at Savoonga several of the traditional skin boats have been retained.

Wainwright and Barrow - For the first time hunters at Barrow and Wainwright began hunting walrus principally for their ivory. The harvest at Wainwright and Barrow showed an increase of 436 and 316 percent, respectively, over the previous nine year average. The actual take was 257 walrus at Wainwright and 138 at Barrow. The previous high harvest was 92 at Wainwright while at Barrow the 1976 harvest was only exceeded during 1972 when 150 walrus were taken. Other than during 1972 the highest annual take at Barrow had been only 55 animals. As the demand for ivory increases and the knowledge of its value expands, similar harvests should be expected. This is borne out in part by the fact that villages in the Yukon-Kuskokwim region have begun to take an increasing number of walrus, particularly at Mekoryuk. Where this has occurred there has been a corresponding drop in the utilization of meat.

Composition and Productivity

In the process of gathering harvest data at Diomede the composition of pods was determined at every opportunity. During the spring, walruses moved through the Bering Straits in large numbers and the vast majority of pods observed were comprised of cows and calves with a smaller number of bulls. On only two occasions were large groups of bulls observed (June 12 and June 18). When frightened, the walrus would leave the ice in a stampede, making composition counts difficult.

Productivity was difficult to assess but cow to calf ratios indicated successful breeding. Parturition appeared to be spread over a two-month period since young calves were taken at St. Lawrence Island as early as the first week of May and young calves and pregnant females were taken on the 16th of May at Diomede. Young calves were also observed in the second week of June at Diomede.

Management Summary and Recommendations

Two factors of special interest during 1976 were: 1) the return of walrus management to the State; and 2) the substantial increase in the walrus harvest.

On April 16, Federal agencies transferred management control of walrus to the State under provisions of the Marine Mammal Protection Act. However, Federal agencies retained an "absentee" supervisory position because adoption of State regulations required their approval. Such an arrangement has hindered the rapid and timely promulgation of meaningful regulations.

Again, the Department monitored harvests at Gambell, Savoonga and Diomede, by stationing personnel at these locations. The results of their surveys in combination with surveys of other coastal villages from the Yukon-Kuskokwim Delta to Point Barrow revealed the highest harvest in recent times (2,990 animals). Utilization statewide was estimated at less than 50 percent, and in some villages less than 10 percent utilization occurred. A survey on August 5, 1976 of coastal beaches from Nome to Cape Lisburne revealed approximately 280 fresh carcasses washed onto the beach. Soviet officials reported a similar occurrence on their beaches, and questioned the American management scheme for walrus. In view of the high harvest and 45-50 percent loss rate, 280 carcasses on the beaches were not as high as might be expected. Poor judgment under intense competition, inexperienced hunters and inadequate equipment all contributed toward the high loss rate. Young hunters eager to participate in the shooting probably were a primary factor contributing to the high rate of loss. Hunters from villages where walrus hunting has not occurred previously lacked experience and added to the losses.

As the lifestyles of local residents change, the demand for "store bought" products will continue to increase. Motorized transportation and a greater dependency upon stores for food place a heavy demand upon available cash. The sale of "carved" ivory products plus periodic employment provide some cash, but the mainstay in many Unit 22 villages is raw ivory. As youngsters mature they are demanding a share of the harvest equal to their elders. This has resulted in larger harvests that are now approaching the limit under the sustained yield principle.

Unless loss rates can be reduced significantly and utilization of retrieved carcasses improved, an increase in the bag limit is not recommended. As a result of intense competition and improved hunting equipment it is

recommended that quotas and bag limits be established for areas exhibiting high harvests. Utilization of the carcass increased when crews were guiding sport hunters. Sport hunting accounted for only 25 bulls during 1976 but such hunting should be encouraged. Effort should be made to increase the utilization of walrus carcasses.

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Table 1. Combined seal harvest*-1976.

SPECIES	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Yearly TOTAL
Ring Seal ♂	51	26	18	22	74	20	63	1	1	2	3	3	284
Ring Seal ♀	43	15	8	14	78	34	92	0	1	0	7	3	295
Ring Seal Unk	37	7	8	19	33	14	0	9	19	7	19	20	192
TOTAL RING SEAL	131	48	34	55	185	68	155	10	21	9	29	26	771
Bearded ♂	0	0	0	3	29	7	31	1	16	6	2	0	95
Bearded ♀	0	0	0	4	52	12	41	4	16	5	1	0	135
Bearded Unk	0	0	0	4	55	27	0	3	4	2	7	2	104
TOTAL BEARDED SEAL	0	0	0	11	136	46	72	8	36	13	10	2	334
Spotted ♂	0	0	0	1	4	3	8	1	9	9	4	0	39
Spotted ♀	0	0	1	0	7	4	6	4	7	15	0	0	44
Spotted Unk	0	0	0	0	1	1	11	26	86	21	20	0	166
TOTAL SPOTTED SEAL	0	0	1	1	12	8	25	31	102	45	24	0	249
Ribbon	0	0	0	0	0	1	0	0	0	0	2	0	3
TOTAL HARVEST ALL SPECIES	131	48	35	64	333	123	252	49	159	67	65	28	1357

