ALASKA DEPARTMENT OF FISH AND GAME
JUNEAU, ALASKA

STATE OF ALASKA
Jay S. Hammond, Governor

DEPARTMENT OF FISH AND GAME
Ronald O. Skoog, Commissioner

DIVISION OF GAME
Ronald J. Somerville, Director

ANNUAL REPORT OF SURVEY-INVENTORY ACTIVITIES

PART IV. Furbearers, Small Game, Walrus, and Wolverines

EDITED AND COMPILED BY

Robert A. Hinmam, Deputy Director

Volume XII
Federal Aid in Wildlife Restoration
Project W-19-1 and W-19-2, Jobs No. 7.0, 10.0, 15.0, and 14.0

(Printed July 1982)


ARCTIC OCEAN
ALASKA
GAME MANAGEMENT UNITS
26
23
25
24
22
21
20
22
18
19
16
14
13
12
11
17
15
7
6
5
1
18
JUNEAU
GULF OF ALASKA
9
4
3
10
8
2
10
Aleutian Islands
10

Statewide Harvests and Population Status

Furbearers

Reports on furbearers are presented in several formats, depending on the species, area, and amount of information available. Generally, furbearers are little effected by harvest; populations are usually controlled by natural factors. Trapper harvest is influenced by weather and by fur prices; in 1980-81, both factors depressed harvest of several species in many areas. Sealing of pelts provides reasonably accurate harvest data for wolves, wolverines, lynx and land otters; harvest on other species is estimated from other sources.

These reports detail harvest of 1,374 otter, nearly half (606) of which were taken in Unit 18. Of the 2,128 lynx reported here, over half (1,086) were taken in Unit 23.

Also included are two reports summarizing information received on furbearers from trappers by questionnaire.

Small Game

Reports are presented on results of a small game questionnaire from interior Alaska, and a statewide questionnaire on Upland game birds. In the Interior, the three species of grouse were moderately abundant and stable, while hares in most areas were low to moderate and increasing.

Walrus

Although the State has no direct management control over walrus, one report (on Unit 17) is included due to the Department's involvment in management of the Walrus Islands State Game Sanctuary.

Wolverine

Reports are presented for Units 9, 11, 13, 16 and 22; data on wolverines in other units are included in furbearer reports. In these units, harvest was down significantly from that of 1979-80. This decrease was due to weather conditions in some units, and to unknown causes in others. General indications are that populations are stable.

CONTENTS

FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNITS 1A AND 2

GEOGRAPHICAL DESCRIPTION: Ketchikan and Prince of Wales Island

PERIOD COVERED: July 1, 1980 - June 30, 1981

Season and Bag Limit

See Trapping Regulations No. 21.

Population Status and Trend

Due to snow conditions during the last few years, no wolf surveys have been flown and estimation of the wolf population trend is difficult. Several emaciated pups were taken in Unit 1A last winter, possibly indicating starvation due to difficulty in obtaining prey because of an extremely mild winter. If this were the case, a population decline may have occurred.

Based on discussions with trappers, mink and marten populations have apparently remained fairly steady at moderate to high levels. The populations in areas with better access are generally lower than surrounding areas because of heavy trapping pressure. This applies more to marten than mink because of the ease of trapping marten.

Otter populations appear to still be below the level of the early 1970's but have probably increased somewhat due to lower fur prices and, thus, less trapper interest. Several of the better otter trappers did not trap otters this year because of poor demand for otter pelts.

Wolverine populations should be in good condition. They occur only on the mainland and are seldom taken, particularly during mild winters when they stay away from the more easily trapped beach areas.

Population Composition

No data available.

Mortality

The wolf harvest in Unit 1A was 19 this year, compared to 20 in 1979-80. Sixteen of the 19 were taken on Revilla Island. There were nine males, nine females and one unknown sex in the harvest. Sixteen were brown and three were black. Seven of the 19 were shot and 12 were trapped.

In Unit 2, wolf harvest increased from 10 last year to 35 this year. Greater trapper effort appeared to be the primary reason for the increase. Color was recorded on 19 wolves from Unit 2 and 18 were brown, one was black. Of 29 wolves sexed, 13 were males and 16 were females. Fourteen of the wolves were shot, 19 were trapped and one was snared. The high incidence of wolves taken by shooting can probably be attributed to the extensive logging road system in Unit 2. In Unit 1A, 68 percent of the wolves were taken from December through March, while in Unit 2, 51 percent were taken during that same period.

Only one wolverine was taken in Unit 1A this year, compared to three in 1979-80 and 11 in 1978-79. Mink and marten harvest data were unavailable.

The otter harvest in both Units 1A and 2 dropped substantially from 1979-80. Sixty-three otters were taken in Unit 1A this year, down 50 percent from last year. In Unit 2, the 138 otters taken this year was down 39 percent from the 226 sealed in 1979-80. The sexes were 63 percent males in Unit 1A and 54 percent males in Unit 2.

The number of trappers sealing otters for 1980-81 in Unit 1A was 13 compared to 20 last year. In Unit 2, 22 trappers sealed otters this year compared to 31 in 1979-80. Reduced otter prices were probably the main reason for the reduced trapper effort and harvest.

Management Summary and Conclusions

Trapping pressure remained fairly high for mink and marten, but was substantially lower for otter. Average prices paid for mink and marten were slightly lower than in 1979-80, but remained sufficiently high to maintain trapping pressure. Otter prices have fallen off enough in the past 2 years to discourage some of the better trappers from specifically trapping for otters. No changes in seasons or bag limits are recommended.

PREPARED BY:

Robert E. Wood
Game Biologist III

SUBMITTED BY:

Nathan P. Johnson
Regional Management/
Research Coordinator

WOLF, WOLVERINE AND FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT 1B and 3

GEOGRAPHICAL DESCRIPTION: UNIT 1B - Southeast Mainland from Cape Fanshaw to Lemesurier Point

UNIT 3 - Islands of the Petersburg, Wrangell, Kake area

PERIOD COVERED: Furbearers - July 1, 1980 - June 30, 1981

Wolf and Wolverine - July 1, 1978 - June 30, 1981

Population Status and Trend

No systematic data were collected during the period other than hide sealing information. Routine field observations indicate that populations are increasing slowly. While wolf populations have been low, they appeared to be on the increase in 1980 in some localities. Mink, marten and otter populations continue to be good in most areas, and are the species most sought after by trappers. Raccoons and red foxes are not known to exist in GMU 3. Coyotes and lynx may occur in major drainages of Unit 1B, but none were trapped or reported during the period. Wolverines are found in low numbers throughout most of the area. A recent habitat survey by a consulting firm under Federal contract indicates that muskrats are wide spread in Units 1B and 3.

Population Composition

No information on population composition was collected during the report period. Table 1 shows sex of harvested wolverines since 1978, and wolf sex composition data since 1978 are shown in Appendix I.

Mortality

Mortality data were compiled from the sealing information maintained in the Petersburg Area office (Table 2). Harvest information based on the fur export permit report was not available for this report period.

Table 1. Wolverine harvest results, fall 1978 through spring 1981.

	GMU 1B				GMU 3			
Season	Males	Females	Unknown	Total	Males	Females	Unknown	Total
1978-79	2	4	-	6	1	-	-	1
1979-80	2	1	-	3	-	1	-	1
1980-81	1	-	1	2	-	-	1	1
TOTAL	5	5	1	11	1	1	1	3

Table 2. 1980-81 sealing data, Units 1B and 3.

	Beaver	Lynx	Otter	Wolf	Wolverine
Unit 1B	63	0	30	3	2
Unit 3	11	0	90	12	1
TOTAL	74	0	120	15	3

Wolf mortality data for the past 20 seasons (Fig. 1) were taken from bounty records and the mandatory wolf hide sealing program. Wolves are no longer bountied. Chronology of harvest, method of take, and color of wolves have varied over the last 3 years (Appendix I).

Management Summary and Recommendations

Most furbearer populations are stable or increasing in Units 1B and 3. Trapping effort depends on fur prices to a great extent. Trappers depend on boats for transportation and are subject to the vagaries of weather with effort reduced by a stormy winter when only larger vessels leave port. Trapping in the vicinity of communities in Units 1B and 3 is conducted primarily by recreational or "weekend trappers." This probably accounts for the low harvest. Trapping appears to be a secondary source of income for most trappers while seasonal occupations such as fishing or logging provide their primary source of income.

Although current seasons and bag limits meet the demand for trapping, without apparent detriment to the resource, there is a need for better information on furbearer harvest. The sealing program for beavers, lynx, otters, wolves and wolverines works well and should be continued.

PREPARED BY:

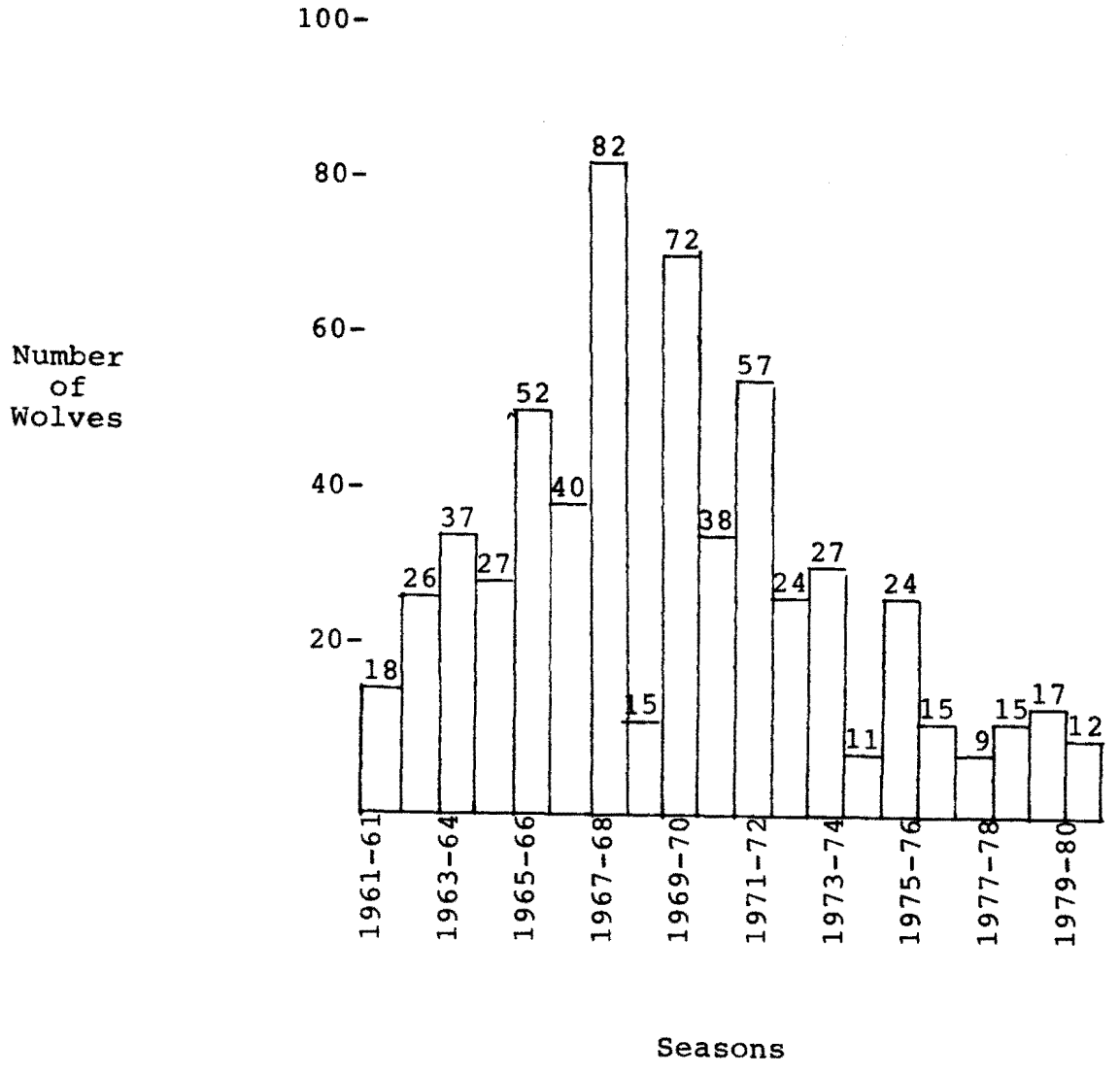
E. L. Young, Jr.
Game Biologist III

SUBMITTED BY:

Nathan P. Johnson
Regional Management/
Research Coordinator

Figure 1

Wolf Harvest, GMU 3, 1961-19



Appendix I. Wolf Harvest, 1978-79 through 1980-81, Units 1B and 3.

UNIT 1B, 1978-79

Harvest

Males - 3 Females - 4 Unknown - 0 Total - 7

Chronology by Month

Month	Number	Percent	Month	Number	Percent
July	-	--	January	3	43
August	-	--	February	1	14
September	-	--	March	-	--
October	-	--	April	-	--
November	-	--	May	-	--
December	3	43	June	-	--
			Unknown	-	--
			Total	7	100

Method of Take	Number	Percent
Ground Shooting	-	--
Trapping	7	100
Snaring	-	--
Other	-	--
Total	7	100

Color of Wolves Taken	Number	Percent
White	-	--
Brown	-	--
Gray	-	--
Black	-	--
Unknown	7	100
Total	7	100

Appendix I (cont'd). Wolf Harvest, 1978-79 through 1980-81, Units 1B and 3.

UNIT 3, 1978-79

Harvest

Males - 10 Females - 5 Unknown - 0 Total - 15

Chronology by Month

Month	Number	Percent	Month	Number	Percent
July	-	--	January	2	13
August	-	--	February	2	13
September	1	7	March	2	13
October	1	7	April	1	7
November	-	--	May	1	7
December	4	26	June	1	7
			Unknown	-	--
			Total	15	100

Method of Take	Number	Percent
Ground Shooting	7	47
Trapping	8	53
Snaring	-	--
Other	-	--
Total	15	100

Color of Wolves Taken	Number	Percent
White	-	--
Brown	1	7
Gray	11	73
Black	2	13
Unknown	1	7
Total	15	100

Appendix I (cont'd). Wolf Harvest, 1978-79 through 1980-81, Units 1B and 3.

UNIT 1B, 1979-80

Harvest

Males - 3 Females - 1 Unknown - 0 Total - 4

Chronology by Month

Month	Number	Percent	Month	Number	Percent
July	-	--	January	1	25
August	-	--	February	-	--
September	-	--	March	-	--
October	-	--	April	1	25
November	2	50	May	-	--
December	-	--	June	-	--
			Unknown	-	--
			Total	4	100

Method of Take	Number	Percent
Ground Shooting	3	75
Trapping	1	25
Snaring	-	--
Other	-	--
Total	4	100

Color of Wolves Taken	Number	Percent
White	-	--
Brown	-	--
Gray	-	--
Black	4	100
Unknown	-	--
Total	4	100

Appendix I (cont'd). Wolf Harvest, 1978-79 through 1980-81, Units 1B and 3.

UNIT 3, 1979-80

Harvest

Males - 8 Females - 7 Unknown - 2 Total - 17

Chronology by Month

Month	Number	Percent	Month	Number	Percent
July	-	--	January	7	41
August	-	--	February	4	23
September	1	6	March	-	--
October	-	--	April	2	12
November	-	--	May	1	6
December	-	--	June	2	12
			Unknown	-	--
			Total	17	100

Method of Take	Number	Percent
Ground Shooting	7	41
Trapping	10	59
Snaring	-	--
Other	-	--
Total	17	100

Color of Wolves Taken	Number	Percent
White	-	--
Brown	3	18
Gray	12	70
Black	2	12
Unknown	-	--
Total	17	100

Appendix I (cont'd). **Wolf Harvest, 1978-79 through 1980-81, Units 1B and 3.**

UNIT 1B, 1980-81

Harvest

Males - 2 Females - 2 Unknown - 1 Total - 5

Chronology by Month

Month	Number	Percent	Month	Number	Percent
July	-	--	January	1	20
August	-	--	February	-	--
September	2	40	March	1	20
October	-	--	April	-	--
November	-	--	May	-	--
December	1	20	June	-	--
			Unknown	-	--
			Total	5	100

Method of Take	Number	Percent
Ground Shooting	2	40
Trapping	3	60
Snaring	-	--
Other	-	--
Total	5	100

Color of Wolves Taken	Number	Percent
White	-	--
Brown	-	--
Gray	2	40
Black	1	20
Unknown	2	40
Total	5	100

Appendix I (cont'd). **Wolf Harvest, 1978-79 through 1980-81, Units 1B and 3.**

UNIT 3, 1980-81

Harvest

Males - 7 Females - 3 Unknown - 2 Total - 12

Chronology by Month

Month	Number	Percent	Month	Number	Percent
July	-	--	January	2	17
August	-	--	February	1	8
September	1	8	March	4	34
October	-	--	April	1	8
November	-	--	May	-	--
December	1	20	June	-	--
			Unknown	2	17
			Total	12	100

Method of Take	Number	Percent
Ground Shooting	1	8
Trapping	9	75
Snaring	-	--
Other	2	17
Total	12	100

Color of Wolves Taken	Number	Percent
White	-	--
Brown	3	25
Gray	4	33
Black	2	17
Unknown	3	25
Total	12	100

FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNITS 1C AND 1D

GEOGRAPHICAL DESCRIPTION: Mainland of Southeastern Alaska North of Cape Fanshaw

PERIOD COVERED: July 1, 1980 - June 30, 1981

Population Status and Trend

The status of furbearer populations is mostly unknown. Trapper comments indicated at least stable populations at moderate levels for wolves, otters, marten and mink for the last 2 years in Units 1C and 1D.

Population Composition

Except for wolves in a portion of Unit 1C, no formal surveys were conducted for other furbearers in Units 1C and 1D or for wolves in the remainder of Unit 1C or 1D.

Results of several surveys conducted in Berners Bay in Unit 1C during winter 1980-81 indicated that a maximum of 10 wolves used the area.

Mortality

Reductions in trapper pressure and harvest levels were noted in 1980-81 compared to 1979-80 in Unit 1C, while no significant changes in pressure or harvest were noted in Unit 1D during this same period (Appendix I).

In Unit 1C, pressure declined from 29 trappers in 1979-80 to 18 in 1980-81, while harvest levels of mink and marten correspondingly declined.

Management Summary and Recommendations

Current seasons and bag limits appear to provide adequate opportunity to take furbearers in Units 1C and 1D.

Interest in trapping seems moderately high and will probably remain so if fur prices hold up.

PREPARED BY:

David W. Zimmerman
Game Biologist III

SUBMITTED BY:

Nathan P. Johnson
Regional Management/
Research Coordinator

Appendix I. Furbearer harvest statistics - Units 1C and 1D for 1979-80 and 1980-81, Southeast Alaska.

Game Management Unit 1C

Year	/1 wolf	wolv.	otter	/2 beaver	mink	mskrt.	mrtn.	wsl.	lynx	sqrl.	total no. trappers /1	/2
1979-80	4	3	37	18	235	12	365	12	0	0	15	29
1980-81	9	5	34	1	170	0	288	0	0	0	20	18

Game Management Unit 1D

Year	/1 wolf	wolv.	otter	/2 beaver	mink	mskrt.	mrtn.	wsl.	lynx	sqrl.	total no. trappers /1	/2
1979-80	7	11	6	/3	91	12	89	14	1	18	12	18
1980-81	5	3	8	/3	71	14	80	10	0	28	8	17

/1 Data from Furbearer Sealing Documents.

/2 Data from Dealer Purchases from Trappers and Trapper Exports by Unit Printouts.

/3 No Open Season.

FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT 4

GEOGRAPHICAL DESCRIPTION: Admiralty, Baranof, Chichagof, and Adjacent Islands

PERIOD COVERED: July 1, 1980 - June 30, 1981

Population Status, Composition and Trend

No data were available.

Mortality

Furbearer harvests are determined by sealing beavers and otters and through mandatory reports for other species. During the 1979-80 season there was only one beaver reported taken from Unit 4. The reported otter harvest was 173 animals. The slight increase in the 1979-80 catch was probably a function of higher fur prices and therefore an increase in trapping pressure (Appendix I).

Harvests of mink, marten and weasels, as determined by combining fur dealer export, trapper export, and dealer purchases from trapper reports, are also given in Appendix I. Reported harvests are known to be somewhat below the true harvests. For instance, the otter harvest by the above tabulation was 105 animals, yet the sealing program showed a harvest of 173 animals. The most likely explanation for the low reported harvest is the system itself, which has never gained full public support nor compliance.

The increased interest in trapping due to the high demand for furs in 1979-80, will probably further increase during the 1980-81 season as fur prices are expected to continue at high levels.

Management Summary and Recommendation

Current trapping seasons and harvests are commensurate with local fur resources. Current high prices may lead to local overutilization and/or competition between user groups. This has been the history of utilization of furbearers and will correct itself as fur prices drop.

An easily applied sealing system for more precise and timely measurements of mink and marten harvests is needed. This is especially true for marten, where data such as sex ratios and ages of animals harvested in conjunction with trapping effort are very useful from a management standpoint.

PREPARED BY:

Loyal J. Johnson
Game Biologist III

SUBMITTED BY:

Nathan P. Johnson
Regional Management/
Research Coordinator

Appendix I. Fur harvests from Game Management Unit 4.

Regulatory Year	Otter										
	Harvest			Percent Statewide	Harvest Method by Percent		Number of Persons Present Otter for Sealing	Location by Percent of Harvest			
	Male	Female	Total		Sport	Trapped		Admiralty	Baranof	Chichagof	Unknown
1972-73			90								
1973-74			121								
1974-75			44								
1975-76			113								
1976-77											
1977-78	78	77	155	7	25	75	24	-	-	-	-
1978-79	84	70	154	-	67	33	26	9.1	24.0	55.8	11.0
1979-80	95	78	173	8	23	77	36	15.6	38.7	45.6	0

Appendix I. (cont.) Fur harvests from Game Management Unit 4.

Regulatory Year	Otter					Other Species			
	Chronology of Harvest by Percent								
	November	December	January	February	Unknown	Mink	Marten	Weasel	Beaver
1972-73						121	301	0	0
1973-74						408	662	0	0
1974-75						167	458	0	0
1975-76						256	797	0	0
1976-77									
1977-78	1.3	21.9	33.6	40.0	3.2	271	811	0	8
1978-79	0.6	39.3	27.1	2.5	30.3	489	801	1	0
1979-80	0.7	38.2	27.7	10.9	22.5	475	1,074	3	1

All data derived from Dealer Purchase From Trapper, Fur Dealer Export and Trapper Export Reports, except otter data after 1977-78 and all beaver harvests.

FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT 5

GEOGRAPHICAL DESCRIPTION: Yakutat and Malaspina Forelands, Gulf of Alaska

PERIOD COVERED: July 1, 1980 - June 30, 1981

Population Status and Trend

No formal furbearer surveys were conducted, but general observations and interviews with local trappers indicate there have been no significant changes in the status and trend of Unit 5 furbearer populations during this report period.

Population Composition

Although no formal furbearer surveys were conducted, general observations and trapper interviews indicate that production and survival are generally good for most species.

Mortality

Trapping pressure was moderate over most of the Yakutat Forelands (5A) during the report period, but was fairly intense in the area immediately adjacent the community of Yakutat. This increase in pressure is probably related to higher fur values and an influx of additional trappers into the area associated with job related transfers to Yakutat.

Based on trapper interviews, harvest of mink and marten was fairly high relative to past years. Over 200 marten are known to have been taken, as well as approximately 120 mink.

One lynx was incidentally taken by a sport hunter during fall 1980 in the Dry Bay portion of the Alsek River. In addition, four otters and three wolverines were sealed during the report period.

No known furbearer harvest occurred in Unit 5B during this report period. Locally, confusion still arises over trapping within the Wrangell-St. Elias park boundaries.

Management Summary and Recommendations

Furbearer populations appear to be healthy and stable across the Unit, but, trapping pressure is on the increase. Harvest should be closely monitored and trappers interviewed to gather as much data as possible to prevent overharvest in localized areas. It

would be extremely beneficial to have some type of accounting or sealing system for all species of furbearers to provide data for better management of the populations.

Timber harvest on both private and public lands is imminent and will undoubtedly adversely affect most furbearer populations. Efforts should continue to build a data base on furbearer populations so that potential impacts from development can be mitigated before-hand and assessed afterwards.

