ALASKA DEPARTMENT OF FISH AND GAME
JUNEAU, ALASKA

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ANNUAL REPORT OF SURVEY-INVENTORY ACTIVITIES

PART IV. FURBEARERS, UPLAND GAME, WOLF AND WOLVERINE

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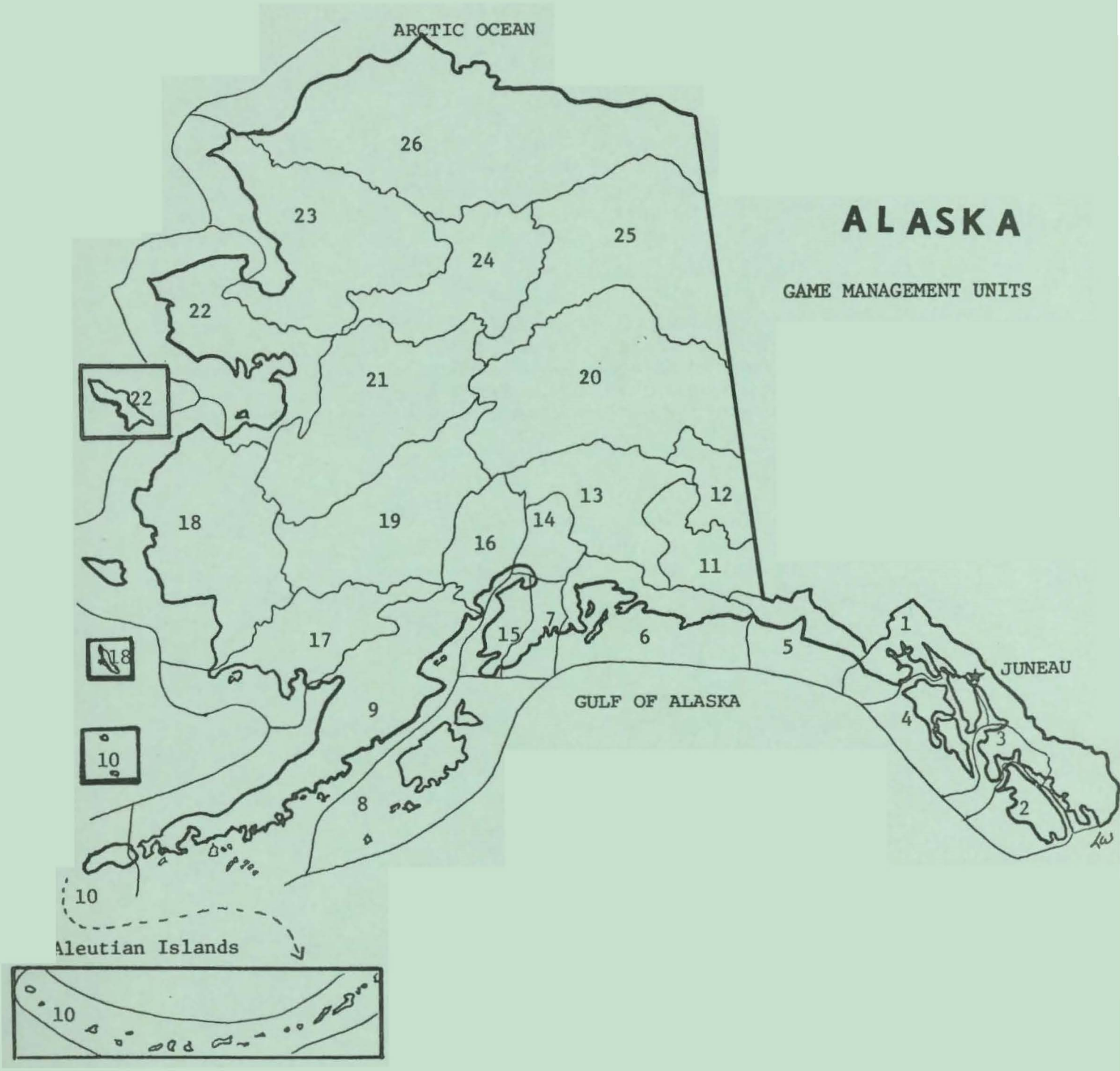
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Furbearers

Furbearer data are presented for those units where significant data were available or significant work was done during 1978-79. Results from the trapper questionnaire are also given reporting on comparative population levels and harvests by trappers of lynx, red foxes, and marten in the Interior.

Beaver

Statewide harvest composition and trends for beavers are presented for the period 1975 through 1979. The statewide harvest of 5,532 beavers was a decline from the previous 2 years. These harvest figures probably reflect economic conditions rather than beaver population levels. Beaver numbers are generally expanding throughout most suitable habitat in the state.

Wolf

The statewide harvest of wolves in 1978-79 was 843, compared to 879 in 1977-78. This relatively low harvest reflects, in large part, the comparatively mild winter and lack of snowfall throughout much of the Interior and does not reflect lower wolf populations. Major harvests, again, came from Unit 20 (134 wolves), Unit 24 (102), Unit 21 (80), and Unit 13 (69).

Wolverines

The statewide harvest for wolverines in 1978-79 was 743, lower than the previous year's take of 855. Again, the reduced harvest probably reflects trapping effort and success as influenced by weather rather than levels of wolverine populations.

Lynx

The statewide harvest of lynx was 2,330. Major Units for lynx harvests were Unit 25 (408), Unit 23 (377), Unit 20 (319) and Unit 24 (300). Lynx populations appear to be low or moderate in most areas of the Interior but may be beginning the recovery portion of their cycle in some units.

Otter

Statewide harvest of land otters in 1978-79 was 2,024. Of particular interest is the Unit 18 harvest of 638 otters.

Upland Game

Grouse populations were at moderate levels over most areas of the state except for the Alaska Peninsula where they were low and Southeastern Alaska where grouse populations were reported high.

Ptarmigan populations were moderate statewide with several exceptions and appear to be increasing statewide.

The snowshoe hare population increased throughout the State except for Kodiak Island and the Alaska Peninsula where there was a slight decrease in the number of hares reported. Populations are still relatively low except in the western portion of the state where they are high.

1978-79 Wolf Harvest

Unit	Number Taken	Unit	Number Taken
1	45	14	4
2	9	15	43
3	16	16	29
4	1	17	20
5	12	18	-
6	3	19	52
7	12	20	134
8	-	21	80
9	17	22	5
11	40	23	48
12	35	24	102
13	69	25	36
		26	31
		TOTAL	843

1978-79 Wolverine Harvest

Unit	Number Taken	Unit	Number Taken
1	34	14	11
2	-	15	4
3	-	16	61
4	-	17	43
5	1	18	9
6	18	19	56
7	22	20	92
8	-	21	49
9	79	22	17
11	15	23	46
12	30	24	41
13	59	25	47
		26	9
		TOTAL	743

1978-79 Lynx Harvest

Unit	Number Taken	Unit	Number Taken
1	-	14	9
2	-	15	31
3	-	16	6
4	-	17	30
5	-	18	75
6	-	19	126
7	2	20	319
8	-	21	75
9	129	22	237
11	51	23	377
12	76	24	300
13	68	25	408
(Unk)	(10)	26	1
		TOTAL	2,330

1978-79 Otter Harvest

Unit	Number Taken	Unit	Number Taken
1	198	14	5
2	183	15	25
3	51	16	26
4	155	17	133
5	-	18	638
6	95	19	44
7	2	20	41
8	190	21	25
9	103	22	7
11	11	23	17
12	10	24	36
13	17	25	8
(Unk)	(4)	26	-
		TOTAL	2,024

CONTENTS

FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT - 1978-79

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

Seasons and Bag Limits

	Trapping	Hunting
Beaver	Dec.1-May 15 No limit	No open hunting season
Marten	Dec.1-Feb 15 No limit	No open hunting season
Mink	Dec.1-Feb 15 No limit	No open hunting season
Land otter	Dec.1-Feb 15 No limit	No open hunting season
Wolf	Nov.1-Apr 30 No limit	No closed season-No limit
Wolverine	Dec.1-Feb 15 No limit	Nov.10-Feb 15 one wolverine

Population Status and Trend

The wolf population in Unit 1A and 2 appears to be holding level or increasing slightly. Sizes of several packs on Revilla Island increased slightly over the past few years.

Marten populations have remained fairly high with the exception of the local area around Ketchikan where populations are low. Trapping pressure was fairly heavy but the road system on Prince of Wales was used less for trapping this year because of the heavy snow that fell from mid-December through January.

Mink populations appear to be high in all areas. Pelt prices have been discouragingly low and less effort is expended trapping mink than other species.

Otter populations are apparently holding somewhat below the level of the past 5 to 10 years. Prices have remained high and trapping pressure has been quite heavy.

No information was available on other species.

Population Composition

No data were available.

Mortality

The wolf harvest for Unit 1A in 1978-79 was 21 compared to 22 taken in 1977-78. Seventeen of the 21 were taken on Revilla Island. The Unit 2 harvest dropped to 10 wolves, down substantially from the 23 taken in

1977-78. Sex ratios for both Units were essentially even, and all wolves taken were brown except for one black female from Revilla Island.

Fifteen of the 21 wolves from Unit 1A were trapped, as were 6 of the 10 taken from Unit 2. Those not trapped were shot.

Eleven wolverines from Unit 1A were sealed during the 1978-79 season. Six were males and all were taken in traps.

Beaver trapping has been relatively unimportant in this area for several years. Prices are low and trapping difficult. During the 1978-79 season, 11 beavers from Unit 2 were sealed, and six were taken in Unit 1A.

The otter harvest of 147 from Unit 1A for 1978-79 was up 43 percent from the 1977-78 take. In Unit 2, the otter harvest dropped substantially from 305 last year to 183 this year, a 40 percent decline. The sex ratio in Unit 2 also dropped from 58 percent males last year to 46 percent males this year while the sex ratio for otter taken in 1A remained about the same - 52 percent males this year compared to 56 percent males in 1977-78.

The number of trappers sealing otter this year was 22 in Unit 1A and 29 in Unit 2.

Management Summary and Recommendations

Data for this report are from sealing records in the Ketchikan office. The statewide tabulation from all sealing records is not complete at this time.

Fur prices were up significantly last year and interest in trapping went up accordingly. Local buyers were competing for furs which hasn't occurred for several years. Prices paid locally were averaging about $35 for marten, $20 to $25 for mink and $100 to $110 for otter. The Seattle Fur Exchange produced prices averaging around $46 for marten with a high of $94 and for mink, the prices averaged about $30 with a high of $60. Otter prices averaged about $85, somewhat lower than what was paid locally, and the high pelt price was $150.

Price predictions remain high for the 1979-80 season and trapping pressure can be expected to remain high. No changes in seasons or bag limits are recommended.

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FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT - 1978-79

Game Management Units 1B and 3 - Southeast Mainland from Cape Fanshaw to Lemessurie Point, and Petersburg-Wrangell area

Seasons and Bag Limits

	Trapping	Hunting
Beaver (except Mitkof Island, Unit 3)	Dec. 1-May 15 No limit	No open hunting season
Unit 3, Mitkof Island	Dec. 1-Feb.15 No limit	
Coyote	Dec. 1-Apr.30 No limit	Sept.1-Apr.30 2 coyotes
Red Fox	Dec. 1-Jan.31 No limit	Sept.1-Feb.15 2 foxes
Lynx	Dec. 1-Feb.15 No limit	Sept.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

Population Status and Trend

Data were insufficient to determine trends.

Population Composition

No data have been collected.

Mortality

The fur export permit and sealing programs for land otters (started on December 10, 1977), lynx (started on December 10, 1977), and beavers are the only records of furbearer harvests. Harvest information available for the 1978-1979 season was obtained from sealing documents and trapper's comments.

Beaver: Available information indicates that trapping pressure in 1978-79 was light (except near human population centers) and about the same as in previous years. Pressure is not expected to change unless beaver pelt prices improve.

The reported beaver catch in Unit 3 was six beavers in 1978-79 (reported catches for Unit 1 did not specify subunits). During the 1977-78 season the reported harvest was 11 beavers in Unit 3 and none in Unit 1B.

Lynx: Sealing data indicate that no lynx were taken in Units 1B or 3 during the 1978-79 season. Lynx populations are not known to exist in Unit 3, however, the final analysis of the 1977-78 harvest showed two trappers had exported eight lynx from this Unit. These lynx were most likely taken in another Unit.

Marten: Available information indicates that trapping effort was probably about the same in 1978-79 as in the previous year. Adverse weather conditions during peak trapping periods may affect overall trapping effort and harvest. Final analysis of the 1977-78 fur export and dealer purchases from trappers showed that 22 trappers took 234 marten in Units 1B and 3.

Mink: Though the reported harvest for 1978-79 was not available for analysis, the catch was expected to be lower than in 1977-78 due to adverse trapping conditions. The final 1977-78 catch report (which was not available for 1977-78 S.I. Progress Report) indicated a catch of 824 mink by 24 trappers in Units 1B and 3.

Land Otter: Fur sealing data indicated that the 1978-79 otter harvest was 76 animals in Units 1B and 3 which was down slightly from the 81 otters taken in 1977-78. Twenty-two trappers reported harvesting otters in 1978-79. Fur prices for otters appeared to be stable and are expected to remain so for the next season.

Management Summary and Recommendations

Current seasons and bag limits appear to adequately meet the needs of most trappers and appear to be within the harvest limits of the various species.

No regulatory changes are recommended at this time.

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FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT REPORT - 1978-79

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

Harvest and Trapping Pressure

Harvest figures are only available for beavers and otters in the 1978-79 regulatory year. No beavers were reported taken in Unit 4. A hand compilation of the otter sealing forms shows that 154 otters were taken in Unit 4 in the 1978-79 season by 26 hunters/trappers. These statistics are almost identical to those for 1977-78 when 24 hunters/trappers took 155 otters. Sex ratio of the 1978-79 harvest was 1.2 males per female (compared to a 1:1 sex ratio in 1977-78).

Chronologically, 0.6 percent were taken in November, 39.3 percent in December, 27.1 percent in January, and 2.5 percent in February. No specific date of kill was listed for the remaining 30.3 percent. By area, 9.1 percent of the harvest was taken on Admiralty, 24.0 percent from Baranof, 55.8 percent from Chichagof, 7.1 percent from other areas in the Unit, and for 3.9 percent, specific location could not be pinpointed. Sixty-seven percent of the otters were shot, the remaining 33 percent were trapped.

Harvest figures for otters cannot be used at this time to reflect population trends or impacts of harvest pressures, as harvests are solely dependent on trapping pressure. Casual observations suggest otters are evenly distributed throughout the Unit, while harvest efforts are highly concentrated and the success rate among trappers is variable. By illustration, exactly 50 percent of the harvest was taken by three trappers, each of whom concentrated his efforts in a specific area. Two of these operated on Chichagof Island, which accounts for the high percentage of the harvest coming from that island. Overall, the number of otters taken per trapper ranged from 1 to 31 with an average of about 6.

Composition and Productivity

No data were available.

Management Summary and Recommendation

There are no data or indications to suggest that trapping seasons and harvests are not commensurate with the furbearer resource. Extremely high fur prices in 1978-79 will undoubtedly increase trapping pressure. This may cause some trapper interactions and competition in localized, accessible areas where that pressure may already control marten numbers.

As recommended earlier, a reliable and quickly applied system for measuring harvests of marten and mink needs to be developed and implemented. As has been noted also, the November 10 opening date for

eastern Admiralty Island serves no purpose and is considerably earlier than pelts are prime. Only one otter was reported taken during that early season; and, of course, marten and mink harvests for that time and location are unknown.

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FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT - 1978-79

Game Management Unit 5 - Yakutat

Population Status and Trend

Coyote - Coyote populations unit-wide are moderate to low but some of the larger islands, such as Kantak, appear to support higher densities. The beach fringes, particularly those with dunes such as the Italio, Akwe, and Alsek River areas, also seem to support higher densities of coyotes.

Red Fox - Red fox populations are currently low unit-wide. They do occur in small numbers along the beach fringes in both Subunit 5A and 5B, but their numbers are not expected to increase because of their inability to compete with coyotes.

Lynx - Although lynx populations are still low on the Yakutat Forelands they seem to be increasing. Hares the lynx's prime food source, are increasing steadily and although they are still not abundant, it's not uncommon to observe them along the road. With this obvious increase in preferred food availability, lynx populations are also expected to increase. The status of lynx populations on the Malaspina Forelands is unknown at this time.

Marten - Moderate populations of marten occur in suitable habitat throughout the Yakutat Forelands. The status of marten populations in Unit 5B is unknown at this time.

Mink - Mink are present throughout Unit 5 in low to moderate numbers.

Land Otters - Land otters are numerous in Unit 5, occurring in both the fresh water and marine environments. They are often seen in the saltwater bays between the islands and their sign is common on many of the larger islands that have freshwater streams and pools.

Squirrels - Red squirrels are common throughout Unit 5 but do not appear to be abundant. No flying squirrels or ground squirrels are known to inhabit Unit 5.

Weasel - Ermine are abundant in the Yakutat area and probably unit-wide.

Wolverine - Wolverines are present throughout Unit 5 in moderate to high densities.

Population Composition

No furbearer surveys were completed during this report period but casual observance of animals and sign indicates good production and survival.

Mortality

Trapping pressure was light on the Yakutat Forelands during this report period. Several areas were trapped that have received no pressure in recent years, such as the upper Situk River drainage and the lower Italio River and Akwe River, primarily along the beach fringes.

No accurate information was available on the take of those species not requiring sealing. No otters were brought in for sealing, but "four or five" were trapped along the Akwe River, the hides of which were destroyed before they could be sealed when a wolverine reportedly broke into the cache where they were stored.

One wolverine pelt was brought in for sealing and the carcass from a second wolverine was observed at the community landfill but the hide was never brought in.

One fresh unsealed lynx hide was also observed at the landfill in early fall. It was from a young animal that had been either hit by a vehicle or shot early in the season, prior to it's hide being of any value. The hair was slipping so it was not salvaged nor sealed.

Management Summary and Recommendations

Overall, most furbearer populations appear to be healthy and stable, with beaver and lynx populations on the increase. Trapping pressure, particularly in areas away from the community of Yakutat, is still light but appears to be increasing slightly due to the upward trend of fur prices. At this time no changes in seasons or bag limits are recommended.

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FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT - 1976-1979

Game Management Unit 8 - Kodiak and Adjacent Islands

Seasons and Bag Limits

Species	Season	Bag Limits
Beaver	Nov. 10-May 15	No limit
Red Fox	No Closed Season	No limit
Marten	Dec. 1-Feb. 28	No limit
Weasel	Nov. 10-Jan. 31	No limit
Muskrat	Nov. 10-June 10	No limit
Land Otter	Nov. 10-March 31	No limit

Harvest and Hunting Pressure

This report summarizes furbearer harvest data from the 1976-77 trapping season through the 1978-79 season. Relatively little has been previously reported on Unit 8 furbearers. The U.S. Fish and Wildlife Service requires annual reports from trappers who are issued permits to trap on the Kodiak National Wildlife Refuge. Widespread noncompliance with this requirement makes these data of limited value. The usefulness of data from the State's fur export permit report is also limited as some trappers do not fill out the reports and some of the fur is used locally. Sealing data are available for beaver, a species for which little effort is expended in Unit 8. Red foxes and land otters are the most sought after furbearers in the Kodiak Island area.

1976-1977 Season

A harvest questionnaire was sent to 48 people who had previously trapped in Unit 8. Results of the questionnaire are presented in Appendix I. Nineteen of the 22 people returning their questionnaires reported trapping during the 1976-77 season. Red foxes and land otters comprised 63 percent of the 702 animals reported harvested. One trapper took 45 land otters from the Raspberry Straits area. Seventeen trappers reported taking one or more foxes and 13 trappers took one or more otters. Ninety-six beavers were reported taken; this compares with 131 beavers taken by 29 trappers which were sealed from Unit 8.

