ALASKA DEPARTMENT OF FISH AND GAME

JUNEAU, ALASKA

STATE OF ALASKA
Bill Sheffield, Governor

DEPARTMENT OF FISH AND GAME
Don W. Collinsworth, Commissioner

DIVISION OF GAME
W. Lewis Pamplin, Jr., Director
Robert A. Hinman, Deputy Director

ANNUAL REPORT OF SURVEY-INVENTORY ACTIVITIES

PART VII. BEAVER, FURBEARERS, LYNX, WOLF, AND WOLVERINE

Edited and Compiled by
Alma Seward, Publications Technician

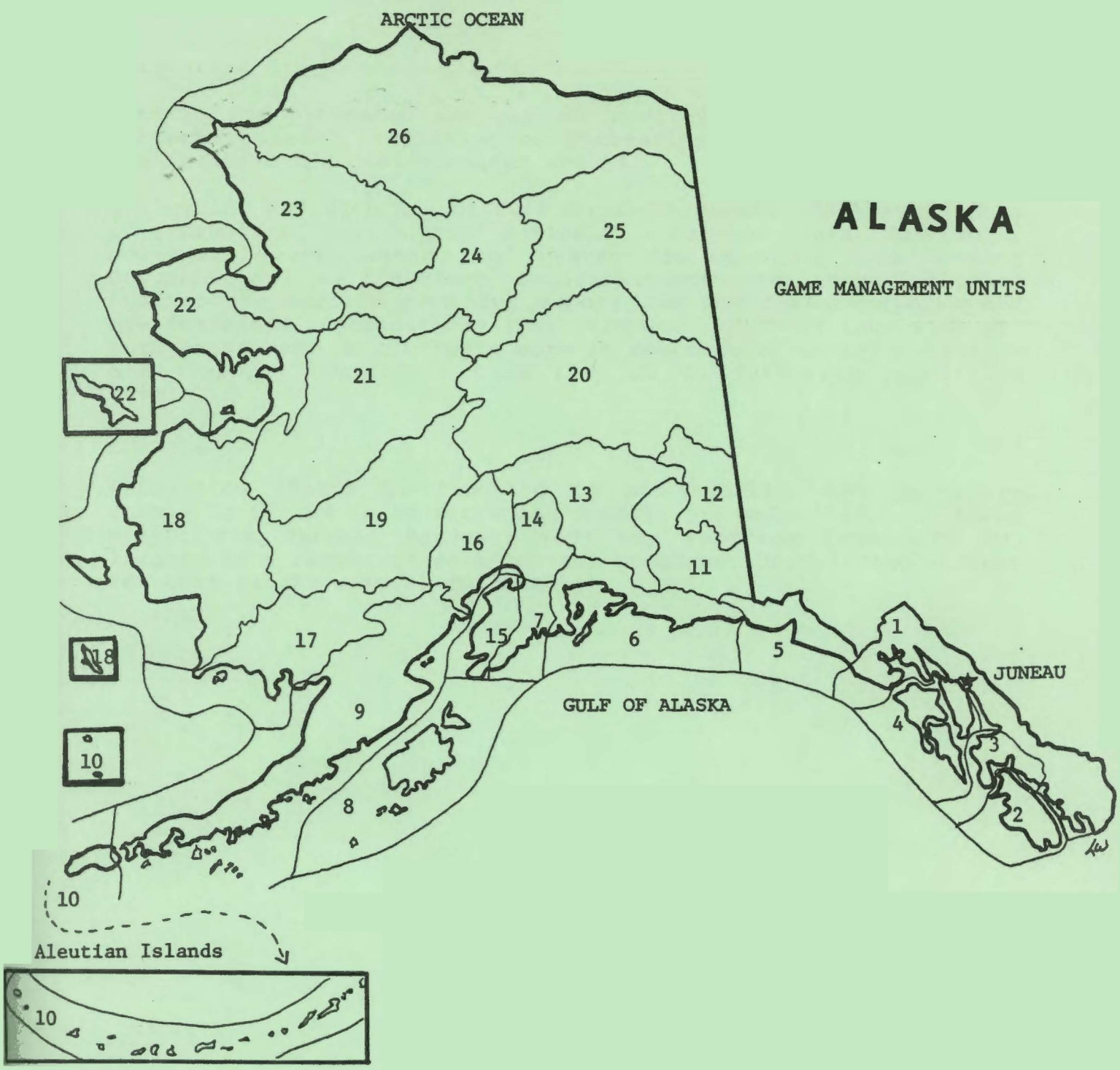
Volume XIV

Federal Aid in Wildlife Restoration
Project W-22-2, Job 7.0, 14.0, and 15.0

(Printed November 1984)

CONTENTS

Wolverine


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

Statewide Harvest and Population Status

Furbearers

Reports are presented for various species by various units; in subsequent years, reporting on furbearing species will be more standardized for easier reader access.

The amount and accuracy of both population data and harvest data on furbearer are highly variable. Harvest data for wolf, wolverine, lynx, otter, and beaver are compiled from sealing documents and are therefore relatively accurate; those for other species are derived from fur export and fur dealer reports and are therefore considerably less accurate. Harvest levels on all furbearers tend to fluctuate more in response to market condition and trapping conditions than they do to furbearer population levels.

Wolf

Population status is reported to be variable, but generally stable in the 18 units for which reports are submitted. Of these units, the largest harvest (157) was reported from Unit 20, largely as a result of wolf control programs; Unit 13 (90 wolves) and Unit 21 (89 wolves) followed.

Robert A. Hinman
Deputy Director

BEAVER

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 17

GEOGRAPHICAL DESCRIPTION: Northern Bristol Bay

PERIOD COVERED: 1 July 1982-30 June 1983

Season and Bag Limit

See Fur Animal Hunting and Trapping Regulations No. 23.

Population Status and Trend

Beaver cache surveys were conducted 27 September 1982 on 4 rivers in Subunits 17A and 17C (Table 1), yielding an average density of 1.3 caches/mile of stream surveyed ($\bar{N}$ = 136). Survey conditions were poor due to exceptionally high water levels and many caches along the main channels of the Kokwok and Iowithla rivers appeared to have washed away.

While beaver densities appeared to be similar to those observed in 1981, some winter mortality may have occurred due to the loss of food caches resulting from high water prior to freeze-up. While no cache surveys were flown along the Togiak River in 1982, general observation indicated the lower Togiak drainage supported the lowest beaver densities in Unit 17.

Mortality

Trapping conditions throughout February 1983 were very good. Snow cover and ice thickness were sufficient to permit trappers to travel to all portions of the unit. A trapping pressure survey was flown 23 February 1983 along the Nushagak River from Dillingham to Koliganek. Of the lodges observed, 59% were trapped, having an average of 1.9 sets per trapped lodge. The greatest number of sets observed at one lodge was 5. Trappers concentrated their efforts along the major channels and missed many lodges in ponds and land-locked sloughs.

A total of 205 trappers sealed 1,792 beavers (Table 2). Of these, 14% (245) was kits, which was the lowest percentage in the harvest since 1977. Aleknagik had the highest percentage of kits in their harvest (32%). None of the Nushagak River villages had greater than 8% kits among the beavers they sealed.

Management Summary and Recommendations

Although the seasons in portions of Unit 17 have been lengthened each year since 1979, both harvest and population levels have remained relatively constant. Pelt prices have steadily declined

during this period and averaged $20 during the 1983 Dillingham Beaver Round-Up. Beaver carcasses of young animals were of greater value than their pelts, and many pelts from kits and yearlings probably were not stretched and sealed this year.

While snow and ice conditions were optimum for trapper dispersal, few trappers took advantage of the longer season and good conditions to travel very far from their villages. Pressure was high along the lower Nushagak, Kokwok, Klutuk, Iowithla and Togiak rivers. During this reporting period the Board of Game adopted a liberal season and bag limit for Unit 17 with instructions to the staff to close heavily trapped areas by Emergency Order as the season progresses. This should stimulate greater utilization of the beaver in more remote portions of the unit.

PREPARED BY:

Kenton P. Taylor
Game Biologist III

SUBMITTED BY:

Leland P. Glenn
Survey-Inventory Coordinator

Table 1. Beaver cache counts in Unit 17, 1975-1982.

	Caches/mi							
River	1982[a]	1981	1980	1979	1978	1977	1976	1975
Klutuk	--	1.42	1.38	1.36	1.36	0.87	1.00	0.72
Kokwok	1.23	2.43	2.53	1.40	1.83	1.00	0.93	0.80
Iowithla	1.02	1.48	1.56	1.24	1.19	1.10	0.77	0.77
Sunshine	1.83	2.33	2.92	2.08	2.17	2.42	--	1.42
Togiak	--	1.02	0.82	0.63	1.07	0.87	--	0.42
Ongivinuck	1.69	1.97	1.66	1.00	1.38	1.47	--	0.78
Harris	--	1.69	1.24	1.03	1.00	--	0.69	0.72
Mosquito	--	--	2.79	--	1.62	1.55	1.24	1.59
Mulchatna	--	--	2.49	--	1.32	1.25	1.25	1.55
Stuyahok	--	2.20	1.88	1.13	0.90	0.75	.53	1.08
North Fork Napotoli	--	0.43	0.60	0.37	0.47	--	0.77	--
South Fork Napotoli	--	0.56	0.59	0.33	0.70	--	1.19	--
King Salmon	--	--	1.57	--	1.28	0.76	0.72	--
Tikchik	--	--	--	1.27	--	--	1.09	--
Nushagak	--	--	--	--	0.91	0.77	--	--
Weary	--	--	1.45	--	--	--	--	--
Average no. caches/mi	1.29	1.49	1.63	0.98	1.17	1.02	0.93	0.95

[a] 1982 Data are not comparable to previous years due to very poor visibility of caches as a result of high waters during the 1982 surveys.

Table 2. Beaver harvests from Unit 17, 1982-83. Data compiled from sealing certificates.

Area	No. trappers	No. kits	No. adults	Total beaver	Percent kits
Koliganek	20	14	166	180	8
New Stuyahok	46	26	419	445	6
Ekwok	17	4	163	167	2
Portage Creek	3	2	28	30	7
Clark's Point	5	0	41	41	0
Dillingham	32	45	214	259	17
Aleknagik	29	77	162	239	32
Manokotak	22	30	138	168	18
Twin Hills	1	0	6	6	0
Togiak	30	47	210	257	18
Totals	205	245	1,547	1,792	14

BEAVER

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 18

GEOGRAPHICAL DESCRIPTION: Yukon-Kuskokwim Delta

PERIOD COVERED: 1 July 1982-30 June 1983

Season and Bag Limit

See Fur Animal Hunting and Trapping Regulations No. 23.

Population Status and Trend

Reports from local residents and department personnel indicate that beavers continue to be abundant throughout Unit 18. Residents of coastal and tundra villages report increasing numbers of beavers in areas where they have not traditionally been found. Compared with densities observed further inland, beaver populations in coastal areas are still quite low. Coastal habitat is of marginal quality due to a scarcity of willows and will probably never support high beaver densities. Beaver populations north of the Yukon River and southeast of the Kuskokwim River appear to be at high and stable levels, although local fluctuations undoubtedly occur.

Aerial cache counts were conducted in October 1982. Five drainages were surveyed, yielding 197 caches in 239 mi of river (Table 1). Because 1982 was the 1st year these drainages were surveyed, conclusions regarding population trend cannot be made with certainty. However, high densities were observed in all drainages except the Johnson River, and are exceeded only by densities observed in the Bristol Bay region by Taylor (1982).

Because the Johnson River drainage normally supports a heavy beaver harvest, it seems incongruous that cache count data indicate low densities. Typical of Delta streams, the Johnson River drains an extremely large area composed mostly of lakes and sloughs. Because willows are relatively scarce, the area is marginal beaver habitat. Consequently, it cannot support populations as dense as those observed in other drainages. However, because the drainage is large, it supports a large, low-density beaver population. Because the Johnson River is adjacent to population centers on the Kuskokwim River, it is not surprising that it supports a heavy beaver harvest.

Population Composition

No data were available.

Mortality

Sealing certificates indicate that trappers harvested 1177 beavers from Unit 18 during the 1982-83 season. The observed harvest level represents a substantial decline from the 2396 and 1819 beavers harvested during the 1980-81 and 1981-83 seasons, respectively. Interpretation of the data is complicated by the fact that many trappers use beavers domestically and therefore do not submit them for sealing. We believe, however, that the reduction in harvest reflects low pelt prices and a lack of interest in beaver trapping. The only area of Unit 18 in which the harvest increased substantially was the flats south of the Yukon River between Alakanuk and Pilot Village (Table 2).

The proportion of kits (under 54 in) in the harvest (22%) was within the range observed during prior years. Libby (1955) suggested that for interior Alaska beaver populations a harvest in excess of 20% kits indicates overtrapping. For the Andreafsky, Goodnews, Kanektok, and Reindeer River drainages, the proportion of kits occurring in the harvest currently exceeds 20%. Due to differences in trapping practices and possibly productivity, we believe that the 20% guideline may not be applicable to Unit 18 beaver populations. Whereas interior trappers will normally attempt to catch only the larger beavers from a colony, most Delta trappers attempt to catch as many beavers as possible. Although this practice tends to decimate individual colonies, colonies more distant from villages remain untrapped. Beaver populations are overtrapped near villages, but the population as a whole does not suffer from overharvest. It also appears that Unit 18 populations are more productive, with larger mean colony size and higher recruitment than those observed by Libby (1955). The milder climate and more favorable habitat on the Delta may account for higher productivity.

Observations by department personnel and discussions with local residents indicate that few people took advantage of the spring shooting season. Because sealing certificates do not differentiate between shooting and snaring, it is not possible to accurately determine the number of beavers shot in the spring. At that time of year most people seem to prefer waterfowl hunting and subsistence or commercial fishing to beaver hunting.

Little is known about other sources of mortality. Predation is believed to be insignificant, because few wolves are found in Unit 18. An unknown number of beavers are illegally shot during the summer and fall; however, because access to many beaver ponds is limited (even during the open-water season), we believe that the problem is insignificant unit-wide.

Management Summary and Recommendations

Beavers remain abundant throughout Unit 18. Local residents continue to report that beavers are expanding westward into coastal areas and are blocking favorite blackfish streams. The

high incidence of illegal trapping in November and December is becoming an increasingly serious problem in some areas, especially near Bethel. Several trappers from the Bethel area have commented that local beaver ponds are often trapped out before the season opens. Although beavers are not fully prime until January or February, many local residents wish to see the season open earlier in the winter when trapping is easier.

The following activities are recommended for the 1983-84 season:

1) Continue annual fall cache surveys on selected drainages. Presently, we are on a 2-year schedule of resurveying streams previously surveyed;

2) Continue efforts to establish sealing agents in villages that do not presently have one;

3) Encourage trapping away from villages; and

4) Initiate investigations to improve the utility and accuracy of aerial survey information.

Literature Cited

Libby, W. L. 1955. Beaver management studies. Alaska Coop. Wildl. Res. Unit Q. Rep. 6(4):7-28.

Taylor, K. P. 1982. Beaver survey-inventory progress report. Pages 110-114 in R. A. Hinman, ed., Annual Report of Survey-Inventory Activities. Part IV, Vol. XII. Alaska Dep. Fish and Game. Fed. Aid in Wildl. Rest. Proj. W-19-1 and W-19-2, Jobs 7.0, 10.0, 15.0, and 14.0. Juneau. 143pp.

PREPARED BY:

Steven Machida
Game Biologist II

SUBMITTED BY:

David A. Anderson
Survey-Inventory Coordinator

Table 1. Unit 18 beaver cache aerial surveys, October 1982.

River	Miles surveyed	Cache count	Caches/mi
Johnson	89	12	0.13
Black	22	29	1.32
Archuelinguk	15	10	0.67
Kisaralik	34	24	0.71
Kanektok	79	122	1.54

Table 2. Unit 18 beaver harvest by drainage, 1981-1983.

Location	Year	No. of trappers	No. pelts and (%) taken by pelt size		Total pelts	Take/ trapper
			0-53 in.	54 in.+		
Andreafsky River	1981	23	55(27)	151(73)	206	9.0
	1982	9	6(11)	49(89)	55	6.1
	1983	4	5(28)	13(72)	18	4.5
Eek River	1981	6	5(10)	44(90)	49	8.2
	1982	11	8(9)	84(91)	92	8.4
	1983	3	3(17)	15(83)	18	6.0
Goodnews River	1981	18	73(39)	116(61)	189	10.5
	1982	6	14(30)	32(70)	46	7.7
	1983	6	17(32)	37(68)	54	9.0
Johnson River	1981	25	72(26)	202(74)	274	11.0
	1982	20	62(27)	164(73)	226	11.3
	1983	11	23(16)	118(84)	141	12.8
Kanektuk River	1981	3	25(47)	28(53)	53	17.7
	1982	4	10(32)	21(68)	31	7.8
	1983	3	20(57)	15(43)	35	11.7
Kashunuk River	1981	12	34(23)	111(77)	145	12.1
	1982	10	21(18)	99(82)	120	12.0
	1983	6	11(20)	44(80)	55	9.2
Kisaralik River	1981	8	34(39)	54(61)	88	11.0
	1982	6	10(17)	49(83)	59	9.8
	1983	4	4(11)	34(89)	38	9.5
Kuskokwim R. - Akiak, Kalskag	1981	20	39(18)	177(82)	216	10.8
	1982	11	23(19)	97(81)	120	10.9
	1983	1	--	10	10	10.0
Kwethluk River	1981	20	71(30)	170(70)	241	12.1
	1982	30	51(19)	225(81)	276	9.2
	1983	12	31(20)	126(80)	157	13.1
Pastolik	1981	2	2(50)	2(50)	4	2.0
	1982	5	2(5)	37(95)	39	7.8
	1983	0	--	--	--	--
Reindeer River	1981	3	2(7)	25(93)	27	9.0
	1982	3	15(50)	15(50)	30	10.0
	1983	2	6(26)	17(74)	23	11.5

Table 2. Continued.