At this time, no changes in seasons or bag limits are recommended.

PREPARED BY:

Ronald E. Ball
Game Biologist III

SUBMITTED BY:

Nathan P. Johnson
Regional Management/
Research Coordinator

FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNITS 6, 7, 8, 11, 13, 14, 15 and 16

GEOGRAPHICAL DESCRIPTION: Southcentral Alaska

PERIOD COVERED: July 1, 1980 - June 30, 1981

Trapper Questionnaire

During May 1981, a trapper questionnaire (Appendix I) was sent to 430 trappers who reported on sealing documents as having trapped in Units 6, 7, 8, 11, 13, 14, 15, and 16 during the 1979-80 season. Due to budget and time constraints, no reminder letters were sent. Twenty-seven questionnaires were returned as undeliverable by the Postal Service and 194 (48%) were returned by the trappers. Of these, 70 individuals indicated they did not trap during the 1980-81 season. One hundred and thirty-two individuals indicated they had trapped and provided harvest and population trend information (Appendices II - XIV).

Questionnaire Results - Harvest and Population Levels

Beaver - Southcentral beaver trappers reported an average harvest of 12 beavers per trapper during the 1980-81 season. The overall catch rate for beavers and other furbearer species was calculated only for those trappers who reported a catch for that species. The highest reported catch per trapper came from the Skwentna, Matanuska Valley, and Talkeetna areas. Most trappers reported beaver abundance to be at moderate to high levels. Only McCarthy and Glennallen area trappers reported beavers to be at low to moderate densities. The population trends in most areas were reported to be stable or increasing. Although Matanuska Valley trappers reported a high catch per trapper, several individuals reported the population trend to be decreasing.

Muskrat - The average catch for all areas was reported to be 47 muskrats per trapper. Highest harvests came from the Matanuska Valley and Talkeetna areas. Muskrat densities were generally reported to be low to moderate and declining slightly. Cordova trappers indicated muskrat populations to be low and declining. Skwentna, McCarthy, and Kodiak area trappers reported muskrat populations to be stable or increasing slightly.

Mink - Overall, mink trappers harvested an average of 10 mink per trapper. The highest reported catch per trapper came from the Cordova, Glennallen, and Skwentna areas. Trappers from most areas reported mink abundance to be at moderate levels and stable. However, Glennallen area trappers reported densities to

be at moderate to high levels and an increasing trend in abundance. Cordova and Talkeetna area trappers reported densities to be at low to moderate levels and a decreasing trend.

River Otter - Otter trappers reported an average harvest of five otters per trapper. The highest reported catch per trapper came from the Kodiak area. Otters were generally reported to be present in moderate densities. McCarthy and Matanuska Valley trappers, however, reported low to moderate densities of otters. Cantwell trappers reported otters to be present in low densities. Nearly all trappers reported the trend in abundance to be stable or increasing.

Red Fox - The average harvest of red foxes was 11 foxes per trapper. The highest catch rates were reported from the Glennallen and Kodiak areas. Foxes are locally abundant in Southcentral Alaska and were reported to be present in moderate to high numbers only in the Cantwell, Kodiak, and Talkeetna areas. Trappers from most areas indicated fox populations were either decreasing in abundance or stable. However, Glennallen, Skwentna, and Talkeetna area trappers reported a slight increasing trend.

Marten - Marten trappers harvested an average of 15 marten per trapper. The highest reported catch per trapper came from the Cantwell, Glennallen, and Skwentna areas. Marten populations were reported as being low to moderate in abundance in all areas. Most trappers indicated the trend in abundance as declining or stable. Only in the McCarthy area did a sizeable proportion of trappers report the population trend for marten as increasing.

Lynx - Lynx trappers reported an average harvest of five lynx per trapper. Nearly all trappers indicated the density of lynx in their areas was low. Only in the McCarthy area did trappers indicate lynx as being low to moderate in abundance. The majority of trappers reported the lynx populations in their areas as either declining or stable in number. A sizeable proportion of McCarthy trappers, however, reported an increasing trend in abundance.

Coyote - Coyote trappers reported an average harvest of three coyotes per trapper. Highest harvest rates came from the Cantwell and Mantanuska Valley areas. Most trappers reported coyote populations as low to moderate in abundance with little change from 1979-80 levels. Cantwell and McCarthy area trappers reported a slight increase.

Wolf - The average reported wolf harvest for the Southcentral area was two wolves per trapper. Overall, wolves were reported to be low to moderate in abundance. Only in the Cantwell area did trappers report an increasing trend in numbers. Most of the other trappers reported a declining or stable trend in abundance.

Wolverine - Southcentral trappers reported an average harvest of two wolverines per trapper. Nearly all trappers reported wolverines to be low to moderate in abundance in their areas. Trends in abundance were reported to be declining or stable by the majority of trappers.

Weasel - The average reported harvest of weasels was 10 per trapper. Overall, trappers reported weasels to be moderately abundant in their areas. Kodiak trappers, however, unanimously reported weasels to be highly abundant in their area. Most individuals reported little change in abundance from 1979-80 levels although a sizeable proportion of Talkeetna and Skwentna area trappers reported a declining trend and a number of individuals from the McCarthy and Kodiak area reported an increasing trend.

PREPARED BY:

Steven Machida
Game Biologist II

SUBMITTED BY:

Leland P. Glenn
Survey-Inventory Coordinator

Appendix I.

1980-1981 SOUTHCENTRAL ALASKA TRAPPER QUESTIONNAIRE

Did you trap this year? _____

SPECIES	NUMBER CAUGHT TRAP/ SNARE	GROUND SHOOT	POPULATION THIS YEAR LOW	MOD.	HIGH	COMPARED TO LAST YEAR FEWER	SAME	MORE
Beaver								
Muskrat								
Mink								
Otter								
Fox								
Marten								
Lynx								
Coyote								
Wolf								
Wolverine								
Weasel								

Where do you trap? Game Management Unit _____ Subunit _____

Closet town/village to your trapping area(s)? _____

How long have you been trapping at these locations? _____

How long is your trapline(s)? _____

What kind of transportation did you use? _____

Approximately how many days did you devote to trapping? _____

COMMENTS AND SUGGESTIONS:

(Complete only if you wish to receive a copy of the results).

NAME: _____
ADRESS: _____
_____
_____

Appendix II. Furbearer harvest levels by species for various locations in Southcentral Alaska. Data taken from the 1980-81 Southcentral Alaska Trapper Questionnaire.

Area	Total No. Trappers	Average Catch per Trapper (No. Trappers Reporting Catch) a/			
		Beaver	Muskrat	Mink	Otter
Cantwell, Denali	6	8.8 (5)	17.5 (2)	7.3 (3)	--
Cordova, Valdez	11	11.4 (8)	2.5 (2)	13.4 (10)	3.8 (8)
Glennallen, Paxson, Lake Louise	21	7.3 (3)	47.3 (9)	15.5 (13)	3.0 (5)
Kenai, Sterling, Homer	21	4.6 (14)	19.3 (8)	7.1 (16)	2.7 (7)
Kodiak Is., Afognak Is.	15	12.3 (8)	50.0 (3)	--	9.0 (12)
Matanuska Valley, Houston, Willow	11	20.0 (5)	120.5 (6)	7.0 (9)	3.7 (3)
McCarthy, Nabesna	9	2.7 (3)	20.0 (2)	4.0 (4)	1.0 (1)
Seward, Hope, Portage	7	7.0 (4)	6.3 (3)	11.7 (3)	8.0 (1)
Skwentna, Tyonek	13	20.6 (9)	34.0 (6)	14.7 (9)	4.0 (6)
Talkeetna, Petersville	8	21.6 (7)	89.8 (4)	3.8 (5)	1.5 (4)

a/ Most trappers did not report a catch for every species. Average catch figure reflects only those trappers who reported a catch for that species.

Prepared By: Steven Machida, Game Biologist II

Appendix III. Furbearer harvest levels by species for various locations in Southcentral Alaska. Data taken from the 1980-81 Southcentral Alaska Trapper Questionnaire.

Area	Average Catch per Trapper (No. Trappers Reporting Catch) [a]						
	Fox	Marten	Lynx	Coyote	Wolf	Wolverine	Weasel
Cantwell, Denali	8.5 (6)	17.0 (3)	1.0 (1)	5.0 (1)	1.6 (5)	2.0 (2)	15.5 (2)
Cordova, Valdez	--	7.3 (7)	--	3.5 (2)	--	4.5 (2)	7.3 (8)
Glennallen, Paxson, Lake Louise	18.3 (12)	14.5 (13)	3.2 (5)	3.0 (7)	3.3 (4)	2.5 (6)	9.5 (10)
Kenai, Sterling, Homer	--	5.0 (2)	2.0 (1)	2.6 (10)	1.0 (7)	1.0 (2)	3.6 (5)
Kodiak Is., Afognak Is.	13.1 (14)	--	--	--	--	--	15.7 (3)
Matanuska Valley, Houston, Willow	3.5 (4)	3.5 (4)	--	6.3 (3)	2.0 (1)	1.0 (2)	6.3 (4)
McCarthy, Nabesna	3.3 (4)	9.0 (4)	7.0 (6)	2.0 (3)	1.0 (2)	1.8 (5)	11.3 (3)
Seward, Hope, Portage	--	2.0 (1)	--	1.8 (4)	1.5 (2)	3.0 (1)	2.0 (1)
Skwentna, Tyonek	4.6 (5)	32.9 (10)	--	1.3 (4)	3.0 (1)	2.3 (4)	18.1 (9)
Talkeentna, Petersville	2.8 (4)	11.0 (6)	--	2.7 (3)	--	1.3 (3)	6.3 (3)

a/ Most trappers did not report a catch for every species. Average catch figure reflects only those trappers who reported a catch for that species.

Prepared By: Steven Machida, Game Biologist II

Appendix IV. Furbearers population trend and abundance indices by species for various locations in Southcentral Alaska. Data taken from the 1980-81 Southcentral Alaska Trapper Questionnaire.

SPECIES/ Area	Abundance in 1980-81 Season [a]				Compared with 1979-80 [a]			
	Low	Mod	High	Index [b]	Fewer	Same	More	Index [b]
Beaver								
Cantwell, Denali	1	2	2	5.8	1	3	1	5.0
Cordova, Valdez	0	5	2	6.1	0	5	2	6.1
Glennallen, Paxson, Lake Louise	4	3	2	4.1	2	4	1	4.4
Kenai, Sterling, Homer	2	6	3	5.4	0	5	5	7.0
Kodiak Is., Afognak Is.	1	5	3	5.9	1	4	4	6.3
Matanuska Valley	1	3	1	5.0	2	3	0	3.4
McCarthy, Nabesna	3	3	0	3.0	0	4	2	6.3
Seward, Hope, Portage	0	3	1	6.0	0	4	0	5.0
Skwentna, Tyonek	0	3	6	7.7	0	5	4	6.8
Talkeetna, Petersville	1	4	2	5.6	1	5	1	5.0
Total	13	37	22	5.5	7	42	20	5.8

a Based on the number of answers to each question; not all responding trappers answered all questions.

b Index values ranged from 1.0 thorough 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 value of the index is weighted average of all the answers for a particular area. Calculation of the index value was based on number of trappers who answered that particular question.

Prepared By: Steven Machida, Game Biologist II

Appendix V. Furbearers population trend and abundance indices by species for various locations in Southcentral Alaska. Data taken from the 1980-81 Southcentral Alaska Trapper Questionnaire.

SPECIES/ Area	Abundance in 1980-81 Season[a]			[b]	Compared with 1979-80[a]			[b]
	Low	Mod	High	Index	Fewer	Same	More	Index
Muskrat								
Cantwell, Denali	3	1	0	2.0	1	4	0	4.2
Cordova, Valdez	3	0	0	1.0	2	0	0	1.0
Glennallen, Paxson, Lake Louise	3	7	2	4.7	3	6	1	4.2
Kenai, Sterling, Homer	1	4	0	4.2	1	4	0	4.2
Kodiak Is., Afognak Is.	3	1	1	3.4	0	3	1	6.0
Matanuska Valley	3	2	2	4.4	3	2	2	4.4
McCarthy, Nabesna	2	3	0	3.4	0	2	2	7.0
Seward, Hope, Portage	1	2	0	3.7	0	3	0	5.0
Skwentna, Tyonek	1	3	2	5.7	1	2	3	6.3
Talkeetna, Petersville	1	3	0	4.0	2	1	1	4.0
Total	21	26	7	4.0	13	27	10	4.8

a Based on the number of answers to each question; not all responding trappers answered all questions.

b Index values ranged from 1.0 thorough 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 value of the index is weighted average of all the answers for a particular area. Calculation of the index value was based on number of trappers who answered that particular question.

Prepared By: Steven Machida, Game Biologist II

Appendix VI. Furbearers population trend and abundance indices by species for various locations in Southcentral Alaska. Data taken from the 1980-81 Southcentral Alaska Trapper Questionnaire.

SPECIES/ Area	Abundance in 1980-81 Season [a]			[b]	Compared with 1979-80 [a]			[b]
	Low	Mod	High	Index	Fewer	Same	More	Index
Mink								
Cantwell, Denali	1	4	0	4.2	1	2	1	5.0
Cordova, Valdez	2	6	0	4.0	3	6	0	3.7
Glennallen, Paxson, Lake Louise	0	8	5	6.5	0	6	6	7.0
Kenai, Sterling, Homer	2	7	2	5.0	2	7	1	4.6
Kodiak Is., Afognak Is.	0	0	0	-	0	0	0	-
Matanuska Valley	3	5	1	4.1	2	4	2	5.0
McCarthy, Nabesna	1	5	0	4.3	0	3	1	6.0
Seward, Hope, Portage	0	4	1	5.8	1	3	1	5.0
Skwentna, Tyonek	0	5	1	5.7	0	6	1	5.6
Talkeetna, Petersville	1	3	0	4.0	2	2	0	3.0
Total	10	47	10	5.0	11	39	13	5.1

a Based on the number of answers to each question; not all responding trappers answered all questions.

b Index values ranged from 1.0 thorough 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 value of the index is weighted average of all the answers for a particular area. Calculation of the index value was based on number of trappers who answered that particular question.

Prepared By: Steven Machida, Game Biologist II

Appendix VII. Furbearers population trend and abundance indices by species for various locations in Southcentral Alaska. Data taken from the 1980-81 Southcentral Alaska Trapper Questionnaire.

SPECIES/ Area	Abundance in 1980-81 Season [a]				Compared with 1979-80 [a]			
	Low	Mod	High	Index [b]	Fewer	Same	More	Index [b]
River Otter								
Cantwell, Denali	4	0	0	1.0	0	3	1	6.0
Cordova, Valdez	1	3	2	5.7	0	6	1	5.6
Glennallen, Paxson, Lake Louise	2	7	2	5.0	0	7	2	5.9
Kenai, Sterling, Homer	0	4	1	5.8	1	3	2	5.7
Kodiak Is., Afognak Is.	0	8	5	6.5	0	10	3	5.9
Matanuska Valley	2	1	1	4.0	0	2	0	5.0
McCarthy, Nabesna	2	1	0	2.3	0	2	0	5.0
Seward, Hope, Portage	0	3	1	6.0	1	1	1	5.0
Skwentna, Tyonek	0	6	1	5.6	1	4	2	5.6
Talkeetna, Petersville	0	2	2	7.0	0	2	2	7.0
Total	11	35	15	5.3	3	40	14	5.8

a Based on the number of answers to each question; not all responding trappers answered all questions.

b Index values ranged from 1.0 thorough 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 value of the index is weighted average of all the answers for a particular area. Calculation of the index value was based on number of trappers who answered that particular question.

Prepared By: Steven Machida, Game Biologist II

Appendix VIII. Furbearers population trend and abundance indices by species for various locations in Southcentral Alaska. Data taken from the 1980-81 Southcentral Alaska Trapper Questionnaire.

SPECIES/ Area	Abundance in 1980-81 Season[a]				Compared with 1979-80[a]			
	Low	Mod	High	Index[b]	Fewer	Same	More	Index[b]
Red Fox								
Cantwell, Denali	1	4	1	5.0	0	5	0	5.0
Cordova, Valdez	1	0	0	1.0	1	0	0	1.0
Glennallen, Paxson, Lake Louise	3	9	1	4.4	2	4	6	6.3
Kenai, Sterling, Homer	2	0	0	1.0	0	1	1	7.0
Kodiak Is., Afognak Is.	1	6	5	6.3	3	8	1	4.3
Matanuska Valley	2	2	1	4.2	2	3	1	4.3
McCarthy, Nabesna	3	3	0	3.0	2	2	1	4.2
Seward, Hope, Portage	2	0	0	1.0	1	0	1	5.0
Skwentna, Tyonek	3	1	1	3.4	1	2	2	5.8
Talkeetna, Petersville	0	4	0	5.0	1	2	2	5.8
Total	18	29	9	4.4	13	27	15	5.2

a Based on the number of answers to each question; not all responding trappers answered all questions.

b Index values ranged from 1.0 thorough 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 value of the index is weighted average of all the answers for a particular area. Calculation of the index value was based on number of trappers who answered that particular question.

Prepared By: Steven Machida, Game Biologist II

Appendix IX. Furbearers population trend and abundance indices by species for various locations in Southcentral Alaska. Data taken from the 1980-81 Southcentral Alaska Trapper Questionnaire.

SPECIES/ Area	Abundance in 1980-81 Season [a]			[b]	Compared with 1979-80 [a]			[b]
	Low	Mod	High	Index	Fewer	Same	More	Index
Marten								
Cantwell, Denali	1	2	1	5.0	2	1	1	4.0
Cordova, Valdez	1	3	1	5.0	0	6	0	5.0
Glennallen, Paxson, Lake Louise	5	8	2	4.2	3	5	4	5.3
Kenai, Sterling, Homer	1	1	0	3.0	0	2	0	5.0
Kodiak Is., Afognak Is.	0	0	0	-	0	0	0	-
Matanuska Valley	2	2	0	3.0	1	3	0	4.0
McCarthy, Nabesna	2	4	0	3.7	1	1	3	6.6
Seward, Hope, Portage	2	1	0	2.3	1	2	0	3.7
Skwentna, Tyonek	3	3	1	3.9	2	4	2	5.0
Talkeetna, Petersville	4	1	0	1.8	4	2	0	2.3
Total	21	25	5	3.8	14	26	10	4.7

a Based on the number of answers to each question; not all responding trappers answered all questions.

b Index values ranged from 1.0 thorough 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 value of the index is weighted average of all the answers for a particular area. Calculation of the index value was based on number of trappers who answered that particular question.

Prepared By: Steven Machida, Game Biologist II

Appendix X. Furbearers population trend and abundance indices by species for various locations in Southcentral Alaska. Data taken from the 1980-81 Southcentral Alaska Trapper Questionnaire.

SPECIES/ Area	Abundance in 1980-81 Season[a]			[b]	Compared with 1979-80[a]			[b]
	Low	Mod	High	Index	Fewer	Same	More	Index
Lynx								
Cantwell, Denali	4	0	0	1.0	1	2	0	3.7
Cordova, Valdez	1	0	0	1.0	0	1	0	5.0
Glennallen, Paxson, Lake Louise	13	0	0	1.0	3	8	1	4.3
Kenai, Sterling, Homer	6	0	0	1.0	2	5	0	3.9
Kodiak Is., Afognak Is.	0	0	0	-	0	0	0	-
Matanuska Valley	1	0	0	1.0	0	1	0	5.0
McCarthy, Nabesna	3	4	0	3.3	1	3	3	6.1
Seward, Hope, Portage	2	0	0	1.0	2	0	0	1.0
Skwentna, Tyonek	5	0	0	1.0	0	4	0	5.0
Talkeetna, Petersville	3	0	0	1.0	1	2	0	3.7
Total	38	4	0	1.4	10	26	4	4.4

a Based on the number of answers to each question; not all responding trappers answered all questions.

b Index values ranged from 1.0 thorough 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 value of the index is weighted average of all the answers for a particular area. Calculation of the index value was based on number of trappers who answered that particular question.

Prepared By: Steven Machida, Game Biologist II

Appendix XI. Furbearers population trend and abundance indices by species for various locations in Southcentral Alaska. Data taken from the 1980-81 Southcentral Alaska Trapper Questionnaire.

SPECIES/ Area	Abundance in 1980-81 Season[a]			[b]	Compared with 1979-80[a]			[b]
	Low	Mod	High	Index	Fewer	Same	More	Index
Coyote								
Cantwell, Denali	2	0	1	3.7	0	1	2	7.7
Cordova, Valdez	0	1	1	7.0	0	1	1	7.0
Glennallen, Paxson, Lake Louise	5	4	1	3.4	0	8	1	5.4
Kenai, Sterling, Homer	2	6	1	4.6	3	5	2	4.6
Kodiak Is., Afognak Is.	0	0	0	-	0	0	0	-
Matanuska Valley	1	2	0	3.7	2	2	0	3.0
McCarthy, Nabesna	1	2	1	5.0	0	4	2	6.3
Seward, Hope, Portage	0	3	0	5.0	1	2	0	3.7
Skwentna, Tyonek	2	4	0	3.7	0	5	1	5.7
Talkeetna, Petersville	2	2	0	3.0	2	2	0	3.0
Total	15	24	5	4.1	8	30	9	5.1

a Based on the number of answers to each question; not all responding trappers answered all questions.

b Index values ranged from 1.0 thorough 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 value of the index is weighted average of all the answers for a particular area. Calculation of the index value was based on number of trappers who answered that particular question.

Prepared By: Steven Machida, Game Biologist II

Appendix XII. Furbearers population trend and abundance indices by species for various locations in Southcentral Alaska. Data taken from the 1980-81 Southcentral Alaska Trapper Questionnaire.

SPECIES/ Area	Abundance in 1980-81 Season[a]			[b]	Compared with 1979-80[a]			[b]
	Low	Mod	High	Index	Fewer	Same	More	Index
Wolf								
Cantwell, Denali	1	3	1	5.0	0	1	3	8.0
Cordova, Valdez	1	0	0	1.0	0	1	0	5.0
Glennallen, Paxson, Lake Louise	6	6	0	3.0	3	5	2	4.6
Kenai, Sterling, Homer	1	4	2	5.6	1	5	2	5.5
Kodiak Is., Afognak Is.	0	0	0	-	0	0	0	-
Matanuska Valley	2	0	0	1.0	1	1	0	3.0
McCarthy, Nabesna	2	3	1	4.3	0	4	1	5.8
Seward, Hope, Portage	2	0	1	3.7	1	1	1	5.0
Skwentna, Tyonek	4	2	0	2.3	1	5	0	4.3
Talkeetna, Petersville	3	0	0	1.0	2	1	0	2.3
Total	22	18	5	3.5	9	24	9	5.0

a Based on the number of answers to each question; not all responding trappers answered all questions.

b Index values ranged from 1.0 thorough 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 value of the index is weighted average of all the answers for a particular area. Calculation of the index value was based on number of trappers who answered that particular question.

Prepared By: Steven Machida, Game Biologist II

Appendix XIII. Furbearers population trend and abundance indices by species for various locations in Southcentral Alaska. Data taken from the 1980-81 Southcentral Alaska Trapper Questionnaire.

SPECIES/ Area	Abundance in 1980-81 Season[a]				Compared with 1979-80[a]			
	Low	Mod	High	Index[b]	Fewer	Same	More	Index[b]
Wolverine								
Cantwell, Denali	1	2	0	3.7	1	2	0	3.7
Cordova, Valdez	1	0	1	5.0	1	0	1	5.0
Glennallen, Paxson, Lake Louise	6	6	0	3.0	1	8	0	4.6
Kenai, Sterling, Homer	0	2	0	5.0	0	2	0	5.0
Kodiak Is., Afognak Is.	0	0	0	-	0	0	0	-
Matanuska Valley	1	2	0	3.7	1	2	1	5.0
McCarthy, Nabesna	2	5	0	3.9	0	5	1	5.7
Seward, Hope, Portage	0	3	0	5.0	0	3	0	5.0
Skwentna, Tyonek	3	3	0	3.0	2	5	0	3.9
Talkeetna, Petersville	1	2	1	5 0	1	3	0	4.0
Total	15	25	2	3.8	7	30	3	4.6

a Based on the number of answers to each question; not all responding trappers answered all questions.

b Index values ranged from 1.0 thorough 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 value of the index is weighted average of all the answers for a particular area. Calculation of the index value was based on number of trappers who answered that particular question.