At least five individuals known to have trapped did not return their questionnaires. Actual harvests were probably 30 percent greater than reported on questionnaires.

1977-78 Season

Conforming to the Endangered Species Scientific Authority mandate, sealing of land otter hides was initiated on December 10, 1977, one month after the otter trapping season opened in Unit 8. Two hundred and

eighty-nine land otters were sealed during the first season (Appendix II). Males comprised 56 percent of the harvest. Thirty-five trappers brought in otters for sealing. The average take was 8.4 otters/trapper. Seventy-three percent (215) of the otters were taken by 12 trappers. Fifty-four percent of the trappers took five or fewer otters apiece. The highest take by a trapper was 32 otters.

Distribution of the harvest is shown in Appendix III. Some otters were harvested from most of the major drainages in Unit 8. The Kizhuyak Bay, Raspberry Straits and Spruce Island areas received the heaviest trapping pressure. These areas are accessible from Ouzinkie and Port Lions villages as well as Kodiak.

Eighteen trappers sealed a total of 143 beavers during the 1977-78 season, only 12 more than during the previous season.

No data were compiled on harvest of other furbearers. From personal contacts with Unit 8 trappers, trapping effort for red foxes appeared to have increased from the previous year's level. Most trappers reported receiving higher prices from out of state fur buyers than during the previous season.

1978-1979 Season

One hundred and ninety-two otters were sealed, including 96 males (50%), 94 females (48%) and two animals (1%) of unknown sex (Appendix II). Thirty-four trappers sealed otters and averaged 5.6 otters/trapper. The highest take by a single trapper was 26 otters. Eleven trappers (32%) took 132 otters (69%). Twenty-three trappers (68%) took five or fewer otters apiece.

Distribution of the harvest was comparable to that recorded during the previous season (Appendix III).

The decline in otter harvest from the 1977-78 season was partly a result of severe storms during December and January which limited travel by small boat. A switch by some trappers to fox trapping further explains the decline in otter harvest. Several trappers reported that they received higher prices for otters in 1979 than in previous years.

Prices paid for Unit 8 red foxes were the highest in recent times. One trapper averaged $150 apiece for one lot of 25 cross foxes from a Canadian fur buyer. The largest known catch by one trapper was 70 red foxes over a 2-month period. Total harvest of red foxes in Unit 8 probably exceeded 400 animals during the 1978-79 season.

A total of 102 beavers taken by 21 trappers were sealed in Unit 8.

Composition and Productivity

No data were collected.

Management Summary and Conclusions

Trappers in Unit 8 concentrate primarily on red foxes and land otters. Rising prices for red foxes provide increased incentives for local trappers. Data from 2 consecutive years of otter sealing indicate that the number of active trappers is fairly stable. The fact that about 1/3 of the otters were taken by 2/3 of the trappers indicates that most trapping is for recreation.

The land otter sealing program has resulted in improved communication with local trappers besides documenting the otter harvest. The otter sealing program was generally well received by Kodiak trappers, some of whom had previously advocated closer monitoring of the otter harvest.

Trapping effort for land otters has been generally well distributed. Relatively higher harvests have occurred in the Raspberry Island and Raspberry Strait areas of Afognak Island. One trapper who took 45 otters there in 1977 reported his catch dropped more than half in 1978 with comparable trapping effort. Thirty-three otters were taken in the area in 1979 and 64 percent were females. This was the first year when harvest of females significantly exceeded that of males in that area. This area is easily accessible and may require restrictions in season length should harvests favoring females continue next season.

Recommendations

No changes in seasons or bag limits are recommended.

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APPENDIX I. Fur animal harvest statistics 1976-77 from Trapper questionnaires, Unit 8.

	No.	%
Questionnaires sent	48	100
Questionnaires returned	22	46
Did trap	19	86
Did not trap	3	14
Trapped previously in Unit 8	16	73
Total days spent trapping (15 replies)	630	-
Mean days spent trapping	42	

Harvest

Species	No. trappers who reported taking	No. animals taken	%
Red fox	17	229*	33
Land otter	13	212*	30
Beaver	10	96	14
Marten	0	0	-
Weasel	4	37	5
Muskrat	4	127	18
Raccoon	1	1	<1
	Total	702	

* Includes 35 animal estimate from one reporting trapper.

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APPENDIX II. Land otter harvest, Game Management Unit 8, (from sealing certificates).

Season	No. males	% males	No. females	% females	No. unknown sex	% unknown sex	Total no.	No. trappers	No. otter/ trapper
1977-78	163	56	122	42	4	1	289	35	8.4
1978-79	96	51	94	48	2	1	192	34	5.7

APPENDIX III. Distribution of land otter harvest, Game Management Unit 8, 1977-78 and 1978-79 seasons (from sealing certificates).

	Otter harvest 1977-78		Otter harvest 1978-79	
	No.	%	No.	%
Shuyak Island	18	6	14	7
Afognak and Raspberry Islands	62	21	47	24
Kodiak Island Group	209	72	131	68
Total Unit 8 harvest	289		192	

PREPARED BY: Roger B. Smith, Game Biologist III

FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT - 1978-79

Game Management Unit 12 - Upper Tanana and White Rivers

Harvest and Hunting Pressure

Lynx - Sealing documents indicate that 61 lynx (31 males, 23 females, and 7 of unknown sex) were taken in Unit 12 during this reporting period. This represents a 15 percent decrease from the reported harvest of 72 lynx during the 1977-78 season.

The Tanana drainage accounted for 31 percent (19 lynx) of the reported harvest, followed by the Nabesna and Tetlin drainages each with 21 percent (13 lynx), the Chisana with 13 percent (8 lynx), and the Tok with 11 percent (7 lynx). No location was noted for one lynx.

Thirty-four percent of the harvest occurred during November, 16 percent during both January and February, and 13 percent during both December and March. The harvest date was unknown for three lynx. Most lynx (47) were trapped, six were snared, and one was shot.

Pelt length (tip of nose to base of tail) was determined at the time of sealing. It is assumed that kitten pelts are 36 inches or less and adults are greater than 36 inches. Using this assumption, kittens comprised 28 percent of the harvest (17 lynx) and adults 62 percent (38 lynx). Measurements were unavailable for six lynx.

It is likely that lynx in Unit 12 were at, or near, their cyclic low during this reporting period. Snowshoe hare populations remained low in the Nabesna area, but increased noticeably in the Tanana drainage. Lynx numbers are expected to increase in areas where hares are abundant.

Land Otter - Eight land otters (5 males and 3 females) were presented for sealing in 1978-79 compared to a known harvest of five in 1977-78. Four otters were taken from Beaver Creek at the junction of the Chisana and Nabesna Rivers, three from the Tanana drainage, and one from the Nabesna drainage. Three otters were taken in November, one in December, and four in January. Two Northway residents accounted for all but one of the land otters harvested during the 1978-79 season.

Wolverine - According to sealing documents, 20 wolverines (13 males and 7 females) were taken in Unit 12 during the 1978-79 season. This represents a decline of 29 percent from the reported 1977-78 catch (28 wolverines) and marked the second consecutive year of declining harvests. Harvest was spread evenly throughout the period November through March. The Nabesna and Tanana drainages accounted for harvests of six and five

wolverines, respectively. The Tok, Tetlin, and Chisana drainages each accounted for three wolverines. The greatest decline in harvest occurred in the Tok drainage where 11 wolverines were taken during the 1977-78 season.

Management Summary and Recommendations

Relatively high prices were paid for hides of terrestrial furbearers during the 1977-78 season. Aquatic species such as otters, beavers, and muskrats were not abundant in Unit 12 during this period. Consequently, most of the trapping was directed toward terrestrial species.

It is difficult to draw conclusions regarding population trends of lynx and otters since the sealing requirement on these species has only been in effect since December 1977. It is known, however, that lynx are still at the low in their cycle and that otters are not numerous anywhere in Unit 12. It is possible that wolverine numbers are declining somewhat, but the sample size is too small to assess population trends with certainty.

Trapping pressure is so widespread and light in Unit 12 that it probably has no significant effect on furbearer populations except in local situations.

No changes in seasons or bag limits are recommended.

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FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT - 1978-79

Game Management Units 12, 20, 21, 24, and 25 - Interior Alaska

Trapper Questionnaire

The trapper questionnaire was sent to 642 trappers in Units 12, 20, 21, 24, and 25 during spring 1979. About 30 percent of the questionnaires were returned initially and a reminder letter increased the return rate to 56 percent (363 questionnaires). Of these, 115 people replied that they did not trap and provided no other information. Two hundred and forty-seven questionnaires provided data regarding harvest and population trends (Tables 1 and 2).

Questionnaire Results - Harvest and Population Levels

Lynx - The average number of lynx harvested in the Fairbanks area was 3.9 per trapper, an increase from 2.8 per trapper recorded for the 1977-78 season. Trappers in the Fort Yukon, Circle, Delta, Tok and Brooks Range areas reported increases in the number of lynx taken per trapper. Fort Yukon area trappers reported the highest average take with 22.3 per trapper compared to 11.1 per trapper in 1977-78. Trappers in the Eagle, Beaver, and Livengood areas reported some decrease in the take of lynx. For more information regarding lynx harvests, see Unit Furbearer or Lynx, Land Otter, and Wolverine Survey and Inventory Reports.

Lynx populations were considered to be at low levels throughout the Interior during the 1978-79 season, but over 30 percent of the trappers felt that populations had increased in their areas. Most areas reported no change or slight increases in lynx abundance, but Ruby, Huslia, and Hughes area trappers reported definite increases in lynx numbers.

Red Fox - Interior trappers reported an average harvest of 6.3 foxes per trapper in 1978-79, an increase over the average take of 4.8 foxes per trapper during the 1977-78 season.

Fox populations were still moderately low throughout the Interior, but trappers in some areas felt there had been an increase in fox populations compared to 1977-78.

Marten - The average marten harvest in the Interior was 50.2 per trapper, an increase over the 43.6 marten per trapper reported for 1977-78. Trappers in Circle, Central, Beaver, Stevens Village, Venetie, and Tok reported increases in the average number of marten caught per trapper, although reports from some areas indicated slight declines in marten abundance.

Table 1. Lynx, fox, and marten harvests as indicated by the Trapper Questionnaire, 1978-79.

Area	Number Trappers*	Number Lynx Taken	Number Lynx/ Trapper*	Number Fox Taken	Number Fox/ Trapper*	Number Marten Taken	Number Marten/ Trapper*
Brooks Range	9	29	9.7	26	6.5	320	53.3
Beaver, Beaver Creek	4	12	6.0	5	2.5	403	100.8
Circle, Central	6	11	3.7	3	3.0	201	40.2
Delta	15	25	12.5	107	10.7	92	13.1
Eagle, Chicken, Boundary	12	6	1.5	1	1.0	251	27.9
Fairbanks	42	66	3.9	143	4.8	581	20.8
Fort Yukon	24	245	22.3	65	4.6	1233	72.5
Galena	15	11	3.7	27	3.0	816	58.3
Healy, Mt. McKinley, Nenana, Clear	21	19	4.8	69	5.8	220	22.0
Hughes	4	38	12.7	15	5.0	770	192.5
Huslia	6	13	4.3	51	10.2	229	38.2
Livengood	3	0	0.0	2	2.0	56	18.7
Manley, Minto	15	15	5.0	10	2.0	535	41.2
McGrath	19	8	1.6	14	2.3	1341	78.9
Ruby	4	29	9.7	0	0.0	199	66.3
Tanana	12	2	2.0	9	2.3	465	51.7
Tok, Northway	22	29	3.6	99	8.3	649	59.0
Venetie, Stevens Village, Rampart	8	28	5.6	6	1.5	217	43.4
Interior Totals	241	586	7.3	652	6.3	8578	50.2

* 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.

Table 2. Interior Alaska furbearer population abundance and trend indices by species based on Trapper Questionnaire.

SPECIES/ Area	Abundance in 1978-79 Season[a] Low	Mod	High	Index[b]	Compared with 1977-78[a] Fewer	Same	More	Index[b]
LYNX								
Brooks Range	2	1	3	5.2	0	4	6	7.4
Beaver, Beaver Creek	4	0	0	1.0	2	1	0	3.3
Circle, Central	2	4	0	3.7	1	3	2	5.7
Delta	14	2	0	1.5	4	8	1	4.1
Eagle,Chicken,Boundary	10	1	0	1.4	2	3	5	6.2
Fairbanks	33	2	0	1.2	8	12	15	5.6
Fort Yukon	14	6	2	2.8	4	10	7	5.6
Galena	9	5	1	2.9	3	6	5	5.6
Healy, Mt. McKinley, Nenana, Clear	12	6	0	2.2	4	9	6	5.4
Hughes	0	2	1	6.3	0	0	3	9.0
Huslia	1	4	1	5.0	0	1	5	8.3
Livengood	3	0	0	1.0	1	2	0	3.7
Manley, Minto	12	0	0	1.0	4	7	1	4.0
McGrath	5	4	0	2.8	2	7	3	5.3
Ruby	0	1	1	7.0	0	0	1	9.0
Tanana	6	0	0	1.0	0	2	3	7.4
Tok, Northway	16	10	0	1.4	7	5	6	4.8
Venetie, Stevens Village	2	1	0	3.0	0	1	0	5.0
Interior Totals	145	39	8	2.1	42	81	56	5.3

[a] Based on the number of answers to each question; not all cooperators answered all questions.

[b] Index values range from 1.0 through 9.0 and were derived by giving an arbitrary value of 9.0, 5.0, and 1.0 to each "High" (More), "Moderate" (Same), and "Low" (Fewer) answer, respectively. The total value of the answers to each question for each species was divided by the number of answers to that question. An index of 9.0 indicates High (More), 5.0 indicates Moderate (Same), and 1.0 indicates Low (Fewer).

Table 2. Interior Alaska furbearer population abundance and trend indices by species based on Trapper Questionnaire (cont.).

SPECIES/ Area	Abundance in 1978-79 Season[a] Low	Mod	High	Index[b]	Compared with 1977-78[a] Fewer	Same	More	Index[b]
RED FOX								
Brooks Range	3	3	0	3.0	1	4	2	5.6
Beaver, Beaver Creek	3	0	0	1.0	2	1	0	2.3
Circle, Central	3	2	0	2.6	0	3	2	6.6
Delta	2	12	2	5.0	1	7	5	6.2
Eagle, Chicken, Boundary	3	6	1	4.2	0	8	1	5.4
Fairbanks	17	20	2	3.5	5	14	17	5.7
Fort Yukon	8	7	3	3.9	3	9	9	6.1
Galena	2	9	4	5.5	1	9	4	5.9
Healy, Mt. McKinley, Nenana, Clear	6	10	2	4.1	5	9	5	5.0
Hughes	1	2	0	3.7	0	2	1	6.3
Huslia	0	5	1	5.7	0	5	1	5.7
Livengood	2	1	0	1.0	0	2	1	6.3
Manley, Minto	7	5	0	2.7	2	6	4	5.7
McGrath	6	2	2	3.4	4	5	4	5.0
Ruby	2	1	0	2.3	0	1	1	7.0
Tanana	2	6	0	4.0	1	4	1	5.0
Tok, Northway	9	6	4	3.9	3	8	7	5.9
Venetie, Stevens Village	2	2	0	3.0	1	1	0	3.0
Interior Totals	77	96	21	3.8	29	96	64	5.7

[a] Based on the number of answers to each question; not all cooperators answered all questions.

[b] Index values range from 1.0 through 9.0 and were derived by giving an arbitrary value of 9.0, 5.0, and 1.0 to each "High" (More), "Moderate" (Same), and "Low" (Fewer) answer, respectively. The total value of the answers to each question for each species was divided by the number of answers to that question. An index of 9.0 indicates High (More), 5.0 indicates Moderate (Same), and 1.0 indicates Low (Fewer).

Table 2. Interior Alaska furbearer population abundance and trend indices by species based on Trapper Questionnaire (cont.).

SPECIES/ Area	Abundance in 1978-79 Season[a] Low	Mod	High	Index[b]	Compared with 1977-78[a] Fewer	Same	More	Index[b]
MARTEN								
Brooks Range	0	2	5	7.9	0	6	2	6.0
Beaver, Beaver Creek	0	1	3	8.0	0	2	1	6.3
Circle, Central	1	3	2	5.7	0	4	2	6.3
Delta	5	9	1	3.9	2	9	2	5.0
Eagle, Chicken, Boundary	0	3	9	8.0	0	6	5	6.8
Fairbanks	14	18	3	3.9	8	17	6	4.7
Fort Yukon	0	12	10	6.8	2	12	8	6.1
Galena	0	5	9	5.8	0	4	1	7.9
Healy, Mt. McKinley, Nenana, Clear	6	6	5	5.1	2	6	7	6.3
Hughes	1	1	2	6.0	0	3	1	6.0
Huslia	0	4	2	6.3	0	4	2	6.3
Livengood	1	1	1	5.0	2	1	0	2.3
Manley, Minto	2	9	2	5.0	2	6	5	5.9
McGrath	3	8	5	5.5	7	7	5	4.6
Ruby	0	0	4	9.0	0	2	1	6.3
Tanana	1	6	1	5.0	0	2	5	7.9
Tok, Northway	7	2	8	5.1	3	6	8	5.3
Venetie, Stevens Village, Rampart	0	1	3	8.0	0	2	0	5.0
Interior Totals	40	90	73	5.7	28	96	71	5.9

[a] Based on the number of answers to each question; not all cooperators answered all questions.

[b] Index values range from 1.0 through 9.0 and were derived by giving an arbitrary value of 9.0, 5.0, and 1.0 to each "High" (More), "Moderate" (Same), and "Low" (Fewer) answer, respectively. The total value of the answers to each question for each species was divided by the number of answers to that question. An index of 9.0 indicates High (More), 5.0 indicates Moderate (Same), and 1.0 indicates Low (Fewer).

Table 2. Interior Alaska furbearer population abundance and trend indices by species based on Trapper Questionnaire (cont.).

SPECIES/ Area	Abundance in 1978-79 Season[a] Low	Mod	High	Index[b]	Compared with 1977-78[a] Fewer	Same	More	Index[b]
MUSKRAT								
Brooks Range	1	3	1	5.0	0	3	1	6.0
Beaver, Beaver Creek	3	0	0	1.0	2	0	0	1.0
Circle, Central	2	0	1	3.7	1	1	1	5.0
Delta	3	5	4	5.3	1	6	3	5.8
Eagle, Chicken, Boundary	2	2	0	3.0	0	4	0	5.0
Fairbanks	7	7	1	3.4	2	9	3	4.4
Fort Yukon	16	4	0	1.8	13	5	1	2.5
Galena	4	6	0	3.4	1	10	0	4.6
Healy, Mt. McKinley, Nenana, Clear	5	4	2	3.9	0	8	2	5.8
Hughes	2	1	0	2.3	1	2	0	3.3
Huslia	3	3	0	3.0	1	5	0	4.3
Livengood	-	-	-	-	-	-	-	-
Manley, Minto	9	1	0	1.4	3	7	0	3.8
McGrath	5	1	0	1.7	1	4	1	5.0
Ruby	0	1	0	5.0	0	0	1	9.0
Tanana	3	2	0	2.6	0	4	0	5.0
Tok, Northway	1	10	4	5.8	4	5	5	5.3
Venetie, Stevens Village	3	0	0	1.0	2	0	0	1.0
Interior Totals	67	49	13	4.7	31	71	18	4.6

[a] Based on the number of answers to each question; not all cooperators answered all questions.

[b] Index values range from 1.0 through 9.0 and were derived by giving an arbitrary value of 9.0, 5.0, and 1.0 to each "High" (More), "Moderate" (Same), and "Low" (Fewer) answer, respectively. The total value of the answers to each question for each species was divided by the number of answers to that question. An index of 9.0 indicates High (More), 5.0 indicates Moderate (Same), and 1.0 indicates Low (Fewer).

Table 2. Interior Alaska furbearer population abundance and trend indices by species based on Trapper Questionnaire (cont.).