Location	Year	No. of trappers	No. pelts and (%) taken by pelt size		Total pelts	Take/ trapper
			0-53 in.	54 in.+		
Yukon River - Pilot Village to Russian Mission	1981	29	31(14)	199(86)	230	7.9
	1982	16	19(10)	167(90)	186	11.6
	1983	6	5(12)	37(88)	42	7.0
Yukon River - Alakanuk to Pilot Village	1981	45	70(22)	244(78)	314	7.0
	1982	27	44(25)	131(75)	175	6.5
	1983	37	73(19)	301(81)	374	10.1
Unit 18 (no drainage given)	1981	23	47(21)	176(79)	223	9.7
	1982	14	36(23)	122(77)	158	11.3
	1983	18	57(27)	155(73)	212	11.8
Unit 18 totals	1981	237	560(25)	1699(75)	2259	9.5
	1982	172	321(20)	1292(80)	1613	9.4
	1983	113	255(22)	922(78)	1177	10.4

FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 1A AND 2

GEOGRAPHICAL DESCRIPTION: Ketchikan and Prince of Wales Island

PERIOD COVERED: 1 July 1982-30 June 1983

Season and Bag Limit

No change from 1981-82. See Fur Animal Hunting and Trapping Regulations No. 23.

Population Status and Trend

Based on discussions with trappers, the mink and marten populations are apparently holding fairly steady at a moderate to high level. The populations in the better accessed areas are generally lower than surrounding areas because of concentrated trapping pressure. This applies more to marten than mink because of the ease of trapping marten and the relatively high marten and low mink prices.

Otter populations are probably still below the level of the early 1970's but are increasing. Lower fur prices and less trapper interest are the primary reasons. Several of the better otter trappers did not trap otter this year because of poor demand for otter pelts.

Wolverine populations are thought to 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.

No wolf surveys were conducted last year because of poor snow conditions but there were no indications of a noticeable population change from the past few years.

Population Composition

No data available.

Mortality

The wolf harvest in Subunit 1A was 20, compared to 18 in 1981-82. Thirteen of the 20 were taken on Revilla Island. There were 6 males, 13 females, and 1 unknown sex in the harvest. Color breakdown was 3 black and 17 brown. Ninety percent of the 20 wolves were taken in the December through April period. Five of the 20 were shot and the rest were trapped.

In Unit 2, the 1982-83 harvest was 16 wolves, down from 20 taken last year. Eighty-one percent of the harvest was males and the breakdown by color was 5 black and 11 brown wolves. Thirteen of the 16 were shot and the rest were trapped. Timing of the harvest was different than in Subunit 1A and only 38% were taken in the December through April period. The high percentage of wolves taken by shooting indicates a mostly incidental harvest along the logging road system and corresponds more with the deer and bear seasons.

Only 1 wolverine was taken in Subunit 1A this year, as in each of the last 2 years.

The otter harvest for both Subunit 1A and Unit 2 rose somewhat from last year. In Subunit 1A, 55 otters were taken, up 31% from last year, while the 116 taken in Unit 2 represent a 7% increase from the 108 taken in 1981-82. The sex ratio of otters from Subunit 1A was 47% males while in Unit 2 it was 50% males. About 2% of the otters taken in both Units were shot and the rest were trapped.

In Subunit 1A, the 55 otters were taken by 11 trappers, up from 10 trappers reporting taking otters in 1981-82. Sixteen trappers took the 116 otters sealed from Unit 2 this years, a decrease from the 18 trappers harvesting otters last year. Otter prices remain very low and are the principal reason for the low harvest and trapper participation.

No data are available on the harvest of mink and marten. In general, however, there appears to be less trapper effort for all species, a result of poor pelt prices.

Management Summary and Recommendations

Trapping pressure appears to have stabilized at a fairly low level as a result of the declining fur values. The more dedicated trappers seem to be more affected than the recreational type trapper.

No changes in seasons or bag limits are recommended.

PREPARED BY:

Robert E. Wood
Game Biologist III

SUBMITTED BY:

Steven R. Peterson
Acting Management Coordinator

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, and Kake Areas

PERIOD COVERED: 1 July 1982-30 June 1983

Season and Bag Limit

See Fur Animal Hunting and Trapping Regulations No. 23.

Population Status and Trend

No systematic data were collected during the period other than those obtained through hide sealing. Routine field observations and sealing records indicate that wolf populations are stable or increasing in parts of Unit 3. Mink, marten and otter populations continue to be good in most areas, and are the species most sought by trappers. Raccoons and red fox are not known to exist in Game Management Units 1B and 3. Lynx may occur in major drainages of Subunit 1B, but none were trapped or reported during the period. A single coyote was trapped in Unit 3. Wolverines are present throughout most of the area, but are seldom trapped. Muskrats are found in low numbers throughout Subunit 1B and Unit 3. Marmots are not trapped, but are found in mainland alpine areas and on a few of the larger islands. Prices paid for beaver pelts are low, and while populations are increasing throughout the area, there is little trapping effort. Squirrels and weasels occur in both units and are taken incidental to mink and marten trapping.

Population Composition

No information on composition was collected in the field during the report period. Sealing records indicate sex composition of fur animals reported, including otter, wolf and wolverine. These records may not reflect true sex ratios, since trapping may be sex-selective.

Of the 4 wolverines taken in Subunit 1B, 2 were females and 2 were males. Two wolverines were taken in Unit 3, 1 male and 1 of undetermined sex. Table 1 shows the sex composition of wolverines taken in these units since the 1978-79 trapping season ($N = 25$).

The wolf harvest in Subunit 1B (N = 8) was composed of 25% females and 75% undetermined sex (Table 2). The Unit 3 harvest (N = 16) consisted of 56% females, 38% males, and 6% undetermined sex (Table 3).

The otter harvest in Subunit 1B (N = 22) was composed of 50% females and 50% males (Table 4). In Unit 3, the otter harvest (N = 67) showed a sex composition of 35.8% females and 64.2% males (Table 5).

Mortality

Fur export reports do not require trappers to record the unit where furs were taken, but do indicate the residence of the trapper. The records indicate that 17 residents of Petersburg and Wrangell shipped a total of 289 mink, 155 marten, 95 otters, 9 beavers, 10 weasels, and 2 red squirrels in 1982-83. While harbor seals can be taken only by Alaska natives and are not governed by State regulations, 19 were shipped from Petersburg during the report period.

Mortality data were obtained from the sealing program established for beavers, lynx, otters, coyotes, wolves, and wolverines (Table 6). Seasons and bag limits are shown in Table 7.

Eight wolves were taken in Subunit 1B, as opposed to 5 in the previous year. In Unit 3, the 1982-83 wolf harvest increased to 16 from the previous year's figure of 14. Wolf harvest in Unit 3 has varied from 9 to 82 in the past 23 seasons. Chronology of harvest, method of take, and pelt color are displayed in Tables 2 and 3.

A total of 22 river otters was taken in 1982-83, a decline from the 29 harvested in 1981-82. The Unit 3 take declined from 77 in 1981-82 to 67 in 1982-83. The chronology, method of take, and sex of otters are shown in Tables 4 and 5.

The wolverine harvest in Subunit 1B and Unit 3 is incidental to trapping for other species. Wolverines are usually caught in wolf sets. The wolverine harvest on the mainland (Subunit 1B) was 4, while Unit 3 accounted for 2 (Table 1).

The beaver harvest in Subunit 1B decreased from 9 in 1981-82 to 2 in 1982-83. The Unit 3 harvest increased from 8 in 1981-82 to 10 in 1982-83. While beaver populations are good, low prices for the furs discourage trappers. Some trappers seek beavers for wolf bait.

Management Summary and Recommendations

Most furbearer populations are stable or increasing in Subunit 1B and Unit 3. Trapping effort is regulated by fur prices and weather conditions. Trapping in the vicinity of communities in Subunit 1B and Unit 3 is conducted primarily by recreational or

"weekend trappers." This probably accounts for the low harvest. Trapping appears to be a minor income source for most trappers while seasonal occupations such as fishing or logging provide the primary source of income.

While 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 populations and harvest.

Wolves continue to be the major predator on Unit 3 deer populations and a management program should be implemented for this species.

PREPARED BY:

E. L. Young, Jr.
Area Management Biologist

SUBMITTED BY:

Steven R. Peterson
Acting Management Coordinator

Table 1. Wolverine harvest results, 1978-83, in Game Management Units 1B and 3.

	GMU 1B				GMU 3			
Season	Males	Females	Unk.	Total	Males	Females	Unk.	Total
1978-79	2	4	-	6	1	-	-	1
1979-80	2	1	-	3	-	1	-	1
1980-81	1	-	1	2	-	-	1	1
1981-82	-	4	-	4	-	1	-	1
1982-83	2	2	-	4	1	-	1	2
Totals	7	11	1	19	2	2	2	6

Table 2. Wolf harvest data, 1982-83, in Game Management Unit 1B.

	Number	Percent
Harvest		
Males	0	0
Females	2	25
Unk.	6	75
Totals	8	100
Chronology by Month		
December	2	25
January	5	62
February	1	13
Totals	8	100
Method of Take		
Ground Shooting	0	0
Trapping	8	100
Snaring	0	0
Totals	8	100
Color of Wolves Taken		
White	0	0
Brown	4	50
Gray	0	0
Black	4	50
Totals	8	100

Table 3. Wolf harvest data, 1982-83, in Game Management Unit 3.

	Number	Percent
Harvest		
Males	6	38
Females	9	56
Unk.	1	6
Totals	16	100
Chronology by Month		
August	1	6
October	1	6
November	3	20
December	8	50
January	2	12
February	1	6
Totals	16	100
Method of Take		
Ground Shooting	4	25
Trapping	10	63
Snaring	2	12
Totals	16	100
Color of Wolves Taken		
White	0	0
Brown	10	63
Gray	4	25
Black	2	12
Totals	16	100

Table 4. Otter chronology, method of take and sex, 1982-83, Game Management Unit 1B.

	Number	Percent
Harvest		
Males	11	50
Females	11	50
Totals	22	100
Chronology by Month		
December	8	36
January	14	67
February	0	0
Totals	22	100
Method of Take		
Trapping	22	100

Table 5. Otter chronology, method of take and sex, 1982-83, Game Management Unit 3.

	Number	Percent
Harvest		
Males	43	64
Females	24	36
Totals	67	100
Chronology by Month		
December	35	52
January	28	42
February	4	6
Totals	67	100
Method of Take		
Ground Shooting	1	1
Trapping	66	99
Totals	67	100

Table 6. Furbearer harvest from hide sealing records, 1982-83.

	Beaver	Lynx	Otter	Wolf	Wolverine	Coyote
GMU 1B	2	0	22	8	4	0
GMU 3	10	0	67	15	1	1
Totals	12	0	89	23	5	1

Table 7. Furbearer seasons and bag limits, 1983-83, Game Management Units 1B and 3.

Species	Trapping[a] season	Limit	Hunting[b] season	Limit
Beaver (except Mitkof Island)	1 Dec-15 May	None	No open season	--
Beaver (Mitkof)	1 Dec-15 Feb	None	No open season	--
Coyote	1 Dec-30 Apr	None	1 Sept-30 Apr	2
Red Fox	1 Dec-31 Jan	None	1 Sept-15 Feb	2
Lynx	1 Dec-15 Feb	None	1 Sept-31 Mar	2
Marmot	All Year	None	No open season	--
Marten	1 Dec-15 Feb	None	No open season	--
Mink & Weasel	1 Dec-15 Feb	None	No open season	--
Muskrat	1 Dec-15 May	None	No open season	--
Land Otter	1 Dec-15 Feb	None	No open season	--
Raccoon	All Year	None	All Year	None
Squirrel	All Year	None	All Year	None
Wolf	1 Nov-30 Apr	None	All Year	None
Wolverine	1 Dec-15 Feb	None	10 Nov-15 Feb	1

[a] Alaska Trapping Regulations No. 23, effective 1 July 1982-30 June 1983.
[b] Alaska Hunting Regulations No. 23, effective 1 July 1982-30 June 1983.

FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 1C

GEOGRAPHICAL DESCRIPTION: Southeast Mainland North of Cape Fanshaw to the Latitude of Eldred Rock

PERIOD COVERED: 1 July 1982-30 June 1983

Season and Bag Limit

See Trapping Regulations and Fur Animal Hunting Regulations No. 23.

Population Status and Trend

General observations and hunter and trapper reports indicated that no significant changes have occurred in furbearer populations since the last report period. Furbearer abundance was moderate, and populations seemed stable.

Population Composition

Size classes of 26 harvested beavers were as follows: 0-53 inches, 4; 53-59 inches, 6; 60-64 inches, 4; 65+ inches, 12. No other population data were available.

Mortality

Furbearer harvests increased from the previous year (Table 1). Eight wolverines and 26 beavers were sealed, representing the greatest harvest of these species in the last 4 years. Wolverine harvest has increased in each of the last 4 years. Thirty otters were sealed, an increase from 19 last year. Lynx were taken for the first time in 4 years in GMU 1C. Depressed dealer purchases and trapper exports were reported for mink and marten for the second straight year.

Twenty-seven trappers sealed, sold, or exported furs, an increase from last year. The number of trappers remained below the levels of 1979-80 and 1980-81. Of 48 wolf, wolverine, otter, and lynx sealed this year, 24 were reported taken from areas within walking distance of the Juneau road system. An additional 10 animals were taken in Berner's Bay; the remainder were taken from other scattered areas.

Management Summary and Recommendations

The Board of Game adopted regulations during their spring 1983 meeting that established consistent opening dates for the trapping season in southeast Alaska, including Subunit 1C. In

Subunit 1C, all furbearer seasons in 1983-84, except wolf, will open 1 December instead of 10 November. For wolf, the opening date was changed from 1 November to 10 November. The closing date for wolf trapping season will remain the same (30 April), however, all other furbearer seasons will end 15 February. Despite these significant changes, seasons and bag limits should provide adequate opportunity to harvest fur animals in Subunit 1C.

Trapping pressure does not appear to be adversely impacting the furbearer resource. However, distribution of trapper pressure should be monitored.

PREPARED BY:

David W. Zimmerman
Area Management Biologist

Kris J. Hundertmark
Game Biologist

SUBMITTED BY:

Steven R. Peterson
Acting Management Coordinator

Table 1. Subunit 1C furbearer harvest statistics, 1979-80 to 1982-83.

	Furbearer Sealing Documents					Dealer Purchases/Trapper Export Documents								
Year	Wolf	Wlvrn.	Otr.	Lynx	Bvr.	Bvr.	Mink	Mskrt.	Mrtn.	Wsl.	Lynx	Sqrl.	Red fox	Total trappers
1979-80	4	3	37	0	--	18	235	12	365	12	0	0	0	15[a] 29[b]
1980-81	9	5	34	0	--	1	170	0	288	0	0	0	0	20[a] 18[b]
1981-82	4	6	19	0	10	--	73[c]	0[c]	95[c]	7[c]	0[c]	0[c]	1[c]	12[a] 8[c]
1982-83	8	8	30	2	26	--	90	0	99	0	1	0	0	17 10

[a] Data from furbearer sealing documents.
[b] Data from "Dealer purchases from trappers" and "Trapper exports by Unit" printouts.
[c] Data from "Trapper exports by Unit" printouts only.

FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 1D

GEOGRAPHICAL DESCRIPTION: Upper Lynn Canal

PERIOD COVERED: 1 July 1982-30 June 1983

Season and Bag Limit

See Fur Animal Hunting and Trapping Regulations No. 23.

Population Status and Trend

No formal surveys or censuses were conducted during the period. Fur animals appeared to be present in similar numbers to those of past years, judging by trapper interviews and harvest trends, with one notable exception. The lynx harvest increased dramatically, going from essentially 0 to 40 animals during the 1982-83 trapping season (Tables 1 and 2). This increase was apparently due to emigrations from the Yukon Territory, where hare numbers have apparently dropped off from high levels in recent years. The hare population in southern Yukon plummeted in the late winter of 1982, and radio-collared lynx were found to migrate out of the area (B. Slough, Yukon Wildlife Branch, pers. commun.).

Population Composition

Information from sealing certificates showed that 65% of the lynx harvest was females. Nose to tail-base length measurement ranged from 32-43 inches, with an average of 38.6 inches.

Lynx in this size class are probably adult animals.

Mortality

Known harvest, number of trappers, and take per trapper of fur animals during the period are shown in Table 1. Table 2 shows known harvest since the 1979-80 season.