* Gambell, Savoonga, Hooper Bay and Shishmaref

Appendix I. Hooper Bay seal harvest - 1976.

SPECIES	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Yearly TOTAL
Ring Seal ♂	25	21	12	21	72	9						1	161
Ring Seal ♀	19	12	4	10	76	12	1		1			1	136
Ring Seal Unk	22	7	4	18	15	4							70
TOTAL RING SEAL	66	40	20	49	163	25	1		1			2	367
Bearded ♂				3	24	6		1	16	5			55
Bearded ♀				4	44	7		4	16	5			80
Bearded Unk				1	7	4				1			13
TOTAL BEARDED SEAL				8	75	17		5	32	11			148
Spotted ♂				1	4	3			8	7	1		24
Spotted ♀			1		7	4	2	4	7	14			39
Spotted Unk					1						1		2
TOTAL SPOTTED SEAL			1	1	12	7	2	4	15	21	2		65
Ribbon						1							1
TOTAL HARVEST ALL SPECIES	66	40	21	58	250	50	3	9	48	32	2	2	581

Appendix I. Shishmaref seal harvest - 1976.

SPECIES	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Yearly TOTAL
Ring Seal ♂	13			1		9	63						86
Ring Seal ♀	22			4		21	88						135
Ring Seal Unk	11												11
TOTAL RING SEAL	46			5		30	151						232
Bearded ♂							31						31
Bearded ♀						1	41						42
Bearded Unk													
TOTAL BEARDED SEAL						1	72						73
Spotted ♂							7						7
Spotted ♀							3						3
Spotted Unk													
TOTAL SPOTTED SEAL							10						10
Ribbon													
TOTAL HARVEST ALL SPECIES	46			5		31	233						315

Appendix I. Gambell seal harvest - 1976.

SPECIES	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Yearly TOTAL
Ring Seal ♂					2								2
Ring Seal ♀					2	1							3
Ring Seal Unk					18	6		7		6	11	19	67
TOTAL RING SEAL					22	7		7		6	11	19	72
Bearded ♂					4	1							5
Bearded ♀					7	4							11
Bearded Unk					48	11		2	4	1	7	2	75
TOTAL BEARDED SEAL					59	16		2	4	1	7	2	91
Spotted ♂													
Spotted ♀													
Spotted Unk								24	67	15	17		123
TOTAL SPOTTED SEAL								24	67	15	17		123
Ribbon											2		2
TOTAL HARVEST ALL SPECIES					81	23		33	71	22	37	21	288

Appendix I. Savoonga seal harvest - 1976.

SPECIES	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Yearly TOTAL
Ring Seal ♂	13	5	6			2		1	1	2	3	2	35
Ring Seal ♀	2	3	4				3				7	2	21
Ring Seal Unk	4	0	4	1		4		2	19	1	8	1	44
TOTAL RING SEAL	19	8	14	1		6	3	3	20	3	18	5	100
Bearded ♂					1					1	2		4
Bearded ♀					1						1		2
Bearded Unk				3		12		1					16
TOTAL BEARDED SEAL				3	1	12		1		1	3		22
Spotted ♂							1	1	1	2	3		8
Spotted ♀							1			1			2
Spotted Unk						1	11	2	19	6	2		41
TOTAL SPOTTED SEAL						1	13	3	20	9	5		51
Ribbon													
TOTAL HARVEST ALL SPECIES	19	8	14	4	2	19	16	7	40	13	26	5	173

WALRUS

SURVEY-INVENTORY PROGRESS REPORT

Game Management Units 17, 18, 22, 23 and 26 - Marine waters

Period Covered: January 1 - December 31, 1976

Seasons and Bag Limits

Prior to April 16, 1976 Alaskan Natives were allowed to harvest walruses without limit under provisions of the Marine Mammal Protection Act. On April 16, 1976 management authority for walruses was returned to the State of Alaska. After this date the season was as follows:

Unit 17	No open season	
Units 18, 22, 23 and 26	Apr. 16 - Dec. 31	
	Resident: No closed season	One adult bull*; provided, however, that residents dependent upon and utilizing walrus for food may take up to 5 adult cows or subadults (either sex), and adult bulls without a limit; and provided further, that orphaned calves may be taken for food without contributing to the bag limit.**
	Nonresident: No closed season	One adult bull*

* By permit. Refer to Sec. 81.050(16).