SPECIES/ Area	Abundance in 1978-79 Season[a] Low	Mod	High	Index[b]	Compared with 1977-78[a] Fewer	Same	More	Index[b]
MINK								
Brooks Range	2	2	0	3.0	1	4	0	4.2
Beaver, Beaver Creek	0	1	2	7.7	1	0	1	5.0
Circle, Central	2	3	0	3.4	0	4	1	5.8
Delta	8	3	1	2.7	5	4	0	2.8
Eagle, Chicken, Boundary	4	1	0	1.8	1	4	0	4.2
Fairbanks	8	16	3	4.3	3	13	8	5.8
Fort Yukon	4	11	8	5.7	1	9	11	6.9
Galena	6	6	0	3.0	1	11	0	4.7
Healy, Mt. McKinley, Nenana, Clear	7	9	0	3.3	2	11	2	5.0
Hughes	3	1	0	2.0	1	3	0	4.0
Huslia	4	2	0	2.3	4	2	0	2.3
Livengood	-	-	-	-	-	-	-	-
Manley, Minto	7	3	0	2.2	1	7	2	5.4
McGrath	7	5	0	2.7	3	8	1	4.3
Ruby	0	3	0	5.0	0	2	0	5.0
Tanana	2	4	0	3.7	0	5	0	5.0
Tok, Northway	3	6	2	4.6	0	8	3	6.1
Venetie, Stevens Village	3	1	0	2.0	2	0	0	1.0
Interior Totals	63	76	16	3.8	25	92	28	5.1

[a] Based on the number of answers to each question; not all cooperators answered all questions.

[b] Index values range from 1.0 through 9.0 and were derived by giving an arbitrary value of 9.0, 5.0, and 1.0 to each "High" (More), "Moderate" (Same), and "Low" (Fewer) answer, respectively. The total value of the answers to each question for each species was divided by the number of answers to that question. An index of 9.0 indicates High (More), 5.0 indicates Moderate (Same), and 1.0 indicates Low (Fewer).

Table 2. Interior Alaska furbearer population abundance and trend indices by species based on Trapper Questionnaire (cont.).

SPECIES/ Area	Abundance in 1978-79 Season[a]				Compared with 1977-78[a]			
	Low	Mod	High	Index[b]	Fewer	Same	More	Index[b]
BEAVER								
Brooks Range	1	3	1	5.0	0	2	2	7.0
Beaver, Beaver Creek	2	1	0	2.3	1	1	0	3.0
Circle, Central	0	3	1	6.0	0	3	1	6.0
Delta	5	7	0	3.3	2	5	2	5.0
Eagle, Chicken, Boundary	4	1	0	3.8	2	5	0	3.9
Fairbanks	4	15	8	5.6	3	16	6	5.5
Fort Yukon	4	10	6	5.4	2	12	3	5.2
Galena	1	9	2	5.3	1	10	1	5.0
Healy, Mt. McKinley, Nenana, Clear	4	6	4	5.0	3	7	5	5.5
Hughes	0	3	1	6.0	0	3	1	6.0
Huslia	2	4	0	3.7	3	3	0	3.0
Livengood	-	-	-	-	-	-	-	-
Manley, Minto	6	5	1	3.3	4	8	0	3.7
McGrath	0	3	9	8.0	1	8	6	6.3
Ruby	0	3	1	4.0	1	2	0	3.7
Tanana	5	1	1	2.7	3	3	0	3.0
Tok, Northway	4	6	0	3.6	1	8	0	4.6
Venetie, Stevens Village	3	0	0	2.0	2	0	0	1.0
Interior Totals	45	78	35	4.7	29	93	26	4.9

[a] Based on the number of answers to each question; not all cooperators answered all questions.

[b] Index values range from 1.0 through 9.0 and were derived by giving an arbitrary value of 9.0, 5.0, and 1.0 to each "High" (More), "Moderate" (Same), and "Low" (Fewer) answer, respectively. The total value of the answers to each question for each species was divided by the number of answers to that question. An index of 9.0 indicates High (More), 5.0 indicates Moderate (Same), and 1.0 indicates Low (Fewer).

Table 2. Interior Alaska furbearer population abundance and trend indices by species based on Trapper Questionnaire (cont.).

SPECIES/ Area	Abundance in 1978-79 Season[a] Low	Mod	High	Index[b]	Compared with 1977-78[a] Fewer	Same	More	Index[b]
OTTER								
Brooks Range	4	1	0	1.8	1	4	0	4.2
Beaver, Beaver Creek	1	0	0	1.0	1	0	0	1.0
Circle, Central	2	0	0	1.0	0	2	0	5.0
Delta	8	3	0	2.1	2	6	0	4.0
Eagle, Chicken, Boundary	5	0	0	1.0	0	5	0	5.0
Fairbanks	18	7	0	2.1	3	13	6	5.5
Fort Yukon	8	10	0	3.2	3	10	2	4.7
Galena	2	10	0	4.3	1	12	0	4.7
Healy, Mt. McKinley, Nenana, Clear	5	8	0	3.5	1	11	1	5.0
Hughes	2	2	0	3.0	0	4	0	5.0
Huslia	1	5	0	4.3	1	5	0	4.3
Livengood	1	0	0	1.0	0	1	0	5.0
Manley, Minto	8	0	2	2.6	1	9	0	4.6
McGrath	2	5	3	5.4	1	11	1	5.0
Ruby	1	2	0	3.3	0	2	1	6.3
Tanana	2	3	1	4.3	1	2	1	5.0
Tok, Northway	3	4	3	5.0	0	7	2	5.9
Venetie, Stevens Village	3	0	0	1.0	2	0	0	1.0
Interior Totals	74	58	9	3.2	18	100	14	4.9

[a] Based on the number of answers to each question; not all cooperators answered all questions.

[b] Index values range from 1.0 through 9.0 and were derived by giving an arbitrary value of 9.0, 5.0, and 1.0 to each "High" (More), "Moderate" (Same), and "Low" (Fewer) answer, respectively. The total value of the answers to each question for each species was divided by the number of answers to that question. An index of 9.0 indicates High (More), 5.0 indicates Moderate (Same), and 1.0 indicates Low (Fewer).

Table 2. Interior Alaska furbearer population abundance and trend indices by species based on Trapper Questionnaire (cont.).

SPECIES/ Area	Abundance in 1978-79 Season[a]				Compared with 1977-78[a]			
	Low	Mod	High	Index[b]	Fewer	Same	More	Index[b]
WOLVERINE								
Brooks Range	3	4	0	3.3	2	5	0	3.9
Beaver, Beaver Creek	2	1	0	2.3	2	1	0	2.3
Circle, Central	4	1	0	1.8	1	4	0	4.2
Delta	9	2	2	2.8	2	6	2	5.0
Eagle, Chicken, Boundary	1	7	1	5.0	0	5	3	6.5
Fairbanks	20	5	1	2.1	8	16	0	3.7
Fort Yukon	8	12	1	3.7	3	12	1	4.5
Galena	7	3	1	6.2	0	9	2	5.7
Healy, Mt. McKinley, Nenana, Clear	7	12	0	3.5	3	10	3	5.0
Hughes	1	3	0	4.0	1	3	0	4.0
Huslia	3	3	0	3.0	2	4	0	3.7
Livengood	1	0	0	1.0	0	1	1	7.0
Manley, Minto	10	2	0	1.7	5	6	1	3.7
McGrath	3	5	1	4.1	3	7	1	4.3
Ruby	0	3	0	5.0	0	2	1	6.3
Tanana	2	4	0	3.7	1	2	1	5.0
Tok, Northway	9	6	2	4.8	2	12	2	5.0
Venetie, Stevens Village	1	2	0	3.7	1	1	0	3.0
Interior Totals	90	72	9	3.1	35	103	17	4.5

[a] Based on the number of answers to each question; not all cooperators answered all questions.

[b] Index values range from 1.0 through 9.0 and were derived by giving an arbitrary value of 9.0, 5.0, and 1.0 to each "High" (More), "Moderate" (Same), and "Low" (Fewer) answer, respectively. The total value of the answers to each question for each species was divided by the number of answers to that question. An index of 9.0 indicates High (More), 5.0 indicates Moderate (Same), and 1.0 indicates Low (Fewer).

Table 2. Interior Alaska furbearer population abundance and trend indices by species based on Trapper Questionnaire (cont.).

SPECIES/ Area	Abundance in 1978-79 Season[a] Low	Mod	High	Index[b]	Compared with 1977-78[a] Fewer	Same	More	Index[b]
COYOTE								
Brooks Range	-	-	-	-	-	-	-	-
Beaver, Beaver Creek	-	-	-	-	-	-	-	-
Circle, Central	1	0	0	1.0	0	1	0	5.0
Delta	6	9	1	3.8	1	13	0	4.7
Eagle, Chicken, Boundary	3	1	0	2.0	0	2	2	7.0
Fairbanks	18	3	0	1.6	2	14	2	5.0
Fort Yukon	5	1	0	1.7	2	4	0	3.7
Galena, Nulato, Koyukuk	9	2	0	2.5	1	7	3	5.7
Healy, Mt. McKinley, Nenana, Clear	10	4	1	2.6	1	11	2	5.3
Hughes	3	0	0	1.0	0	3	0	5.0
Huslia	2	0	0	1.0	0	2	0	5.0
Livengood	2	0	0	1.0	0	1	0	5.0
Manley, Minto	8	0	0	1.0	1	7	0	4.5
McGrath	5	0	0	1.0	0	5	0	5.0
Ruby	-	-	-	-	-	-	-	-
Tanana	5	0	0	1.0	1	3	0	4.0
Tok, Northway	12	2	0	1.6	4	9	0	3.8
Venetie, Stevens Village, Rampart	3	0	0	1.0	1	1	0	3.0
Interior Totals	88	22	2	1.9	14	79	9	4.8

[a] Based on the number of answers to each question; not all cooperators answered all questions.

[b] Index values range from 1.0 through 9.0 and were derived by giving an arbitrary value of 9.0, 5.0, and 1.0 to each "High" (More), "Moderate" (Same), and "Low" (Fewer) answer, respectively. The total value of the answers to each question for each species was divided by the number of answers to that question. An index of 9.0 indicates High (More), 5.0 indicates Moderate (Same), and 1.0 indicates Low (Fewer).

Table 2. Interior Alaska furbearer population abundance and trend indices by species based on Trapper Questionnaire (cont.).

SPECIES/ Area	Abundance in 1978-79 Season[a] Low	Mod	High	Index[b]	Compared with 1977-78[a] Fewer	Same	More	Index[b]
WOLF								
Brooks Range	5	1	1	2.7	5	0	1	2.3
Beaver, Beaver Creek	2	1	0	2.3	1	2	0	3.3
Circle, Central	1	1	3	6.6	0	2	3	7.4
Delta	7	6	2	3.7	5	4	3	4.3
Eagle, Chicken, Boundary	4	4	1	3.7	3	3	2	4.5
Fairbanks	11	13	6	4.4	7	11	8	5.2
Fort Yukon	9	11	1	3.5	6	11	3	4.4
Galena	4	6	3	4.5	2	9	1	4.7
Healy, Mt. McKinley, Nenana, Clear	11	4	2	2.9	7	9	2	3.9
Hughes	1	2	1	5.0	1	2	1	5.0
Huslia	0	5	1	5.7	0	5	1	5.7
Livengood	1	2	3	3.7	0	3	0	5.0
Manley, Minto	10	2	0	1.7	4	8	0	3.7
McGrath	0	3	9	8.0	1	8	6	6.3
Ruby	0	3	0	5.0	0	3	0	5.0
Tanana	3	1	2	3.7	0	1	4	8.2
Tok, Northway	10	7	0	2.6	8	10	0	3.2
Venetie, Stevens Village	3	0	0	1.0	2	0	0	1.0
Interior Totals	82	72	28	3.8	50	86	34	4.6

[a] Based on the number of answers to each question; not all cooperators answered all questions.

[b] Index values range from 1.0 through 9.0 and were derived by giving an arbitrary value of 9.0, 5.0, and 1.0 to each "High" (More), "Moderate" (Same), and "Low" (Fewer) answer, respectively. The total value of the answers to each question for each species was divided by the number of answers to that question. An index of 9.0 indicates High (More), 5.0 indicates Moderate (Same), and 1.0 indicates Low (Fewer).

Table 2. Interior Alaska furbearer population abundance and trend indices by species based on Trapper Questionnaire (cont.).

SPECIES/ Area	Abundance in 1978-79 Season[a] Low	Mod	High	Index[b]	Compared with 1977-78[a] Fewer	Same	More	Index[b]
SQUIRREL								
Brooks Range	0	3	4	7.3	0	4	2	6.3
Beaver, Beaver Creek	0	0	2	9.0	0	1	1	7.0
Circle, Central	1	1	1	5.0	0	2	1	6.3
Delta	0	2	5	7.9	1	8	1	5.0
Eagle, Chicken, Boundary	0	3	6	7.7	0	5	2	3.7
Fairbanks	2	20	6	5.6	3	18	5	4.6
Fort Yukon	3	12	5	5.4	1	16	2	5.2
Galena	0	5	5	7.0	0	8	1	5.4
Healy, Mt. McKinley, Nenana, Clear	1	6	8	6.9	2	7	6	6.1
Hughes	1	0	2	6.3	1	0	2	6.3
Huslia	0	2	2	7.0	0	4	0	5.0
Livengood	0	1	1	7.0	0	1	1	7.0
Manley, Minto	0	6	3	6.3	0	7	2	5.9
McGrath	0	3	6	7.7	2	4	5	6.1
Ruby	0	1	2	7.7	1	0	2	6.3
Tanana	0	3	3	7.0	0	3	2	6.6
Tok, Northway	2	5	4	5.7	3	6	2	4.5
Venetie, Stevens Village	0	2	1	3.7	0	2	0	5.0
Interior Totals	15	99	65	6.1	15	123	35	5.5

[a] Based on the number of answers to each question; not all cooperators answered all questions.

[b] Index values range from 1.0 through 9.0 and were derived by giving an arbitrary value of 9.0, 5.0, and 1.0 to each "High" (More), "Moderate" (Same), and "Low" (Fewer) answer, respectively. The total value of the answers to each question for each species was divided by the number of answers to that question. An index of 9.0 indicates High (More), 5.0 indicates Moderate (Same), and 1.0 indicates Low (Fewer).

Table 2. Interior Alaska furbearer population abundance and trend indices by species based on Trapper Questionnaire (cont.).

SPECIES/ Area	Abundance in 1978-79 Season[a]				Compared with 1977-78[a]			
	Low	Mod	High	Index[b]	Fewer	Same	More	Index[b]
HARE								
Brooks Range	1	3	4	6.5	0	1	6	8.4
Beaver, Beaver Creek	1	0	3	7.0	0	0	3	5.0
Circle, Central	1	3	2	5.7	0	1	5	8.3
Delta	2	9	4	5.5	1	2	10	7.8
Eagle, Chicken, Boundary	1	5	3	5.9	0	0	8	9.0
Fairbanks	11	22	4	3.8	1	3	29	8.4
Fort Yukon	3	9	10	6.3	1	3	16	8.0
Galena	0	5	8	7.5	0	1	11	8.7
Healy, Mt. McKinley, Nenana, Clear	8	11	0	3.3	1	4	14	7.7
Hughes	0	2	2	7.0	0	1	3	8.0
Huslia	0	4	2	6.3	0	3	3	5.5
Livengood	1	2	0	3.7	0	0	3	9.0
Manley, Minto	8	4	0	2.3	0	2	10	8.3
McGrath	6	2	3	3.9	3	3	7	6.2
Ruby	1	0	2	6.3	0	1	1	7.0
Tanana	5	2	0	2.1	1	1	4	7.0
Tok, Northway	7	8	2	3.9	1	1	13	8.2
Venetie, Stevens Village	2	0	1	3.7	1	1	0	3.0
Interior Totals	58	90	49	4.8	10	28	146	8.0

[a] Based on the number of answers to each question; not all cooperators answered all questions.

[b] Index values range from 1.0 through 9.0 and were derived by giving an arbitrary value of 9.0, 5.0, and 1.0 to each "High" (More), "Moderate" (Same), and "Low" (Fewer) answer, respectively. The total value of the answers to each question for each species was divided by the number of answers to that question. An index of 9.0 indicates High (More), 5.0 indicates Moderate (Same), and 1.0 indicates Low (Fewer).

Overall, trappers reported that marten populations were moderate to high in most areas and that populations during 1978-79 were at the same or higher levels than during the 1977-78 season.

Muskrat - Muskrat populations were generally reported low or moderately low in Yukon Flats villages (Fort Yukon, Beaver, etc.) and trappers there felt that numbers of muskrats had declined in 1978-79 compared to the previous year. Elsewhere muskrat numbers were considered moderate to moderately high with little change, or a slight increase from the previous year.

Mink - Mink populations were moderately low to moderate over most of the Interior with numbers reported to be about the same as the 1976-77 season. Trappers in the Fort Yukon, Central, Beaver, Fairbanks, and Tok areas felt that mink populations were higher in 1978-79 than in 1977-78, while trappers in the Huslia, Hughes, and McGrath areas reported that mink populations had declined. Other areas reported little or no change in mink abundance compared to the previous season.

Beaver - Beaver populations were reported to be at moderate levels with little change from the previous season throughout most of the Interior. McGrath and Fairbanks area trappers reported high numbers of beavers, with an increase in population compared to 1977-78, while most other areas reported little or no change in populations.

The beaver sealing program provides much better information on beaver populations and on the effects of harvesting than the Trapper Questionnaire (see Beaver Survey and Inventory Report).

Land Otter - Otter abundance was thought to be moderately low throughout the Interior during 1978-79 with little or no change from 1977-78.

The otter sealing program provides additional information on otter harvests in the Interior (see Unit Furbearer or Lynx, Land Otter, and Wolverine Survey and Inventory Reports).

Wolverine - Trappers responding to the questionnaire indicated that wolverine populations were at moderate to low levels throughout the Interior with populations remaining stable or decreasing slightly in most areas.

Wolverine sealing records provide some harvest information although many wolverine hides are never sealed (see Unit Furbearer or Lynx, Land Otter, and Wolverine Survey and Inventory Reports).

Coyote - Few trappers reported catching coyote during the 1978-79 season and less than half of those who responded to the questionnaires had comments regarding coyote abundance. Populations were reported to be low and little changed from 1977-78.

Wolf - Wolf populations were reported to be moderate to low in most areas of the Interior. Trappers at Central, Tanana, Huslia, and McGrath

reported increases in numbers of wolves, while in several other areas wolf populations were reported to have decreased since 1977-78.

Wolf sealing provides additional information on wolf harvests in the Interior (see Wolf Survey and Inventory Report).

Squirrel - Squirrel numbers were moderate to high in most of the Interior and reports from most areas indicated that squirrel numbers had shown little change or a slight increase since 1977-78.

Snowshoe Hare - Hare populations were moderately low to moderately high in the Interior with most areas reporting definite increases in hare abundance since 1977-78. The general trend seems to be increasing hare populations with moderate to high populations in the north and east and low to moderate populations in the south and west.

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FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT - 1978-79

Game Management Unit 18 - Yukon-Kuskokwim Delta

Seasons and Bag Limits

Species	Hunting		Trapping	
Beaver	No open season		Feb. 1-Mar. 31	15/season
Arctic Fox	Sept. 1-Apr. 30	2 foxes	Nov. 10-Apr. 15	No limit
Red Fox	Sept. 1-Feb. 15	2 foxes	Nov. 10-Apr. 15	No limit
Lynx	Sept. 1-Mar. 31	2 lynx	Nov. 10-Mar. 31	No limit
Marten	No open hunting season		Oct. 20-Feb. 28	No limit
Mink	No open hunting season		Nov. 10-Jan. 31	No limit
Land Otter	No open hunting season		Nov. 10-Mar. 31	No limit
Muskrat	No open hunting season		Nov. 10-June 10	No limit
Red Squirrels	No closed season	No limit	No closed season	No limit
Ground Squirrels	No open season		No closed season	No limit

Harvest and Hunting Pressure

Beaver: Beavers continue to be very abundant in the Yukon and Kuskokwim Delta. Elderly trappers report good numbers in areas where they have not seen beavers before. Their caches are now found in marginal coastal habitat as well as open tundra areas. This expansion is evidenced by the 100 beavers reported taken from tundra drainages, however, the reported harvest appears to be more a function of the effort by trappers than an indication of the population status. The 454 beavers reported taken from the Johnson River area represent beavers colonizing marginal areas. Residents of the villages on Nelson Island continue to complain that beavers are blocking their blackfish streams. These villagers are not accustomed to beaver trapping and have begun removing the animals by placing gillnets around beaver lodges.