The 1982-83 harvests of marten, mink, weasel, and wolverine were close to the 1979-80 through 1982-83 average (Table 2). Muskrat, land otter, and red squirrel take was down from the 4-year mean. The known harvest of 39 lynx is unprecedented in recent years. Hare are not noted as abundant in the area, thus an increase in the local lynx population is not expected to be sustained in coming years. Chronology of the lynx harvest indicated that 8% were taken from mid-September through mid-October, 62% during the month of December, 24% in January, and 6% in the 1st half of February. Sixty-two percent of the lynx harvest was taken in the Chilkat Valley.

The only natural mortality documented was that of wolverine kits being fed upon by wolves in the upper Chilkat Valley.

Management Summary and Recommendations

No changes in seasons or bag limits are recommended.

PREPARED BY:

W. Bruce Dinneford
Game Biologist III

SUBMITTED BY:

Steven R. Peterson
Acting Management Coordinator

Table 1. Game Management Unit 1D furbearer harvest, 1982-83.[a]

Species	Number Harvested	Number Trappers	Take/ Trapper[b]
Fox	3	2	1.5
Lynx	39	18	2.2
Marten	81	9	9.0
Mink	70	9	7.8
Muskrat	4	1	4.0
Otter	1	1	1.0
Squirrel	7	2	3.5
Weasel	9	3	3.0
Wolverine	9	8	1.1

[a] Data from sealing certificates and Trapper Export report.
[b] Take/trapper for those trappers reporting at least 1 animal trapped or fur exported.

Table 2. Historical furbearer harvest for Game Management Unit 1D.[a]

Year	Fox	Lynx	Marten	Mink	Muskrat	Otter	Squirrel	Weasel	Wolverine
1979-80	unk.	1	89	91	12	6	18	14	11
1980-81	unk.	0	80	71	14	8	28	10	3
1981-82	unk.	0	unk.	unk.	unk.	3	unk.	unk.	6
1982-83	3	37	81	70	4	2	7	9	9
Mean	N/A	10	83	77	10	5	18	11	7

[a] No open season for beaver. Wolf covered in separate report.

FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 4

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

PERIOD COVERED: 1 July 1982-30 June 1983

Season and Bag Limit

See Fur Animal Hunting and Trapping Regulations No. 23.

Population Status, Composition, and Trend

No data available.

Mortality

No data are available on natural mortality.

Available fur harvest information is shown in Table 1. The veracity of this data continues to be questionable.

Management Summary and Recommendations

An accurate, timely, easily applied and readily interpreted technique for measuring fur harvests is needed if we are to properly manage the furbearer resource.

PREPARED BY:

Loyal J. Johnson
Game Biologist III

SUBMITTED BY:

Steven R. Peterson
Acting Management Coordinator

Table 1. Otter fur harvest annual data for Game Management Unit 4, 1977-1983. Data obtained from sealing records.

	1977-78	1978-79	1979-80	1980-81	1981-82	1892-83
No. of pelts	155	154	173	154	184	163
Male	78	84	95	81	82	94
Female	77	70	78	63	91	69
Undetermined sex				10	11	
Statewide harvest, %	7	--	8	7	10	11
No. persons presenting otter pelts for sealing	24	26	36	27	28	23
Harvest method						
Shot, %	25	67	23	27	46	51
Trapped, %	75	33	77	73	54	49
Harvest chronology						
Nov, %	1	1	1	6	2	0
Dec, %	22	39	38	35	55	31
Jan, %	34	27	28	55	29	21
Feb, %	40	3	11	1	14	15
Date unknown, %	3	30	23	4	1	33
Harvest location						
Admiralty, %	--	9	16	23	26	26
Baranof, %	--	24	39	24	15	24
Chichagof, %	--	56	46	46	51	14
Unknown/other, %		11	0	7	7	36

Table 2. Selected furbearer annual harvest data for Game Management Unit 4, 1972-1983.[a]

Year	Beaver	Marten	Mink	Weasel
1972-73	0	301	121	0
1973-74	0	662	408	0
1974-75	0	458	167	0
1975-76	0	797	256	0
1976-77	--	--	--	--
1977-78	8	811	271	0
1978-79	2	801	489	1
1979-80	1	1,074	475	3
1980-81	2	--	--	--
1981-82	9	--	--	--
1982-83	0	553	291	0

[a] Data source: Dealer Purchase from Trapper, Fur Dealer Export, and Trapper Export reports. All beaver data after 1977-78 from mandatory sealing.

FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 5

GEOGRAPHICAL DESCRIPTION: Malaspina and Yakutat Forelands, Gulf of Alaska

PERIOD COVERED: 1 July 1982-30 June 1983

Season and Bag Limit

See Fur Animal Hunting and Trapping Regulations No. 23.

Population Status and Trend

No formal surveys were conducted for fur animals during the period. Trapper interviews indicated that marten populations were down from recent years and many animals were found to have hides with considerable absence of guard hairs.

Based on observations and an increased harvest, lynx abundance appeared higher than in several years. A high lynx population in Yukon Territory, accompanied by a crash in the hare population there in late winter 1982, probably accounted for a movement of cats into the Yakutat area.

The remainder of the fur species occurring in Unit 5 are felt to be stable, based upon animal sign and trapper interviews.

Population Composition

No data available.

Mortality

The known harvest of furbearers during 1982-83 is presented in Table 1. Of notable increase from other years was the take of 5 lynx. Four of these animals were taken close to the road system in Subunit 5A, while the fifth came from the East River area. Pelt size indicated these were adult animals.

One each otter and wolverine were taken from the Dry Bay/Alsek River area. Three beavers were also taken from drainages in the eastern portion of the Unit.

Both the mink and marten harvest appeared noticeably reduced from recent years. Trapper effort reportedly was the same as in the past yet harvest was markedly lower.

Management Summary and Recommendations

Trapping pressure appears stable within recent years, if not slightly reduced in GMU 5. Logging is proceeding in the area, and plans exist to extend Forest Highway 10 from its current terminus at the Dangerous River to the Dry Bay area. Should this occur, an increase in trapping effort and harvest of fur species would undoubtedly occur. The pending construction of a sawmill near Yakutat and the possible human population growth due to development of oil resources will promote increased demand upon all wildlife resources, including furbearers. If habitat reduction, increased access, and higher demand do occur, season and bag limit reductions will probably be needed. At this time no changes are deemed necessary.

PREPARED BY:

W. Bruce Dinneford
Game Biologist III

SUBMITTED BY:

Steven R. Peterson
Acting Management Coordinator

Table 1. Historical furbearer harvest for GMU 5[a].

Year	Beaver	Lynx	Marten	Mink	Otter	Weasel	Wolverine
1971-72	--	--	--	--	--	--	8
1972-73	--	--	9	40	36	21	7
1973-74	13	1	40	13	8	8	14
1974-75	6	2	9	21	--	1	1
1975-76	--	--	--	--	--	--	0
1976-77	--	--	--	--	--	--	1
1977-78	--	0	--	--	3	--	1
1978-79	--	1	--	--	5	--	2
1979-80	0	0	13	6	2	--	3
1980-81	--	1	200	120	4	--	2
1981-82	0	0	200	100	4	--	3
1982-83	3	5	30	8	1	--	1

[a] Data from sealing certificates, trapper export reports, and survey-inventory progress reports.

FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 12

GEOGRAPHICAL DESCRIPTION: Upper Tanana and White River Drainages

PERIOD COVERED: 1 July 1982-30 June 1983

Season and Bag Limit

See Fur Animal Hunting and Trapping Regulations No. 23.

Population Status and Trend

Both the lynx population and harvest apparently peaked during this reporting period. A harvest of 224 lynx was reported. The 1982-83 take was only slightly higher than the 1981-82 harvest of 198 lynx. Thus ended a series of 4 consecutive years of substantially increasing harvest. Harvests are expected to be lower for the next 4 or 5 years. Only 7% of the lynx taken were kittens, assuming pelts 35 inches in length or less are from kittens. In 1981-82 and 1980-81 kittens composed 13% of the harvest.

A lynx collaring operation conducted in the Tok River drainage during winter 1982-83 indicated that lynx began emigrating from that area during midwinter when hare abundance declined. All 4 radio-collared lynx were eventually taken by trappers within 12-15 miles of the Tok River during the 1982-83 season.

Of note is that this was a low amplitude high of lynx. The unusually cold spring of 1979 appeared to dampen the snowshoe hare increase and, in turn, may have affected the lynx increase.

Six land otters were reported taken during this reporting period compared to 4 in 1981-82 and 6 in 1980-81. Otters exist at low densities in Unit 12 and receive little trapping pressure. The harvest was well distributed with 2 otters taken in the Nabesna River drainage and 1 each in the Little Tok, Tetlin, Tanana, and Kalutna drainages. Four males and 2 females were taken.

Thirty-one wolverines were reported taken in Unit 12 during 1982-83 compared to only 10 in 1981-82 and 29 in 1980-81. The harvest was comprised of 21 males and 10 females according to sealing documents. The harvest was well distributed throughout the Unit. Virtually nothing is known about wolverine densities in Unit 12.

According to local trappers, fox catches were down during this reporting period. Marten numbers also appeared to be down slightly from 1981-82 levels. Coyotes are becoming more abundant

each year in the Tanana and Chisana drainages based upon observations during big game survey flights.

Although muskrat populations remain low in the Unit, populations in the eastern portion of Unit 12 appear to be increasing. Observations of muskrats and pushups are becoming more common.

Management Summary and Recommendations

Furbearers that rely heavily upon snowshoe hares are expected to decline further because of declines in hare numbers. Marten numbers may increase as goshawks, great-horned owls, and other marten predators decline in response to low hare densities.

Season closing dates for most large terrestrial furbearers should be synchronized to 15 March. It makes little sense to close the season for fox, for instance, while permitting the trapping seasons for coyote and wolf to run longer. Sets which will take wolves and coyotes will also take fox. Similarly, sets for wolverines, legal until 31 March, will also take lynx, the season for which ends 15 March.

PREPARED BY:

David G. Kelleyhouse
Game Biologist III

SUBMITTED BY:

Jerry D. McGowan
Survey-Inventory Coordinator

FURBEARER

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 18

GEOGRAPHICAL DESCRIPTION: Yukon-Kuskokwim Delta

PERIOD COVERED: 1 July 1982-30 June 1983

Seasons and Bag Limits

See Fur Animal Hunting and Trapping Regulations No. 23.

Population Status and Trend

Little is known of the distribution and abundance of arctic foxes in Unit 18. Although arctic foxes are found along the coast from the mouth of the Kuskokwim River to the northern border of the Unit near Kotlik, they appear to be abundant only in the area of Nelson and Nunivak Island, Cape Romanzof, and the Yukon Delta. Results of the Unit 18 trapper questionnaire and reports from village residents indicate that population densities are geographically quite variable but have not changed greatly over the past year.

Red foxes are found in all areas of Unit 18. The greatest fox densities occur in willow and riparian habitats that support substantial populations of hares and ptarmigan. Red foxes are also commonly observed in the coastal areas and on Nelson and Nunivak Islands. Results of the trapper questionnaire and reports from trappers and department personnel indicate that fox densities are low throughout the Unit and have declined substantially from levels observed 2 years ago.

Commercially, mink are the most important furbearer in Unit 18. Delta mink consistently command high prices due to large body size, high fur quality, and uniformity of color. Although mink are quite common throughout the Unit, the highest densities are observed in the vicinity of the Kashunuk, Black, and Johnson River drainages, the Baird Inlet area, and the big lake country northwest and southwest of Nunapitchuk. The areas of lowest density include the mountainous country north of the Yukon River and southeast of the Kuskokwim River. Results of the Trapper Questionnaire and reports from village residents suggest that mink densities are the same or somewhat lower than those observed last year.

Muskrats are found in virtually all aquatic habitats within Unit 18. However, the greatest densities appear to be associated with the flat, delta country south of the Yukon River and north of the Kuskokwim River. Results of the trapper questionnaire and reports from village residents and department personnel indicate

that muskrat populations are extremely low in all areas of Unit 18. During the winter of 1982, warm rains melted much of the insulating snow cover, and a cold March and April resulted in an unusually thick ice cover on lakes and streams. We believe that the thick ice caused substantial overwinter mortality, and muskrat populations are only beginning to recover.

River otters are found in all aquatic habitats in Unit 18. The greatest densities occur in the vicinity of the Yukon Delta, the Kashunuk, Black, and Johnson River drainages, and the big lake country north and south of Baird Inlet. Reports from trappers and results of the trapper questionnaire indicate that otter densities are similar to those observed in 1981-82.

River otters make very distinctive tracks that are easily observed from a low-flying aircraft. During fall, the animals appear to spend more time above the ice than later in the winter. This pattern may lend itself to the development of a survey technique for assessing population trends.

Marten populations are quite low throughout Unit 18 and are confined primarily to the wooded portions north of the Yukon River and east of the Kuskokwim River. Most trappers reported low densities in their areas. Russian Mission trappers, however, reported seeing more marten north of Russian Mission in the hills near Kako and Kuyukutuk Creeks than in past years.

The distribution of lynx coincides with the distribution of snowshoe hares. Along the Kuskokwim drainage, the highest lynx densities occur in the Bogus, Tuluksak, Kwethluk, and Kisaralik River drainages. Along the Yukon drainage, lynx are locally abundant in the Andreafsky and Chuilnuk drainages, and in the wooded areas south of the Yukon River. Lynx densities appear to be lower overall in the Yukon River drainage than in the Kuskokwim river drainage, although they are present over a larger portion of the Yukon River drainage. Reports from local residents and results of the trapper questionnaire suggest that lynx populations remain at levels similar to those observed last year, even though hare populations are reported to have declined in many areas.

Little information is available concerning the status and distribution of wolverines in Unit 18. Reports from trappers and department personnel indicate that wolverines are confined to the Andreafsky and Kilbuck Mountains, although they are occasionally sighted in the flat, delta country south of the Yukon River and north of the Kuskokwim River. Low wolverine densities have consistently been reported throughout Unit 18, and 1982-83 was no exception.

Population Composition

No data were available.

Mortality

Accurate arctic fox harvest estimates in Unit 18 are not available. Dealer purchase records indicate that 200 pelts were purchased from trappers in Unit 18 during the 1982-83 season. I believe the actual harvest was substantially higher (300 - 400 foxes). Because prices for arctic fox pelts are now quite low, many pelts were probably used domestically rather than sold to fur buyers.

The high 1981-82 mortality rate due to rabies among red foxes was not observed this year. Whereas the Bethel PHS hospital reported 43 confirmed rabies cases in red foxes on the Delta in winter 1981-82, no cases were reported during winter 1982-83.

Only 700-900 red foxes were taken in Unit 18 during this reporting period, a substantial decline from the 1981-82 harvest of 3,000 foxes. High fox mortality from rabies was probably largely responsible for this decline.

Poor trapping conditions and high water in November resulted in a low mink harvest. According to dealer purchase records, 6,600 mink were sold by trappers residing in Unit 18. Because most mink are sold rather than used domestically, this value fairly accurately reflects the Unit 18 mink harvest. The 1982-83 harvest estimate (6,600) is substantially lower than the 1981-82 estimate (14,000).

Although the actual muskrat harvest is unknown, I believe that at least 3,000-5,000 muskrats were taken. This year's harvest was substantially lower than those of the past several years, probably reflecting a decline in muskrat populations.

According to sealing records, 171 otters were harvested in Unit 18. This value agrees closely with dealer purchase records that indicate a harvest of 149 otters in the Delta villages. The 1982-83 harvest was substantially lower than the estimated 400-600 animals harvested annually during the past 3 years. Because otters are normally trapped incidentally to fall mink and spring beaver trapping, the otter harvest is closely related to the harvest of these other species. Because weather and ice conditions were not favorable for mink trapping, it is not surprising that the otter harvest was also unusually low.

An accurate estimate of the marten harvest is not available. Dealer purchase records indicate that 182 marten were purchased from Unit 18 villages, predominantly from Marshall, Pilot Station, and Russian Mission. Because trappers residing in Subunits 19A and 21E occasionally harvest marten in Unit 18, the actual harvest was probably 300-400.

Sealing documents indicate that 65 lynx were harvested from Unit 18 during the reporting period. According to dealer purchase records, 56 lynx were harvested by trappers residing in Unit 18

villages. Because lynx pelts currently bring a high price, I believe that most harvested lynx are sold; therefore, sealing and fur dealer purchase records fairly accurately reflect the actual harvest. The 1982-83 harvest is nearly identical to the 1981-82 reported harvest (66 lynx) and well within the harvest range (25-75) reported since 1974.

Nine wolverines were harvested from Unit 18, according to sealing documents. Most were taken in the mountains adjacent to St. Mary's, Pilot Station, Marshall, and Russian Mission, and in the Kisaralik and associated drainages southeast of Bethel. Because wolverine pelts are highly valued for domestic uses and are frequently not sealed, I believe that the actual harvest was at least 20 wolverines. Although wolverines are highly valued by trappers, most are taken incidentally to other hunting and trapping activities.