** It is the intent of the State of Alaska to limit the annual take of walruses to less than 2,300 per year. If this number is exceeded, further restrictive regulations will be implemented. If the take exceeds 3,000 walruses, hunting will be closed for the remainder of the regulatory year.

Harvest and Hunting Pressure

The number of walruses taken during 1976 far exceeded any previous annual harvest on record. Based upon data gathered at Gambell, Savoonga, Diomede, Wales, Shishmaref and numerous interviews in other villages, the 1976 harvest was estimated to be 2,990 walruses. Department representatives were stationed at Gambell, Savoonga and Diomede during the spring and were able to gather specific harvest data. Residents of these villages took more than 68 percent of the statewide harvest during this period (Table 1). In addition, hunting effort and approximate loss rates were also determined (Table 2).

seal populations were estimated at 300,000 and 200,000 animals, respectively. The ribbon seal population was estimated at about 100,000 individuals. Seasonal distribution of each species and timing of hunting effort accounted for differences in the species composition of the harvest.

Sex ratios were found to be nearly equal in the ringed seal and spotted seal harvests, but among bearded seals the take was weighted toward females. Hunters did not select with regard to the sex of seals taken. Therefore, cases where the take was weighted toward one sex are thought to result from distribution and behavioral differences between the sexes.

Management Summary and Recommendations

At the present rate of harvest, ringed, bearded and spotted seals are in no immediate danger of overharvest. If additional incentives arise, such as allowing sale of raw skins, a rapid increase in the harvest could result.

If management of seals is returned to the State, a hunting season open to residents and nonresidents will be recommended. Assuming present harvest levels remain constant, a season open throughout the year is suggested. During the 1950's and 1960's annual harvest averaged 15,000 seals per year. Based on present levels of harvest there is no justification for placing restrictions on the harvest. Utilization standards could be improved in some areas where large numbers of seals are taken for skins to be used in the garment manufacturing industry.

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Table 1. 1976 walrus harvest composition by villages.

Area	Number of walrus retrieved Males	Females	Calves	Total	Percent of total kill
Yukon-Kuskokwim	15	6	-	21	1
Gambell	293	273	176	742	25
Savoonga	13	164	79	656	22
Nome-King Island	162	108	10	280	9
Teller	-	-	-	-	-
Brevig Mission	18	5	-	23	1
Wales	65	33	11	109	4
Diomede	519	200	20	739	25
Shishmaref	-	-	-	-	-
Kivalina	1	-	-	1	1
Point Hope	3	1	-	4	1
Point Lay	13	6	-	19	1
Wainwright	203	50	4	257	9
Barrow	115	21	2	138	5
Total	1820	867	302	2989	100
Percent of total kill	61	29	10		

Table 2. Hunting effort (boat and man hours) and loss rates at sample villages,* 1976.

Area	Boat hours	Man hours	Number of walrus retrieved	Boat hour/ walrus	Man hour/ walrus	Estimated loss rate in percent	Estimated total kill
Gambell	1257**	6709**	742	1.7	9.0	45	1349
Savoonga	831**	3152**	656	1.3	4.8	45	1193
Diomede	625	6243	739	.8	8.4	30	1055
Combined Total	2713	16,104	2137	1.3	7.5		3597

* Gambell, Savoonga and Diomede
** Does not represent the total effort expended in these villages.

Table 3. Proposed quotas and bag limits.

GMU 17			
All areas	No open season		
GMU 18			
All areas	No closed season, no bag limit		
GMU 22	No closed season		
Gambell	400 quota	5 females	10 males per hunter
Savoonga	400 quota	5 females	10 males per hunter
Nome-King Island	200 quota	5 females	10 males per hunter
Wales	150 quota	5 females	10 males per hunter
Diomede	450 quota	5 females	10 males per hunter
Shishmaref	90 quota	5 females	10 males per hunter
GMU 23	No closed season		
Point Hope	50 quota	5 females	10 males per hunter
GMU 26	No closed season		
Barrow	125 quota	5 females	10 males per hunter
Wainwright	170 quota	5 females	10 males per hunter