Prepared By: Steven Machida, Game Biologist II

Appendix XIV. Furbearers population trend and abundance indices by species for various locations in Southcentral Alaska. Data taken from the 1980-81 Southcentral Alaska Trapper Questionnaire.

SPECIES/ Area	Abundance in 1980-81 Season[a]				Compared with 1979-80[a]			
	Low	Mod	High	Index[b]	Fewer	Same	More	Index[b]
Weasel								
Cantwell, Denali	2	1	0	2.3	1	2	0	3.7
Cordova, Valdez	1	4	0	4.2	0	6	0	5.0
Glennallen, Paxson, Lake Louise	2	4	4	5.8	1	6	2	5.4
Kenai, Sterling, Homer	1	3	0	4.0	1	2	1	5.0
Kodiak Is., Afognak Is.	0	0	4	9.0	0	2	2	7.0
Matanuska Valley	1	4	1	5.0	0	5	0	5.0
McCarthy, Nabesna	0	3	2	6.6	0	2	2	7.0
Seward, Hope, Portage	1	2	0	3.7	1	2	0	3.7
Skwentna, Tyonek	3	2	1	3.7	3	2	1	3.7
Talkeetna, Petersville	3	0	1	3.0	4	0	0	1.0
Total	14	23	13	4.9	11	29	8	4.8

a Based on the number of answers to each question; not all responding trappers answered all questions.

b Index values ranged from 1.0 thorough 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 value of the index is weighted average of all the answers for a particular area. Calculation of the index value was based on number of trappers who answered that particular question.

Prepared By: Steven Machida, Game Biologist II

FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT 12

GEOGRAPHICAL DESCRIPTION: Upper Tanana and White River Drainages

PERIOD COVERED: July 1, 1980 June 30, 1981

Harvest and Population Status

Lynx - Sealing documents available in early June 1981 indicate that 138 lynx (78 males, 41 females, and 19 of unknown sex) were taken in Unit 12 during the 1980-81 season. This represents a 50 percent increase in harvest over the 1979-80 season when 92 lynx were taken. This season represented the second consecutive year of increasing lynx harvests in the Unit. The Chisana-White River and the upper Tanana Valley areas contributed 51 (37%) and 48 (35%) lynx to the harvest. The Nabesna River contributed 17 (12%), the Tetlin River 14 (10%), and the Tok River 8 (6%). Harvests roughly doubled in the Chisana-White River and Tanana River drainages over the previous season's catch.

Traditionally, kittens have been identified as lynx having pelts equal to or less than 36 inches in total length. Such lynx (21) comprised 15 percent of those measured (137). However, a shorter pelt length, perhaps 33 inches, may give a more accurate estimate of percent kittens. Lynx with pelts 33 inches and shorter (8) comprised only 6 percent of the harvest.

Because snowshoe hares are on the increase, future increases in Unit 12 lynx numbers and harvests are anticipated.

Otters - Six land otters (2 males, 3 females, and 1 unknown sex) were sealed during the reporting period. Harvests of this species have been low and comparable for the past 4 years. Based upon casual observations of otter tracks, the population appears to be increasing, but few local trappers set for otters intentionally. Four otters were taken in the White River-Ptarmigan Lake area and one each in the Tanana and Tetlin River drainages.

Wolverine - According to sealing documents, 29 wolverines (17 males and 12 females) were taken in Unit 12 during the reporting period compared to 21 during the 1979-80 season. Harvests have changed little since the 1977-78 season, indicating a stable population. The Tanana River drainage contributed seven wolverines to the harvest with the rest of the catch evenly distributed elsewhere in the Unit.

Other Furbearers - According to local trappers, marten numbers were still moderately high during the 1980-81 season, but not as

high as during recent years. I expect fewer marten to be taken next year as lynx continue to increase.

Red fox numbers were high with some increase noted since the last reporting period.

Summary

Lynx, red foxes, and otters are increasing; wolverines are stable; and marten are expected to decrease. Recent changes in furbearer regulations may be expected to decrease catches of lynx, marten, and red foxes needlessly from a biological point of view. Interest in fur trapping in Unit 12 is high, and the trapping pressure is relatively evenly distributed throughout the Unit. With the exception of beaver populations, trapping does not appear to be affecting furbearer populations in the Unit significantly.

PREPARED BY:

David G. Kelleyhouse
Game Biologist III

SUBMITTED BY:

Oliver E. Burris
Regional Management Coordinator

FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNITS 12, 19, 20, 21, 24, and 25

GEOGRAPHICAL DESCRIPTION: Interior Alaska

PERIOD COVERED: July 1, 1980 - June 30, 1981

Trapper Questionnaire

The trapper questionnaire was sent to 500 trappers in Units 12, 19, 20, 21, 24, and 25 during spring 1981. No reminder letters were sent, but 200 questionnaires (40%) were returned. Of these, 50 respondents indicated they had not trapped and provided no other information. One hundred and fifty questionnaires provided data regarding harvest and population trends (Tables 1 and 2).

Questionnaire Results - Harvest and Population Levels

Lynx - According to sealing records, lynx harvests rose in the Fort Yukon area and in the Interior. Overall the 1980-81 take of lynx in the Interior averaged 8 compared to 9 per trapper in 1979-80.

Lynx populations were still considered to be at moderately low levels throughout the Interior, but area trappers reported there had been an overall slight increase. McGrath and Ruby were the only areas reporting declines in numbers of lynx.

Red Fox - Interior trappers reported an average harvest of 8 foxes per trapper in 1980-81, an increase from the average take of 7 foxes per trapper reported for the 1979-80 season. Delta trappers again reported the highest fox harvest with an average of 24 foxes per trapper. In 1979-80, Delta trappers averaged 32 foxes. Over much of the Interior, fox numbers were reported to be moderately high and more abundant than in 1979-80.

Marten - The average marten harvest in the Interior was 49 per trapper, greater than the 1979-80 average of 45 marten per trapper. The average harvest increased in Fairbanks, Nenana, Healy, Huslia, Hughes, and Eagle. In other areas, it declined or remained the same as in 1979-80.

Overall, Interior trappers felt that marten populations were at moderate levels and had remained the same as in the previous year.

Muskrat - Muskrat populations were reported moderately low in the Interior with little change from 1979-80 levels. Huslia, Hughes, Manley, and McGrath reported increases in muskrat populations.

Mink - Mink populations were moderately low to moderate over most of the Interior with numbers reported to be about the same as during 1978-79. Trappers in the Eagle, Tok, Tanana, and Healy areas reported an increase in mink numbers.

Beaver - Regional beaver populations were reported to be at moderate levels, with little change or perhaps a slight increase in numbers compared to 1979-80. The beaver sealing program provides much better information on beaver populations and harvest than the trapper questionnaire (see Beaver Survey and Inventory Report).

Land Otter - Otter abundance was thought to be moderately low to moderate throughout the Interior during 1980-81 with little change from 1979-80. The otter sealing program provides additional information on Interior otter harvests.

Wolverine - Trappers indicated that wolverine populations were moderately low throughout the Interior and little changed in most areas. Wolverine sealing records provide some harvest information, although some hides are never sealed.

Coyote - Few trappers reported catching coyotes during the 1980-81 season, and less than half of these respondents had comments regarding coyote abundance. Populations were reported to be low and little changed from 1979-80.

Wolf - Wolf populations were reported to be moderately low in most areas of the Interior, with little change from 1979-80. Trappers from the Fort Yukon, Eagle, Tok, and Healy areas reported slightly decreased wolf numbers, while trappers from Ruby, Central, Circle, Huslia, and Hughes reported increased wolf numbers.

Squirrel - Squirrel numbers were at moderate to moderately high levels in the Interior, and reports from most areas indicated little change or a slight increase in squirrel populations compared to 1979-80.

Snowshoe Hare - Hare populations were moderate to moderately high in the Interior, and most area trappers reported definite increases in hare abundance since 1979-80. The only area reporting a decline was Tanana, with three out of five respondents reporting declining numbers of hares.

PREPARED BY:

Jeannette R. Ernest
Game Biologist II

SUBMITTED BY:

Oliver E. Burris
Regional Management Coordinator

Table 1. Lynx, fox, and marten harvests as indicated by the Trapper Questionnaire, 1980-81.

Area	Number of Trappers* Responding	Number Lynx Taken	Number Lynx/ Trapper*	Number Fox Taken	Number Fox/ Trapper*	Number Marten Taken	Number Marten/ Trapper
Brooks Range	13	81	9.0	22	2.8	559	55.9
Circle, Central	5	10	10.0	2	2.0	35	11.7
Delta	13	24	6.0	195	24.4	144	28.8
Eagle, Chicken, Boundary	8	5	2.5	24	6.0	462	77.0
Fairbanks	40	59	3.1	259	9.6	564	22.6
Fort Yukon	20	200	28.6	32	4.6	427	42.7
Galena, Nulato, Koyukuk	8	19	3.8	17	5.7	470	78.3
Healy, Mt. McKinley,	5	6	3.0	23	5.8	76	38.0
Hughes, Huslia	4	26	13.0	10	3.3	500	166.7
Manley	5	2	1.0	4	2.0	294	73.3
McGrath	15	49	16.3	10	1.7	668	55.7
Nenana, Clear	10	38	6.3	27	6.8	108	15.4
Ruby	4	41	41.0	3	3.0	422	105.5
Tanana	6	4	4.0	8	2.7	103	20.6
Tok, Northway	15	28	3.5	92	8.4	453	45.3
Miscellaneous other	9	73	18.3	12	2.4	332	55.3
Interior Totals	180	665	8.9	740	7.9	5722	49.3

* 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 1980-81 Season[a] Low	Mod	High	Index[b]	Compared with 1979-80[a] Fewer	Same	More	Index[b]
BEAVER								
Brooks Range	2	3	2	5.0	0	4	3	7.3
Circle, Central	0	2	0	5.0	0	2	0	5.0
Delta	1	6	2	5.4	1	7	0	4.5
Eagle, Chicken, Boundary	1	1	0	3.0	0	2	0	5.0
Fairbanks	2	14	5	5.6	2	13	5	5.6
Fort Yukon	5	5	3	4.4	3	6	4	3.0
Galena, Nulato, Koyukuk	0	2	3	7.4	0	4	4	7.0
Healy, Mt. McKinley,	1	1	2	6.0	0	4	0	5.0
Hughes, Huslia	1	2	1	5.0	0	0	3	9.0
Manley, Livengood	0	3	0	5.0	0	3	0	5.0
McGrath	2	7	3	5.3	1	4	5	6.6
Nenana, Clear	0	4	0	5.0	0	3	1	6.0
Ruby	1	2	1	5.0	1	3	0	4.0
Tanana	2	2	0	3.0	1	2	0	3.7
Tok, Northway	2	7	0	4.1	2	6	0	4.0
Miscellaneous other	0	4	2	6.3	3	4	1	4.0
Interior Totals	20	65	24	5.1	14	67	26	5.4

[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.

SPECIES/ Area	Abundance in 1980-81 Season[a]				Compared with 1979-80[a]			
	Low	Mod	High	Index[b]	Fewer	Same	More	Index[b]
COYOTE								
Brooks Range	4	1	0	1.8	0	5	0	5.0
Circle, Central	1	0	0	1.0	0	1	0	5.0
Delta	2	5	1	4.5	1	8	0	4.6
Eagle, Chicken, Boundary	2	0	0	1.0	0	2	0	5.0
Fairbanks	15	4	0	1.8	4	13	0	3.9
Fort Yukon	5	0	0	1.0	1	3	0	4.0
Galena, Nulato, Koyukuk	1	0	0	1.0	0	2	0	5.0
Healy, Mt. McKinley,	1	4	0	4.2	0	5	0	5.0
Hughes, Huslia	2	0	0	1.0	0	1	0	5.0
Manley, Livengood	2	0	0	1.0	0	2	0	5.0
McGrath	2	2	0	3.0	0	4	0	5.0
Nenana, Clear	3	2	1	3.7	1	2	2	4.8
Ruby	1	1	0	3.0	0	2	0	5.0
Tanana	4	0	0	1.0	0	3	0	5.0
Tok, Northway	5	3	0	2.5	1	3	2	5.7
Miscellaneous other	2	2	0	3.0	1	2	0	3.7
Interior Totals	51	22	2	2.4	9	58	4	4.7

[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.

SPECIES/ Area	Abundance in 1980-81 Season[a]				Compared with 1979-80[a]			
	Low	Mod	High	Index[b]	Fewer	Same	More	Index[b]
GROUSE								
Brooks Range	4	4	1	3.7	4	4	0	3.0
Circle, Central	2	1	0	3.3	3	0	0	1.0
Delta	2	6	1	4.6	1	5	2	5.5
Eagle, Chicken, Boundary	2	3	2	6.8	1	2	2	5.4
Fairbanks	13	16	3	3.6	12	15	4	4.0
Fort Yukon	10	4	1	2.6	7	6	1	3.3
Galena, Nulato, Koyukuk	2	1	0	2.3	2	2	1	4.2
Healy, Mt. McKinley,	2	1	1	4.0	2	1	1	4.0
Hughes, Huslia	2	1	0	2.3	0	2	0	5.0
Manley, Livengood	2	1	0	2.3	3	0	0	1.0
McGrath	4	4	3	4.6	1	7	2	5.4
Nenana, Clear	5	2	0	2.1	3	3	1	3.9
Ruby	1	1	2	6.0	1	1	2	6.0
Tanana	0	4	0	5.0	3	0	0	1.0
Tok, Northway	0	7	3	6.2	1	6	3	5.8
Miscellaneous	4	2	2	4.0	2	3	2	5.0
Interior Totals	55	58	19	3.9	46	57	21	4.2

[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).

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

SPECIES/ Area	Abundance in 1980-81 Season[a] Low	Mod	High	Index[b]	Compared with 1979-80[a] Fewer	Same	More	Index[b]
HARE								
Brooks Range	0	2	7	8.1	0	3	5	7.5
Circle, Central	2	1	0	3.3	3	0	0	1.0
Delta	2	4	3	5.4	2	4	4	5.8
Eagle, Chicken, Boundary	2	2	3	5.8	1	2	3	6.3
Fairbanks	3	20	10	5.9	1	10	20	7.5
Fort Yukon	2	8	4	5.6	2	7	4	5.6
Galena, Nulato, Koyukuk	0	2	2	7.0	0	3	4	7.1
Healy, Mt. McKinley,	1	3	0	4.0	0	2	2	7.0
Hughes, Huslia	0	2	1	6.3	0	0	2	9.0
Manley, Livengood	1	1	1	5.0	0	0	3	9.0
McGrath	4	2	3	4.6	2	3	3	5.5
Nenana, Clear	1	6	1	5.0	0	3	5	7.5
Ruby	1	1	2	3.0	0	2	2	7.0
Tanana	3	3	0	3.0	3	1	1	3.4
Tok, Northway	0	8	3	6.1	0	6	5	6.8
Miscellaneous other	3	4	5	5.7	0	4	6	7.4
Interior Totals	25	69	45	5.6	14	50	69	6.7

[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.

SPECIES/ Area	Abundance in 1980-81 Season[a] Low	Mod	High	Index[b]	Compared with 1979-80[a] Fewer	Same	More	Index[b]
LYNX								
Brooks Range	3	3	5	5.7	1	5	5	6.5
Circle, Central	0	3	0	5.0	1	1	2	6.0
Delta	9	0	1	1.8	2	4	2	5.0
Eagle, Chicken, Boundary	4	2	0	2.0	2	2	2	5.0
Fairbanks	28	7	0	1.7	4	18	11	5.8
Fort Yukon	6	7	2	3.9	1	9	5	6.1
Galena, Nulato, Koyukuk	0	4	0	5.0	1	4	2	5.6
Healy, Mt. McKinley,	3	2	0	2.6	0	3	2	6.6
Hughes, Huslia	1	1	2	6.0	1	1	1	5.0
Manley,	2	1	0	2.3	0	1	2	7.7
McGrath	6	4	0	2.6	4	4	1	3.9
Nenana, Clear	4	5	0	3.2	0	2	6	8.0
Ruby	3	1	0	2.0	1	2	1	3.0
Tanana	3	1	1	3.4	0	3	1	6.0
Tok, Northway	8	3	0	2.1	4	4	3	4.6
Miscellaneous other	6	2	0	2.0	0	5	5	7.0
Interior Totals	86	46	11	2.9	22	68	51	5.8

[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.

SPECIES/ Area	Abundance in 1980-81 Season[a] Low	Mod	High	Index[b]	Compared with 1979-80[a] Fewer	Same	More	Index[b]
MARTEN								
Brooks Range	1	5	4	6.2	0	8	2	5.8
Circle, Central	2	1	0	2.3	2	0	1	3.7
Delta	1	5	1	5.0	1	6	1	5.0
Eagle, Chicken, Boundary	1	3	2	5.7	1	5	2	5.5
Fairbanks	7	20	1	4.1	5	14	9	5.8
Fort Yukon	5	7	3	4.5	7	6	3	4.0
Galena, Nulato, Koyukuk	1	2	2	5.8	1	3	4	6.5
Healy, Mt. McKinley,	1	2	1	5.0	0	2	2	5.8
Hughes, Huslia	0	1	3	8.0	1	1	1	5.0
Manley, Livengood	0	2	2	7.0	1	3	0	4.0
McGrath	0	11	1	5.3	1	6	3	5.8
Nenana, Clear	3	4	1	4.0	3	3	1	3.9
Ruby	0	3	1	6.0	1	1	2	6.0
Tanana	2	4	0	3.7	1	2	1	5.0
Tok, Northway	2	7	2	5.0	2	9	0	4.9
Miscellaneous other	1	5	2	5.5	2	4	2	5.0
Interior Totals	27	82	26	5.0	29	73	34	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.

SPECIES/ Area	Abundance in 1980-81 Season[a] Low	Mod	High	Index[b]	Compared with 1979-80[a] Fewer	Same	More	Index[b]
MINK								
Brooks Range	3	6	1	4.2	1	6	3	5.8
Circle, Central	1	1	0	3.0	0	2	0	5.0
Delta	2	4	1	4.4	2	4	0	3.6
Eagle, Chicken, Boundary	1	3	0	4.0	0	1	1	7.0
Fairbanks	8	16	3	4.3	4	16	4	5.0
Fort Yukon	6	8	0	3.3	5	7	2	4.1
Galena, Nulato, Koyukuk	1	2	1	5.0	2	3	3	5.5
Healy, Mt. McKinley,	1	3	0	4.0	0	3	1	6.0
Hughes, Huslia	1	3	0	4.0	1	1	1	5.0
Manley, Livengood	2	1	0	2.3	2	1	0	2.3
McGrath	3	4	1	4.0	1	4	2	5.6
Nenana, Clear	3	3	1	3.9	3	1	3	5.0
Ruby	1	3	0	4.0	1	3	0	4.0
Tanana	3	1	0	2.0	0	1	1	7.0
Tok, Northway	1	6	2	5.4	0	4	4	7.0
Miscellaneous other	5	3	1	2.2	1	3	3	6.1
Interior Totals	42	67	11	4.0	23	60	28	5.2

[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).

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

SPECIES/ Area	Abundance in 1980-81 Season[a] Low	Mod	High	Index[b]	Compared with 1979-80[a] Fewer	Same	More	Index[b]
MUSKRAT								
Brooks Range	5	1	1	2.7	1	5	1	5.0
Circle, Central	0	1	0	5.0	0	0	1	9.0
Delta	2	2	1	4.2	2	4	1	5.2
Eagle, Chicken, Boundary	0	0	0	---	0	0	0	---
Fairbanks	8	7	0	2.9	4	10	1	4.2
Fort Yukon	7	7	0	3.0	2	10	2	5.0
Galena, Nulato, Koyukuk	2	0	1	3.7	1	3	1	5.0
Healy, Mt. McKinley,	1	1	0	3.0	0	2	0	5.0
Hughes, Huslia	3	1	0	2.0	0	1	2	7.7
Manley, Livengood	2	1	0	2.3	0	2	1	6.3
McGrath	3	3	2	4.5	0	3	4	7.3
Nenana, Clear	1	1	0	3.0	1	1	0	3.0
Ruby	2	0	0	1.0	1	0	1	5.0
Tanana	3	0	0	1.0	1	1	0	3.0
Tok, Northway	1	6	3	5.8	2	4	4	5.8
Miscellaneous other	4	0	0	1.0	3	1	0	4.0
Interior Totals	94	31	8	3.3	18	47	19	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.

SPECIES/ Area	Abundance in 1980-81 Season[a] Low	Mod	High	Index[b]	Compared with 1979-80[a] Fewer	Same	More	Index[b]
OTTER								
Brooks Range	4	5	0	3.2	0	9	0	5.0
Circle, Central	1	0	0	1.0	0	1	0	5.0
Delta	1	3	1	5.0	0	3	1	6.0
Eagle, Chicken, Boundary	2	0	0	1.0	0	2	0	5.0
Fairbanks	7	8	0	3.1	3	8	4	5.3
Fort Yukon	6	4	0	2.6	3	5	1	4.1
Galena, Nulato, Koyukuk	1	2	2	7.0	0	5	1	5.7
Healy, Mt. McKinley,	1	3	0	4.0	0	4	0	5.0
Hughes, Huslia	1	3	0	4.0	2	0	1	3.3
Manley, Livengood	0	2	0	5.0	0	2	0	5.0
McGrath	0	9	0	5.0	0	7	0	5.0
Nenana, Clear	2	1	0	2.3	1	3	0	4.0
Ruby	2	2	0	3.0	1	3	0	4.0
Tanana	3	0	0	1.0	1	1	0	3.0
Tok, Northway	6	2	0	2.0	1	6	0	4.4
Miscellaneous other	2	5	0	1.7	0	4	1	5.8
Interior Totals	39	49	3	3.5	12	63	9	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.

SPECIES/ Area	Abundance in 1980-81 Season[a] Low	Mod	High	Index[b]	Compared with 1979-80[a] Fewer	Same	More	Index[b]
PTARMIGAN								
Brooks Range	3	6	0	3.7	4	4	0	3.0
Circle, Central	3	0	0	1.0	3	0	0	1.0
Delta	2	5	0	3.9	2	3	2	4.9
Eagle, Chicken, Boundary	3	3	1	3.9	1	4	0	4.2
Fairbanks	14	16	2	3.5	8	18	5	4.6
Fort Yukon	6	8	1	3.7	4	9	2	4.5
Galena, Nulato, Koyukuk	4	1	0	1.8	3	1	1	3.4
Healy, Mt. McKinley,	2	2	0	3.0	3	1	0	2.0
Hughes, Huslia	2	1	0	2.3	2	2	0	3.0
Manley, Livengood	2	1	0	2.3	3	0	0	1.0
McGrath	6	4	0	2.6	5	4	0	2.8
Nenana, Clear	5	2	0	2.1	3	4	0	3.3
Ruby	3	0	1	3.0	3	0	1	3.0
Tanana	4	1	1	3.0	3	1	1	3.4
Tok, Northway	1	5	3	5.9	2	7	1	4.6
Miscellaneous other	0	4	5	6.2	2	5	3	4.4
Interior Totals	60	59	14	3.6	51	63	16	3.9

[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.

SPECIES/ Area	Abundance in 1980-81 Season[a] Low	Mod	High	Index[b]	Compared with 1979-80[a] Fewer	Same	More	Index[b]
RED FOX								
Brooks Range	3	3	5	5.7	1	5	5	6.5
Circle, Central	0	2	1	6.3	0	1	2	7.9
Delta	2	4	5	6.1	2	3	5	6.2
Eagle, Chicken, Boundary	1	2	4	6.7	0	2	5	7.8
Fairbanks	7	17	8	5.1	1	12	18	7.2
Fort Yukon	4	8	3	4.7	3	5	7	6.1
Galena, Nulato, Koyukuk	1	3	0	4.0	3	4	0	3.3
Healy, Mt. McKinley,	0	3	2	6.6	0	2	3	7.4
Hughes, Huslia	2	0	2	5.0	0	2	1	6.3
Manley, Livengood	1	2	0	3.7	1	0	2	6.3
McGrath	2	5	2	5.0	1	3	5	6.8
Nenana, Clear	2	3	3	5.5	2	3	2	5.0
Ruby	3	1	0	2.0	1	1	2	3.0
Tanana	0	5	1	5.7	0	3	1	6.0
Tok, Northway	0	8	4	6.3	1	5	6	6.7
Miscellaneous other	2	5	3	5.4	0	5	3	4.5
Interior Totals	30	71	43	5.4	16	56	67	6.5

[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.