Management Summary and Recommendations

Furbearers continue to be present in all suitable habitat throughout Unit 18. Although populations often fluctuate widely, such changes appear to be more the result of natural environmental factors than of trapping pressure. Trapping only appears to significantly affect furbearer densities in areas immediately adjacent to villages. Although trapping activity has increased during the past 5 years, it is still well below the level seen 20-30 years ago. Much furbearer habitat throughout Unit 18 receives little, if any, trapping pressure. One exception to this generalization is lynx populations which consistently receive heavy trapping pressure. Lynx have a very clumped distribution, and local "hot spots" are often heavily trapped. I believe, however, that sufficient refugia exist in the more remote portions of the Unit to provide for the recovery of heavily trapped areas.

Efforts should be continued to establish and maintain village sealing agents. Department personnel should make a greater effort to encourage local fur buyers to comply with reporting requirements thereby increasing the accuracy of harvest estimates. More emphasis should be placed on the research and development of furbearer survey techniques. Although additional survey and inventory information is not presently an absolute necessity for management, a widespread resurgence of interest in trapping would necessitate the collection of better furbearer population data.

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

PREPARED BY:

Steven Machida
Game Biologist II

SUBMITTED BY:

David A. Anderson
Survey-Inventory Coordinator

FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 19

GEOGRAPHICAL DESCRIPTION: Upper and Middle Kuskokwim River Drainages

PERIOD COVERED: 1 July 1982-30 June 1983

Season and Bag Limit

See Fur Animal Hunting and Trapping Regulations No. 23.

Population Status and Trend

Sixty-three wolverines (41 male, 18 female, and 4 of unknown sex) were presented for sealing by 35 trappers in Unit 19. This is slightly higher than the previous 11-year average of 55 for the Unit. Location code errors on sealing records have been corrected and sealing data that have been received subsequent to preparation of annual survey and inventory reports have been included (Table 1).

The wolverine harvest has been fairly well distributed throughout Unit 19 with a slightly larger take in Subunit 19A. Most effort was concentrated near the Alaska Range foothills. The Upper Stony River is a particularly popular wolverine trapping area. In 1982-83 most wolverines were taken during November, December, and February, the most popular marten trapping periods. Sixty percent of the wolverines were trapped, 11% snared, and 29% were shot.

The take of 144 lynx is the lowest since 1977-78, the 1st year sealing was mandatory (Table 1).

The number of trappers who sealed lynx in 1982-83 (48) was similar to last year (54) but the average take per trapper dropped from 5 to 3. The death of a very successful lynx trapper probably contributed significantly to the reduced harvest. This person normally took from 30-55 lynx annually. December, January, and February were the most productive months for lynx trappers. Trapping accounted for 94% of the take. Four percent of the lynx taken were snared and 2% were shot. The upper South Fork of the Kuskokwim and Aniak River tributaries which drain the Kilbuck Mountains continue to be areas with the highest lynx numbers. It appears, however, that lynx are starting to decline in the Kilbuck Mountains, but more are showing up along the Kuskokwim near Aniak.

Although otters continue to be abundant over most of Unit 19, especially in the flats near Nikolai, lower Holitna River, and

lower Aniak River, most trappers take them incidental to beaver trapping. During the 1982-83 season 34 trappers took 64 otters (Table 1). The harvest consisted of 38 males, 18 females, and 8 otters of unknown sex. One trapper caught 9 otters, otherwise the maximum taken by a trapper was 3. Nearly half of the harvest occurred in Subunit 19A, an area that has the greatest number of trappers.

The reported take of 566 beavers by 64 trappers during 1982-83 is next to the lowest take on record for Unit 19. The 1982-83 take is 1/3 of the previous 26-year average of 1,756 beavers by 162 trappers. The previous low was 516 beavers by 78 trappers in 1970-71 and the high was 4,576 beavers by 307 trappers in 1960-61. Although few beavers were taken during the 1982-83 season, the percentage of kits in the harvest (15%) was slightly higher than normal. It is unclear why the number of beaver trappers declined so sharply during 1982-83. Although pelt prices were low, they had increased slightly since the previous year. The catch per trapper of 8.8 was only slightly lower than the 26-year average of 10.8 beavers per trapper. Beaver sign continues to be abundant over most of Unit 19. Beaver houses and dams are especially common in Subunits 19A and 19D.

Marten are the principal fur species for trappers in Unit 19. This was particularly evident in 1982-83 when marten prices were the highest in several years. Prices averaged near $45 per pelt with a high of $78 received by a trapper in McGrath for a large male. Based on fur dealer and fur export reports the marten harvest was estimated to be approximately 3,500. This is similar to harvests reported for previous years, yet most marten trappers in the Upper Kuskokwim reported reduced catches, especially after early December. Most reported almost no marten sign or catches during January and February. Along the upper Kuskokwim only 1 trapper caught over 200 marten; normally 15 to 20 trappers take 200 or more each in that area. The catches on the Middle Kuskokwim were more normal although some trappers also reported very little marten sign after early December. Despite lower success, the estimated value of the Unit 19 marten harvest was $157,500, over half the total value of fur taken in the Unit during 1982-83 (Table 2).

Based on fur reports, the estimated mink harvest for Unit 19 was only 100 by 35 trappers. Although a few trappers made specific sets for mink, none had large catches.

Many furbuyers would not purchase muskrats this season. Only 25 muskrat pelts were reported on fur export or fur dealer reports. Several spring muskrat hunters reported sharp drops in muskrat numbers. Not more than 300 muskrats were taken in Unit 19 this year and nearly all of these were used locally.

Red foxes were relatively abundant in much of the Unit, especially in the flats near Nikolai, and in the lower Holitna

and Hoholitna River drainages. Despite the abundance of foxes, an estimated 25 trappers took approximately 75 red foxes in the Unit. Trapper success catching red foxes is quite variable.

Management Summary and Recommendations

Both fur harvest and the number of trappers were down considerably during the 1982-83 season. Near record low catches of beaver and lynx were reported. Marten remains the principal fur species in Unit 19. Fur trapping is still an important source of income to Unit 19 residents, and the value of the fur harvested by trappers during 1982-83 was nearly $250,000.

PREPARED BY:

Robert E. Pegau
Game Biologist III

SUBMITTED BY:

Jerry D. McGowan
Survey-Inventory Coordinator

Table 1. Corrected wolverine, lynx, and otter harvest totals based on sealing data, Unit 19.

Year	Wolverine	Lynx	Otter
1971-72	31	ND	ND
1972-73	34	ND	ND
1973-74	41	ND	ND
1974-75	43	ND	ND
1975-76	64	ND	ND
1976-77	74	ND	ND
1977-78	75	98	105
1978-79	59	150	58
1979-80	62	215	66
1980-81	52	271	55
1981-82	70	283	85
1982-83	63	144	64

Table 2. Fur harvest, number of trappers, and pelt values for the 1982-83 trapping season, Unit 19.

Species	Number harvested	Average price paid	Number of trappers	Estimated value
Wolverine	63	$250	32	$15,750
Lynx	144	250	48	36,000
Otter	64	35	34	2,240
Wolf	32	200	16	6,400
Beaver	566	25	64	14,150
Mink	≅100	30	≅35	3,000
Marten	≅3,500	45	≅150	157,500
Muskrat	≅300	4	≅20	1,200
Red fox	≅75	70	≅25	5,250
Total value of fur harvest				$241,490

FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 20

GEOGRAPHICAL DESCRIPTION: Central Tanana Valley

PERIOD COVERED: 1 July 1982-30 June 1983

Season and Bag Limit

See Fur Animal Hunting and Trapping Regulations No. 23.

Harvest and Population Status

Harvest data for lynx, otter, and wolverine were derived from sealing certificates and processed through the Statistics Section. Some discrepancies were noted in the computer printout; hence, harvest figures given may not be exact.

According to sealing records, 906 lynx were caught in Unit 20 during the 1982-83 season. The reported harvest by Subunit was: 135 (20A), 172 (20B), 392 (20C), 122 (20D), 46 (20E), 37 (20F), 2 (Subunit unknown).

The lynx harvest was distributed throughout the season as follows: 10 (1%) taken in September; 160 (18%) in November; 256 (28%) in December; 249 (27%) in January; 178 (20%) in February; and 52 (6%) in March. The date of take for 1 lynx was not known.

According to sealing records, 24 land otters (14 males, 8 females, and 1 of unknown sex) were caught in Unit 20 during the 1982-83 season. The number of otters taken in each Subunit was as follows: 2 (20A), 13 (20B), 5 (20C), 2 (20D), and 1 each in 20E and 20F.

The otter harvest was distributed throughout the season. Two otters (8%) were taken in November, 7 (29%) in December, 2 (8%) in January, 5 (21%) in February, 6 (25%) in March, and 2 (8%) in April.

Sealing documents indicated that 91 wolverines (54 males, 35 females, and 2 of unknown sex) were harvested from Unit 20 during the 1982-83 season. The number of wolverines taken in each Subunit was as follows: 16 (20A), 21 (20B), 16 (20C), 19 (20D), 12 (20E), and 5 (20F). Area of take was not determined for 2 otters.

The wolverine catch occurred throughout the season, with 8 (9%) taken in November; 25 (27%) in December; 23 (25%) in January; 24 (26%) in February; 10 (11%) in March; and 1 (1%) for which the date of take was unknown.

Mortality

The lynx harvest in 1982-83 was almost 50% greater than during the 1981-82 season. According to replies from the trapper questionnaire, lynx populations had increased in the Unit.

The number of otters harvested in 1982-83 was about the same as in 1981-82. 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 wolverine in 1982-83 (91) increased to almost twice that of 1981-82 (57). Trappers reported wolverine populations to be about the same as 1981-82, and the reasons for these harvest fluctuations are unknown.

Management Summary and Recommendations

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 abundance of most furbearers.

PREPARED BY:

Jeannette R. Ernest
Game Biologist II

SUBMITTED BY:

Jerry D. McGowan
Survey-Inventory Coordinator

FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 21

GEOGRAPHICAL DESCRIPTION: Middle Yukon

PERIOD COVERED: 1 July 1982-30 June 1983

Season and Bag Limit

See Fur Animal Hunting and Trapping Regulations No. 23.

Population Status and Trend

Weather and snowfall did not hamper trapping activities in Unit 21 during the trapping season. Snow was on the ground almost continuously after 1 November and the Yukon River froze on 24 October 1982 which enabled some trappers early access to traplines. Moderate temperatures, rarely below -30°F, prevailed throughout most of the winter.

Catch data suggest that the hare and lynx populations have peaked after an unusually short cycle (Table 1). Lynx in Unit 21 are responding to prey densities differently (Table 2). In Subunit 21B the catch is down by half. In Subunits 21A and 21C the catch is little changed, although the trapping pressure is very low in 21C. In Subunit 21D many trappers reported that lynx had disappeared in early November 1982. In Subunit 21E the hare cycle must not have peaked, as lynx catches are still increasing.

Otter catches remained stable in all Subunits except 21E where very low prices kept skins off the market. Normally, 21E produces half the Unit catch. Not all otters thought to have been taken were sealed. Most otters were caught incidental to beaver trapping.

Wolverine catches were up (Table 1) from an annual average of 40. A substantial part of the increase came from trappers using aircraft in Subunits 21A and 21E. Some trappers also began to trap in new areas during the 1982-83 season. A relatively high proportion of the 1982-83 harvest was thought to have been reported. This was because wolverine pelts brought good prices and many trappers had hides sealed so they could be sold.

Due to high rodent densities, fox populations were up in Subunits 21B and 21D, although low pelt prices resulted in low trapping effort and harvest. Seven fox heads from Subunit 21D were tested for rabies by the Virology-Rabies Unit at the University of Alaska-Fairbanks. All were found negative.

Marten trapping started out poorly, which discouraged trappers. Marten numbers increased during December 1982, but overall the catch was only 60% of the previous year. Prices were low, and as a result, trapping effort declined. Some areas still had good marten populations, especially the lowland areas along the Yukon River.

Coyotes, considered rare in Unit 21, were relatively abundant during the 1982-83 season. Five coyotes were caught in the Galena area and more were seen. This is the 2nd consecutive season that coyotes have been numerous enough to trap.

Mink populations are probably stable, but low pelt prices discouraged trapping effort throughout Unit 21.

Muskrat populations were low in most of the Unit. Local residents believe that a loss of aquatic habitat, coupled with abundant pike populations, is responsible for the continuing low level in muskrat populations. There are some areas where muskrats are abundant; however, there is little interest in trapping because of low pelt prices.

Management Summary and Recommendations

Regulations are adequate to protect furbearer species in Unit 21. Low prices, more than any other factor, continue to discourage intensive trapping.

PREPARED BY:

Timothy O. Osborne
Game Biologist III

SUBMITTED BY:

Jerry D. McGowan
Survey-Inventory Coordinator

Table 1. Furbearer catches, Unit 21.

	1977-78	1978-79	1979-80	1980-81	1981-82	1982-83
Lynx	71	82	65	120	480[a]	357
Otter	67	30	60[a]	82	55[a]	33
Wolverine	58	54	38[a]	39	43[a]	72

[a] These figures have been revised and updated from previous Furbearer S&I reports for 1981-82.

Table 2. Lynx catches by Subunits in Unit 21.

	1978-79	1979-80	1980-81	1981-82	1982-83
21A	8	5	4	18	16
21B	32	19	15	92	49
21C	1	3	0	9	13
21D	31	39	98	350	236
21E	10	0	3	11	43
Totals	82	66	120	480	357

FURBEARER

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 22

GEOGRAPHICAL DESCRIPTION: Seward Peninsula

PERIOD COVERED: 1 July 1982-30 June 1983

Seasons and Bag Limits

See Fur Animal Hunting and Trapping Regulations No. 23.

Population Status and Trend

Much of Unit 22 is open tundra, and furbearer habitat is limited primarily to Subunits 22A and 22B where the vegetation is dominated by spruce and riparian willows. Over the years, densities of some furbearer populations have changed slightly. Because data on the habits of these animals is nonexistent, it is not known whether these changes were caused by natural environmental factors or by man. However, long-term effects of trapping on furbearer populations are believed to have been minimal and are expected to remain so.

Lynx are primarily limited to Subunits 22A and 22B because of unfavorable habitat elsewhere. As in many other areas of Alaska, lynx numbers within the Unit rise and decline in direct proportion to hare and other prey densities. Except for a dramatic decline during the winter of 1980-81, the lynx harvest within the Unit has risen steadily since the implementation of a sealing program in 1977. This year's recorded harvest of 820 lynx was an all-time high for Unit 22 trappers.

Limited information from other biologists, hunters, and trappers again indicated that wolverines occur throughout most of the Unit; tracks were observed in all major drainages and in virtually all habitat types.

Over the past 10 years, the average recorded harvest of wolverines for the Unit was 18 per year, ranging from a high of 33 animals in 1975-76 to a low of 2 in 1974-75. The low harvest probably resulted from a decline in trapping pressure and sealing effort and not from a change in wolverine densities. This year's harvest (14 wolverines) was slightly lower than the average for the past 10 years. As in past years males composed most (79%) of the harvest, probably because males are more nomadic than females.

During the winter months, arctic foxes were commonly observed along the entire coastline of the Seward Peninsula, as well as on the major offshore islands of St. Lawrence, Sledge, King, and

Little Diomede. The population appears to have remained relatively stable over the years, and those hunters and trappers interested in catching foxes have been quite successful. Trapping and hunting effort and success were probably limited more by the price of furs than by the availability of arctic foxes.

Documentation of new beaver lodges each year suggests that the Unit 22 population is still increasing and continuing to disperse westward. Beaver trapping effort has been minimal and is expected to remain low until densities increase to a point where trapping becomes profitable.

Marten habitat within the Unit is primarily limited to Subunit 22A, the Shaktoolik and Unalakleet Rivers probably having the highest densities. Because marten are relatively uncommon, trapping effort in past years has been relatively light and is expected to remain so.

Although mink tracks were observed in most of the major drainages of the Unit, little is known about their present or past distribution and abundance. Population densities appear to be low throughout the Unit, as has been the case in the recent past.

During the last 5 years otter tracks have been observed in most major drainages of the Unit, but primarily in those drainages where a source of thermal groundwater prevents the formation of a solid ice cover. Although population densities are presently unknown, otters are believed to be rather uncommon throughout the Unit, probably accounting for low trapper success in past years.

Red and cross foxes remain relatively common in those drainages where ptarmigan and snowshoe hares are abundant. During the past decade, those hunters and trappers making even a minimal effort have been successful in harvesting foxes.

Population Composition

Composition data were not available during the reporting period for any furbearers within the Unit. Harvest composition for those species with sealing requirements is given in the mortality section of this report. It is presently unknown whether these data reflect the true population composition.

Mortality

It is very difficult to gather accurate furbearer harvest data for the Unit, because many pelts are kept for personal use. Table 1 presents the unit-wide harvest by species during the 1982-83 reporting period. This year's harvest data for lynx, wolverine, otter, and beaver were gathered from sealing certificates and not from computer runs. Because trappers are not required to seal mink, muskrats, marten, foxes, or weasels, harvest values for those species (Table 1) came from 1982-83 fur

dealer and trapper export runs. It is not known whether these values reflect true harvests, because the runs only indicate the number of furs exported and not the date on which they were taken.