In 1978-79, 141 trappers took 1,223 beavers compared with a catch of 1,956 beavers by 178 trappers in 1977-78. This reflects a steady decrease in the number of trappers as well as the total catch in the last 3 years. Low prices and difficulty in trapping beaver have resulted in steady decreases in trapping pressure for the last couple of years.

The following is the breakdown of the beaver harvest reported by major drainages in Game Management Unit 18.

Drainage	Beaver	Trappers	Trapper
Johnson River	454	47	9.7
Unknown (Unit 18)	114	14	8.1
Devils Elbow, Yukon River	102	12	8.5
Kanektok River	84	11	7.6
Lower Yukon River (Pilot Station)	83	11	7.6
Tulusak River	76	7	10.9
Andreafsky River	74	12	6.2
Kuskokwim River (Akiak-Kalskag)	66	10	6.6
Kisaralik River	65	6	10.8
Eek River	36	3	12.0
Kashunuk River	29	3	9.7
Reindeer River	23	2	11.5
Gweek River	7	1	7.0
Chuelinguk River	5	1	5.0
Goodnews River	5	1	5.0
TOTAL	1,233	141	8.7

Kits made up 18 percent of the season's catch, 37 percent were super blankets (65" and up), and the remaining 45 percent were pelts between 54 and 64 inches.

Arctic Fox: Arctic fox numbers were depressed on Nunivak Island this year. Reports from local trappers indicated that this was also the case on the mainland. This decrease is probably due to the large harvest taken in spring 1978. Decreased fox numbers probably reflect heavy harvests of spring 1978 and differences in sea ice distribution from past years.

Red Fox: Red fox populations were in good shape in most parts of Unit 18. The pelts brought high prices with some local fur buyers paying as much as $160. The most common color phase found in this area is the cherry-red which commanded the highest price this last season. Red and Arctic foxes are commonly taken with the aid of snow machines throughout Unit 18.

Mink: Most mink trapping on the Yukon-Kuskokwim Delta is done in early November before the ice is very thick. Because of a late freeze-up, hindering travel throughout the delta, mink trappers harvested very few animals. The mink populations, however, are doing well in this area and in fact appear to be expanding along the lower Kuskokwim and Yukon River drainages.

Muskrat: Muskrats continue to be found in good numbers over most of Unit 18. No figures are available on the actual harvest, but reports from local trappers indicated that muskrats are available right after break-up in large numbers. The majority of the muskrats were taken in May and early June.

Land Otter: Six-hundred and eleven land otters (282 males, 174 females, and 155 of unknown sex) were sealed from Unit 18 this past season. Two-hundred and seven were taken from the Yukon River, 152 from the Kuskokwim drainages, and 252 from the coastal area. Fifty-seven land otters were taken in November, 377 in December, 85 in January, 51 in February, 40 in March, and 1 was reported harvested in April. Eighteen percent of the otters taken were shot, 45 percent were trapped, 19 percent snared, and 18 percent were harvested by unknown means.

Local trappers seemed more cooperative with the sealing requirement this season and that may have had some influence on the increased number of otters sealed this year. During the 1977-78 season, 490 otters were sealed compared to the 1978-79 report of 611. Prices continued high for Yukon-Kuskokwim land otters during most of the season.

Lynx: Seventy-four lynx were taken in Unit 18 during the 1978-79 season; 30 males, 29 females, and 15 of unknown sex. Most were harvested in March (33), 19 were taken in February, 12 in December, 7 in January, and 2 in November. Fifty lynx were trapped, 13 were snared, 10 were harvested by unknown means, and 1 animal was shot from the ground.

The majority of the lynx were taken on the Kuskokwim drainages, primarily from Akiak up river. Sixty-one percent were harvested from the Kuskokwim, and 29 percent were from the Yukon River drainage. The major part of the Yukon harvest came from the Andreafsky River.

Snowshoe and tundra hare populations are increasing at this time, and the lynx population appears to be following this same cycle. Fourteen more animals were reported harvested during the 1978-79 season than in 1977-78. No reliable harvest data are available prior to the 1977-78 season, as that was the first year of the State's sealing requirement.

Lynx pelts commanded good prices, bringing around $250-$300 from local fur buyers for pelts in prime condition. This encouraged additional trapping pressure, especially during March when travel conditions were excellent throughout most of the Unit.

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FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT - 1978-79

Game Management Unit 19 - McGrath

Harvest and Hunting Pressure

Wolverine - The total reported wolverine take from Unit 19 during the 1978-79 season was 37. The harvest consisted of 15 females, 21 males, and 1 wolverine of undetermined sex. The 1978-79 catch was lower than that reported for several previous seasons, but approximated the average annual take during the previous 10-year period. Beaver trappers took a moderate number of wolverines. The decline in the wolverine take may reflect the fact that relatively few beaver trappers were active in Unit 19 during the 1978-79 season.

Land Otter - Most of the otters sealed in 1978-79 were taken in the upper Kuskokwim drainage. Few otters were sealed from the Sleetmute-Aniak-Kalskag areas which normally account for most of the Unit 19 take. Only 30 otters were reported to have been taken in Unit 19. Lack of interest in beaver trapping and relatively low pelt prices for otters probably contributed to the lower catch. Field observations suggested that otter populations were moderate to high throughout Unit 19.

Lynx - Lynx again increased in abundance in Subunits 19A, 19C, and 19D. This increase was reflected in the sealing of 106 lynx. One trapper in 19A caught 56 lynx, an impressive number for that area. Most of the remaining harvest occurred in subalpine areas of Unit 19 or along the upper Kuskokwim tributaries. Increases in lynx numbers and harvests are expected to continue over the next few years.

Marten - Marten were abundant throughout most of Unit 19 and dominated the fur catch. During the early part of the season pelt values increased slightly over the 1977-78 highs, but dropped lower as late season furs began to appear on the market. The largest catch reported exceeded 300 with most trappers handling from 30 to 100 pelts. The estimated marten catch for 1978-79 was about 4,000 pelts.

Mink - Mink appeared to be increasing in Unit 19 but this elicited very little interest among trappers. This lack of trapping pressure probably resulted from low pelt values and preoccupation with marten trapping. Late in the season, mink pelt values rose considerably, but this did not result in any special effort to catch mink. The estimated mink catch for Unit 19 was 200 to 300.

Red Fox - Red foxes continued to be scarce in Unit 19, despite ever-increasing pelt values. The estimated catch of red and cross foxes was 300 to 350 animals.

Muskrat - Muskrat numbers were low throughout the upper Kuskokwim drainage and they received little trapping effort. However, trappers in Subunit 19A reported slight increases in muskrat populations along some of the major Kuskokwim tributaries. This increase, and high pelt values, encouraged some extra effort to harvest muskrats during the spring months. The resulting catch was probably equal to the estimated 1,000 pelts taken the previous year.

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FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT - 1978-79

Game Management Unit 20 - Fairbanks, Central Tanana Valley

Harvest and Hunting Pressure

Lynx - A total of 271 lynx from Unit 20 was sealed during the 1978-79 season, according to sealing records. The reported harvest by Subunit for Unit 20 was as follows:

	Males	Females	Unknown	Total
Subunit 20A	25	16	9	50
Subunit 20B	14	24	8	46
Subunit 20C	58	42	38	138
Subunit 20D	5	5	10	20
Subunit 20E	8	6	3	17
Unit 20 Total	110	93	68	271

In Subunit 20A, 12 percent of the harvest (6 lynx) were taken in the Wood River drainage, 36 percent (18 lynx) in the Dry Creek area, 24 percent (12 lynx) in the Delta-Little Delta area, and 18 percent (9 lynx) along the Tanana River from North Pole to Birch Lake.

In Subunit 20B, 30 percent (14 lynx) were taken on the Tanana River west of Fairbanks, 30 percent (14 lynx) in the Goldstream-Murphy Dome area, 11 percent (5 lynx) from the Chatanika drainage, 9 percent (4 lynx) from the Chena drainage, and 15 percent (7 lynx) from the Minto Flats and Elliott Highway areas. The remainder of the take was scattered throughout Subunit 20B.

The area breakdown of the Subunit 20C harvest was as follows: 29 percent (40 lynx) in the Birch Creek area and along the Yukon River near Circle; 14 percent (19 lynx) in the Beaver Creek area; 36 percent (50 lynx) in the Nenana, Healy, McKinley, and Kantishna areas; and 15 percent (20 lynx) in the Delta, Tok, and Taylor Highway areas. The remainder of the harvest was scattered throughout the Subunit.

Otter - According to sealing records, a total of 29 land otters was harvested in Unit 20 during the 1978-79 season. The reported harvest by Subunit for Unit 20 was as follows:

	Males	Females	Unknown	Total
Subunit 20A	4	2	0	6
Subunit 20B	0	2	1	3
Subunit 20C	12	6	0	18
Subunit 20D	2	0	0	2
Subunit 20E	0	0	0	0
Unit 20 Total	18	10	1	29

Most otters (62%) were taken during the period November-January, although a few were taken in February and March.

Wolverine - Sealing documents indicated that a total of 83 wolverines was sealed from Unit 20 during the 1978-79 season. The reported wolverine harvest by Subunit for Unit 20 was as follows:

	Males	Females	Unknown	Total
Subunit 20A	11	6	0	17
Subunit 20B	0	0	0	0
Subunit 20C	23	17	3	43
Subunit 20D	8	1	0	9
Subunit 20E	10	1	3	14
Unit 20 Total	52	25	6	83

The wolverine harvest occurred throughout the season with 15 wolverines (18%) being taken in November, 20 (24%) in December, 21 (25%) in January, 14 (17%) in February, and 13 (16%) in March.

Management Summary and Recommendations

Because of prevailing high fur prices, interest in trapping for lynx and wolverines remained high in Unit 20, although some trappers put little effort into trapping because of low lynx populations in their local areas.

The harvest of lynx declined during the 1978-79 season with a total of 271 lynx sealed compared with 389 lynx sealed in 1977-78. Lynx populations were estimated to be at a low point in much of the Unit during the 1978-79 season, but increases in kits and in the snowshoe hare populations were noted in many areas.

The decline in the otter harvest from 53 sealed in 1977-78 to 27 sealed in 1978-79 is probably more an indication of lower interest in trapping otters than a decrease in otter populations. Otter populations have remained fairly stable in Unit 20 for several years, but prices for otter pelts have remained low compared to prices for long-haired furs. Some otters taken may never have been sealed as otter pelts are often used locally rather than sold.

The wolverine harvest also showed a decline from 115 sealed in 1977-78 to 83 sealed in 1978-79. The reasons for the decline in harvest are unknown at this time.

Furbearer populations fluctuate in response to a number of natural factors, including availability of food and habitat. Except for local situations, trapping is believed to have little influence on overall furbearer numbers.

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FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT - 1978-79

Game Management Unit 21 - Middle Yukon Drainages

Harvest and Hunting Pressure

Trapping conditions were poor during November and December due to heavy snowfall, high winds, unseasonably warm temperatures, and overflow. Many trappers were unable to get started until mid-November due to thin ice and heavy overflow. Conditions improved during January and February when trappers made good catches of martens. Trapping pressure increased directly in response to high fur prices and indirectly because during summer 1978 little income was derived from fire fighting.

Lynx - According to sealing certificates, 71 lynx (42 females, 14 males, and 15 of undetermined sex) were harvested in Unit 21, a small increase from 1977-78. Although the harvest increased slightly, lynx populations increased substantially between 1977-78 and 1978-79. One trapper from Ruby caught 24 lynx from a small area west of Ruby. Tanana trappers reported seeing more lynx sign in that area compared to 1977-78 and some lynx were taken from the Innoko drainage. Apparently lynx populations were increasing throughout Unit 21, and the highest numbers occurred in the northwestern portion of the Unit.

Land Otter - The Unit 21 otter harvest as determined from sealing certificates was 21 (11 males, 9 females, and 1 of undetermined sex), less than one-third the previous season's take. Since most otters are taken incidental to beaver trapping, the drop in the otter harvest probably resulted from cold February weather which delayed beaver trapping 4 weeks.

Wolverine - According to sealing certificates, 35 wolverines (19 females, 17 males, and 1 of undetermined sex) were harvested in Unit 21. The total catch was probably higher since wolverines used locally for garment trim were not sealed. Based on tracks and conversations with trappers, wolverines were more numerous than during the preceding year.

Marten - Economically, marten was the most important species during 1978-79. The marten population was moderate in most areas and high along the south slope of the Kaiyuh Hills and along the Yukon floodplain south of Kaltag. Catches in excess of 100 animals were common.

Beaver - Beaver populations were very high in many areas in Unit 21, especially the populations along the rivers and streams. Cold weather in February delayed most beaver trapping activity until March. Prices for beaver pelts increased considerably and the reported harvest may not be indicative of the actual take since many stored pelts were sold this year.

Incidences of trapping beavers out of season were frequently observed. While some of the offenders took beavers for food, others were motivated by profit.

Management Summary and Recommendations

All fur regulations except beaver are adequate to meet the needs of local trappers. The beaver season and bag limits should be increased in all areas.

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SURVEY-INVENTORY PROGRESS REPORT - 1978-79

Game Management Unit 22 - Seward Peninsula

Seasons and Bag Limits

	Hunting	Trapping
Beaver	No open season	Feb 1-Apr 15 50 per season
Arctic Fox	Sept 1-Apr 30 Two foxes	Nov 10-Apr 15 No limit
Red Fox	Sept 1-Feb 15 Two foxes	Nov 10-Apr 15 No limit
Mink & Weasel	No open season	Nov 1-Jan 31 No limit
Muskrat	No open season	Nov 1-June 10 No limit
Land Otter	No open season	Nov 1-Apr 15 No limit

Harvest, Hunting Pressure, and Abundance

For the 3rd year in a row, record high prices for long-haired fur spurred trapping interest throughout much of Unit 22. Based on sealing records, conversations with knowledgeable trappers, and from the number of inquiries received in the office, it appeared there was at least a 20 to 30 percent increase in the number of part-time trappers. Even though the amount of fur taken by newcomers was relatively low, their combined catch contributed significantly to the overall harvest. As expected, the highest catches were taken by experienced trappers who spent considerable time in their areas. During the first two months of the season trappers were hampered by a continuous string of storms approaching blizzard conditions. The storms slacked off in mid-January, and with the improved snow conditions there was a corresponding improvement in trapping success.

Beaver

Reports from knowledgeable village residents and aerial observations indicated that beavers have continued to increase and expand their range from the eastern portion of Unit 22. Beaver now regularly occur as far west as the Kwiniuk River near Elim, and a few animals were observed in the Fish River drainage. 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 beavers. The only area where beavers have been taken in any substantial number is the southeastern portion of the Unit. Beaver trapping pressure was light throughout Unit 22, and the harvest probably did not exceed 200 animals.

Arctic Fox

The Arctic fox population appeared to have stabilized after its downward decline during the 1977-78 season. A few white foxes were caught outside their "normal range" near the villages of Elim and Koyuk

indicating that the population was moderately high. Average to above average catches were reported on St. Lawrence Island, and average to below average catches occurred at Wales and Shishmaref (the only two villages on the mainland in Unit 22 that regularly took white foxes). According to fur dealer records, the minimum reported harvest on St. Lawrence island was 520 white foxes, and the minimum catch on the mainland was 58 white foxes. A few trappers took as many as 30 foxes, but the average was probably less than 10. The harvest for the entire unit was estimated at between 750 and 1200 white foxes.

Red Fox

For the second year in a row the red fox population appeared to exhibit a rather dramatic change in numbers. During the 1976-77 season they were extremely abundant, but the following year it appeared a crash had occurred. This past winter fox were again very numerous, and apparently widespread throughout the Seward Peninsula. This condition was attributed to an abundant food supply (ptarmigan and hare populations were high, and beach carrion was common) which resulted in a very high survival of pups. The minimum reported harvest based on fur dealer and fur export reports, was 508 red foxes. The actual harvest was estimated between 750 and 1000 red and cross foxes. Although not confirmed, two trappers working together were reported to have taken 75-80 for the season; the average catch per trapper was probably between 5 and 10 foxes.

Land Otter

Trapping effort for otters was usually incidental to the taking of other furbearers. The total reported harvest from sealing documents and the furbearer export report was 9 otters; 3 males, 2 females, and 4 animals of unknown sex. It is unlikely that all the otters taken during the season were sealed. The total unit harvest was estimated to be between 10 and 20 otters.

From tracks noted during the winter, it appeared otters were distributed throughout every major drainage in Unit 22. The greatest densitites occurred in the central and eastern portion of Unit 22, principally in the drainages of the Noxapaga, Fish, and Koyuk Rivers. However, it was not uncommon to see abundant sign in smaller drainages and feeder creeks, especially if there was a source of thermal ground water that prevented the formation of a solid ice cover. The otter harvest was very low in relation to the total population.

Mink and Weasel

The harvest of these animals continued to be low. In favorable habitats densities appear to be average or above average, but few trappers took advantage of this situation.

Management Summary and Recommendations

For the last 2 years lynx hides have been selling for over $400.00 and red fox has regularly brought prices in excess of $150.00 per skin. With long-haired fur bringing such high prices, a number of rural residents have returned to trapping to supplement their annual income. Still, considering the potential income that could be made from trapping, the increase was not as high as expected. Except in the immediate vicinity of a local community, it did not appear that there was excessive competition among trappers, nor were any of the furbearer populations significantly impacted. It was estimated that harvest of red foxes, white foxes, lynx, otters, and beavers was worth at least $200,000.00 to area residents. It appeared that the harvest of all furbearer species (except lynx) could have doubled or tripled with no adverse effect. Lynx were probably harvested near the optimum level in most areas. Considering the relatively low harvest for the Unit as a whole, liberal seasons and bag limits should be retained.

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FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT - 1978-79

Game Management Unit 23 - Kotzebue Sound

Population Status and Trend

No information was available.

Population Composition

No information was available.

Mortality

No incidences of rabies were recorded from this Unit during this period. Richard Haskins, Sanitation Officer for the U.S. Public Health Service in Kotzebue, tested the following animals during the period: July 10, grey wolf - negative - Selawik; October 31, Arctic fox - negative - Point Hope; December 12, red fox - negative - Noatak; December 20, dog - negative - Deering.

Beaver

Beavers have commonly 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, most of the beavers taken in Unit 23 are not sealed. No harvest information was available.

Arctic and Red Fox

Alaska Commercial Company of Kotzebue bought 1,496 red foxes and 131 Arctic foxes during this regulatory period. No other harvest information was available.

Lynx

Three hundred and eighty-five lynx were taken in Unit 23. The sex of the harvest was 205 males (53%) and 162 females (42%) and 18 unknown (5%). The chronology of harvest was as follows: November-12 (3%), December-48 (12%), January-81 (21%), February-117 (31%) and March-127 (33%).

The preferred method of take was by trapping (341 animals - 88%), followed by snaring (3 - 1%), ground shooting (2 - 1%) and 39 were unclassified (10%).

The distribution of the known harvest by drainage was as follows: Noatak - 117, Kobuk - 147, Selawik - 120, Buckland - 1.

Marten, Mink and Weasel

No information was available.

Muskrat

The Alaska Commercial Company of Kotzebue bought 10,965 muskrat pelts during this regulatory period. No other harvest information was available.