SPECIES/ Area	Abundance in 1980-81 Season[a] Low	Mod	High	Index[b]	Compared with 1979-80[a] Fewer	Same	More	Index[b]
SQUIRREL								
Brooks Range	2	4	2	5.0	1	5	1	5.0
Circle, Central	0	1	1	7.0	0	2	0	5.0
Delta	1	4	4	6.3	0	6	1	6.8
Eagle, Chicken, Boundary	0	2	2	7.0	0	4	0	5.0
Fairbanks	4	21	4	5.0	4	20	2	4.7
Fort Yukon	1	7	3	5.7	1	7	3	5.7
Galena, Nulato, Koyukuk	0	3	0	5.0	0	5	0	5.0
Healy, Mt. McKinley,	0	1	2	7.7	0	2	1	6.3
Hughes, Huslia	2	0	1	3.7	0	2	0	5.0
Manley, Livengood	1	2	0	3.7	2	1	0	2.3
McGrath	1	2	4	6.7	1	3	2	5.7
Nenana, Clear	0	4	4	7.0	1	5	2	5.5
Ruby	0	1	3	8.0	0	2	2	7.0
Tanana	0	3	3	7.0	0	3	2	6.6
Tok, Northway	1	1	5	7.3	2	3	3	5.4
Miscellaneous other	1	1	6	7.5	1	3	1	5.0
Interior Totals	14	57	44	6.0	13	73	20	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.

SPECIES/ Area	Abundance in 1980-81 Season[a] Low	Mod	High	Index[b]	Compared with 1979-80[a] Fewer	Same	More	Index[b]
WOLF								
Brooks Range	6	3	0	2.3	2	6	1	4.6
Circle, Central	0	2	1	6.3	0	1	2	7.7
Delta	5	5	0	3.0	3	5	1	4.1
Eagle, Chicken, Boundary	3	2	1	3.7	1	4	0	4.2
Fairbanks	16	7	1	2.5	7	10	6	4.6
Fort Yukon	7	4	0	2.5	4	6	1	3.9
Galena, Nulato, Koyukuk	1	2	1	5.0	0	6	0	5.0
Healy, Mt. McKinley,	3	2	0	2.6	2	3	0	3.4
Hughes, Huslia	1	2	0	3.7	0	1	1	7.0
Manley, Livengood	2	1	0	2.3	0	3	0	5.0
McGrath	5	5	0	3.0	2	7	0	4.1
Nenana, Clear	6	2	0	2.0	2	2	4	6.0
Ruby	0	2	2	7.0	0	1	3	8.0
Tanana	4	2	0	2.3	2	2	1	4.2
Tok, Northway	6	5	0	2.8	5	7	0	3.3
Miscellaneous other	4	3	0	2.7	2	4	1	4.4
Interior Totals	69	49	6	3.0	32	68	21	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.

SPECIES/ Area	Abundance in 1980-81 Season[a]				Compared with 1979-80[a]			
	Low	Mod	High	Index[b]	Fewer	Same	More	Index[b]
WOLVERINE								
Brooks Range	5	4	0	2.8	2	6	1	4.6
Circle, Central	2	1	0	2.3	1	2	0	3.7
Delta	4	5	0	3.2	0	6	2	6.0
Eagle, Chicken, Boundary	2	4	0	3.7	3	3	0	3.0
Fairbanks	16	4	1	2.1	5	14	2	4.4
Fort Yukon	9	3	0	2.0	5	6	0	3.2
Galena, Nulato, Koyukuk	2	1	1	4.0	0	5	0	5.0
Healy, Mt. McKinley,	1	4	0	4.2	0	4	1	5.8
Hughes, Huslia	1	2	0	3.7	0	1	1	7.0
Manley, Livengood	2	1	0	2.3	1	2	0	3.7
McGrath	2	7	0	4.1	2	6	0	4.0
Nenana, Clear	5	1	0	1.7	2	2	2	5.0
Ruby	2	2	0	3.0	2	2	0	3.0
Tanana	4	2	0	2.3	3	2	0	2.6
Tok, Northway	5	6	0	3.2	2	9	1	4.7
Miscellaneous other	2	3	0	3.4	3	4	0	3.3
Interior Totals	64	50	2	2.9	31	74	12	4.4

[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).

FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT 18

GEOGRAPHICAL DESCRIPTION: Yukon-Kuskokwim Delta

PERIOD COVERED: July 1, 1980 - June 30, 1981

Seasons and Bag Limits

The trapping season for all furbearers in Unit 18 was November 10 to March 31, with three exceptions; beaver, January 1 to March 31 (covered in a separate report); mink and weasel, November 10 to January 31; and muskrat, November 10 to June 10. The only furbearer in Unit 18 having a bag limit was beaver, which was restricted to 20 per trapper per season.

Population Status and Trends

No population survey of furbearers was conducted on the Yukon-Kuskokwim Delta in the reporting period. Discussions with trappers, fur buyers and an analysis of sealing certificates, and number of pelts trapped and sold gives an indication of population trends. Additionally, a trapper questionnaire was mailed to 100 trappers in Unit 18 to aquire information about weather, trapping pressure and other factors that might influence the harvest of several species taken in the Unit. Findings from the survey suggest that; mink and muskrats were present in higher numbers than the previous winter; land otters were slightly more abundant; both red and arctic foxes were at the same level; fewer wolverines were observed, especially by trappers in drainages of the Kuskokwim River. Weather conditions were apparently similar to those in the previous year, with the exception of the Ryar area where trappers reported poor trapping conditions. However, low snowfall in November and December probably contributed to a high mink harvest. Prices paid for pelts were reported by most trappers to be higher than during the previous year. This may also have contributed to the high mink harvest.

Mortality

Fur Dealer Purchase and Trapper Export printouts were not available at the time of report preparation. Comments in this report on harvest and other mortality of unsealed fur bearers are taken from the trapper questionnaire and discussions with fur buyers during the trapping season.

Arctic Fox

Trappers from coastal Unit 18 who responded to the questionnaire indicated that white, or arctic foxes, were present at approximately the same density as during the previous winter, suggesting that approximately 300 arctic foxes may have been taken during the 1980-81 trapping season.

Red Fox

Red foxes were also believed by most trappers to be present in approximately the same numbers as in 1979-80. The 1 exception was along the Lower Yukon River, where returned questionnaires indicated fewer red foxes than in 1979-80. The harvest in Unit 18 during the reporting period was probably close to that during each of the previous two seasons; an estimated 2,000 to 2,500 red foxes were taken from the delta during this time.

Marten

Few marten are trapped in Unit 18. Their habitat is restricted to the Kilbuck mountains south and east of Bethel and to the north side of the Yukon River above Saint Mary's. Since no comments were received regarding marten, I assume very few (less than 100) were taken.

Mink

The harvest of mink from western Alaska during 1980-81 was probably the highest since the 1959-60 trapping season. Discussions with fur buyers and trappers indicate that at least 10,000 were trapped during the season. Trapping conditions were said to be "ideal" for mink during November and early December when most mink are trapped and subsequently purchased for the European market. Also, prices paid for pelts were about $10.00 higher than during the previous season. This latter factor encouraged more people to trap, resulting in a higher harvest than would otherwise have been experienced.

Muskrat

Most trappers who were interviewed believed that muskrat were present in higher numbers than during the previous several years. However, because of a lack of snow early in the season and a subsequent freezing-out of muskrat push-ups, many trappers found only carcasses when sets were made. Because trappers reportedly observed more muskrats than in the previous year, it is possible that winter mortality due to freezing occurred in only a portion of the Unit. The best estimate for the harvest of muskrats in

Unit 18 during 1980-81 is 8,000, or about one-half of the harvest from 1979-80.

Wolf

No wolves were sealed from Unit 18 during the reporting period and I am not aware that any were taken.

Wolverine

Six wolverine pelts were sealed from Unit 18 during the 1980-81 trapping season (Appendix I). This number is down from the previous year's sealed harvest of 13 but represents the approximate number sealed annually from the Unit since 1961-62. Five of the six animals came from the mountains around Pilot Station and Mountain Village.

Lynx

The number of lynx sealed from Unit 18 was the lowest since 1976-77. During this reporting period, 46 lynx were taken, one came from south of the Kuskokwim River, four from the Yukon drainage and 41 from the Kuskokwim. Most of those from the Kuskokwim were taken from the Tuluksak watershed.

Otter

Six hundred and six land otters were sealed from the Yukon-Kuskokwim Delta in 1980-81. This represents approximately one-forth of the otters trapped in Alaska during the reporting period. This number of otters corresponds closely with the 1978-79 harvest when 638 were reported taken in the Unit.

Analysis of sealing certificates indicates that 54 percent of the harvest was males, 35 percent was females and 11 percent was of undetermined sex. Trapping accounted for 64 percent of the take while snaring and shooting accounted for 19 and 6 percent, respectively, (Appendix I).

A high percentage of otters was taken within the first 7 weeks of the season. Thirty-one and 44 percent of the harvest was taken in November and December, respectively. The area from the mouth of the Yukon River upstream to approximately Russian Mission produced nearly 50 percent of the harvest (Appendix II). Twenty percent of the harvest came from tributaries of the Kuskokwim River from Eek River upstream to the Unit boundary.

Management Summary and Recommendations

Unit 18 provides important land otter habitat, as shown by the fact that 25 percent of the 1980-81 statewide harvest came from

this Unit. Because of large harvests and requirements established by the Convention of International Trade in Endangered Species, the data base on otter and their habitat within the Yukon-Kuskokwim Delta should be expanded.

At this time no change in bag limits or seasons is necessary for any furbearers in the Unit.

PREPARED BY:

W. Bruce Dinneford
Game Biologist III

SUBMITTED BY:

John W. Coady
Regional Supervisor

APPENDIX I. Composition, method of take, Chronology, and take per trapper of furbearers sealed from Unit 18 during 1980-81 season.

Harvest	Wolverine #	Wolverine %	Lynx #	Lynx %	Otter #	Otter %
Female	4	(67)	18	(39)	211	(35)
Male	2	(33)	24	(52)	328	(54)
Unknown	-		4	(9)	67	(11)
Total	6	(100)	46	(100)	606	(100)
Method of Take						
Shooting	1	(17)	-		39	(6)
Trapping	4	(67)	43	(93)	384	(64)
Snaring	1	(17)	3	(7)	116	(19)
Unknown	-		-		67	(11)
Chronology						
November	-		3	(7)	189	(31)
December	-		8	(17)	264	(44)
January	2	(33)	8	(17)	46	(8)
February	3	(50)	10	(22)	44	(7)
March	-		13	(28)	37	(6)
Unknown	1	(17)	4	(9)	26	(4)
Number Trappers	5		13		216	
Take Per Trapper	1.2		3.5		2.8	

APPENDIX II. Location of harvest of land otter taken from Unit 18 during 1980-81 season.

Geographical Area	Number Harvested
Coast from Hooper Bay to Kipnuk including Baird Inlet/Dall Lake area	56
Mouth of Yukon River from Kotlik to Sheldons Point and Black River	136
Mountain Vaillage to Russian Mission on the Yukon, and the Kaskanak River/Yukon Flats area	156
Upper Johnson River, Paimut Slough and Yukon River above Russian Mission	44
Coast, south of the Kuskokwim River	38
Lower Johnson River, Tundra Village, Tuntutuliak to Napaskiak	54
Kuskokwim tributaries from Eek River upstream on south side and Akiak/Tuluksak/Lower Kalskag area	119
Unknown	3

FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT 19

GEOGRAPHICAL DESCRIPTION: Upper and Middle Kuskokwim River Drainages

PERIOD COVERED: July 1, 1980 - June 30, 1981

Harvest and Population Status

Wolverine - The reported wolverine catch for Unit 19 during the 1980-81 season was 48. This was less than the 1979-80 catch of 59, which was a record high catch. The harvest consisted of 13 females, 33 males, and 2 wolverines of undetermined sex.

Land Otter - The reported otter catch in Unit 19 was 58, the same as in 1979-80. The harvest consisted of 23 females, 17 males, and 18 otters of undetermined sex. Many otters were taken incidental to beaver trapping. Otters are thought to be abundant over most of Unit 19, but trapping pressure continued to be light.

Lynx - Lynx populations in subalpine and upland river valleys continued to increase. Trappers in Subunit 19A harvested 139 of the 249 lynx reported for the Unit. In Unit 19A, most lynx were taken in January, February, and March.

Summary

Due to the absence of an area biologist in Unit 19, little information is available on the abundance and harvest of those furbearers which are not sealed. The trapper questionnaire indicated that fox and marten populations were high in the Unit, especially in the McGrath area.

PREPARED BY:

Jeannette R. Ernest
Game Biologist II

SUBMITTED BY:

Oliver E. Burris
Regional Management Coordinator

FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT 20

GEOGRAPHICAL DESCRIPTION: Central Tanana Valley

PERIOD COVERED: July 1, 1980 - June 30, 1981

Harvest and Population Status

Lynx - A total of 362 lynx from Unit 20 was caught during the 1980-81 season, according to sealing records. The reported harvest by subunit was as follows:

Subunit 20A	32
Subunit 20B	26
Subunit 20C	253
Subunit 20D	16
Subunit 20E	33
Subunit Unknown	2
Unit 20 Total	362

The lynx harvest was distributed throughout the season as follows: 75 (21%) taken in November, 55 (15%) in December, 90 (25%) in January, 81 (23%) in February, and 58 (16%) in March. Two lynx were reported taken out of season.

Otter - According to sealing records, 31 land otters were harvested in Unit 20 during the 1980-81 season. The reported harvest by subunit was as follows:

Subunit	Males	Females	Unknown	Total
20A	2	0	0	2
20B	1	3	0	4
20C	12	6	4	22
20D	0	0	0	0
20E	1	0	0	1
Unknown	1	1	0	2
Unit 20 Total	17	10	4	31

The otter harvest was spread throughout the season.

Wolverine - Sealing documents indicated that 72 wolverines were harvested from Unit 20 during the 1980-81 season. The reported wolverine harvest by subunit was as follows:

Subunit	Males	Females	Unknown	Total
20A	7	4	0	11
20B	4	3	0	7
20C	17	11	0	28
20D	5	3	2	10
20E	8	8	0	16
Unit 20 Total	41	29	2	72

The wolverine catch occurred throughout the season with 9 (13%) taken in November, 11 (15%) in December, 13 (18%) in January, 15 (21%) in February, and 16 (22%) in March. The date of take was omitted for 8 wolverines (11%).

Summary

The lynx harvest in 1980-81 was slightly less than in 1979-80. Whether this was due to a lower population or to poor trapping conditions is unknown. January was extremely warm with temperatures in the 40's, and thawing conditions made travel difficult, especially in Subunit 20A.

The number of otters harvested in 1980-81 was about half the number taken in 1979-80 but was about the same as the 1978-79 harvest. The otter population in Unit 20 has remained fairly stable over the past several years, and weather conditions may be the most important factor affecting harvest.

The catch of 72 wolverines in 1980-81 was an increase compared to 57 wolverines harvested in 1979-80, but less than 1978-79 season (83 wolverines). The reasons for the differences in harvest are unknown.

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 the overall number of most furbearers.

PREPARED BY: SUBMITTED BY:

Jeannette R. Ernest
Biologist II

Oliver E. Burris
Game Regional Management Coordinator

FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT 21

GEOGRAPHICAL DESCRIPTION: Middle Yukon River Drainage

PERIOD COVERED: July 1, 1980 - June 30, 1981

Harvest and Population Status

Lynx - The reported lynx harvest, based on sealing certificates, was 118. During the 1979-80 season, 55 lynx from Unit 21 were sealed. Trapping conditions in both years may have affected the harvest significantly.

The take of lynx occurred throughout the season, with 23 (19%) in November, 17 (14%) in December, 24 (20%) in January, 19 (16%) in February, and 34 (29%) in March. No date of catch was reported for one lynx.

Land Otter - The land otter harvest in Unit 21, as determined by sealing certificates, was (34 males, 30 females, 8 of undetermined sex), compared to 57 in 1979-80 and 21 in 1978-79. Many otters are taken in snare sets incidental to beaver trapping, and the substantial increase in otter catch may have resulted from increased beaver trapping efforts.

Wolverine - Based on sealing certificates, 34 wolverines (22 males and 12 females) were harvested compared to 40 the previous year. The total catch was probably higher since some wolverines used locally for garments are not sealed.

Management Summary and Recommendations

Furbearer regulations are adequate to meet the needs of local trappers. Illegal trapping of marten and beavers occurs frequently, and some enforcement effort should be directed toward this problem.

PREPARED BY:

Jeannette R. Ernest
Game Biologist II

SUBMITTED BY:

Oliver E. Burris
Regional Management Coordinator

FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT 22

GEOGRAPHICAL DESCRIPTION: Seward

PERIOD COVERED: July 1, 1980 - June 30, 1981

BEAVER

Population Status and Trend

Beavers were uncommon on the Seward Peninsula 30 years ago, except in a few drainages in the extreme southeastern portion of Unit 22. During the last 2 decades, beaver populations expanded westward and became established in all major drainages east of the Fish River (central Seward Peninsula). Within the last 3 years, local residents reported seeing beavers on tributaries of the Fish River, but the presence of a beaver lodge was not confirmed until this year. This documentation suggests that beavers are continuing to disperse westward. In general, beaver populations have continued to increase, particularly in drainages recently colonized.

Mortality

Because beavers are relatively new inhabitants of the Seward Peninsula, few trappers have had the interest or knowledge to trap them. Even though many people considered beavers nuisances (they regularly dammed important fish spawning streams), only a few trappers felt the difficult winter work was worth the price of the pelt. Recently, more individuals have experimented with trapping beavers. Higher pelt prices and the earlier season opening of November 1 probably contributed to the increased interest.

The total reported harvest from sealing certificates in Unit 22 during 1980-81 was only 15 beavers, and all of these came from the Unalakleet River in Subunit 22A. Trappers reported catching 201 beavers during the 1979-80 season, but during the last decade harvests have averaged less than 30 annually. Compliance with sealing regulation has always been poor in rural areas, but reporting improved dramatically during the 1979-80 regulatory year following an increased public awareness program and allocation of sealing supplies to all villages. The sharp decline in reported harvest this year probably occurred because trappers failed to have many pelts sealed and the size of the harvest declined. The total harvest was probably less than 200 beavers.

ARCTIC FOX

Population Status and Trend

The normal distribution of arctic foxes on the Seward Peninsula is along the coastal fringe north of Cape Rodney. They also inhabit the major offshore islands including St. Lawrence, Sledge, King Island, and Little Diomede. When the population is high, white foxes are found along the entire Unit 22 coastline, and occasionally occur up to 30 miles inland.

The white fox population was high between 1975 and 1977. Populations subsequently declined throughout most of their range, and have recently begun a slow recovery. Populations were relatively low throughout most of the mainland north of Cape Rodney, but densities were greater on islands with suitable habitat. Foxes were very scarce or absent in the peripheral areas of their range.

Mortality

Actual harvest statistics were not available, but past trapping effort provided an index to relative success. Trappers residing on St. Lawrence finished the season with the best catches, often taking 30 or more foxes. Residents from Wales and Shishmaref occasionally equalled these figures, but generally caught fewer foxes. Other mainland trappers usually took white foxes incidental to other species. The minimum known harvest during the 79-80 season was 250 foxes. Both trapping effort and success were higher during the 1980-81 season. The estimated harvest was 500 to 1000 white foxes.

RED FOX

Population Status and Trend

Red foxes are distributed throughout the Seward Peninsula in all habitats from the coastal plain to the interior. In general, the greatest density occurs along the major river drainages where ptarmigan and snowshoe hares are abundant, but high densities may also occur along the coast. Marine mammal carcasses and/or small rodents are probably major food sources in coastal areas.

Red fox populations were quite high during the 1976-77 season, but declined sharply the following year. The decline may have been triggered by an outbreak of distemper and rabies. Between 1978 and 1980 fox numbers gradually increased and began to approach former densities. In 1980-81 red fox populations appeared to have recovered throughout most of their range, and were moderately high in all areas of suitable habitat.

Mortality

Both hunting and trapping were major sources of fox mortality in Unit 22. Hunters using rifles and snow machines for transportation probably accounted for one-third to one-half the total take. Full time and recreational trappers accounted for the remaining harvest. During the 1979-80 season, fur dealer records indicated the minimum harvest was 1,095 red foxes, and it was distributed among every mainland village. Hunters and trappers in 1980-81 experienced success equal to or better than the 79-80 season. The total harvest was estimated to range between 1,000 and 1,500 red foxes. Most full time trappers averaged about 20 foxes for the season, but a few took in excess of 50.

MARTEN

Population Status and Trend

Marten habitat is limited primarily to the southeastern portion of Unit 22. Trappers reported marten sign east of the Kwiniuk River in most of the major drainages flowing into Norton Sound. Little is known about the actual population status. The sparse information suggested that marten were scarce or absent from the Kwiniuk River eastward to the Koyuk River. The Shaktoolik and Unalakleet Rivers probably have the highest population densities.

Mortality

In the past few years, Unit 22 trappers have expressed little interest in taking marten. However, the increasing prices for short haired furs stimulated some trappers to make an effort to take marten, but the overall harvest remained low. Most marten were taken from Subunit 22A principally in the Unalakleet drainage. However, a few trappers from Elim and Shaktoolik took an occasional marten. The estimated harvest in Unit 22 ranged between 100 and 300 marten.

MINK

Population Status and Trend

Little information is available on the mink population from the Seward Peninsula. Mink sign has been reported from most of the major drainages, and mink probably occur throughout the entire Seward Peninsula. Population density is unknown, but it is probably low in most areas.

Mortality

Trappers exerted little effort to take mink in Unit 22, and only occasionally made sets specifically for mink. Most mink were caught incidentally in sets designed for other furbearers. During the 1979-80 season, the reported harvest from fur dealer purchases and trapper exports was 31 mink. The 80-81 harvest was probably less than 100.

OTTER

Population Status and Trend

Because otter tracks are distinctive and easily recognizable from the air, aerial moose surveys provided an opportunity to assess otter distribution and abundance. During the last 3 years, otter tracks were seen on every major drainage throughout Unit 22. It was common to find otter sign in small creeks and tributaries, especially if there was a source of thermal ground water that prevented the formation of a solid ice cover. Population density is unknown, but otters were relatively common and widely distributed throughout Unit 22.

Mortality

Few trappers in Unit 22 are experienced or inclined to trap otters. Most of the otters were probably taken while trapping other furbearers. The total reported harvest was only five males: two were from the Tubutulik and Golsovia Rivers, respectively, and one was from the Kwuniuk River. Because otters are widespread and relatively abundant, the low harvest had no significant effect on the population.

Management Summary and Recommendations

As a general statement, furbearers were distributed throughout Unit 22 in areas with suitable habitat. All furbearers populations have fluctuated in density during recent years. However, major changes in population density were probably caused by environmental factors rather than man-induced mortality.

Trappers and hunters have harvested furbearers for several decades in Alaska, and the long-term effects have been generally minimal. Increased fur prices have caused a renewed interest in trapping, and this effort usually resulted in a corresponding increased take of some species. But, competition among trappers did not appear excessive nor were any furbearer populations significantly impacted, except possibly in the immediate vicinity of local communities. Large areas in Unit 22 are essentially untrapped. The harvest of most furbearer species could probably double or triple with no detrimental effect on

populations. Because the harvest of all furbearer species in the Unit was low, liberal seasons and bag limits should be retained.

The harvest of beavers, red foxes, white foxes, lynx, mink, marten, and otters in 1980-81 had an estimated value of $150,000.00 to $200,000.00 to Unit 22 residents.

PREPARED BY:

Carl A. Grauvogel
Game Biologist III

SUBMITTED BY:

John W. Coady
Regional Supervisor

FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT 24

GEOGRAPHICAL DESCRIPTION: Koyukuk River Drainage

PERIOD COVERED: July 1, 1980 - June 30, 1981

Harvest and Population Status

Lynx - Based on sealing certificates, 42 lynx were harvested during the 1980-81 season in Unit 24. The 1979-80 catch was 263 lynx. While the catch was spread throughout the season, one-third of the total lynx harvest occurred in March.