During the past year, 64 trappers and 1 hunter harvested a record 820 lynx within Unit 22. Chronology of the known harvest is given in Table 2. Sex composition of the harvest was as follows: 52% males, 39% females, and 9% of unknown sex. The reported harvest came from 13 drainages within Subunits 22A, 22B, and 22E. The Koyuk River (22B) was the most productive drainage with 34% of the entire catch coming from there. Trappers took lynx during every month of the season, and as in past years, the highest catches were recorded in December, January, February, and March (Table 3).

The recorded harvest of wolverines during the reporting period was 14 (11 males, 3 females); of these, 10 were taken by trappers, while the remaining 4 were shot by hunters. Geographic distribution of the Unit 22 wolverine harvest is given in Table 4. Trappers and hunters harvested wolverines in every month from October through March. As in past years, the highest harvest occurred in March, probably because of warmer weather and longer daylight.

Two otters (1 male, 1 female) were snared during December in Subunit 22A; these were the only otters reportedly taken from the Unit during the reporting period.

Eleven beavers were reported taken from waters of Subunit 22A. Three of these were harvested in November, while the remaining 8 were taken in February.

Management Summary and Recommendations

A furbearer research program has never been conducted on the Seward Peninsula, and accurate assessments of numbers, movements, habits, etc., are not available for any of these populations. As previously indicated, much of Unit 22 is open tundra, and furbearer habitat is primarily limited to Subunits 22A and 22B where plant communities are dominated by spruce and riparian willows. Some furbearer populations are believed to have fluctuated in past years; however, those changes were probably caused by natural environmental factors rather than by human harvest. Long-term effects of human harvest on population levels are believed to be minimal. Although data were not available for all species, trapping effort and success were believed to be highest during the latter part of the season, as was the case with lynx and wolverine (Table 3). Late season success is probably due to increased daylight, warmer temperatures, and increased movement of animals. I believe that trapping and hunting pressure will remain relatively low within the Unit, because densities of most species residing here are low. Present regulations are adequate and appear to meet the needs of most local hunters and trappers.

Our primary furbearer management effort within Unit 22 has been to obtain accurate harvest data. Village sealers are presently employed in most villages to assist and encourage hunters and trappers to seal their furs. Although our efforts have been partially successful, the accuracy of our harvest estimates still needs to be improved. Many hunters and trappers do not seal furs that they plan to use for ruffs, hats, and other garments. We should increase our public contact in rural areas in order to emphasize the management benefits of our sealing program. An improved enforcement program is also needed for obtaining satisfactory compliance with current hunting and trapping regulations. As I indicated last year, a data source of some type should be implemented for those species without sealing requirements. The following options should be considered: 1) a statewide trapper questionnaire; 2) a trapper report; 3) a mandatory sealing program; or 4) a fur dealer purchase and export report that would be available to managers in a timely manner.

PREPARED BY:

Robert R. Nelson
Game Biologist II

SUBMITTED BY:

David A. Anderson
Survey-Inventory Coordinator

Table 1. Unit 22 furbearer harvest, 1982-83.[a]

Species	No. pelts
Arctic Fox	396
Beaver	11
Fox	214
Lynx	820
Marten	25
Mink	156
Muskrat	5
Otter	2
Weasels	28
Wolverine	14

[a] Beaver, lynx, otter, and wolverine data obtained from sealing certificates; data on other species/pelts compiled from fur dealer and trapper export runs.

Table 2. Unit 22 lynx harvest by subunit, sex, and month, 1982-83.

	November			December			January			February			March			April			Totals	
Subunit	M	F	U	M	F	U	M	F	U	M	F	U	M	F	U	M	F	U	No.	%
22A	14[a]	9	0	54	30	15	28	21	6	39	35	9	46	46	7	12	6	0	377	46.0
22B	17	5	0	42	32	17	48	40	8	55	36	4	48	44	5	23	18	0	442	53.9
22E	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	00.1
Totals	31	14	0	96	62	32	76	61	14	94	71	13	94	91	12	35	24	0	820	100.0

[a] Values compiled from sealing certificates.

Table 3. Percentage of Unit 22 harvest by month and species, for 1982-83.

Species	Oct (%)	Nov (%)	Dec (%)	Jan (%)	Feb (%)	Mar (%)	Apr (%)
Lynx	0	5	23	18	23	24	7
Wolverine	7	7	14	7	14	51	0

Table 4. Unit 22 wolverine harvest by subunit and sex, 1982-83.

Subunit	Male	Female	Totals	%
22A	3[a]	0	3	21.3
22B	4	3	7	50.3
22C	2	0	2	14.2
22D	2	0	2	14.2
Totals	11	3	14	100.0

[a] Values compiled from sealing certificates.

FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 23

GEOGRAPHICAL DESCRIPTION: Kotzebue Sound

PERIOD COVERED: 1 July 1982-30 June 1983

Season and Bag Limit:

See Fur Animal Hunting and Trapping Regulations No. 23.

Population Status and Trends

Beaver populations are well established in most drainages in Unit 23, except those north and west of the Kobuk River. Two beaver houses were observed on the Kelly River (a portion of the Noatak River drainage) in September 1981, indicating a recent population expansion into that area.

Beaver cache surveys conducted on 30 August 1983 revealed 0.2 caches/mi of stream surveyed with 63% of observed caches active (Table 1). The census area consisted of the Tagagawik River from its mouth to 36 mi upstream, and the Selawik River from 22 mi below to 27 mi above the mouth of the Tagagawik River. The beaver cache count by boat was initiated in fall 1981.

The beaver population in the area surveyed appears stable with no significant change in density or percentage of active caches since the last reporting period.

Arctic foxes are confined primarily to the coastal fringe of Kotzebue Sound but are more widely distributed inland when populations are high. During this reporting period and the period between fall 1976 and spring 1981, no arctic foxes were observed during aerial surveys of moose, caribou, wolves, or musk-oxen. In fall 1981, numerous arctic foxes were observed near the coast between the mouth of the Noatak River and Point Hope. The U.S. Public Health Service recorded no cases of rabies in arctic foxes during the 1982-83 reporting period.

Red foxes are present throughout the Unit. The greatest densities occur along the lower portions of major drainages where ptarmigan and snowshoe hares are abundant. Hare and ptarmigan populations are low throughout the Unit, except south of the Selawik River where arctic hare populations are high and snowshoe hares are moderate in numbers. During moose surveys we observed .09 foxes/hr, the fewest since we began systematically recording this information in 1976 (Table 3). The U.S. Public Health

Service recorded no cases of rabies in red foxes during the 1982-83 reporting period.

Lynx are declining along with snowshoe hares in the northern portion of the Unit. South of the Selawik River, arctic and snowshoe hares remain numerous and so continue to support relatively high lynx populations.

Marten are present in the northern drainages of the Kobuk River upstream from the Kallarichuk River and on the south side of the Kobuk River upstream from and including the Pick River drainage. Marten are uncommon in the remainder of the Unit.

The Kobuk and Selawik River drainages contain most of the prime mink habitat in Unit 23. Mink population status was not monitored during this reporting period.

Muskrats are common on the lower Noatak and Kobuk Rivers, and on the Selawik Flats. Muskrat population status was not monitored during this reporting period.

Otter signs were observed on all moose surveys but no systematic technique has been developed to quantify this information. The Unit supports substantial otter populations and contains excellent otter habitat.

Wolverines are more abundant in areas inaccessible to snow-machines or in remote untrapped areas than in areas close to human population centers and those with snowmachine access. The wolverine population may be depressed in the Selawik and Buckland River drainages because the area provides unlimited snowmachine access, and is for the most part devoid of the escape cover provided by extensive spruce forests.

Mortality

Most beavers are taken by shooting after spring breakup. During this reporting period 6 trappers took 55 beavers, of which very few were taken by trapping through the ice. Most of the harvest typically comes from the Selawik River drainage. The age structure of the 1982-83 harvest was as follows: 7% kits; 64% medium-age animals (53-64 in.); and 29% super blankets (over 65 in.). The Unit 23 reported harvest for the last 7 years is summarized in Table 2.

Local demand for arctic fox pelts for parka trim results in an unknown percentage of the total harvest being unrecorded. No harvest was recorded for this period. Recent harvest data are given in Table 4.

Most red foxes taken are sold and exported from the Unit. Only a small percentage of the local take is used as clothing trim. During this reporting period 296 foxes were taken, considerably

fewer than usual and indicative of a low population. Table 4 summarizes historical information on Unit 23 red fox harvests.

The Unit 23 harvest of 275 lynx as determined by sealing certificates is much lower than in previous years (Table 5). The recorded harvest came primarily from the southern portion of the Unit.

Marten is not a traditional fur item used locally for clothing. The reported harvest of 30 marten closely represents the actual harvest (Table 4).

Mink also is not a traditional fur item used locally for clothing, and the reported harvest of 140 mink closely resembles the actual harvest. Mink harvest records for the last 9 seasons are summarized in Table 4.

Muskrat fur, although valuable commercially, is also used locally for clothing. Because locally utilized muskrat hides are normally sent to a professional tannery before being sewn into clothing, the reported harvest should approximate the actual harvest. Harvest information is summarized in Table 4.

Otter fur is preferred locally for clothing trim. Because a significant portion of the actual harvest may be unsealed, the reported take does not represent the total harvest. The 1982-83 harvest was 7 otters according to sealing records. Table 5 summarizes harvest records for the last 6 years.

Wolverine is the most sought-after furbearer in Unit 23. The 1982-83 reported harvest was 34 wolverines. The continued low take of wolverines in the Selawik and Seward Peninsula portion of the Unit may be indicative of a downward population trend in open tundra habitat where harvest pressure may be great enough to permanently depress the population.

Management Summary and Recommendations

There has been a general reduction in the harvest of all furbearers since the last reporting period. The most sought-after commercial species (red fox and lynx) are in the declining phase of their population cycles. Trapping effort for less sought-after species may be directly related to the abundance of primary commerical species. The wolverine population may be unacceptably low in the Selawik and Buckland River drainages. However, trapping restrictions placed on wolverines at this time may not reduce the harvest, because enforcement is inadequate and the current local demand for wolverine hides is great. Trapping seasons are adequate to meet the needs of Unit 23 residents. No changes in seasons or bag limits are necessary.

PREPARED BY:

David A. Johnson
Game Biologist III

SUBMITTED BY:

David A. Anderson
Survey-Inventory Coordinator

Table 1. Selawik River beaver cache surveys, 1981-83.

Year	River miles	Caches/ mile	Active caches	Inactive caches	% active caches
1981	39	0.20	8	5	62
1982	60	0.18	11	3	78
1983	51	0.20	10	6	63

Table 2. Unit 23 beaver harvest by pelt size, 1976-83.

Year	Trappers	Pelt size (in.)					Total harvest	Take/ trapper
		0-52	53-59	60-64	65+	Unk.		
76-77	0	0	0	0	0	0	0	0
77-78	0	0	0	0	0	0	0	0
78-79	2	0	1	1	1	0	3	1.5
79-80	7	15	23	8	4	21	71	10.1
80-81	26	89	127	9	36	0	301	11.6
81-82	9	18	30	7	3	0	78	8.7
82-83	6	4	14	21	16	0	55	9.2

Table 3. Red fox observations during Unit 23 moose surveys and recorded cases of fox rabies, 1976-83.

Report period	Hours of observation	Foxes observed	Foxes/ hour	Reported cases of rabies in red foxes
76-77	32.9	14	0.43	3
77-78	28.7	12	0.42	1
78-79	26.7	34	1.27	0
79-80	37.0	29	0.78	11
80-81	21.7	22	1.01	0
81-82	40.8	61	1.49	2
82-83	47.1	4	0.09	0

Table 4. Unit 23 arctic fox, red fox, marten, mink and muskrat harvests from trapper export reports and reports of dealer purchases from trappers, 1974-83.

Species	Year	Harvest areas: Pt. Hope/ Kivalina	Noatak	Kobuk	Selawik	Seward Pen.	Unknown	Totals
Arctic fox	1974-75	0	0	0	0	0	2	2
	1975-76	0	1	5	0	0	0	6
	1976-77	12	6	7	2	0	5	32
	1977-78	13	0	0	0	0	0	13
	1978-79	81	10	3	5	0	76	175
	1979-80	3	2	1	0	3	6	15
	1980-81	0	2	2	1	5	4	14
	1981-82	--	--	--	--	--	--	--
	1982-83	0	0	0	0	0	0	0
Red fox	1974-75	0	1	31	34	4	16	86
	1975-76	0	58	122	74	5	49	308
	1976-77	2	107	171	154	54	122	610
	1977-78	31	27	68	79	32	37	274
	1978-79	111	115	287	103	147	577	1,340
	1979-80	23	127	412	113	189	424	1,288
	1980-81	11	78	259	129	117	367	961
	1981-82	--	--	--	--	--	--	--
	1982-83	0	49	46	80	59	62	296
Marten	1974-75	0	0	6	0	0	0	6
	1975-76	0	0	3	0	0	0	3
	1976-77	0	0	1	1	7	0	9
	1977-78	1	0	13	0	0	0	14
	1978-79	0	0	0	0	0	1	1
	1979-80	1	0	31	0	0	0	32
	1980-81	0	0	20	3	0	1	24
	1981-82	--	--	--	--	--	--	--
	1982-83	0	0	21	0	0	9	30
Mink	1974-75	0	0	87	25	0	0	112
	1975-76	0	0	6	59	0	0	65
	1976-77	0	3	94	102	0	0	199
	1977-78	0	0	50	57	0	16	123
	1978-79	0	1	28	12	0	30	71
	1979-80	0	5	51	35	3	8	102
	1980-81	0	2	254	957	13	213	1,439
	1981-82	--	--	--	--	--	--	--
	1982-83	0	7	7	110	0	16	140
Muskrat	1974-75	0	0	0	0	0	0	0
	1975-76	0	0	86	0	0	0	86
	1976-77	0	0	16	90	22	0	128
	1977-78	0	0	30	266	0	73	369
	1978-79	0	520	5,849	5320	172	857	12,718
	1979-80	0	29	1,901	133	0	171	2,234
	1980-81	0	187	1,327	321	8	118	1,961
	1981-82	--	--	--	--	--	--	--
	1982-83	0	0	0	0	0	0	0

Table 5. Unit 23 lynx, otter, and wolverine harvests from sealing certificates, 1977-83.

Species	Total take	% male	Method of take				Chronology						Area[a]				
			Shot	Trapped	Snared	Unk.	N	D	J	F	M	A	1	2	3	4	5
Lynx																	
1977-78	230	55	0	223	5	2	11	28	60	67	61	0	0	31	166	27	6
1978-79	385	53	2	341	3	39	12	48	81	117	127	0	0	117	147	120	1
1979-80	407	54	14	378	3	12	19	53	96	110	110	13	1	128	139	136	3
1980-81	306	60	3	254	1	41	30	45	62	72	80	17	1	17	128	143	14
1981-82	483	54	7	444	0	32	23	68	77	145	148	19	1	77	133	238	34
1982-83	275	--	6	263	1	5	24	36	38	69	70	33	4	5	34	149	81
Otter																	
1977-78	12	--	1	11	0	0	0	4	5	1	2	0	0	1	4	3	4
1978-79	15	--	2	13	0	0	0	12	2	0	1	0	0	5	1	8	1
1979-80	19	--	10	9	0	0	5	9	2	1	2	0	0	4	2	13	0
1980-81	29	--	0	27	2	0	21	4	2	0	0	2	0	3	6	20	0
1981-82	9	--	0	9	0	0	5	0	1	3	0	0	0	0	4	4	1
1982-83	7	--	1	5	0	1	4	1	1	0	1	0	0	2	2	2	0
Wolverine																	
1976-77	55	56	26	29	0	0	6	6	6	13	23	1	5	17	17	14	2
1977-78	75	67	26	49	0	0	9	8	29	17	12	0	4	10	40	15	6
1978-79	45	73	9	34	0	0	4	4	13	7	17	0	2	8	18	2	6
1979-80	26	63	12	14	0	0	2	4	4	6	9	1	2	8	10	4	2
1980-81	18	76	11	7	0	0	3	6	1	1	5	2	0	10	5	3	0
1981-82	48	75	13	35	0	0	2	3	8	7	23	5	1	28	14	5	0
1982-83	34	68	16	17	1	0	3	2	3	13	10	3	2	21	6	3	2

[a] 1 = Pt.Hope-Kivalina (drainages west of Noatak R. drainage), 2 = Noatak R. drainages, 3 = Kobuk R. drainages, 4 = Selawik R. drainages, 5 = Buckland R. drainages and Seward Peninsula drainages.

FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 24

GEOGRAPHICAL DESCRIPTION: Koyukuk River Above Dulbi River

PERIOD COVERED: 1 July 1982-30 June 1983

Season and Bag Limit

See Fur Animal Hunting and Trapping Regulations No. 23.

Mortality

Weather did not hamper trapping activities in Unit 24 during the 1982-83 season. Temperatures were moderate and rarely dropped below -30°F.

During the 1982-83 season 693 lynx were reported taken in Unit 24 (Table 1). The lynx harvest reached its peak during the 1981-82 season and has since stabilized or started to decline. The majority of lynx came from the eastern section of the Brooks Range, whereas during the 1981-82 season they came from the western section of the Brooks Range.

Only 14 land otters were reported sealed. Low prices were responsible for the low harvest and most otters were taken incidental to beaver trapping. Because some pelts are used for garments and are not sealed, the catch may be slightly higher than reported here.