Land Otter

Fifteen land otters were taken in Unit 23. The sex of the harvest was 8 males (53%), 2 females (13%) and 5 unknown (35%). The chronology of harvest was as follows: December-12 (80%), January-2 (13%), and March-1. Two animals were taken by ground shooting and the remaining 13 by trapping.

The distribution of the known harvest by drainage was as follows: Noatak - 5, Kobuk - 1, Selawik - 8, Buckland -1.

Management Summary and Recommendations

The take of furbearers increased over last year. The sealing of otter and lynx helped in obtaining a more precise harvest estimate. The hare population has been high in this Unit for the 3 years I have been here. The average price given trappers by the Alaska Commercial Company for lynx was $350.00 for small hides, $375.00 medium hides, $400.00 large hides and $495.00 for extra large hides. White foxes were going for $35.00 per hide, red foxes averaged $160.00 per hide and muskrats $3.50 per hide.

The estimated total wholesale value for hides obtained in this Unit was about one-half million dollars.

The statistics on furbearers other than otters and lynx are wanting because of the lack of a suitable reporting system. Considering the economic value of this resource, more Department funds should be directed toward speeding retrieval of harvest information and gathering more biological information.

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FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT - 1978-79

Game Management Unit 24 - Koyukuk Drainage

Harvest and Hunting Pressure

Heavy snowfall early in the season and unseasonably warm temperatures resulted in poor trapping conditions during November and December. Conditions improved considerably in January and February, and some of the highest fur catches were made during this period. Trapping pressure increased from the previous year, probably in response to high fur prices. The establishment of the Gates of the Arctic National Monument did not influence harvest or trapping pressure this year but will have significant impact next season.

Lynx

Lynx were moderately abundant throughout Unit 24, and a noticeable population increase occurred in the southern half of the Unit. According to sealing certificates, 261 lynx were harvested (96 males, 92 females, and 73 of undetermined sex) compared to a take of 99 lynx the previous year. The increased catch resulted primarily from an increase in the lynx population and secondarily from an increase in trapping pressure. A general awareness of the pelt value combined with a greater availability of animals resulted in increased trapping effort by local residents. The largest catches occurred in the Brooks Range drainages in the northern portion of Unit 24. Catches of one to four lynx typified the catch of the trappers in the southern portion of the Unit.

Land Otter

The Unit 24 otter harvest, according to sealing certificates, was 31 (18 males, 12 females, and 1 of undetermined sex) compared to 43 the previous year. Eighty-seven percent of the harvest occurred along the Koyukuk drainage below Hughes. The decrease in the harvest did not indicate a decrease in the population since one individual who normally accounts for a substantial amount of the take expended very little trapping effort during the 1978-79 season.

Wolverine

Wolverines were reported to be moderately abundant, and according to sealing certificates 42 (20 males, 20 females, and 2 of undetermined sex) were harvested. The total catch was probably higher since some wolverines used locally for garment trim were not sealed.

Marten

As in previous years martens were the mainstay of the Unit 24 trapping economy. Marten populations were moderate in most areas, but catches were somewhat lower than during the past year because of the unfavorable trapping conditions early in the season.

Management Summary and Conclusions

The present fur regulations are adequate to meet the needs of local trappers. Members of the Koyukuk Advisory Committee expressed interest in establishing a program for registered traplines in Unit 24. This concept is appealing to some rural trappers as a mechanism to keep other potential trappers out of the area. In Unit 24 trapping pressure and fur harvest are below what the area can annually sustain. Consequently, a trapline registration program is unnecessary for furbearer management at this time.

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FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT - 1978-79

Game Management Unit 25 - Ft. Yukon Area

Harvest and Hunting Pressure

Lynx - Sealing documents indicated that 348 lynx from Unit 25 were sealed during the 1978-79 season. In the majority of cases, sex was listed as unknown as it is difficult to determine the sex of lynx from pelts.

One hundred and fifty-nine lynx were taken in the Black River drainage. This was over 45 percent of the total catch of lynx in Unit 25. The drainages of the Porcupine River and its tributaries (including the Black River) and of the Yukon River upstream from Fort Yukon produced at least two-thirds of the lynx harvest in Unit 25.

The harvest of lynx occurred throughout the season with 15 percent taken during November, 35 percent in December, 15 percent in January, 10 percent in February, and 25 percent in March.

Land Otter - Sealing forms showed that only eight otters from Unit 25 were presented for sealing during the 1978-79 season. It is possible that additional otters were taken but not sealed.

Two otters were taken on the Sheenjek River, one from the Porcupine River, and one from the Black River.

Wolverine - Trappers in Unit 25 sealed a total of 42 wolverines. The recorded harvest consisted of 23 males, 12 females, and 7 of undetermined sex.

The wolverine harvest occurred throughout the season with 29 percent taken in November, 14 percent in December, 14 percent in January, 24 percent in February, 17 percent in March, and 2 percent in April.

Management Summary and Recommendations

The number of lynx sealed in 1978-79 (348) was almost the same as 1977-78 (364), but during 1978-79 a greater proportion came from the Black River drainage. Reports from trappers suggested that the lynx population increased in the eastern part of Unit 25 and lynx were quite abundant in several drainages. It is expected that lynx numbers will increase noticeably in the western portions of Unit 25 during the next year or two.

The traditionally low otter harvest in Unit 25 seems to be indicative of the low interest in trapping this species rather than a scarcity of

otters. The southern half of Unit 25 offers good aquatic habitat and should support fair otter populations. It is possible that many otter pelts taken during 1978-79 were used locally for garments and were not sealed.

The Unit 25 wolverine harvest of 42 animals during 1978-79 was little more than half the number (79 wolverines) harvested in 1977-78. The take of wolverines from Unit 25 had been fairly consistent for several years prior to 1978-79, and no explanation for the decrease is yet available. Preliminary Statewide wolverine harvest figures for 1978-79 indicated that wolverine harvests also decreased significantly in other areas of the State. Factors such as weather or availability of prey may have affected the wolverine catch.

With the current high prices for long-haired furs, interest in trapping for lynx and wolverines will continue.

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FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT - 1978-79

Game Management Unit 26 - Arctic Slope

Seasons and Bag Limits

Species	Trapping Season	Bag Limit
Arctic fox (within 50 miles of coast)	Dec. 1-Apr. 15	No limit
Arctic fox (rest of unit)	Nov. 1-Apr. 15	No limit
Red fox, (within 12 miles of coast)	Dec. 1-Apr. 15	No limit
Red fox, (rest of unit)	Nov. 1-Apr. 15	No limit
Lynx	Nov. 1-Mar. 31	No limit
Weasel	Nov. 1-Jan. 31	No limit
Ground squirrel	No closed season	No limit

Harvest and Trapping Pressure

Arctic fox

Arctic foxes were abundant this winter. Two Barrow trappers reported taking over 100 animals each. Based on information obtained during visits to coastal villages, the total Unit harvest was estimated at 500 to 600 animals.

Red fox

A few red foxes were observed in the vicinity of the Meade and Colville Rivers during aerial surveys for moose and caribou. A few animals were trapped in Subunit 26(C) by residents of Kaktovik but no other animals are known to have been harvested.

Lynx

No lynx were reported seen or taken within the Unit.

Weasel

Weasel populations in the coastal plain region appeared to be low this past winter along with low prey densities, principally lemmings. No assessment of abundance was made in the foothill or mountain regions of the Unit. There were no reports of weasels being taken.

Ground squirrels

Some ground squirrels were probably harvested by Unit residents while they were residing at their fish camps, but no information on the number harvested was available.

Management Summary and Recommendations

In spite of high fur prices, there was only light trapping activity throughout most of Unit 26 for furbearers - the one exception being Arctic foxes. When these foxes are abundant, as they were this winter, several trappers along the coast maintain traplines specifically set for this species. Building and construction projects in the villages for the past few years have provided an alternative way of acquiring cash so relatively few individuals have been trapping for money. Considering the relatively low harvest of furbearers, the existing liberal seasons and bag limits can be retained.

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BEAVER

SURVEY-INVENTORY PROGRESS REPORT - 1978-79

Statewide

Techniques

Since 1967 the stretched pelts of beavers 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 the 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), 2-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 comprised 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 beavers occupying 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 1975 is recorded in Appendix I. During 1975 the reported Statewide harvest was 7,516. In 1976 the harvest declined to 5,641. Pelt prices then started to increase, and in 1977, 1,283 trappers took 11,033 beavers. Pelt prices for beavers did not rise much in the next year and the number of trappers and the resulting harvest decreased in 1978, with 914 trappers harvesting 8,023 beavers. The average number of beavers per trapper was 8.8 which was slightly

higher than the 1977 average of 8.6. In 1979 pelt prices were still low and the harvest further declined to 5,532 beavers taken by 784 trappers for an average of 7.1 beavers per trapper. An early spring may also have contributed to a lower harvest.

The trend in the number of trappers has closely paralleled annual catches during the period 1975-1979. The trend of declining harvest through 1976, the dramatic increase in 1977, and the declines in 1978 and 1979 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 1978 beaver harvest data suggest that additional information may be useful in Units 6, 7, 8, 13, 16, 22, and 23. In these Units kits comprised at least 20 percent of the harvest. Because of the very low harvests recorded in Units 6, 7, 13, and 22, additional field efforts are not justified at this time.

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Appendix I. Reported beaver harvests, 1975-1979.

Unit	Year	Limit	Size Composition of Harvest (percent) (Under 54")	(Under 59")	(Over 59")	Related Take	No. of Trappers	Ave. Catch/ Trapper
1	1975	No limit	19.4	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
	1978	No limit	19.4	40.3	59.7	79	14	5.6
	1979	No limit	6.9	24.1	75.9	43	6	7.2
2	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
	1978	No limit	41.5	61.0	39.0	41	7	2.0
	1979	No limit	18.2	45.5	54.5	11	2	5.5
3	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
	1978	No limit	41.5	61.0	39.0	29	1	29.0
	1979	No limit	0.0	33.3	66.7	6	4	1.5
4	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
	1978	No limit*	37.5	50.0	50.0	8	2	4.0
	1979	No limit*	0.0	50.0	50.0	2	1	2.0
5	1975	No limit	No harvest reported					
	1976	No limit	No harvest reported					
	1977	No limit	No harvest reported					
	1978	No limit	No harvest reported					
	1979	No limit	0.0	0.0	100.0	3	3	1.0
6	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	16.8
	1978	10 & no limit*	37.5	62.5	37.5	33	6	5.5
	1979	10 & no limit*	33.3	55.5	44.5	9	3	3.0

Appendix I. Reported beaver harvests, 1975-1979 (cont.).

Unit	Year	Limit	Size Composition of Harvest (percent) (Under 54")	(Under 59")	(Over 59")	Related Take	No. of Trappers	Ave. Catch/ Trapper
7	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
	1978	20	23.7	52.7	47.3	39	9	4.3
	1979	20	28.9	55.2	44.3	39	8	4.9
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
	1978	No limit	28.1	53.5	46.5	143	18	7.9
	1979	No limit	23.8	41.6	58.4	102	21	4.9
9	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
	1978	40 and 20*	23.1	37.7	62.3	721	65	11.1
	1979	40 and 20*	17.6	36.1	63.9	325	39	8.3
11	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
	1978	No limit	10.0	20.0	80.0	10	3	3.3
	1979	No limit	12.5	50.0	50.0	9	3	3.0
12	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
	1978	15	10.0	30.0	70.0	29	10	2.9
	1979	15	10.0	40.0	60.0	11	5	2.2
13	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
	1978	20	28.1	43.7	56.3	33	9	3.7
	1979	20	22.2	50.0	50.0	43	13	3.3

Appendix I. Reported beaver harvests, 1975-1979 (cont.).

Unit	Year	Limit	Size Composition of Harvest (percent) (Under 54")	(Under 59")	(Over 59")	Related Take	No. of Trappers	Ave. Catch/ Trapper
14	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
	1978	20 & 40*, closed	25.0	38.6	41.4	45	18	2.5
	1979	20 & 40*, closed	18.8	46.3	53.7	77	21	3.7
15	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
	1978	40	18.5	47.7	52.3	65	13	5.0
	1979	40	14.0	24.9	75.1	43	9	4.8
16	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
	1978	40	18.1	38.9	61.1	440	58	7.6
	1979	40	21.8	44.7	55.3	308	42	7.3
17	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
	1978	15, closed*	23.5	35.6	64.4	802	75	10.7
	1979	10	20.3	37.7	64.3	959	125	7.7
18	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
	1978	15	24.5	44.7	55.3	1695	178	9.5
	1979	15	18.3	37.7	64.3	1224	141	8.7

Appendix I. Reported beaver harvests, 1975-1979 (cont.).

Unit	Year	Limit	Size Composition of Harvest (percent) (Under 54")	(Under 59")	(Over 59")	Related Take	No. of Trappers	Ave. Catch/ Trapper
19	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
	1978	40 and 20*	12.0	27.1	72.9	1338	120	11.2
	1979	40 and 20*	13.9	31.0	69.0	636	90	7.1
20	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
	1978	15, 25 closed*	9.8	24.7	75.3	1080	133	8.1
	1979	15, 25 closed*	12.7	26.8	73.2	607	89	6.8
21	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
	1978	15	5.6	19.8	80.2	848	98	8.6
	1979	15	6.9	22.2	77.8	719	92	7.8
22	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
	1978	50	30.0	40.0	60.0	13	4	3.2
	1979	50	21.2	48.5	51.5	40	6	6.7
23	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					
	1978	20	No harvest reported					
	1979	20	21.2	48.5	51.5	40	6	6.7
24	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
	1978	20	3.9	18.6	81.4	129	25	5.2
	1979	20	2.0	17.3	82.7	108	30	3.6

Appendix I. Reported beaver harvests, 1975-1979 (cont.).

Unit	Year	Limit	Size Composition of Harvest (percent) (Under 54")	(Under 59")	(Over 59")	Related Take	No. of Trappers	Ave. Catch/ Trapper
25	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
	1978	20	22.0	42.8	57.2	258	43	6.0
	1979	20	15.8	34.3	65.7	184	27	6.8
Statewide Total	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
	1978		17.6	34.3	65.7	8,023	914	8.8
	1979		15.9	33.3	66.1	5,532	784	7.1

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

5-year average (1975-1979) harvest = 7,549
5-year range (1975-1979) harvest = 5,532-11,033
5-year average (1975-1979) no. of trappers = 930

BEAVER

SURVEY-INVENTORY PROGRESS REPORT - 1978-79

Game Management Unit 5 - Yakutat

Season and Bag Limit

Nov. 10 - May 15 — No limit

Population Status and Trend

Beavers are continuing to increase in numbers across the Yakutat Forelands, and are expanding westward. In early May, the first sighting of a beaver farther west than upper Seal Creek was made at the Yakutat airport. This adult animal had begun cutting forage and attempted to dam a drainage culvert before it was discovered. It was removed by a local trapper who continued to trap the area unsuccessfully. Since no further activity was observed, it is assumed this was a single animal establishing new territory.

No beavers are known to inhabit the Malaspina Forelands.

Population Composition

No population surveys were conducted during this report period.

Mortality

There is very little trapping pressure on this species. Three beavers sealed late in the season were the first reported harvest for Unit 5 in recent years. All three were adults but no sex determinations were made. Pelt measurements of two of the beavers were 62 inches and the third was 68 inches. One of the smaller beavers came from Yakutat and the remaining two from the Alsek River drainage.

Management Summary and Recommendations

The beaver population in Subunit 5A has been expanding westward at a fairly steady rate. Forage is still abundant throughout the range and the population is expected to continue to grow. Trapping pressure varies from nonexistent to very light and trappers should be encouraged to take advantage of this under-utilized resource. No changes in seasons or bag limits are recommended.

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BEAVER

SURVEY-INVENTORY PROGRESS REPORT - 1978-79

Game Management Unit 17 - Bristol Bay

Season and Bag Limit

Feb. 1-Feb. 15 — 10 per season

Harvest and Trapping Pressure

A total of 125 trappers sealed 959 beavers (an average of 7.7 beavers per trapper) from Unit 17 during the 1979 season (Appendix I). Sealing records show that 12 percent of this harvest came from Subunit 17A, 14 percent came from 17B and 75 percent came from 17C. The percent kits in the harvest ranged from 23.2 percent in 17A to 19.4 percent in 17C and averaged 20.3 percent unitwide.

Composition and Productivity

Cache surveys were flown on 14 rivers in fall 1978 (Appendix II). The recent trend toward decreasing miles per cache continued as the 1978 figure, 0.84 miles per cache, is 13 percent lower than the 1977 mean and 36 percent lower than the 1975 mean. The Sunshine and Ongivinuk Rivers were the only drainages to show an increase from 1977 to 1978.

Management Summary and Conclusions

Aerial survey data indicate that the beaver population of Unit 17 continued to grow in 1978. This population trend was set in motion when the severe trapping pressure of the early 1970's was curtailed through closure to trapping of the lower Nushugak and Togiak Rivers in 1975. The recent nature of the increase suggests that the overall population has a predominately young age structure.

Local interest in reopening the entire Unit to trapping in 1978-79 was high. The Board of Game established a brief unitwide season with a conservative bag limit to accommodate this interest while still protecting the recovery of the beaver population. The combination of a short season and poor winter travel conditions resulted in heavy trapping pressure in the formerly closed, lower Nushugak and Togiak drainages.

Nearly 90 percent of the 1978-79 harvest was taken in Subunits 17A and 17C. The high percentage of kits in the harvest indicates this population is young and experiencing high trapping mortality. It is doubtful that beaver populations in these Subunits can long withstand this level of harvest without once again declining.

It has been suggested that the season and/or bag limit should be increased in the upper Nushugak drainages to encourage more uniform distribution of trapping pressure. Such regulations, if feasible, might also allow exploitation of beaver sub-populations in higher elevation drainages that will probably die off naturally when the current trend of mild winter weather reverses. Unfortunately, present limited enforcement capabilities make a split season totally unworkable without cooperation of the local trappers. Self-regulation and cooperation have traditionally been poor in Unit 17.

The results of the upcoming 1979 cache surveys will be critical in evaluating the effect of this year's harvest on the population in Unit 17. These surveys will demonstrate the degree to which the heavy trapping pressure in the lower Nushugak has curbed the population increase. Until those data are secured and evaluated it would be premature to liberalize the season or bag limit.

Recommendation

No change in season or bag limit is recommended.

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APPENDIX I. 1978-79 beaver harvest from Unit 17.

Subunit	% kits	Total beaver	No. of trappers	Beaver/trapper
17(A)	23.2	112	16	7.0
17(B)	22.3	132	17	7.8
17(C)	19.4	715	92	7.8
Total	20.3	959	125	7.7

PREPARED BY: Christian A. Smith, Game Biologist III

APPENDIX II. 1978-79 beaver cache survey results.

Drainage	Miles/cache	% change from 1977	% change from 1975
Klutuk	0.73	-36	-47
Kokwok	0.55	-45	-66
Iowithla	0.84	- 8	-35
Sunshine	0.46	+12	-69
Togiak	0.94	-18	-69
Ongininuk	0.73	+ 7	-43
Harris	1.00	-	-28
Mosquito	0.62	- 3	- 2
Mulchatna	0.76	- 5	+49
Stuyahok	1.10	-17	+18
N. Napotoli	2.10	-	
S. Napotilu	1.40	-	
King Salmon	0.78	-65	
Nushagak	1.10	- 8	
Mean	0.84	-13	-36

PREPARED BY: Christian A. Smith, Game Biologist III

LYNX

SURVEY-INVENTORY PROGRESS REPORT - 1978-79

Game Management Unit 22 - Seward Peninsula

Seasons and Bag Limits

Hunting	Sept. 1-Mar. 31	Two lynx
Trapping	Nov. 1-Mar. 31	No limit

Harvest, Trapping, and Hunting Pressure

This was the 2nd year that regulations required lynx hides to be sealed. Although there were some minor problems in acquiring and retaining competent sealers in all communities, in general the response from trappers was excellent. The high prices paid for skins provided a strong incentive for trappers to seek out sealers even if they were not readily available in their community. Although the lynx population in Unit 22 was high, the sealing program produced some surprising results. Previously the harvest was estimated at approximately 100 lynx per year. The minimum reported harvest this year was 238 lynx, up from 168 reported the previous season. A number of lynx were probably trapped but not sealed because they were saved for personal use or future sale. Based on sealing data the total harvest was estimated to be 240-270 lynx. Distribution of the known harvest by drainage was as follows:

Fish River	66
Koyuk River	42
Kwik River	40
Unalakleet River	33
Tubutulik River	32
Kwiniuk River	12
Niukluk River	4
Shaktoolik River	3
Ungalik River	3
Inglutalik River	2
Kuzitrin River	1
Total	238

Composition of the harvest was 100 males, 100 females, and 38 animals of unknown sex. The catch was distributed among 50 trappers (an increase of 16) for an average of five lynx per person (the same as last year). The average harvest is misleading because the top trapper (from Elim) took 30 lynx and the top five all took 20 or more; there were several trappers who caught more than 10 lynx. The average catch was low because a number of part-time trappers only caught one to four lynx.