Land Otter - The otter harvest, based on sealing certificates, was 46 (22 males, 12 females, and 12 of undetermined sex). As in previous years, most otters were taken from the southern half of Unit 24.

Wolverines - The wolverine harvest, based on sealing certificates, was 46 (27 males, 18 females, and 1 of undetermined sex). This was an increase in harvest from the 1979-80 take of 29 wolverines but about the same as in 1978-79. The total catch is probably higher since many wolverines utilized locally for garment trim are not sealed.

Summary

Present regulations pertaining to furbearers are adequate to meet the needs of local trappers. Local trappers are concerned that Federal land withdrawals may impact trapping in the future, and there is also concern over the influx of nonlocal trappers.

PREPARED BY:

Jeannette R. Ernest
Game Biologist II

SUBMITTED BY:

Oliver E. Burris
Regional Management Coordinator

FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT 25

GEOGRAPHICAL DESCRIPTION: Upper Yukon River Drainage

PERIOD COVERED: July 1, 1980 - June 30, 1981

Harvest and Population Status

Lynx - Sealing documents indicated that 1,086 lynx were sealed from Unit 25 during the 1980-81 season. Six hundred and forty-three lynx were taken in the drainages of the Black and Little Black Rivers. The catch was spread throughout the season: 115 (11%) in November, 206 (19%) in December, 325 (30%) in January, 262 (24%) in February, and 173 (16%) in March. Date of catch was omitted for five lynx.

Land Otter - Sealing forms indicated that only 10 otters were presented for sealing during the 1980-81 season. More otters were sealed in 1979-80. It is possible that additional otters were taken but not sealed because when the fur is used locally for garment trim, hides are not presented for sealing.

Wolverine - Trappers in Unit 25 sealed 47 wolverines in the 1980-81 season, a decrease from the recorded harvest of 78 during the 1979-80 season. The harvest consisted of 24 males, 16 females, and 7 of undetermined sex. The wolverine harvest occurred throughout the season with 8 (17%) trapped in November, 9 (20%) in December, 15 (33%) in January, 8 (19%) in February, and 5 (11%) in March. No dates of capture were available for two other wolverines sealed. The total catch of wolverines in Unit 25 was probably higher since many utilized locally for garment trim are not sealed.

Summary

The number of lynx sealed in Unit 25 in 1980-81 was more than one and one-half times the number sealed in 1979-80. Lynx populations continued to be high in eastern portions of the Unit. Fifty-nine percent of the catch came from the Black River and Little Black River drainages.

Traditionally low otter harvests in Unit 25 seem to be an indication 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 many otter pelts taken during 1980-81 were used locally for garments and were not sealed.

The Unit 25 wolverine harvest in 1980-81 was about half that of 1979 but approximately the same as the catch in 1978-79, which again was only half that of 1977-78. Reasons for the fluctuations are unknown. Factors such as weather or availability of prey may affect the wolverine catch.

Lynx populations appeared to be at a high point in the Black River drainage and trappers in the area expect a decline in lynx during the 1981-82 or 1982-83 season. However, numbers of lynx may continue to increase in the western portions of the Unit.

PREPARED BY:

Jeannette R. Ernest
Game Biologist II

SUBMITTED BY:

Oliver E. Burris
Regional Management Coordinator

LYNX

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT 22

GEOGRAPHICAL DESCRIPTION: Seward Peninsula

PERIOD COVERED: July 1, 1980 - June 30, 1981

Season and Bag Limit

Nov. 1 - Apr. 15	No limit

Population Status and Trend

Lynx habitat is primarily limited to the central and southeastern portions of Unit 22. Based on past trapping success, the drainages bounded by the Fish River on the west and the Koyuk River on the east have consistently produced the most lynx. The vegetation of the area is dominated by spruce, with willows along the main drainages. This area is somewhat typical of "interior" lynx habitat. Even in years when the lynx population was low, good trappers were always able to catch a few animals from this area.

Drainages west of the Fish River do not contain spruce and are not normally considered favorable lynx habitat. However, some lynx regularly occur in these areas, especially during cyclic highs. When the lynx population is high, the Fish and Koyuk Rivers may act as "reservoirs" from which dispersal occurs to less favorable habitats.

Lynx numbers were high throughout most of Unit 22 during winter 1977-78. This population expansion occurred at a time when snowshoe hares were extremely abundant (estimated to exceed 3,000 per square mile in some drainages). Hare populations declined precipitiously on the Kuzitrin and Pilgrim Rivers (22D) the next spring, and lynx numbers subsequently declined during winter 1978-79. Snowshoe hare numbers remained high in the drainages immediately east of the Kuzitrin, and probably some lynx from the Kuzitrin immigrated to the Fish River drainage (22B) where habitat and food were more suitable. Snowshoe hare and lynx numbers persisted at high levels in Subunits 22A and 22B through winter 1979-80. In the late spring, snowshoe hare density declined dramatically in the western half of 22B (Fish and Tubutulik Rivers), followed by the lynx population. Lynx numbers remained moderate to high in the eastern half of 22B (Koyuk drainage), but appeared to decline from east to west. Throughout Unit 22A lynx numbers were low except in a few isolated tributaries.

Mortality

No information was obtained on natural mortality, but it was probably high in drainages where snowshoe hares crashed. Trappers reported taking 86 lynx, but this was low compared to 1978-79 and 1979-80 trapping seasons when 260 and 238 lynx were taken, respectively. Not all the lynx caught during 1980-81 were reported because hides were commonly saved for personal use or future sale without sealing. The total harvest probably ranged from 90 to 100 lynx. The distribution of the known harvest by drainage was as follows:

Subunit 22B		Subunit 22A	
Tubutulik River	27	Golsovia River	2
Koyuk River	20		
Kwik River	15	Unknown	
Fish River	10	(All Unit 22)	6
Kwiniuk River	5		
Ingulutalik River	1		
		Total Unit	86

The reported composition of the harvest was 43 males, 28 females, and 15 animals of unknown sex. The catch was distributed among 19 trappers, compared to 42 successful trappers the previous season. The average catch per person was four lynx, which is down from six last year. However, the average is misleading because 10 of the 19 trappers only took one animal. The four most successful trappers took 17, 12, 10, and 9 lynx.

Lynx were taken in every month of the season, but late January through March was the most productive period. The distribution of the harvest by month for the three most recent trapping seasons was as follows:

	1978-79		1979-80		1980-81	
	No.	Percent Harvest	No.	Percent Harvest	No.	Percent Harvest
NOVEMBER	24	10%	10	4%	6	7%
DECEMBER	36	15%	42	16%	8	9%
JANUARY	41	17%	57	22%	16	18%
FEBRUARY	61	26%	57	22%	13	15%
MARCH	76	32%	67	26%	30	34%
APRIL	0	0*	8	3%	14	16%
UNKNOWN	0	0	19	7%	2	0%
TOTAL	238	100%	260	100%	86	100%

*closed to trapping during this period.

These data indicate that trapping success and/or participation was the lowest at the beginning of the season and generally increased with each succeeding month. During the last 3 years roughly one-third of the annual harvest was taken during March. The increasing daylight, more favorable weather conditions, and increased movement because of the onset of the lynx breeding season probably accounted for this trend.

Management Summary and Recommendations

From 1975 through 1979, the lynx population exhibited a general trend of range expansion and increased numbers concurrent with a cyclic increase in the hare population. Snowshoe hares crashed in Subunit 22D between 1978 and 1980, followed by a corresponding decrease in lynx density. During the report period, further declines in hare populations in Subunits 22B and 22A produced similar declines in lynx numbers. The Koyuk River was apparently the only major drainage that continued to support relatively high numbers of lynx (and snowshoe hares). The reduction in lynx numbers was reflected in trapper success. The harvest declined more than three-fold in 1 year, and was only distributed among 19 trappers compared to 42 in the previous season.

Since 1977 the dramatic increase in the value of pelts produced a corresponding increase in trapping pressure. During the last three seasons, trapping effort was probably the heaviest in several decades. However, trapping did not significantly impact lynx populations in Unit 22. During the most recent cyclic high, trappers took over 200 lynx a year with no apparent decrease in lynx density. Most trapping effort was confined to within a 30 mile radius of villages. Even if lynx density was locally reduced, immigrants from other areas where trapping pressure was low or absent appeared to replace harvested animals. The most pronounced impact on lynx numbers was related to changes in prey density, particularly snowshoe hares.

PREPARED BY:

Carl A. Grauvogel
Game Biologist III

SUBMITTED BY:

John W. Coady
Regional Supervisor

WOLF

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT 18

GEOGRAPHICAL DESCRIPTION: Yukon-Kuskokwim Delta

PERIOD COVERED: July 1, 1980 - June 30, 1981

Seasons and Bag Limits

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

Population Status and Trend

The density of wolves continues to be low in Unit 18 with most sightings in the eastern portion of the Unit along the Yukon drainage and along drainages southeast of the Kuskokwim River. The distribution of wolves appears to reflect the distribution of moose. Aerial survey data for evaluation of population status and trend are not currently available.

Mortality

Based upon sealing certificates, no wolves were reported taken during the 1980-81 season. The annual reported harvest has ranged from zero to four since 1959. The demand for wolf pelts for parkas and garments is high. Therefore, many wolves taken in the course of hunting and trapping are probably utilized before they are sealed. Several residents in the Paimiut-Holy Cross area have reported some illegal aerial hunting of wolves. If wolves illegally taken from the Delta were sealed, they may not have been reported as coming from Unit 18. Although the terrain lends itself well to aerial hunting, the harvest attributable to such hunting is probably low due to the low wolf density and the presence of better hunting opportunities elsewhere. The actual harvest from all sources was estimated to be less than 10 wolves.

Management Summary and Recommendations

The population density and harvest level of wolves in Unit 18 is low. Increased aerial moose surveys should provide more incidental sightings to document wolf density and distribution. More public education and enforcement is needed to increase compliance with the sealing requirement. Although many villages have sealing officers, most local residents do not understand the reasons behind a sealing requirement. Efforts to establish sealing

officers in villages which do not have them should continue. No change in season or bag limit is recommended at this time.

PREPARED BY:

Steven Machida
Game Biologist II

SUBMITTED BY:

John W. Coady
Regional Supervisor

WOLF

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT 11

GEOGRAPHICAL DESCRIPTION: Wrangell Mountains

PERIOD COVERED: July 1, 1980 - June 30, 1981

Seasons and Bag Limits

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

Population Status and Trend

The wolf population in Unit 11 has not been censused, but field observations and sightings by the public suggested that wolves were abundant.

Population Composition

No data were available.

Mortality

Sixteen wolves were harvested in Unit 11 (Appendix I.). The harvest increased over 1979-80 (6 wolves), but was below the average for the last 11 years ($\bar{x}$ = 31.7). The harvest apparently reflects changes in regulations and snow conditions, rather than changes in population numbers.

Thirty-eight percent of the harvest was males and 56 percent females. The percent of harvest from trapping or snaring has increased in the last 2 years, and the percent harvest taken by ground shooting has decreased (Appendix I.).

Management Summary and Recommendations

Wolf harvests have fluctuated each year, but the population does not seem to be declining. I recommend, however, that the wolf trapping season be changed to November 10 through March 31, to coincide with the fox trapping season. No wolves were trapped in October or April from 1972-73 through 1980-81, therefore, the season change should not affect the wolf harvest.

PREPARED BY:

Patricia Martin
Game Biologist II

SUBMITTED BY:

Leland P. Glenn
Survey-Inventory Coordinator

Appendix I. Unit 11 wolf harvest data, 1980-81.

	Number Harvested	(Percent)
Males in Harvest:	6	(38)
Females in Harvest:	9	(56)
Number Sex Unknown:	1	(6)
Method of Kill		
Aerial Shooting:	0	(0)
Ground Shooting:	3	(19)
Trapping/Snaring:	12	(75)
Other:	1	(6)
Age Structure of Harvest		
Adult	5	(62)
Pup	3	(38)
Unknown	8	(50)
Total Wolf Harvest:	16	

PREPARED BY: Patricia Martin
Game Biologist II

WOLF

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT 19

GEOGRAPHICAL DESCRIPTION: Upper and Middle Kuskokwim River Drainages

Period Covered: July 1, 1980 - June 30, 1981

Seasons and Bag Limit

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

Population Status and Trend

Wolves continued to be moderately abundant in Unit 19, but the lack of adequate snow conditions precluded wolf surveys during 1980-81. Based on miscellaneous observations and reports from residents, the distribution and abundance of wolves were similar to last year. Population density was at a moderate level in Subunits 19A and 19B while a higher density existed in portions of 19C and 19D.

Mortality

The total wolf harvest in Unit 19 was 47 wolves, including 18 males, 27 females, 2 wolves of unknown sex, 8 pups, 22 adults, and 17 wolves of unknown age. Although seven aerial permits were issued for Subunits 19A and 19B, no wolves were taken due to poor snow and weather conditions. Aerial hunting was also ineffective in 1979-80, while in 1978-79 aerial hunters were relatively successful in the western portion of Subunit 19A. The present harvest has been effective in controlling wolf numbers only in limited areas. Twenty-seven wolves were taken in Subunits 19A and 19B with the remainder being taken from scattered locations in 19C and 19D.

Management Summary and Recommendations

The status of wolf-prey relationships in Unit 19 is probably most critical in portions of Subunit 19D, where moose density is low and where the vegetation and terrain make control of wolf numbers through normal means ineffective. The Department should conduct control efforts directed toward reducing selected packs in the North Fork drainage (in the vicinity of the Upper Kuskokwim Controlled Use Area) using traps and snares. The option of issuing aerial permits for Subunits 19A and 19B should be retained for the coming year, although information reflecting the

current status of the wolf population should be obtained when conditions permit.

PREPARED BY:

Robert O. Stephenson
Game Biologist II

SUBMITTED BY:

Oliver E. Burris
Regional Management Coordinator

WOLF

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT 5

GEOGRAPHICAL DESCRIPTION: Malaspina and Yakutat Forelands, Gulf of Alaska

PERIOD COVERED: July 1, 1980 - June 30, 1981

Seasons and Bag Limit

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

Population Status and Trend

Based on general observations and hunter and trapper reports, no significant changes have been noted in the status of the Unit 5 wolf population since last year's report. The population appears to be stable, with good reproduction and pup survival.

Population Composition

No surveys were conducted specifically to assess the status of the wolf population, however, all wolves and wolf sign were recorded incidental to other big game surveys. Based on numerous sightings, the wolf population on the Yakutat Forelands (5A) is estimated to be 45-50 animals.

Sightings of wolves and wolf sign on the Malaspina Forelands have been increasing annually, indicating a growing wolf population in Unit 5B. Although actual sightings are rare, three adult wolves were observed in the Yakutat River drainage during the fall moose survey. Sign is commonly observed along the beach in early spring and summer and reports of increased wolf activity in the Icy Bay area have also been received from pilots and big game guides utilizing that area. A conservative minimum population estimate is 10 wolves across the Forelands.

Mortality

Only six wolves were killed during the report period compared to an average of 10 for the 2 previous years. Only one wolf was trapped last year, a young adult male that was in very poor physical condition. The carcass was shipped to Fairbanks for necropsy by a veterinarian and the results showed a severe case of distemper. The remainder of the wolves were taken as incidental kills by bear hunters.

Management Summary and Recommendations

Wolf numbers appear to be stable on the Yakutat Forelands and increasing slightly on the Malaspina Forelands. Production and survival throughout Unit 5 appear to be good, and are probably related to a series of mild winters and abundance of food sources such as moose, goats, salmon, snowshoe hares, and beavers. To reduce the threat of increased wolf 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 furs. No change in seasons or bag limits is recommended at this time.

PREPARED BY:

Ronald E. Ball
Game Biologist III

SUBMITTED BY:

Nathan P. Johnson
Regional Management/
Research Coordinator

WOLF

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNITS 7 AND 15

GEOGRAPHICAL DESCRIPTION: Kenai Peninsula

PERIOD COVERED: July 1, 1980 - June 30, 1981

Seasons and Bag Limits

Hunting	Unit 7	Aug. 10 - April 30	Two wolves
	Unit 15		Four wolves
Trapping		Nov. 10 - March 31	No Limit

Population Status and Trend

Wolf surveys were not conducted by the Department during winter 1980-81 due to the lack of snow for tracking. However, data collected by the U. S. Fish and Wildlife Service during a study on the Kenai Peninsula suggested an early winter population of 193 wolves comprised of 37 percent pups. Pack sizes observed during the study averaged 12 wolves.

Population Composition

No data were available.

Mortality

Forty-three wolves were reported killed in Units 7 and 15 during the 1980-81 hunting and trapping seasons. The harvest was composed of 21 (49%) males, 20 (47%) females, and 2 (5%) of unknown sex. No wolves were reported taken in the non-sport harvest. The harvest, method, and chronology of take for Units 7 and 15 are presented in Appendix I.
Age data derived from known-aged tagged animals or by examination of front leg bones indicated 64 percent adults and 36 percent pups in the harvest (N=25).

Management Summary and Recommendation

The sport harvest of 43 wolves in Units 7 and 15 indicated a 22 percent harvest of the current early winter population estimate of 193 wolves. At this rate of harvest the populations are expected to show a moderate increase in size..

PREPARED BY:

Ted H. Spraker
Game biologist III

SUBMITTED BY:

Leland P. Glenn
S & I Coordinator

Appendix I. Game Management Unit 7 and 15 - Wolf harvest, method of take and chronology of harvest - 1980-81.

Harvest

	Males	Females	Unknown Sex	Total
Unit 7	5	6	0	11
Unit 15	16	14	2	32

METHOD OF TAKE

	No	(%)
Ground Shooting	18	(41.9)
Trapping	8	(18.6)
Snaring	17	(39.5)
Other	--	
Unknown	--	

CHRONOLOGY OF HARVEST

	No	(%)
August	2	(4.7)
September	3	(7.0)
October	2	(4.7)
November	2	(4.7)
December	4	(9.3)
January	13	(30.2)
February	9	(20.9)
March	6	(14.0)
April	2	(4.7)
Unknown	0	

PREPARED BY: Ted Spraker, Game Biologist III

WOLF

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT 12

GEOGRAPHICAL DESCRIPTION: Upper Tanana and White River Drainages

PERIOD COVERED: July 1, 1980 - June 30, 1981

Seasons and Bag Limits

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

Population Status and Trend

Wolf numbers are moderate to high throughout Unit 12. An extensive aerial survey of northern Unit 12 conducted in March 1980, but not previously reported, revealed a minimum of 87 wolves in 17 packs inhabiting that portion of the Unit north of the Mentasta and Nutzotin Mountains. Based upon information from trappers and with a correction factor applied for single wolves not associated with a pack, a population of 135 wolves was estimated for a density of 1 wolf/37 square miles. Casual observations during this reporting period indicate little change from 1979-80 population levels.

Population Composition

Pups comprised 36 percent and females comprised 60 percent of the Unit 12 harvest. No other index of wolf population composition is available.

Mortality

Twenty-one wolves were reported taken in Unit 12 during the reporting period compared to 37 during the previous winter. Snow conditions were poor, which made wolf trapping and aerial tracking difficult. Fifteen wolves were trapped, five were shot on the ground, and method of taking is unknown for one wolf.

The harvest was the heaviest in the White River-Solo Creek-Beaver Creek area with a harvest of 13 wolves. The Chisana River-Scotty Creek area had a reported harvest of five wolves, and the Tetlin River-Little Tok River area contributed three wolves to the harvest. This level of harvest probably represents less than 10 percent of the Unit 12 wolf population.

Management Summary and Recommendations

The wolf density is moderate to high throughout the Unit, and harvests are low in relation to the estimated population. For purposes of moose, and ultimately wolf management, present wolf densities east of the Nabesna River should be reduced to allow substantial increases in moose numbers. Wolf numbers in the Tok and Little Tok River drainages should be reduced as outlined in the Tok River Operational Moose Management Plan to increase yearling moose recruitment prior to a moose herd reduction. Wolves in that portion of Unit 12 north of the Tanana River and west of the Taylor Highway should also be reduced in number concurrent with recommended wolf reductions in adjacent Subunit 20E to guarantee increases in moose numbers.

Currently, wolves are faring well in Unit 12. Recommended reductions in wolf numbers should be measured in extent and duration to achieve specific ungulate management objectives. As a result of such management, the ungulate prey base would be expanded for remaining packs.

PREPARED BY:

David G. Kelleyhouse
Game Biologist III

SUBMITTED BY:

Oliver E. Burris
Regional Management Coordinator

WOLF

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT 13

GEOGRAPHICAL DESCRIPTION: The Nelchina Basin

PERIOD COVERED: July 1, 1980 - June 30, 1981

Seasons and Bag Limits

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

Population Status and Trend

The number of wolf packs in Unit 13 has increased slightly since 1978 and the latest estimate is 20-30 packs of various sizes (Ballard et al. 1981). Additionally, an unknown number of single wolves are found throughout the Unit.

Population Composition

Individual pack composition figures were presented in Nelchina Basin Wolf Studies by Ballard et al. 1981.

Mortality

Data collected from sealing certificates indicated that 46 wolves were killed in Unit 13 during the 1980-81 season. The composition of the harvest was 23 males, 18 females and 5 sex unknown. Trapping was the most productive method of take followed by ground shooting. The harvest chronology and method of take are shown in Appendix I.

Management Summary and Recommendations

The 1980-81 harvest declined from the previous year's kill of 57 wolves. The cause of that decline was attributed to poor snow conditions throughout the winter, resulting in a decrease in hunting effort.

Starting in 1981-82 the wolf trapping season will be shortened by 2 months (opening 1 month later and closing 1 month earlier). This change will reduce conflicts by aligning wolf trapping season with seasons of similarly trapped fur animals. No additional changes in seasons or bag limits were recommended.

Literature Cited

Ballard, W. B., R. O. Stephenson, and T. H. Spraker. 1981. Nelchina Basin wolf studies. Final report. Fed. Aid. in Wildl. Rest. Proj. Rept., W-17-8, W-17-9, W-17-10, and W-17-11, Jobs 14.8R, 14.9R and 14.10R. Juneau. 201 pp.

PREPARED BY:

Robert W. Tobey
Game Biologist III

SUBMITTED BY:

Leland P. Glenn
Survey-Inventory Coordinator

Appendix I. Wolf harvest data, 1980-81, Unit 13[a].

	Number Harvested (percent)
Harvest chronology	
August	2 (4)
September	6 (13)
November	11 (24)
December	5 (11)
January	11 (24)
February	5 (11)
March	5 (11)
Unknown	1 (2)
Method of take	
Ground shooting	16 (35)
Trapping	26 (57)
Snaring	1 (2)
Other	3 (6)
Total wolf harvest:	46

a. Harvest data are based on sealing data only.

PREPARED BY: Robert W. Tobey
Game Biologist III

WOLF

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT 20

GEOGRAPHICAL DESCRIPTION: Central Tanana Valley

PERIOD COVERED: July 1, 1980 June 30, 1981

Seasons and Bag Limits

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

A limited number of aerial hunting permits was available to the public for Subunits 20A, 20B, 20D, and portions of 20C. Permits were valid for 7-day periods, with a bag limit of 5 or 10 wolves, depending on the area.

Population Status and Trend

Wolf numbers remained high throughout most of Subunits 20A, 20C, and 20E. Subunits 20B and 20D contained moderate wolf densities following the 1980-81 trapping/hunting season.

Although survey conditions were marginal to poor throughout most of Unit 20, limited Departmental reconnaissance and reports from trappers indicated the following fall 1980 population levels and wolf:moose ratios (parentheses):

Subunit 20A and portions of 20C	- 100-125 (1:40-32)
Subunit 20B and portions of 20C	- 200 (1:10)
Subunit 20D	- 50 (1:10-12)
Subunit 20E	- 130-150 (1:8-7)

Population Composition

Based on sex and age composition data obtained from sealing certificates, females and pups comprised 49 percent and 47 percent, respectively, of the total Unit 20 harvest. Although these data include 59 known-age wolves taken by conventional methods (trapping, snaring, and ground shooting) which are traditionally biased toward pups, I believe the proportion of pups in the harvest does approximate production of the Unit 20 wolf population. Analyses of 46 wolves taken by aerial methods of harvest indicated 52 percent pups in the sample.

Mortality

The reported harvest for the 1980-81 season was 124 wolves (Table 1), a 51 percent increase from the previous year. Although the take by trapping, snaring, and ground shooting varied slightly, higher success in aerial hunting by the public and Department accounted for the increased harvest.