Sealing records indicated a harvest of 46 wolverines. The harvest is generally stable but may be somewhat higher than reported because some wolverines used locally for garment trim are not sealed.

Little information is available on other species. Fox populations continue to be high in the southern portion of Unit 24. Marten numbers were thought to be reduced by 40% throughout the Unit and in at least 1 area the drop could be attributed to a decline in rodent populations.

Management Summary and Recommendations

Furbearer regulations are adequate to protect local stocks. Low prices continue to discourage intensive trapping.

PREPARED BY:

Timothy O. Osborne
Game Biologist III

SUBMITTED BY:

Jerry D. McGowan
Survey-Inventory Coordinator

Table 1. Furbearer harvest in Unit 24[a].

	1977-78	1978-79	1979-80	1980-81	1981-82	1982-83
Lynx	109	303	262	432	797	693
Otter	43	39	54	47	11	14
Wolverine	39	43	30	45	24	46

[a] The figures presented above are corrected harvest data and hence differ substantially in some instances from harvest data presented in the 1981-82 furbearer S&I report.

FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 25

GEOGRAPHICAL DESCRIPTION: Yukon Flats; Chandalar, Porcupine and Black Rivers; Birch and Beaver Creeks

PERIOD COVERED: 1 July 1982-30 June 1983

Season and Bag Limit

See Fur Animal Hunting and Trapping Regulations No. 23.

Mortality

Sealing records indicate that 1,576 lynx were harvested in Unit 25 (Table 1). This was an increase of 140 animals from the 1981-82 take. Most lynx were taken in Subunit 25B (53%) and in Subunit 25D (33%). The other Subunits yielded relatively few lynx. Harvest location was unspecified for 49 animals.

Numbers of lynx harvested by various methods were: 1,546 (79%) by trapping, 211 (13%) by snaring, and 2 (1%) by ground shooting. Method of take was unknown for 117 (7%) of the animals. The harvest was distributed over the entire season, but November and December were the 2 most important months, with 335 (21%) and 513 (33%) animals taken, respectively.

The Game Division trapper questionnaire and incidental observations indicate that lynx numbers within Unit 25 are variable. In Subunit 25B, density is thought to be high in the Little Black and Porcupine River drainages. A decline has occurred along the Black River, which had high density for at least the previous 2 years. Density in eastern Subunit 25D is thought to be high, and populations may be increasing. Other portions of Unit 25 probably contain low to moderate lynx densities with slowly increasing populations.

Harvest of only 3 otters was reported on sealing forms, 1 from Subunit 25A and 2 from Subunit 25B. This was a decrease of 7 animals from last year's take. Two otters were trapped, and 1 was taken by ground shooting. They were harvested during November and December.

Results of the trapper questionnaire indicate that otter density is low in most of Unit 25. The exception is Subunit 25D where density is moderate, reflecting higher quality habitat.

Harvest of 95 wolverines was reported on sealing forms (Table 2). This harvest was 39 more than last year's. Forty percent of the harvest occurred in Subunit 25A and 25% in Subunit 25B. Location

of harvest was unspecified for 7 animals. A majority (73%) of the wolverines taken were males.

Numbers of wolverine harvested by various methods were: 82 (86%) by trapping, 8 (8%) by snaring, and 5 (5%) by ground shooting.

Seventy-two percent of the harvest occurred from November through January.

The trapper questionnaire and incidental observations indicate that wolverine populations are stable in Unit 25. Density is probably moderate in Subunits 25A and 25B and is low in Subunits 25C and 25D.

Management Summary and Recommendations

Most lynx harvested in Unit 25 were taken in Subunit 25B. Density is high over most of that Subunit, with the exception of the Black River drainage, where the population is depressed. Density is also high in eastern Subunit 25D. Other portions of the Unit contain low- to moderate-density populations that are slowly increasing.

Land otters were lightly harvested. Populations are low and stable over most of the Unit, except in Subunit 25D where density is higher due to better quality habitat.

Most of the wolverine harvest was from Subunits 25A and 25B. Density over most of the Unit is moderate to low and the population appears to be stable.

PREPARED BY:

Roy A. Nowlin
Game Biologist III

SUBMITTED BY:

Jerry D. McGowan
Survey-Inventory Coordinator

Table 1. Lynx harvest from Unit 25 during 1982-83.

Subunit	Harvest
25A	110
25B	842
25C	62
25D	513
Unspecified	49
Total	1,576

Table 2. Wolverine harvest from Unit 25 during 1982-83.

Subunit	Male	Female	Sex unknown	Total
25A	30	8	0	38
25B	15	9	0	24
25C	5	2	1	8
25D	13	4	1	18
Unspecified	6	1	0	7
Totals	69	24	2	95

FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 12, 19, 20, 21, 24, and 25

GEOGRAPHICAL DESCRIPTION: Interior Alaska

PERIOD COVERED: 1 July 1982-30 June 1983

Season and Bag Limit

See Fur Animal Hunting and Trapping Regulations No. 23.

Trapper Questionnaire

The trapper questionnaire was sent to 488 trappers in Units 12, 19, 20, 21, 24, and 25 during spring 1983. No reminder letters were sent, but 203 questionnaires (42%) were returned. Of these, 45 respondents indicated they had not trapped and provided no other information. One hundred fifty-eight responses provided data regarding harvest and population trends (Tables 1 and 2).

Questionnaire Results - Harvest and Population Levels

Lynx

According to questionnaire responses, lynx catches in the Interior generally increased in 1982-83 compared to 1981-82. Fort Yukon trappers averaged fewer lynx in 1982-83 (10.9 compared to 15.2 lynx/trapper in 1981-82), but the total number of lynx taken was greater (251) in 1982-83 compared to 1981-82 (137). Fairbanks area trappers caught more lynx in 1982-83, as did trappers in the Brooks Range, Manley, and Delta areas. Trappers from the Circle-Central, Eagle, Galena-Ruby, McGrath, Nenana-Clear, Tanana, and Tok areas reported smaller lynx catches in 1982-83 compared to 1981-82. (See Table 1 for numbers of lynx taken.)

Although lynx populations were reported to be moderately low to moderate throughout the Interior, trappers thought there had been a definite increase in numbers of lynx. Brooks Range trappers reported high populations of lynx and felt that numbers had increased compared to 1981-82. Trappers in McGrath, Nenana, Galena-Ruby, and Manley reported that lynx populations had remained the same, while replies from Healy, Hughes-Huslia, Eagle, and Tok reported a decline in lynx numbers.

Red Fox

Interior trappers reported an average harvest of 8 foxes/trapper in 1982-83, a decrease from the 1981-82 average harvest of 9

foxes/trapper. Delta trappers again reported the highest average take of foxes (18.4/trapper), an increase from the average harvest of 17 foxes/trapper in 1981-82.

Fox populations were reported at moderate levels regionwide with little change from 1981-82 levels. Nenana, Tok, and Beaver respondents reported increasing fox populations. Delta area respondents reported that fox populations had decreased slightly but were still high. Trappers in Huslia and Hughes reported low and declining populations of foxes, and trappers in the Healy area reported moderately low and slightly declining populations.

Marten

Regionwide, the total marten harvest and the average catch of marten per trapper declined in 1982-83 compared to 1981-82. Trappers from all areas reported declines in total harvest of marten, but in several areas more marten were caught per trapper due to fewer trappers. These were Tanana, Nenana, and Healy. Tanana area trappers reported an average of 87 marten/trapper in 1982-83, compared to 60/trapper in 1981-82; but the total harvest of marten was only 261 in 1982-83, compared to 477 in 1981-82.

Marten populations in the Interior were reported to be moderately low and declining moderately.

Muskrat

Muskrat populations were reported low in the Interior, with a slight decrease from 1981-82. Only trappers from the McGrath and Beaver areas reported increased numbers of muskrats in 1982-83 compared to 1981-82.

Mink

Mink populations were reported to be moderately low in the Interior with little change from the previous year. Circle-Central and McGrath area trappers reported moderate numbers of mink. Reports from these and most other areas indicated little change or slight declines in mink populations.

Beaver

Trappers reported moderate numbers of beavers, with a slight increase from 1981-82. Responses from the Galena-Ruby, Brooks Range, Beaver, Hughes-Huslia, Circle-Central, and Nenana areas indicated high numbers of beavers. Trappers from these areas, as well as Tanana and McGrath, reported increases in the beaver populations.

Land Otter

Otter populations were reported to be moderately low to moderate throughout the Interior during 1982-83, and reports from most areas indicated little change or a slight increase in otter numbers.

Wolf

Wolf populations in the Interior were reported to be moderately low overall, with the same number or a slight decline in numbers from 1981-82. Trappers from the Hughes-Huslia, Eagle, and McGrath areas reported moderate numbers of wolves; responses from the Galena and Ruby areas indicated moderately high numbers. Trappers from these areas, as well as Nenana, Tanana, Fairbanks, Manley, and Brooks Range reported an increase in wolf numbers. Elsewhere in the Interior, numbers of wolves were reported to have declined slightly.

Wolverine

Trappers indicated that wolverine populations were moderately low to low throughout the Interior, with little change in numbers from 1981-82. Trappers in Galena and Ruby reported moderate numbers of wolverines with some increase in abundance from 1981-82. Trappers in McGrath, Hughes-Huslia, Circle-Central, Beaver, Tok, Delta, and the Brooks Range reported low to moderately low numbers and a decline in wolverine populations.

Coyote

Less than half the respondents had comments regarding coyote abundance, and few trappers reported catching coyotes during the 1982-83 season. Populations were reported to be low and little changed from 1981-82.

Squirrel

Squirrel abundance was reported to be moderate in the Interior, and reports from most areas indicated little population change compared to 1981-82.

Snowshoe Hare

Hare populations were reported at moderately low to low levels in the Interior and most trappers reported decreases in the number of hares since 1981-82. Hare populations remained at moderate levels in the Fort Yukon area with little change from 1981-82.

Grouse

In the Interior, grouse numbers were thought to be low and declining. Healy and the Mt. McKinley area trappers were the only respondents reporting moderate levels of grouse with no change in populations compared to 1981-82.

Ptarmigan

Ptarmigan populations were reported to be moderately low, with a decline in numbers throughout all the Interior.

PREPARED BY:

Jeannette R. Ernest
Game Biologist II

SUBMITTED BY:

Jerry D. McGowan
Survey-Inventory Coordinator

Table 1. Lynx, fox, and marten harvests as indicated by the Trapper Questionnaire, 1982-83.

Area	Number of trappers[a] responding	Number lynx taken	Number lynx/ trapper	Number fox taken	Number fox/ trapper	Number marten taken	Number marten/ trapper
Beaver	4	10	3.3	8	4.0	112	37.3
Brooks Range	11	223	24.8	44	5.5	271	33.9
Circle-Central	3	2	2.0	17	8.5	15	7.5
Delta	13	58	9.7	147	18.4	103	17.1
Eagle, Chicken, Boundary	2	6	3.0	6	3.0	18	9.0
Fairbanks	30	108	7.7	172	7.8	210	12.4
Fort Yukon	15	251	10.9	181	16.5	651	54.3
Galena-Ruby	11	24	4.0	16	2.0	462	51.3
Hughes-Huslia	4	10	5.0	2	7.5	462	115.5
Livengood, Elliot Highway	8	6	2.0	2	2.0	93	15.5
Healy, Mt. McKinley	4	7	3.5	25	8.3	2	2.0
Manley	5	63	21.0	8	4.0	236	59.0
McGrath	13	0	0	2	1.0	204	25.5
Nenana-Clear	8	38	6.3	62	12.4	190	23.8
Tanana	6	11	3.7	4	1.3	261	87.0
Tok-Northway	13	47	6.7	65	9.3	117	19.5
Miscellaneous other	9	24	4.8	34	6.8	232	38.7
Interior totals	159	888	10.8	795	8.6	3639	34.6

[a] 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 1982-83 Trapper Questionnaire.

SPECIES/	Abundance in 1982-83 season[a]				Compared with 1981-82[a]			
Area	Low	Mod	High	Index[b]	Fewer	Same	More	Index[b]
COYOTE								
Beaver	2	0	0	1.0	0	2	0	5.0
Brooks Range	3	0	0	1.0	0	3	0	5.0
Circle-Central	2	0	0	1.0	0	2	0	5.0
Delta	3	8	1	4.3	0	7	2	5.9
Eagle	1	0	0	1.0	0	1	0	1.0
Fairbanks	13	4	0	2.0	3	11	2	4.8
Fort Yukon	4	0	0	1.0	0	4	0	5.0
Galena-Ruby	1	0	0	1.0	--	--	--	--
Healy, Mt. McKinley	1	0	0	1.0	1	0	0	1.0
Livengood, Elliot Highway	--	--	--	--	--	--	--	--
Manley	2	0	0	1.0	0	1	0	5.0
McGrath	5	1	0	1.7	0	4	0	5.0
Nenana-Clear	3	1	0	2.0	0	2	0	5.0
Hughes-Huslia	1	0	0	1.0	0	1	0	1.0
Tanana	2	0	0	1.0	1	0	0	1.0
Tok-Northway	6	1	1	2.5	2	3	2	5.0
Miscellaneous other	4	2	6	2.3	2	5	7	3.9
Total coyote	53	17	8		9	46	13	
Means				2.3				5.0
LYNX								
Beaver	2	1	0	2.3	0	0	3	9.0
Brooks Range	0	2	6	8.0	1	4	5	6.6
Circle-Central	1	2	0	3.7	0	2	1	6.3
Delta	6	6	0	3.0	0	4	5	7.2
Eagle	2	0	0	1.0	1	1	0	3.0
Fairbanks	9	13	1	3.6	4	3	16	6.9
Fort Yukon	8	4	3	3.0	5	2	8	5.8
Galena-Ruby	3	5	1	4.1	2	4	1	4.4
Healy, Mt. McKinley	2	0	0	1.0	1	1	0	3.0
Livengood, Elliot Highway	5	1	0	1.7	1	4	2	5.6
Manley	3	0	2	4.2	2	1	1	5.0
McGrath	5	1	1	2.7	2	3	1	4.3
Nenana-Clear	3	4	0	3.3	2	3	2	5.0
Hughes-Huslia	2	0	0	1.0	2	0	0	1.0
Tanana	3	1	0	2.0	0	2	1	6.3
Tok-Northway	7	5	0	2.7	4	2	2	3.8
Miscellaneous other	2	3	2	5.0	1	3	2	5.7
Total lynx	63	48	16		28	41	50	
Means				3.6				5.9

Table 2. Continued.

SPECIES/ Area	Abundance in 1982-83 season[a] Low	Mod	High	Index[b]	Compared with 1981-82[a] Fewer	Same	More	Index[b]
RED FOX								
Beaver	0	0	3	9.0	0	1	2	7.7
Brooks Range	0	4	4	7.0	1	3	4	4.5
Circle-Central	1	1	1	5.0	0	1	2	7.7
Delta	0	8	4	6.3	4	4	1	3.7
Eagle	1	0	1	5.0	1	1	0	3.0
Fairbanks	5	13	6	5.2	3	16	5	5.3
Fort Yukon	5	5	5	5.0	3	7	5	5.5
Galena-Ruby	2	6	1	4.6	2	2	2	5.0
Healy, Mt. McKinley	1	1	0	3.0	1	1	0	3.0
Livengood, Elliot Highway	2	3	0	3.4	2	2	2	5.0
Manley	4	1	1	3.0	2	0	1	3.7
McGrath	4	3	1	3.0	3	3	0	3.0
Nenana-Clear	1	1	4	7.0	0	3	2	6.6
Hughes-Huslia	2	0	0	1.0	2	0	0	1.0
Tanana	1	2	1	5.0	0	3	0	5.0
Tok-Northway	2	8	2	5.0	0	5	3	6.5
Miscellaneous other	2	3	2	5.0	1	3	2	5.7
Total red fox	33	59	36		25	55	31	
Means				5.1				5.2
MARTEN								
Beaver	0	2	1	6.3	1	2	0	3.7
Brooks Range	3	4	0	3.3	5	2	0	2.1
Circle-Central	3	0	0	1.0	2	1	0	2.3
Delta	8	1	1	2.2	3	5	0	3.5
Eagle	2	0	0	1.0	2	0	0	1.0
Fairbanks	12	9	1	3.0	10	6	7	4.5
Fort Yukon	6	7	2	3.9	7	5	3	3.9
Galena-Ruby	2	5	3	5.4	5	3	0	5.6
Healy, Mt. McKinley	1	1	0	3.0	1	1	0	3.0
Livengood, Elliot Highway	4	2	0	2.3	4	3	0	2.7
Manley	4	1	1	3.0	4	1	1	3.0
McGrath	4	5	0	3.2	5	1	1	5.6
Nenana-Clear	2	4	1	4.4	3	2	2	4.4
Hughes-Huslia	1	2	0	3.7	3	0	0	1.0
Tanana	0	4	0	5.0	1	2	0	3.7
Tok-Northway	7	3	1	2.8	3	3	1	3.9
Miscellaneous other	4	2	1	3.3	3	2	1	3.7
Total marten	63	52	12		62	39	16	
Means				3.4				3.4

Table 2. Continued.