As noted last year, the greatest harvest occurred during March, the last month of the trapping season; the poorest success was in the opening month of November. The distribution of the harvest by month and sex was as follows:

Month	Male	Female	Unk	Total	1978-79 percent harvest	1977-78 percent harvest
Nov.	14	10	0	24	10%	5%
Dec.	15	16	5	36	15%	12%
Jan.	20	14	7	41	17%	24%
Feb.	29	23	9	61	26%	20%
Mar.	22	37	17	76	32%	39%
Total	100	100	38	238	100%	100%

Comparing the percent harvest by month for the last two seasons, (see percent harvest above), it appears that trapping success increased as the season progressed. Increasing daylight and better weather conditions toward the latter part of the season may account for this trend. However, the onset of the lynx breeding season may have been a factor as well.

With the exception of two lynx that were shot, the entire harvest was taken by leg-hold traps.

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UPLAND GAME ABUNDANCE

SURVEY-INVENTORY PROGRESS REPORT - 1978-79

Statewide

Techniques

The standard small game abundance questionnaire was mailed in mid-October 1978 to 320 people throughout the State and by the end of January 1979 approximately 170 replies had been received. As in the past, the bulk of replies came from the interior and gulf regions. Replies were tabulated and analyzed as in previous years (see Game Bird Report, Vol. 5, 1965, pp. 2 and 3). A summary of responses was mailed to cooperators in June 1978. Replies to the questionnaire are summarized in Appendix A.

Findings

Grouse - Replies to the 1978 questionnaire indicated that grouse populations had increased slightly statewide and were still at moderate levels over most areas of the State except for the Alaska Peninsula and Southeast. Responses from the Alaska Peninsula indicated moderately low grouse populations with no change from the previous year, while cooperators from Southeast reported high grouse populations and an increase in numbers compared to the previous year.

Ptarmigan - Numbers of ptarmigan were reported to be at moderate levels statewide with several exceptions. Cooperators on Kodiak Island reported moderately low levels of ptarmigan, while replies from the western part of the State indicated moderately high numbers of ptarmigan. In all areas ptarmigan were reported to have been more numerous than during 1977.

Hares - Snowshoe hare populations increased throughout the state except for Kodiak Island and the Alaska Peninsula, where there was a slight decrease reported in the numbers of hares. Snowshoe hare populations were still considered moderately low to low throughout Alaska, with one exception; in the western region cooperators reported very high hare populations.

Management Summary and Conclusions

The standard small game abundance questionnaire has, over the years, indicated that grouse, ptarmigan and hare populations fluctuate considerably throughout the state. Hunting pressure has little effect on fluctuations observed over broad geographical regions of Alaska.

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Appendix A. Summary of replies to questionnaire on grouse, ptarmigan, and hare populations, 1978.

Area and Species	Present Abundance[a]				Comparison with 1977[a]			
	High	Mod.	Low	Index[b]	More	Same	Fewer	Index[b]
Brooks Range - 10 Replies								
Grouse (general)	1	2	2	4.2	1	3	1	5.0
Spruce Grouse	1	1	2	4.0	1	2	1	5.0
Ptarmigan (general)	3	5	2	5.4	3	5	1	5.9
Rock Ptarmigan	0	5	0	5.0	0	4	0	5.0
Willow Ptarmigan	2	2	0	7.0	1	2	0	6.3
Snowshoe Hare	0	3	3	3.0	3	2	1	7.4
Western - 13 Replies								
Ruffed Grouse	3	2	2	5.6	1	4	2	4.4
Spruce Grouse	1	3	2	6.0	1	4	1	5.0
Ptarmigan (general)	5	4	1	6.6	3	5	1	5.9
Willow Ptarmigan	6	3	0	7.7	4	4	1	6.3
Snowshoe Hare	9	1	2	7.3	5	5	1	6.5
Alaska Peninsula - 19 Replies								
Ptarmigan (general)	1	8	4	4.1	3	4	7	3.9
Willow Ptarmigan	1	2	5	3.0	1	4	4	3.7
Snowshoe Hare	0	4	5	2.8	2	4	4	4.2
Kodiak - 3 Replies								
Ptarmigan (general)	0	1	2	2.3	0	2	1	3.7
Snowshoe Hare	0	0	3	1.0	0	2	1	3.7
Southeastern - 15 Replies								
Grouse (general)	5	5	0	7.0	5	2	1	7.0
Blue Grouse	4	6	2	5.7	5	6	0	6.8
Ptarmigan (general)	1	3	3	3.9	3	3	0	7.0
Snowshoe Hare	0	1	4	1.8	2	3	0	6.6
Gulf - 44 Replies								
Grouse (general)	4	21	3	5.1	16	9	0	7.6
Ruffed Grouse	0	3	4	3.8	2	4	1	5.6
Spruce Grouse	8	19	10	4.8	20	15	0	7.3
Sharp-tailed Grouse	0	8	2	4.2	6	4	0	7.4
Ptarmigan (general)	4	17	10	4.2	11	15	4	5.9
Rock Ptarmigan	3	6	5	4.4	5	8	1	6.1
Willow Ptarmigan	6	13	11	4.3	12	14	3	6.2
White-tailed Ptarmigan	1	2	5	3.0	1	5	2	4.5
Snowshoe Hare	1	10	29	2.2	26	11	3	7.3

Appendix A. Continued.

Area and Species	Present Abundance[a]				Comparison with 1977[a]			
	High	Mod.	Low	Index[b]	More	Same	Fewer	Index[b]
Interior - 67 Replies								
Grouse (general)	15	31	8	5.5	29	18	7	6.6
Ruffed Grouse	8	30	11	4.8	23	14	11	6.0
Spruce Grouse	16	23	7	5.8	25	14	6	6.7
Sharp-tailed Grouse	4	12	11	4.0	13	9	7	5.8
Ptarmigan (general)	11	26	9	5.2	24	15	5	6.7
Rock Ptarmigan	5	9	8	4.5	9	9	2	6.4
Willow Ptarmigan	6	15	6	5.0	13	11	3	6.5
White-tailed Ptarmigan	0	5	1	4.3	2	2	4	7.0
Snowshoe Hare	8	27	28	3.7	48	10	1	8.2
Statewide								
Grouse (general)	26	63	18	5.3	52	39	12	6.6
Ruffed Grouse	11	36	20	4.5	27	24	15	5.7
Spruce Grouse	30	61	26	5.1	50	38	10	6.6
Sharp-tailed Grouse	4	21	13	4.1	19	14	7	6.2
Ptarmigan (general)	25	65	22	5.1	48	49	19	6.0
Rock Ptarmigan	11	22	19	4.4	18	26	4	6.2
Willow Ptarmigan	21	38	24	4.9	32	37	12	6.0
White-tailed Ptarmigan	3	7	9	3.7	5	9	6	4.8
Snowshoe Hare	18	49	75	3.4	86	37	12	7.2

[a] Based on the number of answers to each question; not all cooperators answered all questions.

[b] Index values range from 1.0 through 9.0 and were derived by giving an arbitrary value of 9.0, 5.0, and 1.0 to each "High" (More), "Moderate" (Same), and "Low" (Fewer) answer, respectively. The total value of the answers to each question for each species was divided by the number of answers to that question. An index of 9.0 indicates High (More), 5.0 indicates Moderate (Same), and 1.0 indicates Low (Fewer).

GROUSE

SURVEY-INVENTORY PROGRESS REPORT - 1978-79

Game Management Unit 20 - Fairbanks, Central Tanana Valley

Population Status and Trend

Ruffed, spruce and sharp-tailed grouse were abundant during the 1978-79 season. In Unit 20, grouse populations were high in the late 1960's and then declined to low levels during the period 1973-75. In 1976 populations began to increase, and the 1978-79 season marked the third consecutive year of relatively high abundance.

Population Composition

Spruce grouse road counts were conducted along the standard Steese Highway route (Central airstrip to Mile 147) during the period September 19-24, 1978. Five valid counts were completed along the 19-mile route. The number of spruce grouse observed per count ranged from 10 to 18 (mean 14.6) and averaged 0.8 per mile. These figures are somewhat lower than those recorded for 1977, but approximate findings from the 1968 and 1976 counts. Although the 1978 data suggest a moderate population decline, responses to the Small Game Abundance Questionnaire from Unit 20 indicated increases in spruce, ruffed and sharp-tailed grouse numbers between fall 1977 and 1978. Forty-one hunters interviewed in the field indicated that an average of 3.4 grouse was observed per hunting hour. This figure ranged from 1.7 grouse per hour (Delta area) to 7.3 per hour (Tok area). These findings further attest to the fact that grouse were abundant during fall 1978.

Counts of sharp-tailed grouse were obtained from six dancing grounds in early May 1979. The dancing grounds were located in the following areas: near Seaton Roadhouse along the ALCAN Highway, along the Trans-Alaska Pipeline approximately 12 miles north of the Gulkana airport, the Tofty Road near Manley, the West Fork of the Dennison Fork near the Taylor Highway, and the Meadows Road and Buffalo Drop Zone near Delta. The number of sharp-tailed grouse per dancing ground averaged 8.6 (range 3-12). This was an increase from the average of 6.7 birds per dancing ground recorded at four leks in May 1978.

Grouse wings from hunter-killed birds were collected during September and October 1978 in the following areas: Steese, Taylor, and Elliott Highways; Chena Hot Springs Road; and various trails in the vicinity of Delta and Tok. A juvenile to adult ratio of 1.2:1.0 was recorded for the 142 spruce grouse examined from the above areas. This ratio ranged from 0.5:1.0 (upper Steese Highway) to 1.5:1.0 (Tok-Taylor Highways). The proportion of juveniles comprising the harvest was far below that recorded in previous years when populations were high. Wing collections of other species were too small to warrant compilation of age ratios.

Mortality

Hunter harvest was the only mortality factor monitored. The grouse hunting season in Unit 20 was August 10-April 30 with daily bag and possession limits of 15 and 30, respectively. A general impression of harvests and hunting pressure was obtained through a small game hunter questionnaire and a program of interviewing small game hunters in popular hunting sites near Fairbanks, Manley, Delta, and Tok. These programs yielded the following information on hunting pressure and success.

Sixty-one percent of the license holders residing in Interior Alaska hunted small game during fall 1978, and hunting pressure was moderately heavy in the immediate vicinity of access routes in Unit 20. From our small sampling effort we recorded the following number of hunter days: 151, Steese Highway; 147, Elliott Highway; 150, Chena Hot Springs Road; 239, various roads and trails near Delta; and 252, roads and trails including the Taylor Highway.

Our sample indicated that the Unit 20 harvest was comprised of 71 percent spruce grouse, 21 percent ruffed grouse, and 8 percent sharp-tailed grouse (n = 798). In all areas by far the most common species taken was spruce grouse. The number of grouse (all species) known to be taken from the Taylor, Elliott, and Steese Highways was 249, 187 and 175, respectively. Eighty-seven grouse comprised the known harvest along the Chena Hot Springs Road. Since our sampling scheme involved only about one-fiftieth of the Unit 20 license holders (questionnaire) and a few days during September and October (interviews in the field), overall hunting pressure and harvests in these areas were certainly much greater than presented here. Since this was the first year programs to monitor harvests were in operation, comparative data are not available.

Management Summary and Conclusions

Questionnaire and field interview programs should be continued so that in future years comparable data indicating trends in hunting pressure and harvests may be obtained.

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PTARMIGAN

SURVEY-INVENTORY PROGRESS REPORT - 1978-79

Game Management Unit 20 - Fairbanks, Central Tanana Valley

Population Status and Trend

Fall and spring surveys again indicated a low rock ptarmigan population in the Eagle Summit area. Ptarmigan populations peaked at Eagle Summit in 1968 and then commenced steady, annual declines through 1975. Breeding populations have remained low since then. Large wintering concentrations of both rock and willow ptarmigan occurred at Ester and Murphy Domes during 1977-78 and 1978-79.

Population Composition

Autumn abundance of rock ptarmigan at Eagle Summit was assessed on 10 August 1978 by recording the number of ptarmigan seen by two observers along the ridge system between Eagle Summit proper and the west fork of Cripple Creek. During this survey only four ptarmigan, one female with three chicks, were observed. Apparently production during summer 1978 was poor. Forty-eight rock ptarmigan (13 chicks) were recorded along the same route on August 7, 1975, but during the late 1960's, when the breeding populations were high, over 100 ptarmigan were commonly observed during hikes between Eagle Summit and the headwaters of Cripple Creek.

Age data from 50 rock ptarmigan shot on October 16, 1978 at Murphy Dome indicated a juvenile to adult ratio of 2.6:1.0. This ratio is presented for future reference, but it should be remembered that wintering concentrations of rock ptarmigan such as those on Murphy Dome are primarily composed of adult females and juveniles of both sexes. Adult males remain on or near breeding grounds and, as a result, are not common in wintering flocks at Murphy Dome. This seasonal segregation of the sexes must be considered when comparing age ratios from winter flocks with those derived from spring or summer populations.

On 16 and 17 May 1979, the annual census of breeding rock ptarmigan was conducted on the 15-square-mile (39 km^2) Eagle Summit area. Counting conditions were good. Two crews were used and the census was completed in 2 days. The census revealed only 27 males, which was the lowest number of males recorded for the Eagle Summit area since annual spring counts commenced in 1959. The breeding population was, however, little changed from that of 1978 (29 males), and was down somewhat from the 1977 level (36 males).

It is unknown whether population trends at Eagle Summit are representative of changes in ptarmigan abundance throughout the Tanana Hills. Analysis of 29 responses to the Small Game Abundance Questionnaire from

areas within the Tanana Hills indicated that during the 1978-79 season, ptarmigan were moderately abundant and slightly more numerous than during the previous year. Ptarmigan were unusually abundant during late fall and early winter 1978 at Murphy and Ester Domes. The breeding ranges of ptarmigan comprising these winter concentrations are unknown. Therefore, the relative abundance of winter populations in the Fairbanks vicinity apparently had little bearing on spring densities or annual production of specific breeding populations in the Tanana Hills.

Mortality

The ptarmigan hunting season in Unit 20 was August 10-April 30, except in areas within 5 miles of the Steese and Taylor Highways where an August 10-March 31 season was in effect. The bag limit was 20 per day and 40 in possession. There is considerable interest in ptarmigan hunting when birds are readily available. For example, on Saturday, September 30, 1978, 27 hunters killed 158 ptarmigan (5.8 birds per hunter) at Murphy Dome. Ptarmigan were abundant and hunters' reports of the number of birds seen that day ranged from 3 to 2,300. Based on this information plus conversations with other hunters, I estimate that a minimum of 1,500 ptarmigan were killed by sportsmen at Murphy Dome during the 1978-1979 season.

A questionnaire to assess small game harvests was initiated in fall 1978. Questionnaires were mailed to every fiftieth hunter appearing on an alphabetical list of license holders. Presently the questionnaire is in development stages, but some useful information has been obtained. Sixty-one percent of licensees in the Interior hunted small game. Our small sample from Unit 20 indicated 130, 107, and 96 ptarmigan taken from the Elliott Highway, the general Fairbanks area and the upper Steese Highway, respectively. Comparative harvest data will not be available until after the 1979-80 season, but questionnaire data suggested at least moderate ptarmigan harvests in these areas during fall 1978.

Management Summary and Recommendations

Ptarmigan populations are known to undergo marked fluctuations in abundance throughout Interior Alaska. At Eagle Summit the population has remained very low since 1975. Fall harvests should be monitored at Eagle Summit to evaluate the role of hunting in the sustained population low. Counts should also be made on other areas within the Tanana Hills to determine if the situation at Eagle Summit is representative of breeding populations elsewhere in Unit 20.

Despite the general population low at Eagle Summit, there were more territorial males near the Steese Highway study area in spring 1979 than any year since 1972. This may have resulted from the March 31 closure along the highway, but further data are necessary before the early closure can be fully evaluated.

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WOLF

SURVEY-INVENTORY PROGRESS REPORT - 1978-79

Game Management Unit 1C and 1D - Juneau and Haines/Skagway

Seasons and Bag Limits

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

Population Status and Trend

No survey and inventory data were available. The wolf population throughout Units 1C and 1D is generally low, making estimates of population levels or densities difficult. Currently, because of the series of relatively mild winters in the last 4 years, prey populations of deer, moose and goats are thought to be relatively high. Consequently, an increase in the number of wolves is expected.

Population Composition

No data were available.

Mortality

Seven wolves (1 male, 6 females) were taken during 1978-1979 in Unit 1C and nine wolves (7 males, 1 female) were taken in Unit 1D.

Management Summary and Recommendations

The wolf harvests from Units 1C and 1D fluctuate yearly depending on trapping and hunting effort as well as weather. Wolves range over most of the area and the number of wolves taken is low relative to the total population. Thus, harvest levels are well within sustained population limits. No changes in seasons or bag limits are recommended.

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SURVEY-INVENTORY PROGRESS REPORT - 1978-79

Game Management Unit 5 - Yakutat

Seasons and Bag Limits

Hunting	No Closed Season	No limit
Trapping	Nov. 10-Apr. 30	No limit

Population Status and Trend

Data indicate the general population trend for wolves in Unit 5 is stable to increasing slightly. The population on the Yakutat Forelands has been considered moderate in recent years due primarily to a low moose population. But, as moose numbers increase wolf populations may also increase. Additionally, wolves are becoming more abundant on the Malaspina Forelands.

Population Composition

No aerial surveys were conducted specifically to locate wolves, but sightings and tracks were recorded incidental to other big game surveys and local trappers were interviewed to gather supplemental information on wolf densities. Based on these data, the wolf population on the Yakutat Forelands was estimated at 35 animals. Distribution, pack size, and observed spring production are shown in Table 1.

Table 1. Distribution, pack size and observed production of wolves on the Yakutat Forelands from July 1, 1978 to June 30, 1979.

Pack Location	Estimated Winter Density	Observed Spr. Composition Adults	Pups
Italio River - Akwe River	7	5	-
Situk River	6	2	4
Dangerous River	9	3	4
Alsek River	7	4	4
East River-Doame River	6	2	3

Wolf sightings on the Malaspina Forelands have increased in recent years indicating an increase in the population. Reported sightings of four wolves last fall, one in the Chaix Hills and three near Esker Creek, combined with a large amount of sign along the beach in early spring and throughout the summer indicate a minimum population of about 10 wolves across the forelands. This figure is probably conservative and the population may be higher.

Mortality

Nine wolves were harvested from the Yakutat Forelands during the 1978-1979 report period, all of them by ground shooting, four of them incidental to brown bear hunting. The composition of the kill was four adults (3 males, 1 female) and five pups (2 males, 3 females).