Wolf harvests were high enough in several areas to improve wolf:moose ratios, specifically in Subunit 20B and eastern Subunit 20D where 34 and 29 wolves, respectively, were removed.

Management Summary and Recommendations

Wolf densities remained high enough in most of Unit 20 to stabilize or further depress moose populations. Although this period marked the sixth consecutive year of a Department wolf reduction program in Subunit 20A and portions of 20C south of the Tanana River between the Delta and Nenana Rivers, and the second year in which public aerial hunting was authorized in the area, the wolf harvest by all means was so low (13 wolves) that the remaining wolves probably slowed the rate of increase in the moose population. The impact of predation will be stronger in the southern portion of this area where wolf densities are higher.

Aerial hunting permits were also authorized for Subunits 20B, 20D, and portions of 20C; however, due to unfavorable snow conditions, this program was largely ineffective in substantially reducing wolf numbers.

Conventional methods of harvesting wolves accounted for only 68 wolves, a level which probably will not increase significantly even under improved trapping conditions and higher pelt values.

A more intensive harvesting regime must be established and maintained to depress wolf numbers in years of unfavorable tracking and hunting conditions. Reliance on aerial hunting techniques will be effective only in years when deep snow prevails well into spring. The utilization of radio-collared wolves in conjunction with trapping and aerial hunting has proved effective in eastern Subunit 20D, and should be employed in other areas approved for wolf reduction. Persons experienced in trapping, handling, and hunting wolves should conduct trapping operations. Trapping should start as soon as favorable conditions exist in fall and continue through spring. A program of this magnitude should be expanded to include Subunit 20E where wolf:moose ratios remain at a critical level.

PREPARED BY:

Mel Buchholtz
Game Biologist III

SUBMITTED BY:

Oliver E. Burris
Regional Management Coordinator

Table 1. Unit 20 wolf harvest, 1980-81 regulatory year.

Subunit	Age			Sex			Total
	Pup	Adult	Unk	Male	Female	Unk	
Trapping/Sport Harvest:							
20A & 20C*	5	6	-	3	7	1	11
20B	7	3	2	4	8	-	12
20C	5	12	1	9	9	-	18
20D	3	3	-	5	1		6
20E	5	10	5	13	7	-	20
Unk. Subunit	-	-	1	-	1	-	1
Public Aerial Hunting:							
20A	2	-	-	1	1	-	2
20B	4	5	2	6	3	2	11
20C	3	2	-	3	2	-	5
Departmental Harvest:							
20B	4	6	1	4	6	1	11
20C	-	1	3	-	-	4	4
20D	11	8	4	9	10	4	23
Unit Total	49	56	19	57	55	12	124

* Control Area

WOLF

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT 21

GEOGRAPHICAL DESCRIPTION: Middle Yukon River Drainage

PERIOD COVERED: July 1, 1980 - June 30, 1981

Seasons and Bag Limit

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

Population Status and Trend

During winter 1980-81 wolf surveys conducted on State lands in the Innoko and Nowitna drainages resulted in population estimates of 55 and 61 wolves, respectively. In the Innoko, 6 packs ranged in size from 4 to 16 and averaged 9.2, while in the Nowitna 8 packs were identified ranging in size from 2 to 14 and averaging 7.6. Wolf populations in both areas were similar to those observed during 1979-80 but lower than 1978-79 when a minimum of 104 and 79 wolves was estimated in the Innoko and Nowitna, respectively.

The highest concentrations of wolves occurred in the upper Dishna River and along the North Fork of the Innoko. Other portions of Unit 21 were not surveyed, but observations during moose surveys indicate that wolves continue to be fairly abundant in most areas. Harvests have reduced wolf numbers in significant portions of the Innoko and Nowitna drainages during the past 2 years, however.

Mortality

During the 1980-81 season, 72 wolves were reported taken in Unit 21 compared to 95 in 1979-80, 72 in 1978-79, and 21 in 1977-78. The majority of the wolves (about 61) was taken from the Nowitna and Innoko drainages. Aerial permits were issued for State lands in these drainages with 23 wolves being taken by permittees in the Innoko drainage and 3 in the Nowitna. Limited control efforts were also conducted by the Department, accounting for 10 wolves in the Innoko and 15 in the Nowitna.

The harvest was comprised of 20 adults, 15 pups, and 37 of unknown age. There were 15 female, 26 male, and 31 wolves of unknown sex.

The percentage of pups in the 1980-81 harvest was 43 percent compared to 52 percent in 1979-80, 30 percent in 1978-79, and 24 percent in 1977-78. I do not believe this trend reflects increased production of the Unit 21 wolf population. The increasing harvest in recent years has probably caused the average number of adults in many packs to decline, resulting in an increase in proportion of pups. Some increase in productivity may have resulted from the observed increase in hare numbers in recent years, but it is highly unlikely such an increase could account for the apparent increase in the proportion of pups.

Management Summary and Recommendations

During the past three winters, the harvest of wolves in Unit 21 has either stabilized or lowered populations in most areas. As a result, wolf:moose ratios are currently quite favorable in large portions of the Unit. Although somewhat variable from area to area, moose density, production, and survival data suggest that present populations are capable of supporting existing levels of mortality from predation and hunting without undesirable consequences.

Efforts to control or reduce wolf numbers in the Innoko and Nowitna drainages should be discontinued, at least temporarily. The status of moose and wolf populations should be monitored, however. An unusually severe winter could cause a drastic decline in moose numbers and winter conditions should also be carefully watched.

PREPARED BY:

Robert O. Stephenson
Game Biologist II

SUBMITTED BY:

Oliver E. Burris
Regional Management Coordinator

WOLF

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT 23

GEOGRAPHICAL DESCRIPTION: Kotzebue Sound

PERIOD COVERED: July 1, 1980 - June 30, 1981

Seasons and Bag Limits

Hunting	Aug 10 - April 30	No limit
Trapping	Nov 1 - April 15	No limit

Population Status and Trent

In February and April 1981, aerial wolf surveys were conducted in portions of G.M.U. 23 to enumerate wolf densities. Additional information on wolves was provided by sightings made by ADF&G personnel, wolf hunter-trappers and local residents.

The primary areas covered included the Buckland River drainage and adjacent Selawik Hills, the Kobuk River drainage between the Ambler and Mauneluk Rivers, and portions of the Noatak River drainage upstream from the confluence of the Nimiuktuk River. Light coverage and some observations were made in the Tagagawik River drainage, Selawik River drainage, Purcell Mountain area, and Squirrel River drainage.

Wolf surveys were flown on 9 days totaling 59.4 hours of Super Cub time. All or portions of nine different packs and signs of 10 other packs were observed. Packs ranged in size from 2 to 10 and averaged 4.9 wolves per pack.

Methods

The initial surveys were conducted following the technique described by Stephenson (1978). After two survey flights had been completed it was apparent that there were few wolves in areas where caribou were scarce or absent. Therefore, the greatest search effort was concentrated in areas adjacent to wintering caribou. When snow conditions allowed tracking, an attempt was made to visually locate packs. This resulted in more accurate population estimates than sign counts alone would have, but required a greater amount of time in smaller areas than is necessary to survey wolves in the interior of the state.

Distribution of Predators and Prey

In winter and spring 1981, caribou were widely distributed throughout Unit 23 in all major drainages north of, and including, the Buckland River Drainage. An estimated 30,000 caribou were present in the Buckland River drainage in early February, and by late February the majority had moved northwest into the Selawik Hills. From winter to mid-April, caribou were numerous in higher terrain in the lower Taganik River drainage, upper Selawik River drainage, the Sheklukshuk Hills, the Lockwood Hills, and Purcell Mountain (adjacent Unit 24). Caribou wintered north of the Kobuk River between the Ambler River and Killak River. During the northward migration caribou were abundant in the Hunt, Akillik and Redstone Rivers. In the Noatak drainage, wintering caribou were most numerous in the Upper portion, but were also present throughout the mountains of the middle Noatak and westward into the Wulik and Kivalina River drainages. During the northward migration large numbers of caribou utilized the Cutler, Anisak, and Aniuk drainages.

The preferred caribou wintering habitat was windblown ridges and hillsides and occasionally windblown valley bottoms. However, caribou wintering in the area north of the Kobuk River and in the Buckland River drainage did utilize areas of softer, deeper snow in the lowlands.

Most sightings of wolves, or wolf signs, were near wintering caribou. In general, these areas were more difficult to survey accurately because of poor snow conditions and numerous caribou trails which wolves frequently traveled. Snowstorms were normally accompanied by strong easterly winds or followed by strong winds which resulted in poor tracking conditions in higher open terrain even after a fresh snowfall. Winds strong enough to drift snow frequently obliterated signs and made determination of the number of packs in an area more difficult. In areas of high prey density wolves did not make extended movements, and it was necessary to survey these areas with more intensity than is necessary in the interior of the State to avoid missing packs.

Although moose were numerous in riparian habitat along all major rivers, wolves made little use of them. Packs of wolves which utilize the Kelly, Kugururok and Nimiuktok Rivers drainages do frequently prey upon moose. No evidence was observed that wolves were preying on moose in other areas of Unit 23. Our pilot, Jim Rood, has hunted wolves in Unit 23 for several years and has observed evidence of wolf predation on moose in only four or five cases.

Wolf Density Estimates in Portions of Unit 23

Buckland River drainage

Observations during surveys and sightings of other observers indicated a minimum of 40 wolves within the Buckland River

drainage and adjacent Selawik Hills (Table 1). Coverage and survey conditions in this area were the best of any area flown. The 3,160 square miles had a minimum population density of 1 wolf/79 mi^2.

Middle Kobuk Area

This 3,420 square mile area extends south to, and includes, the Lockwood Hills, the Black and Pik River drainages, and includes the northern tributaries of the Kobuk from the Ambler River to the Mauniluk River. Coverage was moderate since not all rivers draining into the Kobuk from the north were surveyed. In addition, survey conditions in the Lockwood Hills and Sheklukshuk Hills were always poor due to extremely windblown snow conditions. Wolf sign was frequently observed in this area but no wolf sightings were made. Nelson Walker, who spent 2 weeks at his cabin along the Kobuk, made several sightings of wolf packs in this area (Table 2).

A minimum of seven wolf packs (33 wolves) utilized the area. This translates to a minimum density of 1 wolf/104 mi^2, consistent with a previous estimate of 1 wolf/100 mi^2, north of the Kobuk River between the Hunt and Alatna Rivers (Stephenson 1978). The latter estimate can also be considered a minimum because coverage of the area was light and the density was calculated from actual sightings of wolves or tracks.

Noatak, Wulik, and Kivalina Drainages

Three survey flights were made in the Noatak River drainage upstream from the Kugururok River. Adequate or good snow conditions occurred south of the Noatak River between Sapun Creek and Kavachurak Creek and throughout the western portion of the Nimiuktuk drainage. In the remainder of the upper Noatak, snow conditions were too poor to survey wolves. No survey flights were conducted in the Wulik and Kivalina drainages. Coverage was insufficient to permit an estimation of wolf density in these areas. However, observations suggested that wolves were as numerous here as in any other portion of the Unit and that several large packs were present (Table 3).

Wolf Population Estimate in Unit 23

Wolf population densities in Unit 23 vary from low densities in areas with few caribou and/or adjacent to human population centers to relatively high densities in or near concentrations of wintering caribou. In 1981, caribou and wolves were widely distributed in Unit 23. Wolf population estimates for the Buckland and Kobuk survey areas combined, resulted in a minimum density estimate of 1 wolf/90 mi^2 (73 wolves, 6580 mi^2) which is representative of approximatley 85 percent of Unit 23. The minimum population estimate for this portion of the Unit is 443 wolves.

Table 1. Observations and reported sightings of Wolves in the Buckland and Kiwalik River drainages

#	Date	Observer	Location	Tracks	Wolves	Comments
1.	Nov 80	Kotzebue Air Taxi	West Fork Buckland		5 grey, 3 black ------	
2.	Jan 81	Lester Hadley	West Fork Buckland		4 grey, 4 black ------	Same pack as #1. Killed 4 blk, 2 grey
3.	Feb 81	Buckland Resident	South Fork Buckland		11 or 12 wolves ------	2 killed
4.	Nov 3/81	Rood/Quimby	South Fork Buckland		6 grey, 2 black ------	
5.	Feb 11/81	Rood/Quimby	South Fork Buckland	8-9	5 grey, 1 black ------	wolves had fed on remains of hunter-killed caribou; probably same pack as obs #4
6.	Feb 11/81	Rood/Quimby	Headwaters Kiwalik	2	----------	No other wolf signs observed in Kiwalik-snow conditions adequate
7.	Feb 11/81	Rood/Quimby	Kalusuk Cr-Buckland	5-6	----------	old tracks
8.	Feb 13/81	Rood/Quimby	Middle Fork-Buckland	5	1 grey ----------	wolves got mixed up in caribou trails - possibly same pack #7
9.	Feb 13/81	Rood/Quimby	Hills-S. Fork Buckland near Tagagawik R.	5	----------	different pack-unable to follow due to blowing snow, fresh tracks
10.	April 5/81	Rood/Quimby	Selawik Hills	10	2 grey, 6 black -------	wolves had recently killed 4 caribou-two wolves tracked toward Selawik flats but not located
11.	April 15	Bobby Henry	Selawik Hills		6 wolves (black & grey)	possibly portion of pack observed in #10

Minimum of 6 packs 2, 5, 5, 8, 10, 12 for a total of 42 wolves, (40 in Buckland, 2 in Kiwalik)

Table 2. Observations and sightings of wolves in Kobuk River Drainage in 1981

#	Date	Observer	Location	Tracks	Wolves	Comments
1.	March 27/81	Rood/Quimby	Kogoluktuk River Lowlands	5	----------	Wolves had been all over the area occupied by an estimated 1000 caribou
2.	March 27/81	Rood/Quimby	Shungnak-Ambler Lowlands	4	----------	3 caribou kills, 2 on flats, 1 on mountain. These wolves were frequenting the mountain between the two rivers
3.	March 27/81	Rood/Quimby	Ambler Valley near Bismark Mt	4-6	----------	trail of a small pack heading NW. Trail blown over. Different pack than obs #2
4.	April 9/81	Rood/Quimby	East end of Waring Hills		4 black, 1 grey ----	No other wolves were present in this pack
5.	April 9/81	Rood/Quimby	Kogoluktuk R.	5-6	3 grey ----------	Wolves in dense cover, same wolves as obs #1, obviously had been airplane educated
6.	April 9/81	Rood/Quimby	Shungnak R.	4	1 grey ----------	Same as obs #2-still using the same hill. Too many caribou in area to locate all wolves.
7.	April 12/81	Rood/Quimby	Pick River	7-8	----------	tracks only observable along river due to snow conditions
8.	April 12/81	Rood/Quimby	Kiukcherd R.	5-6	----------	unable to locate-wolves went north toward Kobuk R.
9.	April 12/81	Rood/Quimby	Kobuk-Mauneluk R.	4	----------	wolves came off Lockwood hills - moving northerly
10.	April 12/81	Rood/Quimby	Akillik R.	4-5	1 grey ----------	thousands of caribou in area, 1 fresh kill-wolves went up side creek into headwaters of River
11.	April 81	Nelson Walker	Lower Mauneluk R.		3 grey ----------	killed 1 adult grey male
12.	April 81	Nelson Walker	Pick River		4 grey, 1 black ----	killed 1 adult grey male
13.	April 81	Nelson Walker	Lockwood Hills		7 grey ----------	killed 1 adult grey male
14.	April 14/81	Rood/Quimby	Squirrel River	2	----------	SW portion of drainage near Nookati creek
15.	April 14/81	Rood/Quimby	Squirrel River	2	----------	near confluence of Omar & Squirrel Rivers

Table 3. Observations and sightings of wolves in the Noatak, Wuluk and Kivalina River drainages

#	Date	Observer	Location	Tracks	Wolves	Comments
1.	Feb 81	Nelson Walker	Upper Noatak		9 grey wolves -----	
2.	Feb 17/81	Rood/Johnson	Eli River	6	----------	
3.	Feb 17/81	Rood/Johnson	Nimiuktuk R.	5	3 grey, 2 black ---	two moose kills observed along the river
4.	Feb 24/81	Rood/Johnson	Kelly River	12-16	----------	very large pack, minimum of 12 wolve
5.	Feb 24/81	Rood/Johnson	Kelly River	4-5	----------	
6.	Feb 24/81	Rood/Johnson	confluence of Noatak and Akulmayuak Cr.	5-6	----------	
7.	Apr 14/81	Rood/Quimby	Akulmayuak Cr.		2 greys + 5 greys --	wolves 8 miles apart but portions of same pack, 2 old caribou kills. Same pack as obs #6
8.	Apr 17/81	Rood/Quimby	Upper Noatak Kavachurak Cr.	4	----------	tracks associated with wintering she
9.	Apr 17/81	Rood/Quimby	Noatak and Ipneluivik R.	6	----------	minimum of 6 wolves-old tracks-possibly same pack as #1 observed nearby
10.	Apr 17/81	Rood/Quimby	Noatak and Makpik Cr.	2	1 grey wolf --------	freshly killed caribou, within 2 hrs
11.	March 81	Willy Goodwin	Noatak to Wuluk	9	----------	tracked 9 wolves into Wuluk drainage did not locate
12.	Mar-Apr 81	Gerry Melanka	Upper Wuluk near the Red Dog mining		1 black, 1 grey ---- 9 grey, 2 black	two large packs occasionally come through the Wuluk area. The pack of 11 may be the large pack in #4 which also uses the Kelly River drainage
13.	Mar-Apr 81	Gerry Melanka	Upper Wuluk near the Red Dog mining			
14.	Mar-Apr 81	Gerry Melanka	Upper Wuluk near the Red Dog mining	8-9	----------	possibly the same pack as #11.

The remaining 15 percent of the Unit, including the area west of the Buckland River drainage, the majority of the Selawik Flats, the western Waring Hills, the Baldwin Peninsula, the Kobuk River delta below Kiana, and the lower Noatak River drainage within 25 miles of Kotzebue, has a much lower density of wolves, not greater than one wolf per 150-200 square miles (33-44 wolves). The combined total minimum estimate for the entire Unit is, therefore, 476 wolves.

Population Composition

No information was available.

Mortality

Sealing certificates returned to the area office indicated that 43 wolves were taken in Unit 23 in 1980-81 compared to 16 in 1979-80 and 45 in 78-79. Approximately 20-25 other wolves were taken and sealed in Unit 23 in 1980-81, but the certificates have apparently been misplaced or lost in transit. Consequently, the total known harvest was about 70 wolves.

For the animals for which data are available, 30 (69.8%) were males and 13 (30.2%) were females. Pups comprised 21.4% of the animals of known age harvested. As in previous years, most wolves taken were grey (76.7%) and all wolves were taken by ground shooting.

The Selawik River drainage, particularly the Purcell Mountain area, sustained the largest harvest (20 wolves). Fifteen wolves were taken from the Kobuk drainage and the remainder from the Buckland, Noatak, and Wulik-Kivalina areas.

One aerial wolf hunting permit was issued on November 26, 1980 to control wolves preying on reindeer south of Deering. The permit remained in effect until April 15, 1981 and only one wolf was taken. Reindeer herders were still having predation problems in late April, and it may be necessary to issue an aerial permit again next year.

Management Summary and Recommendations

Preliminary surveys indicated that the minimum population of wolves in Unit 23 is similar to the 1977 estimate. Efforts should continue to accurately determine wolf population densities in Unit 23, and additional surveys should be conducted in portions of adjacent G.M.U.'s which are utilized by the Western Arctic Caribou Herd.

Wolf pelts from animals taken in mid-April were still in good condition. The annual take of wolves from Unit 23 for the previous 3 years is considered to be below sustainable harvest

levels. The Kotzebue Fish and Game Advisory Committee requested a change in the closing date of the wolf trapping season to April 30, but this was denied by the Board of Game primarily to preserve consistency of fur harvest seasons in Unit 23.

The problem of capturing nontarget species in wolf traps during closed seasons would be insignificant in Unit 23 because all wolves reported taken were ground-shot by hunters using aircraft or snow machines. It is therefore recommended that the wolf trapping season be extended to April 30.

Literature Cited

Stephenson, R. O. 1978. Characteristics of Exploited Wolf Populations.
Alaska Fed. Aid Wildl. Rest. Final Report. Project W-17-3 through
W-17-8, Job 14.3R.

Prepared by:

Roland L. Quimby
Game Biologist III

Submitted by:

John W. Coady
Regional Supervisor

WOLF

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT 24

GEOGRAPHICAL DESCRIPTION: Koyukuk Drainage

PERIOD COVERED: July 1, 1980 - June 30, 1981

Seasons and Bag Limit

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

Population Status and Trend

No wolf surveys were conducted within the Unit during the report period. Based on harvest data, populations appear to be stable throughout the Unit.

Mortality

During the 1980-81 hunting and trapping season, 61 wolves were reported harvested from the Unit. Since 1974, the harvest of wolves has ranged between 45 and 65 with the exception of the 1978-79 harvest when 89 wolves were taken. Harvest data show that 87 percent of the wolves were shot, indicating few trappers in the Unit are actively trapping for wolves. Four of 18 trappers who used shooting as their only method of take were responsible for 65 percent of the harvest. Five trappers reported taking wolves with traps or snares.

Grey wolves outnumbered black wolves 4 to 1 in the harvest. Pups comprised 45 percent of the harvest of aged wolves (n = 51).

Management Summary and Recommendations

The relatively stable harvest over the past 8 years with four individuals responsible for 65 percent of the reported harvest indicates that most trappers are mainly taking wolves by chance encounters. Possible wolf/ungulate imbalances cannot be determined with present data. The lack of surveys has hampered our efforts to manage wolves in Unit 24 on a sound basis. The current seasons and bag limits are as liberal as possible and presently have little effect on wolf populations. No change in the seasons or limits is recommended.

PREPARED BY:

Timothy O. Osborne
Game Biologist III

SUBMITTED BY:

Oliver E. Burris
Regional Management Coordinator

WOLF

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT 25

GEOGRAPHICAL DESCRIPTION: All drainages into the north side of the Yukon River upstream from and including the Tozitna River

PERIOD COVERED: July 1, 1980 - June 30, 1981

Seasons and Bag Limit

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

Population Status and Trend

No systematic surveys of wolf populations were made in Unit 25. However, incidental observations made during moose surveys and communications with local residents indicate that wolves are probably abundant over most of the Unit, particularly in well-drained uplands. During moose surveys, evidence of seven packs, averaging approximately six animals each, was observed in the western portion of the Unit. Hunters and trappers reported an abundance of tracks and sightings on the upper Porcupine and Black Rivers.

Population Composition

No wolf composition data are available for Unit 25 because surveys were not conducted and available harvest data are thought to be unreliable indicators of population composition.

Mortality

Sealing records documenting wolf harvest are the only mortality information available. These records indicate that 60 wolves were taken in Unit 25 during the 1980-81 season. This was a slight increase over both the 1979-80 harvest and the 4-year mean harvest of 55.

The largest harvest, 33 wolves or 38 percent of the take, occurred in the Chandalar River drainage. Harvest from other drainages was as follows: Black River, 12 (20%); Porcupine River, 11 (18%); Sheenjek, 10 (17%); main Yukon, 3 (5%); and Coleen River, 1 (2%).

Forty-one (71%) of the wolves were harvested during March and 10 (17%) were taken during February. No more than three animals were taken during any other month. Thirty-seven (62%) of the wolves were taken by ground shooting. Trapping and snaring accounted for the remaining 23 (38%) animals.

Information on sealing certificates was not always complete. No determination of sex, age, or color categories was made for 1, 7, and 5 wolves, respectively. The remaining animals in each category were classified as follows: 36 (60%) males and 23 (38%) females; 14 (23%) pups and 39 (65%) adults; and 42 (70%) grey and 13 (22%) black.

Management Summary and Recommendations

The scant evidence available indicates no change in the wolf population in Unit 25, and wolves appear to be abundant, particularly in well-drained uplands. Hunters and trappers continued to report sightings, and harvest did not deviate significantly from the 4-year average.

Systematic annual surveys of wolves should be initiated. Survey data are essential if the population is to be managed properly. Particularly important is the possible relationship between wolf predation and low moose densities. Wolf kills may be contributing significantly to poor calf survival and recruitment.