SPECIES/ Area	Abundance in 1982-83 season[a] Low	Mod	High	Index[b]	Compared with 1981-82[a] Fewer	Same	More	Index[b]
MUSKRAT								
Beaver	3	0	0	1.0	0	2	1	6.3
Brooks Range	3	1	0	2.0	1	2	0	3.7
Circle-Central	1	0	0	1.0	1	0	0	1.0
Delta	4	1	1	3.0	2	3	0	3.4
Eagle	1	0	0	1.0	0	1	0	5.0
Fairbanks	10	3	0	1.9	4	10	0	3.9
Fort Yukon	9	0	0	1.0	4	3	2	4.1
Galena-Ruby	5	0	0	1.0	1	2	0	3.3
Healy, Mt. McKinley	1	0	0	1.0	1	0	0	1.0
Livengood, Elliot Highway	--	--	--	--	--	--	--	--
Manley	1	0	0	1.0	--	--	--	--
McGrath	4	1	0	1.8	0	2	1	6.3
Nenana-Clear	1	0	0	1.0	1	0	0	1.0
Hughes-Huslia	2	0	0	1.0	2	0	0	1.0
Tanana	3	0	0	1.0	0	2	0	5.0
Tok-Northway	5	1	0	1.7	2	2	0	3.0
Miscellaneous other	3	1	0	2.0	3	2	0	2.6
Total muskrat	56	8	1		22	31	4	
Means				1.6				3.7
MINK								
Beaver	3	0	0	1.0	1	2	0	3.7
Brooks Range	5	1	0	1.7	3	2	0	2.6
Circle-Central	1	0	1	5.0	0	1	1	7.0
Delta	3	2	0	2.6	2	2	0	3.0
Eagle	1	0	0	1.0	0	1	0	5.0
Fairbanks	9	7	1	3.1	8	8	2	3.1
Fort Yukon	9	5	0	2.4	4	10	0	3.9
Galena-Ruby	5	0	0	1.0	2	1	0	6.3
Healy, Mt. McKinley	1	2	0	3.7	1	2	0	3.7
Livengood, Elliot Highway	1	1	0	3.0	0	2	0	5.0
Manley	3	1	0	2.0	2	1	0	2.3
McGrath	5	2	1	5.5	0	5	0	5.0
Nenana-Clear	1	1	0	3.0	0	1	0	5.0
Hughes-Huslia	2	0	0	1.0	2	0	0	1.0
Tanana	4	0	0	1.0	2	1	0	2.3
Tok-Northway	7	2	0	1.9	4	2	0	2.3
Miscellaneous other	6	1	0	1.6	1	5	0	4.3
Total mink	66	25	3		32	46	3	
Means				2.3				3.8

Table 2. Continued.

SPECIES/ Area	Abundance in 1981-82 season[a] Low	Mod	High	Index[b]	Compared with 1980-81[a] Fewer	Same	More	Index[b]
BEAVER								
Beaver	0	1	2	7.7	0	3	0	5.0
Brooks Range	0	3	2	6.6	0	3	0	5.05
Circle-Central	0	1	1	7.0	0	1	1	7.0
Delta	2	3	2	5.0	1	3	1	5.0
Eagle	1	0	0	1.0	1	3	1	5.0
Fairbanks	2	12	3	4.6	0	11	5	6.3
Fort Yukon	3	5	4	5.3	1	8	3	5.7
Galena-Ruby	0	3	5	7.5	0	5	2	7.1
Healy, Mt. McKinley	1	1	0	3.0	1	1	0	3.0
Livengood Elliot Highway	0	3	0	5.0	0	3	0	5.0
Manley	0	4	0	5.0	0	3	0	5.0
McGrath	1	5	2	5.5	0	2	3	7.4
Nenana-Clear	0	0	2	9.0	0	0	2	9.0
Hughes-Huslia	0	1	2	7.7	0	2	1	6.3
Tanana	1	2	2	5.8	0	3	1	6.0
Tok-Northway	5	3	1	3.2	1	4	0	4.2
Miscellaneous other	1	5	0	4.3	1	5	0	4.3
Total beaver	17	52	28		6	60	20	
Means				5.3				5.8
WOLF								
Beaver	3	0	0	1.0	1	2	0	3.0
Brooks Range	6	1	1	2.5	1	4	2	5.6
Circle-Central	1	1	0	3.0	1	1	0	3.0
Delta	9	2	1	2.3	4	4	1	3.6
Eagle	1	0	1	5.0	0	1	1	7.0
Fairbanks	12	7	1	2.8	8	10	3	4.2
Fort Yukon	8	6	2	3.5	7	9	1	3.6
Galena-Ruby	1	2	3	6.3	0	3	2	6.6
Healy, Mt. McKinley	1	1	0	3.0	1	1	0	3.0
Livengood Elliot Highway	3	2	0	2.6	3	1	1	3.4
Manley	4	1	0	1.8	1	2	1	5.0
McGrath	1	5	1	5.0	0	4	2	6.6
Nenana-Clear	1	2	0	3.7	1	1	1	5.0
Hughes-Huslia	0	2	0	5.0	0	0	2	9.0
Tanana	2	2	0	3.0	0	3	0	5.0
Tok-Northway	7	3	0	2.2	3	4	0	3.3
Miscellaneous other	4	2	1	3.3	1	4	1	5.0
Total wolves	64	39	11		32	54	18	
Means				2.2				4.4

Table 2. Continued.

SPECIES/ Area	Abundance in 1982-83 season[a] Low	Mod	High	Index[b]	Compared with 1981-82[a] Fewer	Same	More	Index[b]
WOLVERINE								
Beaver	3	0	0	1.0	1	2	0	3.7
Brooks Range	4	3	0	2.7	2	3	0	3.9
Circle-Central	2	0	0	1.0	2	0	0	1.0
Delta	7	3	0	2.2	2	5	0	3.9
Eagle	2	0	0	1.0	0	2	0	5.0
Fairbanks	10	4	2	3.0	4	9	3	4.8
Fort Yukon	6	8	2	4.0	5	5	6	5.3
Galena-Ruby	3	3	3	5.0	1	3	4	6.5
Healy, Mt. McKinley	1	1	0	3.0	1	1	0	3.0
Livengood, Elliot Highway	4	0	0	1.0	2	3	0	3.4
Manley	4	1	0	1.8	1	2	1	5.0
McGrath	6	2	0	2.0	4	2	1	3.3
Nenana-Clear	3	3	0	3.0	0	4	2	6.3
Hughes-Huslia	2	0	0	1.0	2	0	0	1.0
Tanana	2	2	0	3.0	0	3	0	5.0
Tok-Northway	8	2	0	1.8	3	4	0	3.3
Miscellaneous other	4	2	0	2.3	0	5	0	5.0
Total wolverine	71	34	7		30	53	17	
Means				2.7				4.5
OTTER								
Beaver	1	2	0	3.7	0	3	0	5.0
Brooks Range	5	1	0	1.7	1	3	0	4.0
Circle-Central	1	0	0	1.0	1	0	0	1.0
Delta	3	1	2	4.3	0	3	1	6.0
Eagle	1	0	0	1.0	0	1	0	5.0
Fairbanks	7	9	0	3.3	2	13	1	4.8
Fort Yukon	4	6	0	3.4	2	7	1	4.6
Galena-Ruby	1	2	2	5.8	0	2	1	6.3
Healy, Mt. McKinley	1	0	0	1.0	0	1	0	5.0
Livengood Elliot Highway	--	--	--	--	--	--	--	--
Manley	2	2	0	3.0	0	4	0	5.0
McGrath	3	3	0	3.0	1	3	0	4.0
Nenana-Clear	0	1	1	7.0	0	2	0	5.0
Hughes-Huslia	0	3	0	5.0	0	3	0	5.0
Tanana	3	1	0	2.0	1	2	0	3.7
Tok-Northway	4	1	1	3.0	2	1	1	4.0
Miscellaneous other	3	3	1	4.0	0	5	1	5.7
Total otter	39	35	7		10	53	6	
Means				3.4				4.8

Table 2. Continued.

SPECIES/ Area	Abundance in 1982-83 season[a] Low	Mod	High	Index[b]	Compared with 1981-82[a] Fewer	Same	More	Index[b]
SQUIRREL								
Beaver	0	1	2	7.7	0	3	0	5.0
Brooks Range	2	1	5	5.0	1	0	3	7.0
Circle-Central	--	--	--	--	--	--	--	--
Delta	0	4	4	7.0	0	6	1	5.6
Eagle	1	1	0	1.0	0	1	0	5.0
Fairbanks	6	13	2	4.2	6	13	2	4.2
Fort Yukon	7	7	1	3.3	7	8	0	3.1
Galena-Ruby	1	0	3	7.0	0	1	1	7.0
Healy, Mt. McKinley	1	0	0	1.0	1	0	0	1.0
Livengood, Elliot Highway	1	1	0	3.0	0	3	0	5.0
Manley	1	3	0	4.0	1	2	0	3.7
McGrath	0	4	4	7.0	0	4	3	6.7
Nenana-Clear	1	0	1	5.0	1	1	0	3.0
Hughes-Huslia	2	0	0	1.0	0	0	2	9.0
Tanana	0	3	2	6.6	0	4	0	5.0
Tok-Northway	4	5	1	3.8	2	5	0	3.9
Miscellaneous other	1	5	0	4.3	1	4	0	4.2
Total squirrel	28	48	25		20	55	12	
Means				4.9				4.6
SNOWSHOE HARE								
Beaver	2	1	0	2.3	3	0	0	1.0
Brooks Range	4	3	1	3.5	4	2	0	2.3
Circle-Central	1	2	0	3.7	3	0	0	1.0
Delta	11	1	0	1.3	7	2	0	1.9
Eagle	2	0	0	1.0	2	0	0	1.0
Fairbanks	15	8	1	2.7	16	6	2	2.7
Fort Yukon	4	8	3	4.7	6	3	5	4.7
Galena-Ruby	7	2	0	1.9	5	2	0	2.1
Healy, Mt. McKinley	1	1	0	3.0	1	1	0	3.0
Livengood Elliot Highway	2	2	0	3.0	2	2	1	4.2
Manley	2	3	0	3.4	4	0	0	1.0
McGrath	5	2	1	3.0	6	0	0	1.0
Nenana-Clear	5	2	0	2.1	2	5	0	3.7
Hughes-Huslia	2	0	0	1.0	2	0	0	1.0
Tanana	4	1	0	1.8	2	2	0	3.0
Tok-Northway	9	1	0	1.4	3	3	1	3.9
Miscellaneous other	6	1	0	1.6	5	1	0	1.7
Total snowshoe hare	82	38	6		73	29	9	
Means				2.5				2.4

Table 2. Continued.

SPECIES/ Area	Abundance in 1982-83 season[a] Low	Mod	High	Index[b]	Compared with 1981-82[a] Fewer	Same	More	Index[b]
GROUSE								
Beaver	3	0	0	1.0	3	0	0	1.0
Brooks Range	7	0	0	1.0	2	2	0	3.0
Circle-Central	3	0	0	1.0	1	2	0	1.2
Delta	8	3	0	2.1	5	2	1	3.0
Eagle	2	0	0	1.0	2	0	0	1.0
Fairbanks	19	4	1	2.0	11	9	4	3.8
Fort Yukon	9	1	1	2.1	5	6	0	3.2
Galena-Ruby	7	1	0	1.5	3	2	0	2.6
Healy, Mt. McKinley	0	2	0	5.0	0	2	0	5.0
Livengood Elliot Highway	4	1	0	1.8	4	2	0	2.9
Manley	4	1	0	1.8	4	0	0	1.0
McGrath	5	4	0	2.8	6	1	0	1.6
Nenana-Clear	3	2	0	2.6	3	2	0	2.6
Hughes-Huslia	2	0	0	1.0	2	0	0	1.0
Tanana	4	1	0	1.8	2	2	0	3.0
Tok-Northway	5	4	1	3.4	4	2	1	3.3
Miscellaneous other	5	2	0	2.1	4	2	0	2.3
Total grouse	90	26	3		61	36	6	
Means				1.7				2.9
PTARMIGAN								
Beaver	2	1	0	2.3	3	0	0	1.0
Brooks Range	8	0	0	1.0	4	0	1	2.6
Circle-Central	3	0	0	1.0	1	2	0	1.2
Delta	4	4	0	3.0	1	5	0	4.3
Eagle	2	0	0	1.0	2	0	0	1.0
Fairbanks	18	2	0	1.4	12	6	2	3.0
Fort Yukon	9	2	0	1.7	10	1	0	1.4
Galena-Ruby	9	0	0	1.0	4	2	0	1.8
Healy, Mt. McKinley	1	1	0	3.0	1	1	0	3.0
Livengood Elliot Highway	5	0	0	1.0	5	1	0	1.7
Manley	4	1	0	1.8	4	0	0	1.0
McGrath	6	2	0	1.8	7	0	0	1.0
Nenana-Clear	5	0	0	1.0	4	1	0	1.8
Hughes-Huslia	2	0	0	1.0	2	0	0	1.0
Tanana	5	0	0	1.0	3	0	0	1.0
Tok-Northway	3	5	1	4.1	4	2	1	3.3
Miscellaneous other	5	2	0	2.1	4	2	6	2.3

Table 2. Continued.

SPECIES/ Area	Abundance in 1982-83 season[a] Low	Mod	High	Index[b]	Compared with 1981-82[a] Fewer	Same	More	Index[b]
Total ptarmigan	83	20	1		71	23	10	
Means				1.8				2.2

[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).

FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 26A

GEOGRAPHICAL DESCRIPTION: Arctic Slope west of the Itkillik River

PERIOD COVERED: 1 July 1982-30 June 1983

Season and Bag Limit

See Fur Animal Hunting and Trapping Regulations No. 23.

Population Status and Trend

Arctic foxes were relatively uncommon compared to previous years. Glenn Hittson at Pt. Lay reported seeing none during the winter of 1982-83. In 1981-82, he commonly saw 10-50 arctic foxes on every outing. As Public Safety Officer in the community, he was aware of 9 confirmed rabid foxes in 1981-82, but only 1 during the present reporting period. These observations suggest a dramatic decline in arctic fox numbers in the Pt. Lay area. James Helmericks also thought that arctic foxes were relatively uncommon in the Colville River Delta. At Barrow, only 1 arctic fox was observed during the first 9 months of 1983. This species is also reported to be uncommon in Subunits 26B and 26C at the present time (Boertje, in press).

The population status of wolverines in Subunit 26A is not known. However, my observations and travel throughout the Unit suggest that these animals are not abundant. At present there is no way to determine whether wolverines are being overharvested in Subunit 26A. The population status and trend of other furbearers is also unknown at this time.

Population Composition

No data or reliable qualitative observations are available concerning the present composition of any furbearer population in Subunit 26A.

Mortality

The low harvest of arctic foxes during the reporting period reflects their low relative abundance. G. Hittson at Pt. Lay neither saw nor harvested a single fox during the reporting period. The previous winter he and friends killed nearly 150. At the eastern end of the subunit, the James Helmericks family consistently traps the Colville Delta area. They reported

trapping 5 foxes in 1982-83. The best known trapper in the village of Nuiqsut also reported taking 5 arctic foxes. No estimate of the total arctic fox harvest is available for the subunit.

Red foxes are encountered inland in Subunit 26A, especially by hunters and trappers from Anaktuvuk Pass, Nuiqsut, and Pt. Lay. The harvest was probably similar to that of arctic foxes but no numerical estimate is available.

Six wolverines were sealed in Subunit 26A. The unreported harvest was substantially greater, primarily because sealing officers were active in only 1 of 6 communities in or adjacent to the subunit. G. Hittson at Pt. Lay estimated that 20-25 wolverines were killed by village residents there, including at least 10 that were killed by one person. At Nuiqsut, 3 of the most active trappers in the village killed a total of 6 wolverines. Assuming that additional wolverines were taken in other communities but not sealed, the actual harvest total may have exceeded 50.
No harvest information was available for other furbearers, nor were estimates of natural mortality available for any furbearer during the reporting period.

Management Summary and Recommendations

Our present knowledge of furbearer populations on the western North Slope is unsatisfactory and must be improved. Contributing to our lack of information is the fact that most people living in the subunit do not comply with licensing or sealing requirements. The reasons for noncompliance with state regulations are complex and not completely understood. The absence of a permanently established departmental office on the North Slope has certainly been a contributing factor. The most important task now is to establish active sealing programs in all communities of the subunit and to develop public support for those programs. Sealing will not only directly improve our knowledge of wolf and wolverine harvests; it will also bring us into contact with most of the active trappers in the subunit. We will then know whom to contact for information on other species, particularly foxes.

Even a functional sealing program will not be adequate to determine the population status of wolverines. Wolverine status in Subunit 26A is similar to that of wolves (Trent, in press). Aircraft sightings of these animals are unusual, tracks are not commonly encountered, and the impact of aircraft and snowmachine-assisted ground shooting is unknown. In addition, the pelts of both species are in very high demand.

Three questions concerning wolverines must be answered if the State is to discharge its obligation to manage wildlife on a sustained yield basis: 1) approximately how many wolverines inhabit Subunit 26A; 2) how viable is the population; and 3) what are the specific impacts of aircraft and snowmachine hunting on wolverines.