Management Summary and Recommendations

The wolf populations throughout Unit 5 appear to be increasing slightly. Currently, hunting and trapping pressure is light to moderate and harvest is low. To reduce the threat of increased predation on moose and goats caused by rising wolf population levels, the liberal hunting and trapping seasons should be retained and the public should be encouraged to take advantage of an opportunity for additional recreation and a possible cash return from the furs. No changes in seasons or bag limits are recommended.

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WOLF

SURVEY-INVENTORY PROGRESS REPORT 1978-79

Game Management Units 7 and 15 - Kenai Peninsula

Seasons and Bag Limits

Hunting	Aug. 10-Apr. 30	Two wolves - Unit 7 Four wolves - Unit 15
Trapping	Nov. 10-Mar. 31	No limit

Harvest and Trapping Pressure

Fifty-six wolves were reported killed in Units 7 and 15 during the 1978-79 hunting and trapping seasons. The harvest was composed of 32 (57%) males, 23 (41%) females and 1 (2%) of unknown sex. Three of these wolves were reported taken during the hunting season before the trapping season opened.

Wolf harvest data were obtained from sealing documents and are presented in Appendix I.

Composition and Productivity

Wolf surveys conducted by the Department of Fish and Game during winter 1978-79 were not completed due to unfavorable weather conditions. However, an estimate of the Kenai Peninsula wolf population was made from data collected by the Fish and Wildlife Service. Wolf density estimates, calculated from study packs during December 1978, indicated that there was one wolf per 25 square miles in primary habitat, one wolf per 40 square miles in secondary habitat, and a total of 186 wolves. These calculations are based on 5,350 acres of habitat considered suitable for wolves (Peterson and Woolington pers. comm.). A minimum of 12 packs have been identified through these studies.

Management Summary and Conclusions

The harvest of 54 wolves in Units 7 and 15 indicates a 29 percent harvest if pre-harvest population estimates of 186 wolves were correct. Poor hunting and trapping conditions, caused by a mild winter with frequent freezing and thawing may be the primary reasons for the low harvest.

Recommendations

Wolves should be harvested at a level to provide a spring population of approximately 40 wolves in Unit 15 and 20 wolves in Unit 7. Since hunters and trappers have not been able to harvest wolves at the desired level, controlled aerial hunting should be allowed to take surplus wolves.

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WOLF

SURVEY-INVENTORY PROGRESS REPORT 1978-79

Game Management Unit 11 - Wrangell Mountains and Chitina Valley

Seasons and Bag Limits

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

Harvest and Trapping Pressure

Forty wolves were killed in Unit 11 during the 1978-79 season. Ground shooting accounted for 31 wolves and 9 were reported trapped.

Composition and Productivity

Composition of the reported wolf harvest was 19 males, 20 females and 1 unknown sex. No futher composition or productivity data were available.

Management Summary and Conclusions

Based on field observations, and hunter and trapper reports, there appears to be a significant wolf population in the Unit. The current harvest is high and indicates a viable wolf population.

Recommendations

Retain current seasons and bag limits.

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SURVEY-INVENTORY PROGRESS REPORT - 1978-79

Game Management Unit 12 - Upper Tanana and White Rivers

Seasons and Bag Limits

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

Population Status and Trend

Although no standardized wolf surveys have been conducted in Unit 12, a minimum of 105 wolves occupied Unit 12 during the reporting period. No wolf sightings or reports were received from the entire southeastern portion of the Unit, which encompasses approximately 3,600 square miles, although 35 to 140 wolves may inhabit this area. Wolves are currently abundant in the Unit; however, further declines in their primary prey populations will eventually precipitate a decline in wolf density.

Population Composition

Approximations of wolf productivity and sex ratios are normally based upon harvest statistics obtained from the wolf sealing program. During this reporting period, however, retention of leg bones on the hides was not required and, consequently, no estimate of productivity was possible.

Mortality

According to wolf sealing documents, 32 wolves were taken during the reporting period, nine by one man. Two wolves were taken by sport hunters. The 1978-79 harvest was slightly greater than the reported take of 31 wolves during the 1977-78 season.

Of the 32 wolves reported taken, 10 were adults, 5 were pups, and no age was reported for the remaining 17. Twenty-three wolves taken were of the gray color phase, 6 were black, and 3 were brown. Seventeen (53%) of the 32 wolves were taken from the Nabesna River drainage, 4 from the Tanana, 3 from the Tok, and 2 each from the Tetlin and Chisana River drainages. The location of take for the other two wolves is unknown. Fourteen wolves were shot, 17 were trapped, and 1 was snared.

The total human-caused mortality probably has an insignificant effect upon this population. Few trappers in the area consistently take wolves and their efforts are restricted to a small portion of Unit 12. Sport hunters rarely get the opportunity to take wolves.

Management Summary and Recommendations

Wolf numbers within Unit 12 are high in relation to ungulate numbers. While sheep populations are stable, both moose and caribou numbers are low and apparently declining. Eventually, wolf densities will also decrease.

Wolf reduction is recommended throughout the Unit with the exception of the Tok and Little Tok River drainages where moose are at or above long-term carrying capacity. Such a wolf reduction program could contribute to continued viability of both prey and wolf populations.

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WOLF

SURVEY-INVENTORY PROGRESS REPORT 1978-79

Game Management Unit 13 - The Nelchina Basin

Seasons and Bag Limits

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

* Subunit 13A was closed to taking of wolves by emergency order on December 21, 1978.

Harvest and Hunting Pressure

Sixty-nine wolves (35 males, 34 females) were taken in Unit 13 during the 1978-79 season. Trapping pressure was heavy early in the season, but deep snows and prolonged cold temperatures hampered activities later in the season. Appendix I lists the current harvest data by chronology and method of take.

Composition and Productivity

Reports from trappers coupled with field observations indicate moderate wolf populations existed prior to the season opening in Subunits 13A, 13B, and 13C. The season was closed by emergency order in Subunit 13A to prevent harvesting of collared wolves and to maintain sufficient wolf densities for predator-prey studies. Subunits 13B and 13C experienced heavy trapping and hunting pressure, reducing wolf populations to a lower level by season's end. Subunits 13D and 13E maintained low populations throughout 1978-79. Subunit 13D experienced wolf dispersal, and in 13E wolves were controlled by the Department in the experimental study area.

Management Summary and Conclusions

The 1978-79 harvest was considerably lower than the previous year's record harvest of 128 wolves. Unfavorable weather conditions and the emergency closure of Subunit 13A, contributed to the harvest decline. Wolf densities in Subunits 13B and 13C were reduced due to heavy hunting pressure. Unit 13 excluding Subunit 13A experienced low wolf densities by season's end.

Recommendations

Continue to monitor wolf harvests and population trends and establish regulations based on research findings.

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SUBMITTED BY:

James B. Faro
Regional Management Coordinator

Appendix I. Wolf harvest data, 1978-79 - Unit 13[a].

	1978-79
Total wolf harvest:	69
Harvest Chronology, Number (Percent):	
July:	1 (1%)
September:	2 (3%)
October:	1 (1%)
November:	6 (9%)
December:	16 (23%)
January:	29 (42%)
February:	8 (12%)
March:	2 (3%)
April:	3 (4%)
Unknown:	1 (1%)
Method of Take, Number (Percent):	
Ground Shooting:	47 (68%)
Trapping:	18 (26%)
Snaring:	2 (3%)
Other:	2 (3%)

a. Harvest data are based on sealing data only.

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WOLF

SURVEY-INVENTORY PROGRESS REPORT - 1978-79

Game Management Unit 18 - Yukon-Kuskokwim Delta

Seasons and Bag Limit

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

Harvest, Hunting and Trapping Pressure

No wolves were reported taken in Unit 18 during the 1978-79 season. Wolves continue to be rare in this Unit and are only sighted occasionally in the eastern section of the Unit along the Yukon and Kuskokwim Rivers. This season's results do not appear to reflect any significant change in the population at this time. The reported harvest has ranged from zero to three animals since 1959.

Management Summary and Recommendations

The wolf population is low and wolves are taken when the opportunity presents itself to local hunters. No change in season or bag limit is recommended.

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WOLF

SURVEY-INVENTORY PROGRESS REPORT - 1978-79

Game Management Unit 19 - McGrath

Seasons and Bag Limits

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

Population Status and Trend

Wolves were present in moderate to high numbers over most of Unit 19, and high populations occurred in several drainages in Subunit 19D. Relatively high wolf concentrations occurred along the North Fork of the Kuskokwim and between the Stony and Tatlawiksuk Rivers. Aerial permit hunting during late winter 1979 reduced the dense and productive wolf population about 67 percent in the Aniak drainage. Wolf populations in Subunits 19A and 19B have begun a slight decline; nevertheless, production has remained high (perhaps stimulated by the increased harvest). As a result, unfavorable moose/wolf ratios persisted in Subunits 19A and 19B. Wolves are expected to increase in areas of high ungulate density, such as the Swift River area, whereas a slow decline in abundance is expected elsewhere.

Population Composition

The average observed pack size was 5.9 individuals; however, track counts suggested that the average pack consisted of 6.7 wolves. Examination of placental scars from wolves collected in Unit 19 revealed an average of 5.4 scars per female. Among wolves shot, the number of corpora lutea plus fetuses averaged about 6.1 per female (R. Stephenson, pers. comm.). These data, plus the general condition of wolves examined, are typical of thriving wolf populations.

Pups comprised 12 percent of the 41 wolves known to have been taken by hunters and trappers in Unit 19 during the 1978-79 season. Pups accounted for 55 percent of 29 additional wolves taken by aerial permittees in the Aniak vicinity. This suggests that the Aniak wolf population is either in a very healthy condition or has been heavily exploited. The former is probably true since wolves in the Aniak area have had little hunting pressure for many years. Although moose populations in the Aniak drainage are low, other prey such as salmon and snowshoe hares are abundant.

Errors in age determinations may have created a significant bias in Unit-wide composition data. In contrast to the age data above, 1977-78 harvest data from Unit 19, especially those from Subunits 19A and 19B,

revealed a high pup composition. Therefore, I conclude that reliance on harvest data for insight into population composition and dynamics is suspect when using present sealing methods.

Mortality

The Unit 19 harvest by various means, including aerial hunting, was 76 wolves. The impact of this harvest on a Unit-wide basis is clearly negligible and at most constitutes an estimated 20 percent mortality. Other mortality factors are little known and cannot be evaluated at present.

Management Summary and Recommendations

Wolf populations over much of Unit 19 are at moderate levels, however, some areas support high populations. Areas of high wolf abundance include all of Subunit 19D and certain portions of Subunits 19A and 19B. To achieve desired moose to wolf ratios, increased harvest of wolves in these locations is necessary. An increased harvest can only be accomplished by aerial hunting and Department involvement.

Since age data from present sealing procedures may be biased, more precise methods of determining the age of wolves harvested are essential if accurate population data are to be obtained.

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WOLF

SURVEY-INVENTORY PROGRESS REPORT - 1978-79

Game Management Unit 20 - Fairbanks, Central Tanana

Seasons and Bag Limits

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

Population Status and Trend

Wolf numbers remained at moderate to high levels in areas where wolf distribution and abundance were documented.

Four consecutive years of the Department's wolf reduction program south of the Tanana River between the Delta and Nenana Rivers has reduced the population to 45-55 wolves. Lower recruitment of pups into the population during 1978 may indicate a reduction in the rate of increase within the wolf population.

Survey and harvest data for the remainder of Unit 20 indicated wolf populations were high and probably increasing. Subunit 20B and the drainages outside Federal land withdrawals of the Volkmar, Goodpaster, and Salcha Rivers, plus Shaw and Birch Creeks, supported a minimum population of 205 wolves. Approximately 40 wolves inhabited Subunit 20D. Surveys were not conducted in Subunit 20E or in the remainder of Subunit 20C; however, the status of ungulate prey species and the sport harvest of wolves within these areas indicated that wolf populations were high enough to retard ungulate population growth.

Population Composition

Pups comprised 33 percent of the wolves taken by the Department and the public south of the Tanana River between the Delta and Nenana Rivers (rehabilitation area), while 47 percent of the sport harvest from the remainder of the Unit consisted of pups. Females comprised 54 percent of the harvest from the rehabilitation area and 47 percent from the remainder of the Unit. The total Unit 20 harvest consisted of 44 and 49 percent pups and females, respectively.

The six females collected by the Department were all reproductively active, with an average litter size of 5.8 (based on number of corpora lutea or fetuses).

Mortality

The reported wolf harvest for the 1978-79 season consisted of 115 animals (Table 1), a 43 percent decline from the previous year when 201

wolves were taken. Together, trapping and sport hunting accounted for 97 wolves, while 18 wolves were taken by Department personnel in the rehabilitation area.

Table 1. Unit 20 wolf harvest, 1978-79 regulatory year.

Subunit	Age			Sex			Total
	Pup	Adult	Unknown	Male	Female	Unknown	
Trapping/sport harvest:							
20A	3	6	3	6	5	1	12
20B	10	3	1	8	6	--	14
20C	25	34	8	32	31	4	67
20D	--	--	--	--	--	--	0
20E	1	3	--	2	--	2	4
Departmental harvest:							
20A, 20C	5	10	3	6	9	3	18
Unit Total	44	56	15	54	51	10	115

The decline in harvest from the previous season can be attributed to the lower number of wolves reported taken from Subunits 20C and 20E (71 in 1978-79 compared to 137 in 1977-78). It appears that the reduction in harvest is a reflection of reduced trapping effort/success rather than a lower wolf density.

Management Summary and Recommendations

Efforts to reduce the wolf population in Subunit 20A and a portion of Subunit 20C have been successful. Although the desired goal of 1 wolf per 100 moose has not been achieved, the downward trend in moose numbers was reversed at a ratio of 1:30, and the current ratio of 1:70 has resulted in a 10 percent average rate of growth in the moose population. Nevertheless, wolf numbers should be further reduced to expedite recovery of the moose population. This will necessitate the removal of approximately 35 wolves during 1979-80 (assuming fall 1979 wolf and moose populations of 75 and 3,900, respectively). Financial constraints and the wolf management strategy adopted for portions of Unit 20 outside the rehabilitation area will determine the levels of public and Departmental participation in wolf control efforts.

Traditional methods of harvesting wolves in Unit 20 appear insufficient to minimize the impact of predation which has resulted in declining moose populations. Wolf/moose ratios in Subunits 20B, 20D, and portions of 20C have reached the level which existed in Subunit 20A during 1975 when moose density, calf production, and survival declined drastically. For example, fall 1978 wolf/moose ratios of 1:10 were noted in Subunit 20B and portions of central 20C, while a ratio of 1:16 existed in Subunit 20D. Imbalanced predator/prey ratios are also suspected in Subunit 20E.

Desired population levels for wolves and their principal ungulate prey species have been identified, and the methods of achieving these levels have been outlined in issue papers. Greater public participation in the wolf harvest through aerial hunting may be the only viable option for reducing wolf numbers. Department control should be utilized to supplement public hunting when necessary.

Federal land withdrawals encompassing the Yukon Flats, Yukon-Charley, and Denali National Monuments will probably preclude an effective predator-prey population management scheme throughout Unit 20. Based upon experience gained in wolf management programs which have been conducted in areas containing both State and Federal lands, aerial wolf hunting may be excluded from Federal (non-military) lands.

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WOLF

SURVEY-INVENTORY PROGRESS REPORT - 1978-79

Game Management Unit 21 - Middle Yukon

Seasons and Bag Limits

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

Population Status and Trend

Extensive wolf surveys conducted within the Nowitna and Innoko River drainages in preparation for proposed wolf control activities revealed minimum populations of 79 wolves (Nowitna drainage) and 104 wolves (Innoko drainage). Surveys were conducted during the 1977-78 season in the Koyukuk and Melozitna drainages, and the results combined with the current year's data for the Nowitna and Innoko produced a midwinter Unit 21 population estimate of 400-500 wolves. The wolf population increased between the 1977-78 and 1978-79 seasons, due to a very low harvest in 1977-78 followed by a normal level of recruitment.

Mortality

During the 1978-79 season 72 wolves were reported harvested in Unit 21, a significant increase over the previous year's reported take of 21. Sixteen of these wolves were taken by aerial shooting under terms of a permit; 11 were from the Innoko drainage and 5 were from the Nowitna drainage. The total wolf harvest by drainage during the 1978-79 season was as follows: 31, Innoko; 12, Nowitna; 12, Koyukuk; 6, Melozitna; 6, Yuki; and 5, scattered locations along the Yukon. Unitwide, 70 percent of the harvest was adult wolves. The increased harvest in 1978-79 resulted from improved hunting conditions due to deeper snow accumulations.

Management Summary and Recommendations

Deep snow levels which concentrated predators and prey and provided improved tracking conditions for hunters resulted in a significant increase in the take of wolves compared to the 1977-78 season. Based on the estimated Unit 21 wolf population, 13 to 18 percent of the midwinter wolf population was harvested, which is below what the population could sustain annually. Harvests in the various major river drainages had slight impact on the respective wolf populations with the exception of the Yuki drainage where 50 percent of the wolves were killed. Success of the aerial wolf control efforts in the Nowitna and Innoko River drainages was hampered by deteriorating snow conditions in late March, restrictions imposed on hunters by the permit system, and closure of Federal lands to wolf control.

Efforts should continue in Unit 21 to increase the wolf harvest to reduce the impact of predation on populations of moose. It is recommended that a unitwide aerial wolf hunting season be established. In problem areas where shooting wolves from a fixed-wing aircraft is ineffective in reducing wolf numbers, the Department should utilize other methods to manage the wolf population.

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WOLF

SURVEY-INVENTORY PROGRESS REPORT - 1978-79

Game Management Unit 22 - Seward Peninsula

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, five wolves were taken during the 1978-79 hunting and trapping seasons. The annual take for the last 17 years has averaged 8, and ranged from a low of two wolves during the 1975-76 season to a high of 28 during the 1967-68 season.

Although the reported harvest of five wolves was below the 17-year average, wolf abundance did not decline significantly in recent years, if at all. This statement is based on three premises; 1) Active predator control during the mid-1960's inflated average harvest figures. 2) Trappers did not report all the wolves that were taken, whereas in the 1960's a bounty provided more incentive to surrender hides for sealing. 3) There were no actively funded predator control programs. It was estimated that the actual harvest was 10 to 15 wolves. The distribution of the reported harvest by drainage was as follows:

Pilgrim River	1
Solomon River	1
Fish River	1
Shaktoolik River	1
Unalakleet River	1
Total	5

Four of the wolves were taken by hunters shooting from the ground, and the other animal was caught in a leg hold trap. It was likely that most of the wolves taken in the unreported harvest were shot by hunters who used snow machines for transportation.

Seasonal Distribution, Migration and Concentration

Reports from village residents, trappers, and aerial observations indicated that wolves in Unit 22 have gradually increased in number and expanded 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 occasionally seen as far west as Shishmaref, and generally were sighted as individuals or as groups of two or three. During aerial moose surveys in March 1979, evidence of at least one pack of six wolves was seen in the drainage of the upper Fish River. Tracks of wolves were also noted in the upper Kuzitrin and Koyuk Rivers. Two wolves, apparently traveling together, were sighted in the Inglutalik River, and recent sign was also noted in the Ungalik River area, the drainage immediately to the east. Based on these observations and the harvest information, it appears that wolves were distributed throughout much of the Seward Peninsula, yet, pack size was generally small. The wolf population in Unit 22 was estimated to be 50 to 75 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. Predator control has not been very effective since 1972 because State and Federal regulations have, at times, precluded the efficient use of aircraft. These actions not only resulted in an increase in the total number of wolves, but also provided an opportunity for wolves to expand their range westward on the Seward Peninsula. Harvest data from the past 10 years suggest there has been an increase in the harvest of wolves in rural areas, but this has not been well documented by sealing records. More enforcement effort should be directed toward gaining compliance with the sealing regulations, and it would be desirable to obtain accurate information to document trends in wolf numbers.

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

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WOLF

SURVEY-INVENTORY PROGRESS REPORT - 1978-79

Game Management Unit 23 - Kotzebue Sound

Seasons and Bag Limits

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

Population Status and Trend

No information was available.