PREPARED BY:

Roy A. Nowlin
Game Biologist III

SUBMITTED BY:

Oliver E. Burris
Regional Management Coordinator

BEAVER

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT 17

GEOGRAPHICAL DESCRIPTION: Northern Bristol Bay

PERIOD COVERED: July 1, 1980 - June 30, 1981

Season and Bag Limit

Feb. 1 - Feb. 15 10 beavers

Unseasonably warm weather during the first 2 weeks of February opened many of the rivers and creeks in Unit 17, making travel along traplines extremely difficult. Several phone calls and written petitions from village councils were received requesting an extension of the beaver season. The Board of Game granted an extension in Subunit 17B through February 28.

Population Status and Trend

Beaver cache surveys were conducted September 30 through October 5, 1980 along all streams surveyed since 1968 except the Tikchik River and the upper Nushagak River (Appendix I). The Weary River was included for the first time as much of the trapping pressure from Manokotak is focused along this stream.

A direct comparison between streams surveyed in 1979 and 1980 indicated a 29 percent decrease in miles per cache. Areas where trapping pressure had left a vacuum in the beaver population were difficult to find. Only the lower drainages of the Togiak River evidenced a noticeable lack of active beaver houses. High beaver densities were apparent in the sloughs along the Nushagak River between Ekwok and New Stoyahok.

Subunit 17B historically has had higher beaver densities than 17C. Greater trapping pressure in 17C has been responsible for the lower density. A comparison of streams surveyed in 17C to those surveyed in 17B in 1980 revealed a slightly denser population in 17C (.55 miles per cache in 17C; .58 miles per cache in 17B). Cache surveys indicated that beaver densities have more than doubled in Unit 17 since 1975.

Mortality

Trapping pressure has increased annually since 1976. A total of 207 trappers reported taking 1,673 beavers in Unit 17 during the 1981 season (Appendix II). More trappers participated this season than any other since 1967. The harvest was the largest

since 1974, the year prior to the 4- year closure in the lower portion of the unit.

Percent kits in the harvest declined from 27.7 percent in 1980 to 20 percent in 1981. An examination of the 1980 beaver harvest by village revealed Manokotak and Togiak were largely responsible for the high percentage kits in the harvest as they both exceeded 40 percent. Trapping conditions in the Togiak drainage were poor in 1981 and only 29 Togiak villagers reported trapping for beaver, taking only 25 percent kits. Nushagak River villages again had low numbers of kits in their harvest.

An undetermined, but probably substantial, number of beavers are caught and killed annually in both commercial and subsistence set nets during the salmon fishery, primarily in the Nushagak River and its tributaries. Most of those examined appear to be dispersing young adults. Most beavers caught and killed in this manner are consumed. Hides are generally saved, remain unsealed, and are used locally for handicrafts.

Management Summary and Recommendations

Trapping patterns in Northern Bristol Bay are not conducive to population management for optimum substained yield. Trappers continue to concentrate their efforts close to villages, leaving a major portion of Unit 17 untrapped. Many influencing factors are involved:

1. It is easier and more economical to trap near the village.

2. There is less dependence upon trapping as an income source since monetary returns from commercial fishing are high.

3. A short 2-week season and low bag limit of 10 beavers discourage planning for a major outing away from the village.

Management of this resource has been very conservative since 1975. Past experience has shown beavers in this area were susceptable to overtrapping throughout a major portion of the unit when there were successive liberal seasons. Consequently, very restrictive seasons and bag limits have been imposed which preclude the possibility of overharvest on all but a very small local scale. The result has been an expansion of the population to the highest density reported anywhere in Alaska.

Beaver management in Unit 17 should be flexible enough to restrict harvests during years or in areas of low beaver density, yet allow for an adequate harvest during population highs.

If population densities remain at their present level, seasons and bag limits in Subunits 17B and 17C should be increased to

1 month and 15 beavers, respectively. Weather records indicate February and March generally have the greatest snow depths of the year, often sufficient to inhibit travel. Opening the season in mid-January rather than in February should be considered.

PREPARED BY:

Kenton P. Taylor
Game Biologist III

SUBMITTED BY:

Leland P. Glenn
Survey-Inventory Coordinator

Appendix I. Aerial beaver cache surveys, Unit 17, Bristol Bay 1975-1980.

River	Miles	1980 Caches	Miles Per Cache '80	'79	'78	'77	'76	'75	% Change In M/C From 1979	Survey Time (Minutes) '80	'79	'78	'77	'76
Klutuk	47	65	.72	.73	.73	1.14	1.00	1.38	-01	22	26	27	23	27
Kokwok	30	76	.39	.71	.55	1.00	1.07	1.25	-45	28	28	28	30	30
Iowithla	62	97	.64	.81	.84	.91	1.29	1.29	-21	29	30	35	28	30
Sunshine	12	35	.34	.48	.46	.41	-	1.47	-29	18	13	9	10	-
Togiak	60	49	1.22	1.58	.94	1.15	-	3.04	-23	46	29	36	36	-
Ongivinuk	32	53	.60	1.00	.73	.68	-	1.28	-40	23	15	19	20	-
Harris	29	36	.81	.97	1.00	-	1.45	1.38	-16	17	18	15	-	15
Mosquito	29	81	.36	-	.62	.64	.81	.63	-	21	-	14	15	15
Mulchatna	65	162	.40	-	.76	.80	.80	.51	-	58	-	45	50	42
Stuyahok	40	75	.53	.89	1.10	1.33	1.90	.93	-40	23	21	18	22	30
North Fork Nopotoli	30	18	1.67	2.72	2.10	-	1.30	-	-39	11	10	12	-	15
South Fork Napotoli	27	16	1.69	3.00	1.40	-	.84	-	-44	11	13	15	-	12
King Salmon	72	113	.64	-	.78	1.30	1.38	-	-	32	-	18	28	19
Tikchik	70	-	-	.79	-	-	.92	-	-	-	35	-	-	20
Nushagak	87	-	-	-	1.10	1.20	-	-	-	-	-	48	44	-
Weary	20	29	.69	-	-	-	-	-	-	14	-	-	-	-

Unit 17 Average M/C 1980 = .61
Average M/C 1979 = .95
Average M/C 1978 = .84
Average M/C 1977 = .97
Average M/C 1976 = 1.09
Average M/C 1975 = 1.32

"1975 - 1978 Closed Area" Average M/C 1980 = .65
Average M/C 1979 = 1.00
Average M/C 1978 = .83
Average M/C 1977 = .91
Average M/C 1976 = 1.10
Average M/C 1975 = 1.40

PREPARED BY: Kenton P. Taylor
Game Biologist III

Appendix II. Annual harvest of beavers, percentage of each age class and number of trappers in Game Management Unit 17 between 1970 and 1981.

Year	Limit	Percent Kits (Under 54")	Percent Kits and Yearlings (Under 59")	Percent Adults (Over 59")	Total No. of Beaver	No. of Trappers	Avg. No. Beaver Per Trapper
1970	15	22.6	34.1	65.9	1,190	118	10.1
1971	15	27.5	41.0	59.0	824	80	10.3
1972	15	20.5	34.0	66.0	762	70	10.9
1973	15	23.9	35.8	64.2	1,849	163	11.3
1974	15	23.9	36.6	63.4	1,681	169	9.9
1975	15	15.8	27.1	72.8	929	85	10.9
1976	15	22.2	32.7	66.4	637	66	9.7
1977	15	17.7	32.1	67.2	766	73	10.5
1978	10	23.5	35.5	64.2	802	75	10.7
1979	10	20.5	37.7	62.2	959	125	7.7
1980	10	27.7	40.4	59.6	1,478	190	7.8
1981	10	20.0	34.0	66.0	1,673	207	8.1

PREPARED BY: Kenton P. Taylor
Game Biologist III

BEAVER

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT 18

GEOGRAPHICAL DESCRIPTION: Yukon-Kuskokwim Delta

PERIOD COVERED: July 1, 1980 - June 30, 1981

Seasons and Bag Limits

Jan. 1 - March 31 20 Beavers

Population Status and Trends

Field observations and discussions with local trappers indicate that beavers continue to be abundant in Unit 18, particularly in areas away from villages. Older residents frequently remark that beavers are colonizing tundra areas where they traditionally were not found. The harvest of 419 beavers from two tundra streams, the Johnson and Kashunak Rivers, attests to this expansion. Residents of some tundra villages, particularly in the Nelson Island area, continue to complain that beaver dams are blocking their blackfish streams.

Mortality

Sealing documents indicate that Unit 18 trappers harvested a record 2,396 beavers during the 1980-81 season. This was the highest harvest reported since 1958-59 when 2,766 beavers were reported taken. Although the harvest declined during the 1977-79 period, the past two seasons experienced increased harvests and interest in beaver trapping (Appendix I). Although pelt prices were low, warm spring weather, increased availability of beaver, and the lack of other employment during the late winter and spring trapping season served to encourage beaver trapping activity. Eight hundred and four beavers were reported harvested from the vicinity of the Yukon River and drainages north of the Yukon, 945 from Kuskokwim River and drainages south, and 423 from the intervening tundra area during the 1980-81 season. The largest increases in harvest occurred in the Yukon River, Andreafsky and Chuilnak Rivers. The number of participating trappers as well as the harvest doubled in the Andreafsky drainage over that reported the previous 4 years. The Reindeer River was the only Yukon drainage which did not support a harvest increase. The Kuskokwim and drainages south of the Kuskokwim, however, showed only modest harvest increases. Only the Goodnews and Kwethluk drainages registered substantial harvest gains. The other drainages south and west of the Kuskokwim (Eek, Kanektok, Kisaralik,

and Tuluksak Rivers) showed losses or small gains in harvest. Among the tundra streams, a larger harvest increase was reported only for the Kashunak River. Although beavers are abundant in Unit 18, the harvest data indicate localized overtrapping may have occurred in some drainages. Whenever the harvest occurring as kits (under 54") is over 20 percent, overtrapping may be occurring (Libby 1955, Ernest 1980). Several factors peculiar to Delta area trappers requires that this otherwise good guideline be used with caution. Although some Delta trappers attempt to make sets selective for larger beavers, most attempt to take as many beavers as possible from a lodge. Nonselective sets made close to a lodge will easily take the less mobile and relatively naive kits. Libby's guidelines apply best to interior Alaska beaver populations where the practice of selective trapping is more widespread. If nonselective trapping techniques predominate in a drainage, the data will usually reflect a high proportion of kits, even if the overall trapping pressure is light. On a localized basis, the trapping pressure is intense, but on a drainage basis, the overall pressure may be light. However, if the trapping is productive, trappers will often take more than their limit and have only the larger beaver sealed. An increasing proportion of kits occurring in the harvest over the years may indicate that trappers are having a more difficult time filling their limits with larger beavers. In this case, overharvest may be indicated. Drainages with a history of high percentages of kits occurring in the harvest should have the possibility of overharvest verified by data from fall cache counts and detailed information concerning local trapping and economic conditions.

The percentages of kits occurring in the harvest are alarmingly high in several drainages, particularly the Goodnews, Kanektok and Kisaralik drainages, ranging from 39 to 47 percent. Although the harvest level in the Goodnews drainage has fluctuated widely in the past 5 years, a high proportion of the harvest, ranging from 31 to 39 percent, has consistently been composed of kits. The high harvest of kits in the Kanektok and Kisaralik drainages appears to have occurred only during the 1980-81 season. In past year's, the percentages of kits were at lower, more acceptable levels. The percentage kits harvested from the Andreafsky, Johnson, and Kwethluk drainages are likewise high, varying from 26 to 30 percent of the 1980-81 harvest. The percentages of kits taken from the Andreafsky and Johnson drainages have crept upward by a few percentage points each year during the last 5 years. The Kwethluk appears to have borne a consistently high harvest of kits.

Management Summary and Recommendations

Beavers continue to be abundant and widely distributed in Unit 18. However, the harvest data indicates localized

overtrapping may be a problem in some drainages. Harvest information obtained from the sealing program can indicate possible areas where overharvest is occurring. However, this needs to be verified by annual fall cache counts and a detailed knowledge of local trapping techniques and economic circumstances.

The following activities are recommended for the 1981-82 season:

1. Initiate annual fall cache surveys on selected drainages. Priority will be given to those drainages where overharvest may be occurring.

2. Encourage trapping away from villages.

3. Encourage the use of trapping/snaring techniques selective for larger beaver.

Literature Cited

Ernest, J. R. 1980. Beaver Survey-Inventory Progress Report. In R. A. Hinman, ed. Annual Report of Survey-Inventory Activities, Part IV. Fed. Aid Wildl. Rest Rept. Alaska Dept. Fish and Game, Juneau.

Libby, W. L. 1955; Beaver Management Studies. Alaska Coop. Wildl. Res. Unit Qtr. Rept. 6(4);7-28.

PREPARED BY:

Steven Machida
Game Biologist II

SUBMITTED BY:

John W. Coady
Regional Supervisor

APPENDIX I. Unit 18 beaver harvest by drainage - 1976-77 season through 1980-81 season

Location	Year	Number Trappers	Number & Percent Taken by Pelt Size (inches) 05-53	54-59	60-64	65+	Total	Take/ Trapper
Andreafsky River	76-77	16	21(17)	30(24)	43(34)	21(25)	125	7.8
	77-78	4	2(8)	8(33)	7(29)	7(29)	24	6.0
	78-79	12	15(20)	12(16)	24(32)	23(31)	74	6.2
	79-80	12	29(29)	6(6)	29(29)	36(36)	100	8.3
	80-81	23	55(27)	28(14)	60(29)	63(31)	206	9.4
Bogus Creek	76-77	0	None	-	-	-	-	-
	77-78	0	None	-	-	-	-	-
	78-79	0	None	-	-	-	-	-
	79-80	3	8(16)	9(18)	13(27)	19(39)	49	16.3
	80-81	0	None	-	-	-	-	-
Chuilnak River	76-77	9	5(8)	12(18)	27(40)	23(34)	67	7.4
	77-78	7	7(13)	11(20)	21(39)	15(28)	54	7.7
	78-79	1	0	2(40)	3(60)	0	5	5.0
	79-80	0	None	-	-	-	-	-
	80-81	3	2(7)	5(19)	9(33)	11(41)	27	9.0
Eek River	76-77	20	27(19)	19(13)	30(21)	67(47)	143	7.1
	77-78	7	11(18)	7(12)	13(21)	30(49)	61	8.7
	78-79	3	0	2(6)	10(28)	24(67)	36	12.0
	79-80	9	17(17)	17(17)	18(17)	50(49)	102	11.3
	80-81	6	5(10)	12(25)	12(25)	20(40)	49	8.2
Goodnews River	76-77	17	42(36)	28(24)	19(16)	29(25)	118	6.9
	77-78	28	104(37)	46(16)	55(20)	77(27)	282	10.1
	78-79	1	0	0	3(60)	2(40)	5	5.0
	79-80	8	23(31)	11(15)	19(26)	21(28)	74	9.3
	80-81	18	73(39)	20(11)	44(23)	52(28)	189	10.5
Gweek River	76-77	3	4(13)	7(23)	9(30)	10(33)	30	10.0
	77-78	0	None	-	-	-	-	-
	78-79	1	4(57)	0	2(29)	1(14)	7	7.0
	79-80	3	8(45)	2(11)	4(22)	4(22)	18	6.0
	80-81	0	None	-	-	-	-	-

APPENDIX I. Con't

Location	Year	Number Trappers	Number & Percent Taken by Pelt Size (inches) 05-53	54-59	60-64	65+	Total	Take/ Trapper
Johnson River	76-77	29	53(20)	49(19)	54(21)	107(41)	263	9.1
	77-78	39	108(23)	94(20)	108(23)	161(34)	471	12.1
	78-79	21	50(22)	42(18)	39(17)	93(43)	229	10.9
	79-80	20	59(24)	39(16)	45(19)	100(41)	243	12.6
	80-81	25	72(26)	52(19)	45(16)	105(38)	274	11.0
Kanektok River	76-77	4	7(21)	5(15)	9(27)	13(38)	34	8.5
	77-78	3	12(34)	6(17)	4(11)	13(37)	35	11.7
	78-79	11	21(25)	21(25)	20(24)	22(26)	84	7.6
	79-80	5	15(27)	20(36)	5(9)	16(28)	56	11.2
	80-81	3	25(47)	4(8)	16(30)	8(15)	53	17.7
Kashunak River	76-77	16	16(19)	14(17)	27(32)	28(33)	85	5.3
	77-78	24	46(24)	47(25)	52(27)	45(24)	190	7.9
	78-79	3	1(4)	9(32)	12(43)	6(21)	28	9.3
	79-80	6	3(7)	4(10)	18(45)	15(38)	40	6.7
	80-81	12	34(23)	24(17)	44(30)	43(30)	145	12.1
Kisaralik	76-77	6	12(34)	8(23)	4(11)	11(31)	35	5.8
	77-78	8	12(19)	15(24)	9(15)	26(42)	62	7.8
	78-79	6	9(14)	10(15)	16(25)	30(46)	65	10.8
	79-80	12	27(25)	11(10)	30(27)	42(38)	110	9.2
	80-81	8	34(39)	6(7)	16(18)	32(36)	88	11.0
Kuskokwim R. - Akiak, Lower Kalskag	76-77	29	30(14)	36(16)	57(26)	100(45)	223	7.7
	77-78	1	0	0	1(25)	3(75)	4	4.0
	78-79	10	16(24)	8(12)	13(20)	29(44)	66	6.6
	79-80	19	64(30)	31(15)	40(19)	76(36)	211	11.1
	80-81	20	39(18)	19(9)	52(24)	106(49)	216	10.8
Kwethluk River	76-77	16	34(28)	14(11)	26(21)	49(40)	124	7.8
	77-78	12	29(28)	16(16)	19(18)	39(38)	103	8.6
	78-79	26	43(19)	57(25)	42(18)	86(38)	228	8.8
	79-80	17	40(30)	21(16)	22(16)	52(38)	135	7.9
	80-81	20	71(30)	28(12)	35(15)	107(44)	241	12.1

APPENDIX I. Con't

Location	Year	Number Trappers	Number & Percent Taken by Pelt Size (inches) 05-53	54-59	60-64	65+	Total	Take/ Trapper
Pastolik River	76-77	0	None	-	-	-	-	-
	77-78	0	None	-	-	-	-	-
	78-79	0	None	-	-	-	-	-
	79-80	0	None	-	-	-	-	-
	80-81	2	2(50)	2(50)	0	0	4	2.0
Reindeer River	76-77	7	9(21)	8(19)	13(30)	13(30)	43	6.1
	77-78	1	2(20)	2(20)	3(30)	3(30)	10	10.0
	78-79	2	2(9)	4(17)	11(48)	6(26)	23	11.5
	79-80	5	13(16)	9(11)	21(25)	40(48)	83	16.2
	80-81	3	2(7)	6(22)	5(19)	14(52)	27	9.0
Tuluksak River	76-77	8	13(18)	10(14)	17(24)	31(44)	71	8.9
	77-78	2	4(21)	5(26)	1(5)	9(47)	19	9.5
	78-79	7	9(12)	18(24)	14(18)	35(46)	76	10.9
	79-80	15	47(24)	30(15)	41(20)	81(41)	199	13.3
	80-81	10	19(17)	18(17)	14(13)	58(53)	109	10.9
Yukon River - Alakanuk to Pilot Village	76-77	40	55(23)	49(20)	71(29)	69(28)	244	6.1
	77-78	32	53(21)	55(22)	89(35)	57(22)	254	7.9
	78-79	11	12(14)	19(22)	31(36)	23(27)	85	7.7
	79-80	19	57(28)	29(14)	61(30)	59(28)	206	10.8
	80-81	45	70(22)	51(16)	95(30)	98(31)	314	7.0
Yukon River - Pilot Village to Russian Mission	76-77	32	44(21)	31(15)	53(25)	81(39)	209	6.5
	77-78	4	8(24)	8(24)	12(35)	6(18)	34	8.5
	78-79	12	12(12)	15(15)	35(34)	40(39)	102	8.5
	79-80	11	35(27)	11(9)	31(24)	52(40)	129	11.7
	80-81	29	31(14)	27(12)	70(30)	102(44)	230	7.9
Unit 18 (No drainage given)	76-77	-	73(18)	67(17)	102(26)	153(39)	395	-
	77-78	6	17(18)	22(24)	23(25)	30(33)	92	15.3
	78-79	14	30(27)	19(17)	32(29)	31(28)	112	8.0
	79-80	8	17(17)	17(17)	31(31)	35(35)	100	12.5
	80-81	23	47(21)	46(21)	49(22)	82(37)	224	9.7

APPENDIX I. Con't.

Location		Number Trappers	Number & Percent Taken by Pelt Size (inches 05-53	54-59	60-65	65+	Total	Take/ Trapper
Unit 18 Total	76-77	258[a]	446(20)	387(18)	561(25)	815(37)	2209	8.6
	77-78	178	415(25)	342(20)	417(25)	521(31)	1695	9.5
	78-79	141	224(18)	238(19)	307(25)	456(37)	1225	8.7
	79-80	173	462(25)	267(14)	428(23)	698(38)	1855	10.7
	80-81	258	581(24)	348(15)	566(24)	901(38)	2396	9.3

SMALL GAME

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNITS 12, 19, 20, 21, 24, and 25

GEOGRAPHICAL DESCRIPTION: Interior Alaska

PERIOD COVERED: July 1, 1980 - June 30, 1981

Population Status and Trend

Observations by Department personnel, reports from sportsmen, and responses to annual abundance and trapper questionnaires provided information to assess small game fall and winter populations on a regionwide basis. Data from these sources suggested that during the 1980-81 season, ruffed, spruce, and sharp-tailed grouse were moderately abundant in Interior Alaska. Grouse and ptarmigan field surveys were not conducted during this reporting period.

Populations of grouse were about the same in 1980-81 as in 1979-80, except near Delta and Tok where declines from the very high populations were reported. Ptarmigan densities were moderate and little changed from 1979-80, except that the Murphy Dome area had fewer ptarmigan than in 1979. Compared to the 1979-80 season, snowshoe hares were more abundant throughout the Interior. High hare numbers occurred predominately in the northern and eastern areas.

Population Composition

Age data from ptarmigan shot at Murphy Dome between 11 October and 7 December 1980 indicated fair production during the 1980 nesting season. Department check station personnel examined 456 ptarmigan killed by hunters at Murphy Dome. With very few exceptions, these were rock ptarmigan. Seventy-three percent of the ptarmigan examined were juveniles and 60 percent were females. A complete age-sex breakdown of this harvest is as follows: juvenile females, 41 percent; juvenile males, 32 percent; adult females, 19 percent; adult males, 8 percent. The juvenile to adult ratio was 2.6:1.0. In 1979, this ratio was 1.5:1.0 for 850 ptarmigan killed, and in 1978 the juvenile to adult ratio was 2.6:1.0. Seasonal movements and segregation of age and sex groups complicate age ratio comparisons between wintering and breeding populations.

No composition data for other small game species were obtained.

Mortality

Hunter harvest, the only small game mortality factor monitored, was obtained through a questionnaire (regionwide) and a check station (Murphy Dome).

The Small Game Hunter Questionnaire, designed to assess hunter interest and harvest, was initiated on a statewide basis in 1978. The 1979-80 and 1980-81 questionnaires were mailed to residents of Units 12, 19, 20, 21, 24, and 25. Names were randomly selected from a list of license holders at the rate of every fifth name (rural areas) and every tenth name (urban and road system areas). Unfortunately, an oversight in computer programming precluded comparisons between responses from rural and urban-road system hunters.

In December 1980, 992 questionnaires were mailed to hunters in the Interior, 117 questionnaires were returned undelivered, and 368 hunters (42%) responded by answering the questionnaire. Among respondents, 238 (65%) hunted small game during fall 1980, almost the same rate as in 1979 (64%). Questionnaire responses indicated that hunters averaged 16 small game hunting trips, and 25 percent of the hunters reported that members of their family under 16 also had hunted small game. As in 1979, hunters in 1980 did not travel far in search of small game, and the most popular areas among Fairbanks hunters were Murphy Dome, the Chena River valley including Eielson AFB, and the Richardson Highway area west of the Salcha River.

Questionnaire responses pertaining to harvest are summarized in Appendix I. During the 1980 fall hunting season, successful hunters took an average of 14 grouse, 15 ptarmigan, and 17 snowshoe hares, for an average of 32 small game animals per successful hunter. Of the urban-road system group, Delta area hunters harvested the most grouse per hunter (16), while three respondents from Aniak averaged the most grouse (31 each) taken by rural hunters. Tok area hunters bagged the most ptarmigan (36) per hunter. Among urban-road system hunters, Healy-Mt.McKinley area residents averaged the most hares (54) per hunter, while two respondents from Lake Minchumina reported the largest average take of hares (60 each) among rural area hunters.

The species breakdown within our sample of the 1980 regional grouse harvest was as follows: spruce grouse, 64 percent; ruffed grouse, 30 percent; and sharp-tailed grouse, 5 percent. Unidentified species of grouse accounted for 1 percent of the harvest. Fairbanks area hunters reported 70 percent spruce grouse, 24 percent ruffed grouse, and 6 percent sharp-tailed grouse.

A check station was operated at Murphy Dome on weekends from 11 October through 7 December 1980. During the nine weekends in this period, 301 hunters (134 parties) harvested 628

ptarmigan. Parties took an average of 4.7 ptarmigan per trip, and the average take per hunter was 2.1 birds. In contrast, during the same period in 1979, 313 hunters interviewed (130 parties) took a total of 1,019 ptarmigan, averaging 7.8 birds per party and 3.2 birds per hunter. With very few exceptions, birds taken were rock ptarmigan.

Management Summary

Grouse, ptarmigan, and hare populations fluctuate markedly in abundance. While hunting is thought to have little effect on small game population trends over broad geographical areas, hunting can influence local abundance. Currently, grouse populations are moderately high and ptarmigan populations are low to moderate. However, winter concentrations of these species have provided good hunting in some areas. Numbers of snowshoe hares are increasing. Although populations are moderate in much of the Interior, high hare numbers exist in the northeastern portions of the region.

Efforts should be directed toward determining the winter range of ptarmigan breeding at Eagle Summit. This information would aid in evaluating the biological significance of ptarmigan harvests in heavily hunted wintering areas.

PREPARED BY:

Jeannette R. Ernest
Game Biologist II

SUBMITTED BY:

Oliver E. Burris
Regional Management Coordinator

Appendix I. Summary of 1980-81 harvest data from the Small Game Hunter Questionnaire.

Hunter Residence	Number Hunters Responding	Number Grouse Taken	Number Grouse per Hunter	Number Ptarmigan Taken	Number Ptarmigan per Hunter	Number Hares Taken	Number Hares per Hunter	Total Animals Taken	Average Number per Hunter
Subunit 19A	4	302	75.5	55	13.8	72	24.0	429	107.3
McGrath	15	167	12.8	122	17.4	84	14.0	373	28.7
Delta	17	213	16.4	155	22.1	135	15.0	503	31.4
Eagle	5	73	14.6	33	8.3	91	22.8	197	39.4
Fairbanks Area	167	1672	12.9	1373	13.6	1594	16.1	4639	29.7
Healy-Mt. McKinley	4	60	30.0	132	44.0	216	54.0	408	102.0
Lake Minchumina	2	6	3.0	5	2.5	120	60.0	131	65.5
Nenana-Clear	7	92	13.1	51	10.2	79	15.8	222	31.7
Tok-Northway	4	13	6.5	72	36.0	41	10.3	126	31.5
Galena	7	13	4.3	8	8.0	73	12.2	94	15.7
Bettles	3	25	8.3	52	17.3	54	18.0	131	43.7
Other	4	13	6.5	74	24.7	39	13.0	126	31.5
Total	239	2649	14.2	2132	15.2	2598	17.4	7379	23.7

SMALL GAME

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT 18

GEOGRAPHICAL DESCRIPTION: Yukon-Kuskokwim Delta

PERIOD COVERED: July 1, 1980 - June 30, 1981

Seasons and Bag Limits

Grouse	Aug. 10 - April 30	15 per day, 30 in possession
Ptarmigan	Aug. 10 - April 30	20 per day, 40 in possession
Hares - Rabbits	No closed season	No limit

Population Status and Trend

ARCTIC HARE

Information on the status of Arctic hare populations in GMU 18 was scarce. Although the number of hares was not particularly high anywhere in the Unit, apparently there was an increase in the northern portion of the Yukon-Kuskokwin Delta near the mouth of the Yukon River.

SNOWSHOE HARE

Throughout most of GMU 18, snowshoe hares were thought to be lower than during the previous two or three seasons. Residents along the Yukon River indicated that since winter 1979-80 the population had crashed, although no data were available to substantiate this claim.

WILLOW PTARMIGAN

More ptarmigan were present on the Yukon-Kuskokwim Delta and on Nunivak Island this year compared to the previous season; however, this increase was not of major significance. One factor contributing to difficulty in assessing ptarmigan numbers was the lack of snowfall on the Yukon and Kuskokwim Delta this past winter. Some observers felt that caused birds to stay on the tundra, rather than concentrate along creek bottoms where willows are prevalent. Numerous residents of the coastal portion of the Unit contended that ptarmigan moved to their area later than normal this year (mid- to late March as opposed to February).

Population Composition

Small game surveys were not conducted during the reporting period, but ptarmigan were observed in sizable numbers in the Bethel area during mid- to late March. Many birds were seen moving in a north or northwesterly direction.

Mortality

No data were available.

Management Summary and Recommendations

Changes in abundance of small game are often difficult to determine, especially over large areas. If the residents of the Unit were questioned, the information could provide a crude relative index of the small game population status and harvest. The use of mail-out questionnaires is probably not a viable tool at this time because of language and other cultural barriers. House-to-house surveys are probably more meaningful, and such work might be coordinated with the Subsistence Section. Aircraft pilots operating throughout the Unit, might be another useful source of information.

PREPARED BY:

W. Bruce Dinneford
Game Biologist III

SUBMITTED BY:

Robert E. Pegau
Regional Supervisor

UPLAND GAME ABUNDANCE

SURVEY-INVENTORY PROGRESS REPORT

STATEWIDE

PERIOD COVERED: July 1, 1980 - June 30, 1981

Techniques

The standard small game abundance questionnaire was mailed in mid-October 1980 to 400 people throughout the State, and by the end of January 1980 approximately 180 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. Replies to the questionnaire are summarized in Appendix A.

Findings

Grouse - Replies to the 1980 questionnaire indicated that grouse populations remained about the same statewide. Populations were at moderate levels in most areas except for the Brooks Range, where numbers of grouse were moderately low. Populations in the Gulf region increased somewhat compared to the 1979 levels.

Ptarmigan - Numbers of ptarmigan (all species) were reported to be at moderate levels statewide with three exceptions: cooperators in both the Gulf and Alaska Peninsula areas reported moderately low numbers of ptarmigan and Kodiak cooperators (3 replies) reported low numbers of ptarmigan. Population levels remained unchanged over much of the State, although Kodiak and the Alaska Peninsula reports indicated a decline in numbers of ptarmigan. In Southeastern, cooperators felt that ptarmigan numbers had increased.

Snowshoe Hare - Snowshoe hare populations increased in many areas of the State. However, numbers of hares on the Alaska Peninsula and in the western part of the State, which had high populations of hares for several years, declined to moderate levels. Hare populations were also at moderate to moderately high levels in the Interior, moderately high in the Brooks Range, and moderately low in the Gulf.

Management Summary and Conclusions

The standard small game abundance questionnaire has repeatedly indicated that grouse, ptarmigan, and hare populations

fluctuate considerably throughout the State. Hunting pressure has little effect on fluctuations over broad geographical regions of Alaska. The management goals of providing the maximum opportunity to participate in small game hunting is being met under the current long seasons and liberal bag limits. Therefore, no changes in our approach to small game management are recommended.

PREPARED BY:	SUBMITTED BY:
Jeannette R. Ernest	Oliver E. Burris
Game Biologist II	Regional Management Coordinator

Appendix A. Summary of replies to questionnaire on grouse, ptarmigan, and hare populations, 1979.

Area and Species	Present Abundance[a] High	Mod.	Low	Index[b]	Comparison with 1978[a] More	Same	Fewer	Index[b]
Brooks Range - 13 replies								
Grouse (general)	0	2	4	2.3	1	4	1	5.0
Spruce Grouse	0	2	1	3.7	0	2	1	3.7
Ptarmigan (general)	1	5	2	4.5	1	6	1	5.0
Rock Ptarmigan	0	2	3	2.6	0	3	1	4.0
Willow Ptarmigan	0	5	4	3.2	0	6	3	3.7
Snowshoe Hare	4	1	2	6.1	4	2	1	6.7
Western - 20 replies								
Grouse (general)	1	3	2	4.3	1	3	1	5.0
Spruce Grouse	0	3	3	3.0	0	3	1	4.0
Ptarmigan (general)	4	5	4	5.0	3	6	4	2.8
Willow Ptarmigan	4	5	3	5.3	2	5	4	4.3
Snowshoe Hare	6	7	5	5.2	2	6	7	3.7
Alaska Peninsula - 21 replies								
Ptarmigan (general)	1	5	6	3.3	1	5	5	2.8
Willow Ptarmigan	1	5	9	2.9	0	6	9	2.6
Snowshoe Hare	3	6	6	4.2	3	6	5	2.7
Kodiak - 3 replies								
Ptarmigan (general)	0	0	3	1.0	0	1	2	2.3
Snowshoe Hare	1	0	2	3.7	1	0	2	3.7
Southeastern - 14 replies								
Grouse (general)	1	7	4	4.0	3	1	5	4.1
Spruce Grouse	0	3	3	3.0	2	2	1	5.8
Blue Grouse	2	5	4	4.2	2	5	3	4.6
Ptarmigan (general)	1	5	2	4.5	3	2	1	6.3
Willow Ptarmigan	0	3	1	4.0	3	1	0	8.0
Snowshoe Hare	1	0	4	2.6	0	5	0	5.0
Gulf - 40 replies								
Grouse (general)	4	16	5	4.8	10	11	3	6.2
Ruffed Grouse	0	3	6	2.3	1	6	1	5.0
Spruce Grouse	5	21	4	5.1	15	13	3	6.5
Sharp-tailed Grouse	0	4	6	2.6	1	5	3	4.1
Ptarmigan (general)	1	15	12	3.4	6	16	5	5.1
Rock Ptarmigan	0	3	6	2.3	1	7	1	5.0
Willow Ptarmigan	1	10	9	3.4	5	12	3	5.4
White-tailed Ptarmigan	0	1	4	1.8	0	4	1	4.2
Snowshoe Hare	1	22	13	3.7	29	8	2	7.8

Appendix A. Continued.

Area and Species	Present Abundance[a] High	Mod.	Low	Index[b]	Comparison with 1978[a] More	Same	Fewer	Index[b]
Interior - 66 replies								
Grouse (general)	4	39	13	4.4	11	22	21	4.3
Ruffed Grouse	4	31	14	4.1	8	23	17	4.2
Spruce Grouse	3	35	13	4.2	10	22	19	4.3
Sharp-tailed Grouse	2	15	16	3.3	9	12	12	4.6
Ptarmigan (general)	6	28	11	4.6	8	24	13	4.6
Rock Ptarmigan	1	13	7	3.9	2	6	10	3.2
Willow Ptarmigan	5	17	8	4.6	4	16	8	4.4
White-tailed Ptarmigan	1	1	4	3.0	1	2	2	4.2
Snowshoe Hare	20	31	9	5.7	33	18	7	7.0
Statewide								
Grouse (general)	11	69	29	4.3	27	43	32	4.8
Ruffed Grouse	5	40	24	3.9	9	36	19	4.4
Spruce Grouse	9	68	29	4.2	30	45	29	5.0
Sharp-tailed Grouse	2	20	26	3.0	10	20	16	4.5
Ptarmigan (general)	14	63	40	4.1	22	60	31	4.7
Rock Ptarmigan	4	22	21	3.6	5	23	15	4.1
Willow Ptarmigan	11	45	34	4.0	14	46	27	4.4
White-tailed Ptarmigan	1	2	8	2.5	1	6	3	4.2
Snowshoe Hare	34	68	41	4.8	71	45	24	6.3

[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).

WALRUS

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT 17

GEOGRAPHICAL DESCRIPTION: Northern Bristol Bay

PERIOD COVERED: July 1, 1980 - June 30, 1981

Season and Bag Limit

Walrus management was under Federal jurisdication during this regulatory year and allowed unlimited harvest by Natives for subsistence and handicraft uses.

Population Status and Trend

Twenty-one radio transmitters were attached to walruses' tusks during the field season. The objectives of this study were to determine the length of haulout and feeding excursions and to estimate the total number of walruses utilizing Round Island. Radio transmitters were monitored and estimates of walrus abundance were made daily. Results show that walruses spent more time at sea than they did hauled-out at Round Island. While there was considerable variation between individuals, walruses generally spent 1 or 2 days hauled-out between feeding excursions which lasted 6 to 8 days. Between 10,000 and 12,000 walruses were hauled-out during peak intervals. Information derived from radio-instrumented walruses indicated approximately 90 percent of the walruses that utilize Round Island were hauled-out during peak periods.

Visual tags were placed on tusks of 14 walruses. Only seven resightings of marked walrus were recorded during the field season. One tag attached on June 7, was recovered from a walrus carcass at Cape Seniavin in mid-July, indicating that some walruses may be utilizing both areas as haul-outs.

Aerial surveys of the Bristol Bay walrus population were conducted each month by the University of Alaska and the Department of Fish and Game. Surveys were conducted to determine distribution of walruses with respect to the proposed clam fishery off the Bering Sea coast of the Alaska Peninsula. Preliminary indications are that walruses utilizing Round Island as a resting place may commonly travel in excess of 100 miles to feed.

Mortality

No mortality studies were conducted in 1980. Reports from pilots indicated that the number of walrus carcasses observed along the

beaches of Northern Bristol Bay were substantially less than the previous year. On the Central Alaska Peninsula approximately 1,200 walruses were observed (May 1980), hauled out at Cape Seniavin. Cape Seniavin is vulnerable to poaching from aircraft, and reports from guides after the spring brown bear season indicated that as many as 100 carcasses were observed along the beach between Port Heiden and Cold Bay.

Visitor Use

Seventeen groups of visitors totalling 58 people visited Round Island during summer 1980. Visitor use was low because the Sanctuary was closed to visitors during the 1979-80 season and knowledge of its reopening was not widespread. Unlike previous years, the majority of visitors were from the Bristol Bay area. Two parties were from Europe and one individual was from the continental U.S. During the spring of 1981 the owners of 53 fishing boats with a minimum crew of 215 people were issued permits (during the Togiak commercial herring fishery) to visit Round Island. An additional 24 permits were issued in Anchorage, King Salmon, and Dillingham to potential visiting parties.

The Commercial Fisheries Division of the Dept. of Fish and Game requested and received permission to use Summit Island in the Walrus Islands State Game Sanctuary as a base of operations during the 1981 herring fishery. Four tent frames were erected on Summit Island to house department employees. A Bell 206B helicopter was stationed on the island to transport personnel. Approximately 20 barrels of fuel were cached along shore against the bluff below camp. Conditions of the permit stipulated that all materials including fuel barrels would be removed at the termination of the field season.

Management Summary and Recommendations

Visitor use of Round Island increases substantially during May and June as commercial herring fishermen begin visiting during closed fishing periods. In order to support increased visitor use, Departmental equipment and facilities should be upgraded. The conditions under which a visitors permit is issued should be enforced.

The Commercial Fisheries camp on Summit Island operated smoothly throughout the herring fishery. No increased camping activity by commercial fishermen was noticeable. Environmental degradation was minimal and was probably offset by the efforts of personnel to prevent fishermen digging in the archaeological sites on the island.

PREPARED BY:

Kenton P. Taylor
Game Biologist III

SUBMITTED BY:

Leland P. Glenn
Survey-Inventory Coordinator

WOLVERINE

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT 9

GEOGRAPHICAL DESCRIPTION: Alaska Peninsula

PERIOD COVERED: July 1, 1980 - June 30, 1981

Seasons and Bag Limits

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

Population Status and Trend

No data were available.

Population Composition

No data were available.

Mortality

Thirty-one wolverines, 26 males, 11 females and 2 sex unknown were reported taken from Unit 9 during the 1980-81 season. As in past seasons, trapping accounted for the majority of the harvest with 31 wolverines taken by this method. Ground shooting accounted for 5 of the remaining 8 kills. This harvest is well below the previous 9-year average of 72 wolverines.

Management Summary and Recommendations

Winter weather conditions provided moderate ice, but extremely limited snow cover on the Alaska Peninsula in 1980-81. As a result, trapper access was restricted and the harvest was reduced.

The continuing predominance of males in the harvest most likely reflects their greater vulnerability due to more extensive movements and larger home range sizes. This

characteristic and the below average harvest indicate that overall trapping pressure in 1980-81 was relatively low.

No changes in season and bag limit were recommended.

PREPARED BY:

Christian A. Smith
Game Biologist III

SUBMITTED BY:

Leland P. Glenn
Survey-Inventory Coordinator

WOLVERINE

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT 11

GEOGRAPHICAL DESCRIPTION: Wrangell Mountains

PERIOD COVERED: July 1, 1980 - June 30, 1981

Seasons and Bag Limits

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

Population Status and Trend

No data were available.

Population Composition

No data were available.

Mortality

Only 13 wolverines, 10 males and 3 females, were killed in Unit 11. This was the lowest reported harvest in the last 10 years. The mean annual harvest for 1976-80 ($\bar{x}$ = 20) was significantly lower than the mean for 1971-75 ($\bar{x}$ = 39) (p F .025).

Of the 13 wolverines killed, 11 were trapped, 1 was snared, and the method of harvest for the other was unreported.

Management Summary and Recommendations

The wolverine harvests have declined since 1973, but no population data are available to determine if the population has also declined. In 1981-82, trappers will be requested to submit canine teeth which will be examined for open root canals to determine the kit:adult ratio of the harvest. No changes in season or bag limits were recommended.

PREPARED BY:

Patricia Martin
Game Biologist II

SUBMITTED BY:

Leland P. Glenn
Survey-Inventory Coordinator

WOLVERINE

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT 13

GEOGRAPHICAL DESCRIPTION: Nelchina Basin

PERIOD COVERED: July 1, 1980 - June 30, 1981

Seasons and Bag Limits

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

Population Status and Trend

No data were available.

Population Composition

No data were available.

Mortality

Thirty-four wolverines were killed in Unit 13 during the 1980-81 season: 19 males, 14 females, and 1 sex unknown. The harvest by chronology and method of take are shown in Appendix I.

Management Summary and Recommendations

The 1980-81 harvest of 34 wolverines declined dramatically over the 81 killed the previous year. Population data are not available and therefore cannot be correlated with this decline in harvest. Historically there has been considerable variation in the wolverine harvests, however, should a downward trend continue, a reduction in season dates and bag limits may be necessary.

PREPARED BY:

Robert Tobey
Game Biologist III

SUBMITTED BY:

Leland P. Glenn
Survey-Inventory Coordinator

Appendix I. Unit 13 wolverine harvest chronology for 1980-81.

	Number of Harvest (percent) 1/
Harvest chronology	
November:	5 (15)
December:	4 (12)
January:	7 (21)
February:	10 (29)
March:	8 (23)
Method of Take	
Ground Shooting:	6 (18)
Trapping:	25 (73)
Snaring:	1 (3)
Unknown:	2 (6)
Total wolverine harvest:	34

1/ Harvest data are based on sealing data only.

PREPARED BY: Robert W. Tobey
Game Biologist III

WOLVERINE

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT 16

GEOGRAPHICAL DESCRIPTION: West Side of Cook Inlet

PERIOD COVERED: July 1, 1980 - June 30, 1981

Seasons and Bag Limits

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

Population Status and Trend

No data were available.

Population Composition

No data were available.

Mortality

Twenty-six wolverines, 11 males, 13 females, and 2 sex unknown, were reported harvested. All were reported taken in Subunit 16B. This is a 54 percent decline from the 1979-80 harvest, and is substantially below the 1971-79 annual average of 60.5 wolverines. Trapping was the most common method of take, accounting for 14 (54%) wolverines. Eleven (42%) were ground shot and the method of harvest for the remaining one is unknown.

Management Summary and Recommendations

The harvest of 26 wolverines was the lowest reported since sealing began in 1971 and the first time no wolverine were reported killed in Subunit 16A. The low harvest is believed to reflect the poor trapping conditions experienced throughout winter 1980-81. Low snow accumulation accompanied by periods of warm, rainy weather made it difficult for trappers to keep sets operational. Airborne trappers found few days with suitable conditions for tracking and landing.

No changes in season or bag limits were recommended.

PREPARED BY:

Jack C. Didrickson
Game Biologist III

Nicholas C. Steen
Game Biologist II

SUBMITTED BY:

Leland P. Glenn
Survey-Inventory Coordinator

WOLVERINE

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT 22

GEOGRAPHICAL DESCRIPTION: Seward Peninsula

PERIOD COVERED: July 1, 1980 - June 30, 1981

Season and Bag Limit

Nov. 1 - April 15	No limit

Population Status and Trend

Because of the small size, solitary habits, and relatively low density of wolverines in Unit 22, only limited information has been obtained on their population status during the past decade. Still, some knowledge of wolverine abundance and distribution has been acquired by noting the incidence of tracks in suitable snow conditions, tabulating reports from knowledgable people, and reviewing annual harvest information. These sources of information indicate the wolverine population in Unit 22 remained relatively stable during the last 10 years or more, with some minor exceptions. Wolverine numbers were generally lower near population centers than in remote areas. Aerial observations indicated wolverines were distributed throughout the entire Seward Peninsula in every major drainage, and tracks were seen at all elevations and in all habitat types. Tracks were most abundant on the Kuzitrin, Koyuk, Fish, Tubutulik, and Serpentine Rivers.

Population Composition

No surveys were conducted to determine the composition of the wolverine population.

Mortality

No information is available on natural mortality. The reported harvest from sealing certificates was 16 wolverines, 12 of which were males, 3 were females, and 1 was of unknown sex. During the last 10 trapping seasons, the harvest averaged 19 wolverines annually, and ranged from

a low of eight (1974-75) to a high of 26 (1975-76). The distribution of the winter harvest was as follows:

Subunit	Drainage	Harvest	% Harvest By Subunit
22A	Golsovia River	3	19%
22B	Koyuk River	5	
22B	Kwik River	3	50%
22C	Nome River	1	
22C	Tisuk River	1	12%
22D	Kuzitrin River	2	
22D	Pilgrim River	1	19%
	TOTAL	16	

The kill of wolverines was distributed throughout most of Unit 22. Although 50 percent of the harvest occurred in 22B, no significant concentration of animals was taken in any Subunit or drainage. Wolverines were taken in every month from November through April, with the highest harvest occurring in March (6 animals). Hunters shooting from the ground accounted for 9 animals (56%), and the remaining 7 were trapped.

Although sealing agents were available in most villages, all wolverines taken during the report period were probably not sealed. The actual harvest was estimated between 20 and 30 animals.

Management Summary and Recommendations

Wolverines are distributed throughout the entire Seward Peninsula, but the highest densities occur along the major river drainages in the central and eastern areas. Precise data are lacking, but the wolverine population probably experienced no significant changes in absolute numbers during the past decade. Minor shifts in population density may have occurred in response to hunting pressure and changes in prey density.

The primary management effort has been to obtain accurate harvest data. Improvements have been made recently, particularly in villages where agents are employed to assist hunters and trappers with sealing furs, but the accuracy of harvest data still needs to be improved. Satisfactory compliance with regulations will probably be attained only by increasing public contact in rural areas, by improved enforcement, and by emphasizing management benefits of the sealing program.

The sealing records and other sources of information indicate the harvest of wolverines has remained relatively constant at around 30 or fewer animals during the last 10 years. Considering their widespread distribution in Unit 22, a harvest of this magnitude probably had no detrimental effect on the population. Densities in the immediate vicinity of villages were probably reduced periodically, but wolverines appeared to recover by improved survival, reproduction, or immigration from adjacent areas of higher density.

The demand for wolverines by hunters and trappers was high due to the quality of the fur and the relative scarcity of the animal. Most wolverines are trapped, but under ideal tracking conditions they are extremely vulnerable to hunters using snow machines. The harvest should be closely monitored to ascertain changes in magnitude and methods of take. Because the harvest was low and the population probably remained stable, liberal trapping seasons and bag limits should be retained.

PREPARED BY:

Carl A. Grauvogel
Game Biologist III

SUBMITTED BY:

John W. Coady
Regional Supervisor