Population Composition

No information was available.

Mortality

The 1978-79 reported harvest was 45 wolves (33 males, 12 females); 27 were gray and 15 black.

Age analysis, determined by examining the fusing ends of radius and ulna bones, revealed 58 percent were adults, 18 percent pups and 2 percent of undetermined age.

Eighty-two percent of the harvest was taken by ground-shooting, 13 percent by trapping and 5 percent by other means. The majority of the harvest was from the southern portion of the Unit with 33 percent taken from the Selawik River drainage, 29 percent from the Seward Peninsula, 18 percent from the upper Kobuk River drainage, 16 percent from the area between the Noatak drainage and Cape Lisburne, and 4 percent from the Noatak River drainage.

Chronology of the harvest was as follows: November, 1; December, 1; January, 5; February, 5; March, 25; and April, 8. Severe weather conditions prevented a sizable harvest prior to March.

Management Summary and Recommendations

The Western Arctic caribou population was down from a high of approximately 240,000 in 1970 to approximately 100,000 animals in 1978-79. Moose populations densities in the Buckland River drainage are also lower.

The harvest of 45 wolves is probably below sustainable harvest level, thus, an increased harvest of wolves is desired. Aerial permits should be issued as soon as the temporary injunction is lifted and hunter efforts should be directed to those areas having the largest wintering populations of caribou, moose, and sheep.

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WOLF

SURVEY-INVENTORY PROGRESS REPORT - 1978-79

Game Management Unit 24 - Koyukuk Drainage

Seasons and Bag Limits

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

Population Status and Trend

No aerial wolf surveys were conducted during winter 1978-79, but extensive surveys were accomplished during the two previous winters. From these surveys 438 wolves were estimated to comprise the spring 1978 population in Unit 24. Since pups comprised 30 percent of the 1978-79 harvest, the pre-season population was estimated at 626 wolves. Subtraction of the 1978-79 harvest (89 wolves) produced a spring 1979 population estimate of 537 wolves. These calculations suggest an 18 percent increase in the Unit 24 wolf population between spring 1978 and 1979. Data regarding natural adult mortality, wounding loss, and unreported take were not available. These factors were not considered in the estimation; hence, the actual population increase was somewhat below the 18 percent reported above.

Mortality

The total harvest of wolves as indicated by sealing certificates was 89 (45 females and 44 males). The majority of wolves (84%) were taken by ground shooting during the period January through mid-April. Only two wolves were taken prior to November 1. Pups comprised 30 percent of the harvest.

The 1978-79 harvest was the largest reported take from Unit 24 since the ban on aerial wolf shooting was initiated. The 1978-79 take represented a 41 percent increase over the average annual take of 63 wolves recorded for the period 1973-77. The increased take was due to good tracking conditions in late winter and a growing expertise by hunters in their abilities to land and shoot wolves.

Management Summary and Recommendations

An underlying problem in wolf management is whether to consider wolves as big game, furbearers, or predators. From a management standpoint the situation would be considerably simplified if wolves were considered fur animals and managed according to regulations providing for annual harvests on a sustained-yield basis. In Unit 24 the current harvest is below what the wolf population could support. A reduction of

the spring breeding population to 300-350 animals would decrease the existing predator-to-prey ratio, thereby providing some relief to depressed ungulate populations. As noted in Unit 20A, such harvests would result in conditions favorable to the production and survival of pups. A more productive wolf population in Unit 24 could sustain annual harvests of 120-160 wolves.

This type of management scheme requires regulations that provide workable means of controlling the harvest of wolves. The take by trapping, snaring, and ground shooting is insufficient to provide the flexibility needed for wolf management in Unit 24. Therefore, it is recommended that a late winter aerial wolf hunting season be established in Unit 24.

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WOLF

SURVEY-INVENTORY PROGRESS REPORT - 1978-79

Game Management Unit 25 - All drainages into the north side of the Yukon River upstream from and including the Tozitna River

Seasons and Bag Limits

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

Population Status and Trend

No systematic surveys of wolf distribution and abundance were conducted in Unit 25. However, observations made during moose surveys and reports from pilots familiar with the area indicated that wolves remained numerous in most portions of the Unit.

Population Composition

No surveys were conducted which would indicate the composition and productivity of the wolf population. Only harvest information is available and these data normally are biased because of the vulnerability of young wolves to trapping and hunting.

Mortality

The total number of wolves harvested in Unit 25 during the 1978-79 seasons, as indicated by sealing records, was 26 compared to 37 taken during the 1977-78 seasons and 103 taken during the 1976-77 seasons.

The number of wolves taken from various drainages was as follows: Coleen, 9; main Yukon, 1; Little Black and Black, 6; and Chandalar, 9.

The harvest was heaviest from January through March with 77 percent of the take occurring during this period. Nineteen percent of the kill occurred from October through December and only one wolf was taken in April. Trapping and snaring accounted for 58 percent of the harvest, and the remaining 42 percent was taken by ground shooting.

Of the 26 wolves taken, no age determination was made on 14 animals. Of the remaining wolves, six were judged to be adults and six were pups. The sex ratio was essentially equal, with nine males and 10 females taken. Most animals were gray (68%), followed by blacks (19%). One brown wolf and one white wolf were also taken.

Management Summary and Recommendations

The 1978-79 wolf harvest was the lowest recorded during the past 6 years and was considerably below the 6-year mean of 53. Even though currently high fur prices have probably stimulated trapping effort in the Unit, most trappers concentrated on other species which are easier and less expensive to trap. In the past most of the harvest was taken by aerial hunting from fixed-wing aircraft; however, the present requirement that pilots land before shooting wolves has greatly reduced their efficiency under most conditions. The present level of harvest has had no detectable effect on the wolf population.

It is likely that the abundance of wolves is largely responsible for the poor calf survival and recruitment plaguing moose populations in Unit 25. Moose numbers are extremely low in most portions of the Unit. As a result, wolf numbers are probably having a significant impact on the moose population. There is no reason to suspect that an increase in the wolf harvest would be detrimental to the wolf population and good reason to suspect that an increased take of wolves would benefit the moose population. The harvest of wolves should be encouraged by providing for limited aerial hunting by the public as long as this activity is not detrimental to the wolf population.

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WOLF

SURVEY-INVENTORY PROGRESS REPORT - 1978-79

Game Management Unit 26 - Arctic Slope

Seasons and Bag Limits

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

Harvest, Hunting and Trapping Pressure

During the 1978-79 regulatory year, 27 wolves were taken in Unit 26 and presented for sealing. This number is less than the reported kill for the 3 previous years (1975-76: 34; 1976-77: 35; 1977-78: 36). These records do not include wolves killed but not sealed.

Population Trends, Composition and Productivity

The population of wolves in Unit 26 was estimated to be less than 400 animals. Densities vary within the Unit, being highest in the mountain and foothill areas and lowest on the coastal plain.

Of the 27 wolves reported taken, 13 (48%) were males; the sex was not reported for one animal. The age composition of the wolves killed was: adults, 70 percent; pups, 11 percent; unknown age, 19 percent.

Management Summary and Recommendations

The wolf population in Unit 26 continued low even though important prey species such as the caribou populations have remained stable (Porcupine and Central Arctic Herds) or have grown (Western Arctic Herd) during the past several years. Apparently hunting pressure and natural mortality factors have kept the wolf population from increasing. Of the reported harvest, 56 percent of the wolves killed were taken by nonresidents of the Unit. Of the 12 hunters reporting taking wolves, eight were not residents of the Unit.

With the creation of the Gates of the Arctic National Monument in the southcentral portion of this Unit, there is a potential for fewer wolves being taken because of new Federal regulations restricting hunting in the monument. Given added protection and an increasing food supply,

wolf populations in that portion of the Unit might be expected to increase over the next few years.

No changes in seasons and bag limits are recommended.

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Regional Supervisor

WOLVERINE

SURVEY-INVENTORY PROGRESS REPORT - 1978-79

Game Management Units 1, 3 and 5 - Southeast Alaska

Seasons and Bag Limits

Hunting

Units 1-5	Nov. 10-Feb. 15	One wolverine

Trapping

Units 1A, 1B, 1D, 3	Dec. 1-Feb. 15	No limit
Unit 1C, 5	Nov. 10-Feb. 15	No limit

Population Status and Trend

No survey or inventory data were available.

Mortality

According to sealing certificates, 36 wolverines were harvested in Southeast Alaska in 1978-1979, an increase of 28.6 percent over the previous year. The harvest was composed of 19 males, 14 females and three of unknown sex.

Management Summary and Recommendations

The wolverine harvest in Southeast Alaska fluctuates annually in response to weather conditions, fur prices, and hunting and trapping effort. Most wolverines are caught incidentally in shore-line sets made for other species. The winter of 1978-79 was somewhat more averaged compared to the previous three winters and may have brought more wolverines to lower elevations increasing their vulnerability to trapping. No changes in seasons or bag limits are recommended.

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Region I Supervisor

WOLVERINE

SURVEY-INVENTORY PROGRESS REPORT 1978-79

Game Management Unit 9 - Alaska Peninsula

Season and Bag Limits

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

Harvest and Trapping Pressure

Seventy-nine wolverines (46 males, 22 females and 11 sex unknown) were reported taken from Unit 9 during the 1978-79 season (Appendix I). As in past seasons, trapping accounted for the majority of the harvest with 55 wolverines taken by this method. Ground shooting accounted for 18 of the remaining 24 kills. This harvest was nearly equal to the previous 7-year average of 75 wolverines. Historical harvest data for Alaska Peninsula wolverines since 1962 were presented by Steen (1979).

Composition and Productivity

No data were available.

Management Summary and Conclusions

Average winter weather conditions providing moderate ice and limited snow cover on the Alaska Peninsula provided typical access for ski-equipped aircraft. As a result, the harvest was well distributed and commensurate with former mean levels.

The predominance of males in the harvest most likely reflects their greater vulnerability due to more extensive movements and larger home range sizes. The stability of the sex ratio and harvest level indicate that overall trapping pressure is relatively low.

Recommendations

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

Literature Cited

Steen, N. C. 1979. Annual Report of Survey-Inventory Activities. Alaska Fed. Aid in Wildl. Rest. Proj. W-17-10, Job No. 7.0, 14.0, 15.0, and 22.0.

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WOLVERINE

SURVEY-INVENTORY PROGRESS REPORT 1978-79

Game Management Unit 11 - Wrangell Mountains and Chitina Valley

Seasons and Bag Limits

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

Harvest and Trapping Pressure

The wolverine harvest for this period was 15 animals, all were reported trapped.

Composition and Productivity

The wolverine harvest was comprised of 8 males and 7 females. No further composition or productivity data were available.

Management Summary and Conclusions

A 50 percent decline from the previous year's harvest of 29 wolverines was reported. This is the lowest reported harvest in 8 years. Due to a severe winter with deep snows and considerable wind, the decreased harvest may represent a decrease in trapping activity. Should a decline in harvest continue, a declining population may be indicated.

Recommendations

Retain current seasons and bag limits.

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WOLVERINE

SURVEY-INVENTORY PROGRESS REPORT 1978-79

Game Management Unit 13 - The Nelchina Basin

Seasons and Bag Limits

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

Harvest and Hunting Pressure

The 1978-79 wolverine harvest was 59 animals (31 males, 27 females, 1 sex unknown). Trapping pressure on wolverines continued to be heavy throughout the Unit. Appendix I lists the current harvest data by chronology and method of take.

Composition and Productivity

No data were available.

Management Summary and Conclusions

The 1978-79 wolverine harvest was identical to the previous year's harvest of 58 wolverines. This represents a decreased harvest for the second consecutive year when compared to the previous 6- year average of 104 wolverines. The reduced harvest, coupled with continued heavy trapping effort, may reflect a possible decrease in the population.

Recommendations

No changes in seasons and bag limits are proposed.

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Appendix I. Wolverine harvest data for 1978-79 - Unit 13[a].

	1978-79	
Total Wolverine Harvest:	59	
Harvest Chronology, Number (Percent):		
November:	4	(7%)
December:	10	(17%)
January:	19	(32%)
February:	9	(15%)
March:	16	(27%)
Unknown:	1	(2%)
Method of Take, Number (Percent):		
Ground Shooting:	10	
Trapping:	48	
Snaring:	1	

a. Harvest data are based on sealing data only.

PREPARED BY: Robert Tobey, Game Biologist II

WOLVERINE

SURVEY-INVENTORY PROGRESS REPORT 1978-79

Game Management Unit 16 - West Side of Cook Inlet

Seasons and Bag Limits

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

Harvest and Trapping Pressure

Sixty-one wolverines, 30 males, 28 females and 3 of unknown sex, were reported taken in Unit 16 (Appendix I). One wolverine was taken in Subunit 16A and 60 were taken in Subunit 16B. Trapping was the most common method of take, accounting for 32 (52%) wolverines harvested. Seventeen (28%) were ground shot and three (5%) were snared; the methods of harvest for the remaining nine (15%) were unknown.

Chronology of the wolverine harvest (Appendix I) shows a relatively uniform kill from December through March.

Composition and Productivity

No data were available.

Management Summary and Conclusions

Trapping accounts for the majority of the wolverine harvest, although the percentage taken by ground shooting has been increasing. Data are inadequate to make accurate assumptions concerning the present status of wolverine populations.

Recommendations

Retain current seasons and bag limits.

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WOLVERINE

SURVEY-INVENTORY PROGRESS REPORT - 1978-79

Game Management Unit 18 - Yukon-Kuskokwim Delta

Seasons and Bag Limits

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

Harvest, Trapping and Hunting Pressure

The 1978-79 reported harvest of wolverines in Unit 18 was eight; one male, three females, and four of unknown sex. This total is consistent with last year's harvest of eight wolverines. The highest take recorded for the Unit was in 1975-76 when 29 wolverines were harvested.

Four wolverines were taken by trapping and four by unknown means. Three animals were harvested in December, four in January, and one in March. Three animals were trapped on the Tuluksak River, four were taken by unknown means in the Pilot Station-Reindeer River area, and one animal was trapped in an unknown location.

More animals may have been harvested but not sealed as local residents often use their wolverine pelts for ruffs and trim without having the pelts sealed.

Management Summary and Conclusion

Hunting and trapping efforts of local residents continue to be dependent on the weather and snow conditions. The harvest level may only reflect the year's environmental conditions and not population trends.

Wolverine remains an extremely valuable fur, and is in great demand by fur buyers and local residents. We should continue to encourage compliance with the sealing regulations.

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WOLVERINE

SURVEY-INVENTORY PROGRESS REPORT - 1978-79

Game Management Unit 22 - Seward Peninsula

Seasons and Bag Limits

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

Harvest, Trapping and Hunting Pressure

Based solely on the analysis of sealing certificates, there were 18 wolverines taken in Unit 22. State regulations have required all wolverines to be sealed since fall 1971. During these 8 trapping seasons, an average of 19 wolverines has been taken annually, but the harvests ranged from a low of eight (1974-75) to a high of 26 (1975-76).

The distribution of the harvest by drainage was as follows:

Koyuk River	3
Shaktoolik River	3
Fish River	2
Kuzitrin River	2
Tubutulik River	2
Unalakleet River	2
Kwiniuk River	1
Nome River	1
Imuruk Basin	1
Inglutalik River	1
Total	18

The reported harvest probably does not include all the wolverines taken because it was a common practice in rural areas to cut up hides for "domestic use" without first having them sealed. The actual harvest for the 1978-79 season was estimated to be 25 to 30 wolverines.

The composition of the reported harvest was 10 males, 6 females and 2 of undetermined sex. Trappers accounted for 12 wolverines (67%) and the remaining 6 (33%) were taken by hunters using rifles. When ground transportation was used, the most common method was to travel cross-country and locate a fresh set of tracks. Then, hunters commonly trailed the animal until they were within shooting distance.

Wolverines were taken in every month during the open season, with the exception of November. Success was highest during the month of January when seven wolverines (44% of the harvest) were caught. Six wolverines were taken in March (33%), three in February (17%) and two during the holiday season in December.

Seasonal Distribution, Migration and Concentration

During the past decade limited information has been gathered on the population status of wolverines in Unit 22. The animal's small size and solitary habits combined with a relatively low abundance make it difficult to conduct accurate ground or aerial surveys. However, trends in wolverine abundance and geographical distribution have been obtained from incidental observations. In general, the wolverine population appeared to be stable in Unit 22. Wolverines were distributed throughout most, if not all, of the Seward Peninsula drainages. Aerial observations during ideal tracking conditions suggested relatively high numbers of wolverines in remote areas, and somewhat lower numbers near population centers. During aerial spring moose surveys, wolverine sign was noted at all elevations and in all habitat types. However, the larger river drainages of the Seward Peninsula appeared to contain the greatest density. Tracks and other sign were most abundant on the Kuzitrin, Koyuk, Fish, Serpentine, Tubutulik, and Serpentine Rivers.

Management Summary and Recommendations

The primary management emphasis 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 wolverines year after year within a 30-mile radius of villages. Near population centers, wolverine harvests probably exceeded the level of maximum sustained yield. However, areas of high density and/or high reproduction appeared to act as reservoirs and served as a source for replacing harvested animals. Wolverine density in remote areas appeared to be stable or increasing.

The price of pelts has doubled during the last 4 years, and it became profitable for some individuals to use aircraft as a means of hunting wolverines. 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 - 1978-79

Game Management Unit 23 - Kotzebue Sound

Season and Bag Limits

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

Population Status and Trend

No information was available.

Population Composition

No information was available.

Mortality

Based on sealing data, the 1978-1979 reported harvest in Unit 23 was 43 wolverines: 28 males, 10 females and 5 sex unknown. It is believed that the wolverine sealing program is still not entirely accurate due to the immediate local use of this fur.

The chronology of this season's harvest was as follows: November, 7 percent; December, 7 percent; January, 33 percent; February, 14 percent; March, 39 percent. Trapping accounted for 79 percent while trappers and hunters took 21 percent by shooting. The majority of wolverines were taken from the Kobuk drainage (33%), Selawik drainage (28%), and Noatak drainage (21%), Seward Peninsula (14%) and the area between Cape Lisburne and the Noatak drainage (5%).

Management Summary and Recommendations

Hunting pressure appeared similar to previous years. Severe weather conditions prevented much airplane and ground travel until February, reducing potential trapping pressure.

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WOLVERINE

SURVEY-INVENTORY PROGRESS REPORT - 1978-79

Game Management Unit 26 - Arctic Slope

Seasons and Bag Limits

Hunting	Sept. 1 - Mar. 31	One wolverine
Trapping	Nov. 1 - Apr. 15	No limit

Harvest, Hunting and Trapping Pressure

During the 1978-79 regulatory year, six wolverines were presented for sealing in Unit 26. Of these, four were reportedly trapped, and two shot from the ground. The actual number of wolverines killed in Unit 26 was probably higher since some animals are not presented for sealing and therefore go unreported. Of the six animals, five were taken by residents of Unit 26, one was taken by a non-Unit resident of Alaska.

Population Trends, Composition and Productivity

Few data are available for estimating population size, however, an ongoing study of wolverines in the foothill habitat of the upper Utukok River area by Audrey Magoun (University of Alaska) is beginning to yield much needed information on home range size, food habits and productivity. Based on radio-collared animals, females in the foothill habitat have summer ranges of about 100 km^2 (39 mi^2) and fall/early winter ranges of about 124 km^2 (48 mi^2). The ranges of adult males are much larger. No information was available on home range size in coastal plain or mountain habitat so no overall estimate of density (or population size) can be made.

The sex composition of killed and sealed wolverine was four males and two females.

Management Summary and Recommendations

Wolverine skins are utilized locally for parka ruffs and garment trim. Animals taken for local use are often not brought in for sealing so the current sealing program underestimates actual wolverine harvest in Unit 26. This situation could be improved with an information and education program, incentives for sealing, and locally available individuals to do the sealing.

There are no data available to suggest that current levels of harvest are detrimental to the wolverine population, therefore, no changes in season or bag limit are recommended.

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