During the next reporting period I will consolidate information on wolverines in this subunit from trappers and from the literature. I will also discuss the potential value of research programs with the Region V staff. If no substantial progress is made toward understanding wolverine population status by the end of the next reporting period, I plan to recommend harvest reductions through changes in seasons, bag limits, or methods and means until there is clear evidence that overharvest is not occurring. Such an action would have significant social, political, and economic consequences. The alternative of continuing to harvest an essentially unrestricted number of animals from a population with unknown characteristics could easily be labeled as irresponsible. Earlier assumptions that human harvest can have only minor or local influences on wolverine populations are not necessarily valid in the light of improved transportation, increased human population, and growing affluence on the North Slope. We must begin to gather information and take necessary corrective action while the opportunity still exists.

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

Literature Cited

Boertje, R. D. In press. Furbearer survey-inventory progress report. In J. Barnette, ed. Annual report of Survey-Inventory Activities. Part VII, Vol. XIV. Alaska Dep. Fish and Game. Fed. Aid in Wildl. Rest. Prog. Rep. Proj. W-22-3. Juneau.

Trent, J. N. In press. Wolf survey-inventory progress report. In J. Barnette, ed. Annual Report of Survey-Inventory Activities. Part VII, Vol. XIV. Alaska Dep. Fish and Game. Fed. Aid in Wildl. Rest. Prog. Rep. Proj. W-22-3. Juneau.

PREPARED BY:

John N. Trent
Game Biologist III

SUBMITTED BY:

David A. Anderson
Survey-Inventory Coordinator

FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 26B and 26C

GEOGRAPHICAL DESCRIPTION: Arctic Slope East of Itkillik River

PERIOD COVERED: 1 July 1982-30 June 1983

Season and Bag Limit

See Fur Animal Hunting and Trapping Regulations No. 23.

Population Status and Trend

Arctic fox populations in Unit 26 were at a low in the 3- to 5-year cycle during winter 1982-83. The previous low occurred during 1977-78 and was somewhat more pronounced than the present low (E. Folleman, pers. commun.).

Evidence of the low population in Subunit 26C came from R. Bartels, USFWS biologist residing on Barter Island, and M. Simms, resident and trapper of Barter Island. Bartels estimated that a maximum of 10-12 arctic foxes were harvested this reporting period by Barter Island trappers, in contrast to 150-200 during the previous reporting period when rabies was documented in the population.

Evidence of a low arctic fox population in Subunit 26B came from Kevin Myers, environmental engineer for ARCO, residing in Prudhoe Bay, who normally arranges for a trapper to reduce winter fox populations in the oil field. These arrangements were not made during this reporting period because of low fox numbers.

Eric Folleman, research professor at the University of Alaska, has 6 years of information on arctic fox population trends that substantiates the present low. Less pronounced lows in the lemming-fox populations occurred near Prudhoe Bay, presumably because of alternative food sources (E. Folleman, pers. commun.).

Arctic fox trapping by pipeline and North Slope Borough personnel occurs to a moderate extent in and around Prudhoe Bay. However, harvest levels are unknown. Although many reports suggest that fox numbers were very low, E. Folleman trapped 7 foxes near Prudhoe Bay in 2 nights with only a few traps.

Lynx are normally rare in Unit 26, but 3 were reported harvested in Subunit 26B during March and April 1983 (data are from computer printout--no sealing certificates were received). These lynx presumably moved from areas of high density just south of the Brooks Range.

Reported wolverine harvest was 0 in Subunits 26B and 26C (no sealing certificates were received) and unreported harvest was 3 (R. Bartels, pers. commun.).

Management Summary and Recommendations

Several generalizations are important regarding furbearer management in Subunits 26B and 26C. Arctic fox, the primary furbearer trapped in Subunits 26B and 26C, experienced a low in their 3- to 5-year population cycle during this reporting period. This low was less pronounced in and near oil fields and along pipelines, presumably because of alternative food sources. Trapping effort by residents of Barter Island continues to be low because of construction projects providing alternative income. Trapping effort in and near oil fields and along pipelines occurs to a moderate extent in Subunit 26B. Trapping by oil exploration personnel on assignment in Subunit 26C is prohibited by the U.S. Fish and Wildlife Service. Inadequate harvest reporting continued. To obtain an indication of the take, communication between residents and Department staff is required.

No changes in seasons or bag limits are recommended.

PREPARED BY:

Rodney D. Boertje
Game Biologist II

SUBMITTED BY:

Jerry D. McGowan
Survey-Inventory Coordinator

WOLF

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 1D

GEOGRAPHICAL DESCRIPTION: Haines-Skagway

PERIOD COVERED: 1 July 1982-30 June 1983

Season and Bag Limit

See Fur Animal Hunting and Trapping Regulations No. 23.

Population Status and Trend

While never abundant, wolves were occasionally observed during the report period by local trappers and Department field staff. One pack of 5 wolves was seen along the upper Chilkat Valley, apparently feeding on wolverine kits.

Population Composition

No data available.

Mortality

Three male wolves were harvested by trapping from the Chilkat River watershed during 1982-83, 1 in December and 2 in February. Two of the 3 were pups. This harvest compares to the 5-year average of 5.4 wolves. The historical harvest from GMU 1D is as follows: 1977-78 (4); 1978-79 (11); 1979-80 (7); 1980-81 (5); and 1981-82 (0).

Management Summary and Recommendations

Wolves continue to be present in moderate numbers and afford trapping and hunting opportunities in the Haines-Skagway area. The more remote locations in the Unit undoubtedly serve as refugia from areas developed by roads, logging, and mining, and will be more important in the future. At this time no changes in seasons or bag limits are suggested.

PREPARED BY:

W. Bruce Dinneford
Game Biologist III

SUBMITTED BY:

Steven R. Peterson
Acting Management Coordinator

WOLF

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 5

GEOGRAPHICAL DESCRIPTION: Yakutat and Malaspina Forelands, Gulf of Alaska

PERIOD COVERED: 1 July 1982-30 June 1983

Season and Bag Limit

See Fur Animal Hunting and Trapping Regulations No. 23.

Population Status and Trend

General observation and hunter/trapper reports indicate no significant change in GMU 5 wolf population levels. Tracks were abundant along the beach in Subunit 5B and, to a lesser extent, along remote beaches in Subunit 5A.

Population Composition

Observations of wolves and wolf sign were made incidental to other field activities. Past estimates established a wolf population of about 50 in GMU 5A. Tracks were observed along the Situk River near Forest Highway 10 and on the beach close to Yakutat, indicating wolf numbers probably have not decreased.

Game Management Unit 5B supports about 12 wolves. Tracks were apparent along the entire coast from Yahtse River to Sudden Stream during a late spring general reconnaissance, pointing to good numbers of wolves. National Park Service staff documented a pack of 5 wolves in the western end of the subunit, apparently comprised of 3 adult and 2 sub-adult animals.

Mortality

Eleven wolves were harvested during the period from Subunit 5A; no harvest from Subunit 5B was reported. Eight of the 11 came from the Dry Bay area, 2 from Yakutat Bay, and 1 from the Ahrnklin River. The harvest was comprised of 7 males, 2 females, and 2 wolves of unknown sex. Six animals were reported as trapped, while the remaining 5 were shot. The harvest chronology was as follows: July, 2; October, 1; November, 1; December 1; January 1; March, 2; April, 2; and May, 1.

One adolescent bitch was found dead from unknown causes along the Lost River Road in late spring. No other non-harvest mortality was documented.

Management Summary and Recommendations

The known historical harvest of wolves from GMU 5 is shown in Table 1. The 1982-83 harvest of 11 wolves is approximately twice the 20-year mean of 6 and has been matched twice since 1975-76. About half of the present year's harvest was taken incidental to other hunting activities, judging by harvest chronology and means.

Current seasons and bag limits provide for opportunistic take by bear and moose hunters, and for trapping when pelts are more prime. While some interest has been displayed in intensifying trapping efforts by commercial fishermen operating in the Dry Bay area, changes in seasons and bag limits are not warranted at this time.

PREPARED BY:

W. Bruce Dinneford
Game Biologist III

SUBMITTED BY:

Steven R. Peterson
Acting Management Coordinator

Table 1. Game Management Unit 5 historical wolf harvest. Data through 1970-71 obtained from aerial permits and bounty records. Harvest data for 1971-72 and succeeding years from mandatory sealing certificates.

Year	Harvest
1963-64	1
1964-65	4
1965-66	7
1966-67	3
1967-68	6
1968-69	8
1969-70	2
1970-71	10
1971-72	2
1972-73	5
1973-74	2
1974-75	9
1975-76	11
1976-77	7
1977-78	1
1978-79	9
1979-80	11
1980-81	6
1981-82	4
1982-83	11
Mean	6

WOLF

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 7 and 15

GEOGRAPHICAL DESCRIPTION: Kenai Peninsula

Season and Bag Limit:

See Fur Animal Hunting and Trapping Regulations No. 23.

Population Status and Trend

Wolf surveys were flown in conjunction with moose composition surveys over most of the Kenai Peninsula during November 1982. Additional population data were collected in the northwestern portion of Unit 7, Subunit 15A, and the western portion of Subunit 15B during a program to control ectoparasites on wolves. Results of these surveys indicated that the size of the early winter population was 194 wolves. The average pack size of 10 wolves was unchanged from the previous year. Comparison of wolf population estimates over the past several years suggests the number of wolves on the Kenai Peninsula has remained stable.

Population Composition

Sex and age data are available for only 4 packs of wolves (Table 1) in Subunit 15A. These packs consisted of 1 pair each of adults, plus 1 to 4 additional adults and an average of 5 pups. Sex composition was 14 (39%) males and 22 (61%) females. Pack size averaged 10 wolves and ranged from 5 to 14. These data suggest a normal sex and age composition for a hunted population. Data were collected through 2 sources: 1) wolves taken by local trappers and presented to the Department for sealing; and 2) wolves captured and released during an ectoparasite infestation control program.

Mortality

Forty-seven wolves, (20 males and 27 females) were reported killed during the 1982-83 hunting and trapping seasons. Three additional animals were killed during capture. Eight (19%) wolves were taken by ground shooting; 17 (40%) by trapping; and 18 (42%) by snaring. The chronology of the harvest was as follows: August, 1; October, 1; November, 6; December, 9; January, 15; February, 6; March, 8; and April, 1. Of the 50 wolves killed this winter, 39 were classified into 19 pups and 20 adults.

Management Summary and Recommendations

The sport kill of 47 wolves indicated a 24% harvest of the early winter population estimate of 194 wolves. At this rate of harvest, the wolf population is expected to remain stable or increase slightly.

No changes in seasons or bag limits were recommended.

PREPARED BY:

Ted H. Spraker
Game Biologist III

SUBMITTED BY:

Leland P. Glenn
Survey-Inventory Coordinator

Table 1. Sex, age, pack affiliation and status of wolves in four packs in Subunit 15A during the winter of 1982-83.

Pack name	Males				Females				Est. pack size	No. of wolves handled per pack
	Adults		Pups		Adults		Pups			
	Trapped	Captured & released	Trapped	Captured & released	Trapped	Captured & released	Trapped	Captured & released		
Point Possession	0	1	1	2	2	3	3	2	14	14
Bear Lake	1	1	1	3	0	1	0	2	7	9
Elephant Lake	0	1	1	1	1	2	1	2	10	9
Swanson Lake	0	1	0	0	1	1	1	0	5	14
Totals	1	4	3	6	4	7	5	6	36	46

WOLF

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 12

GEOGRAPHICAL DESCRIPTION: Upper Tanana and White River Drainages

PERIOD COVERED: 1 July 1982-30 June 1983

Season and Bag Limit

See Fur Animal Hunting and Trapping Regulations No. 23.

Population Status and Trend

No surveys were conducted in Unit 12 south of the Alaska Highway during this reporting period, but incidental observations of wolves and wolf tracks indicated little change in wolf numbers since the last report. Wolf density is estimated to be 1 wolf/32-35 mi^2.

Population Composition

Based upon sealing documents, pups composed 18% of the harvest during the 1982-83 season compared to 36% during the previous season. Females composed 46% of the 1982-83 harvest compared to 60% in the previous season. No other indices of population composition are available.

Mortality

A harvest of 38 wolves was reported for the 1982-83 season, a 46% increase over the 26 wolves taken the previous season. Eleven wolves were taken in the control area north of the Alaska Highway. Of these, 7 were taken by Department personnel and 4 were taken by private trappers.

Harvest was well distributed with a take of 12 wolves in the Tanana River, 10 in the White, 8 in the Chisana, 6 in the Nabesna, and 1 each in the Tok and Little Tok River drainages. While harvests were sufficient to significantly reduce wolf numbers in the control area, and probably in the White River drainage as well, harvest in the remainder of the Unit most likely accounted for less than 10% of the wolf population.

Of the wolves taken, 34% and 66% were black and gray, respectively. Proportionally more grays were taken in 1982-83 than in the previous season, when only 32% of the harvest was composed of grays.

Management Summary and Recommendations

The wolf population in most of Unit 12 is of moderate to high density compared to other areas in the Interior. Two packs containing 7 and 2 wolves were eliminated in the Mansfield Creek area as a result of Department control efforts. Control efforts should continue in Unit 12 north of the Alaska Highway to allow recovery of the moose population.

For purposes of moose, caribou, and, ultimately, wolf management, wolf numbers should be reduced temporarily in Unit 12 east of the Nabesna River. Wolves should also be reduced in number in the Tok and Little Tok River drainages as a prerequisite to a planned moose population reduction. Details of the reduction may be found in the Tok River Operational Moose Management Plan.

Wolves are faring well in Unit 12. Proposed reductions in wolf numbers to effect desired changes in moose and caribou populations should be limited both in extent and duration. This will guarantee that a viable wolf population remains during the period of control. Proper wolf management can ensure availability of ungulates for human harvest and maintain an adequate future prey base for wolves.

PREPARED BY:

David G. Kelleyhouse
Game Biologist III

SUBMITTED BY:

Jerry D. McGowan
Survey-Inventory Coordinator

WOLF

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 13

GEOGRAPHICAL DESCRIPTION: Nelchina and Upper Susitna Rivers

PERIOD COVERED: 1 July 1982-30 June 1983

Season and Bag Limit

See Fur Animal Hunting and Trapping Regulations No. 23.

Population Status and Trend

The Unit 13 wolf population increased slightly during 1982-83. The spring population estimate ranged between 120-135 wolves, exceeding the spring 1982 estimate of 109 wolves. The number of packs was estimated to be between 25-30, which was comparable to the 25 packs estimated in 1982.

Population Composition

The average litter size observed was 5.5, pups with 7-10% of the study packs producing 2 litters (Ballard, in press). The sex ratio for packs observed was approximately 50:50.

Mortality

Preliminary harvest figures show 90 wolves (44 males, 44 females and 2 sex unidentified) were killed. This represents an increase of 35 wolves over last year's harvest of 54. The method of take and chronology of harvest are summarized in Table 1.

Although little information was available on natural mortality, 20% of the observed mortality in radio-collared wolves was attributed to natural causes such as starvation, accidents and intra-specific mortality (Ballard, in press).

Management Summary and Conclusions

The wolf population was higher this spring than in the past few years. Natural mortality was believed to be low, with hunting and trapping mortality controlling population size. The harvest should continue at a level sufficient to maintain a spring pre-breeding population of approximately 125 wolves.

No changes in season or bag limit were recommended.

PREPARED BY:

Robert W. Tobey
Game Biologist III

SUBMITTED BY:

Leland P. Glenn
Survey-Inventory Coordinator

Table 1. Unit 13 wolf harvest for 1982-83[a].

	Number Harvested	Percent
Method of Take		
Ground Shooting	43	48
Trapping	30	33
Snaring	8	9
Unknown	9	10
Chronology of Harvest		
August	1	1
September	4	4
October	2	2
November	17	19
December	11	12
January	12	13
February	18	20
March	18	20
April	7	8
Total wolf harvest	90	

[a] Harvest data are based on sealing data only.

WOLF

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 17

GEOGRAPHICAL DESCRIPTION: Northern Bristol Bay

PERIOD COVERED: 1 July 1982-30 June 1983

Season and Bag Limit:

See Fur Animal Hunting and Trapping Regulations No. 23.

Population Status and Trend

Reports from trappers and general observations made during moose and caribou surveys indicated that wolf populations in Subunits 17B and 17C are increasing. Populations reached high levels in 1974-77 but declined sharply by 1980. Rabies was probably a mortality factor contributing to this decline, as the incidence of reported cases in red fox was very high during the summer and fall of 1980. One rabid wolf was killed near Koliganek (Subunit 17B) in February 1981.

Ungulate populations in this area, particularly the Mulchatna caribou herd, have been increasing in recent years. Trapping conditions were poor from 1980 to 1982, and coupled with the increasing prey base, were largely responsible for the expanding wolf population.

Population Composition

No data were available.

Mortality

The wolf harvest increased dramatically during the 1982-83 season (Table 1). Eleven trappers took 41 wolves, including 25 males, 13 females and 3 of unknown sex. Of these, all but 1 were taken in Subunit 17B. The composition of kill was 29 adults, 10 pups and 2 of unknown age. The chronology of the harvest was: December, 5; January, 24; February, 7; March, 4; April, 1.

Management Summary and Recommendations

No surveys to estimate wolf numbers have ever been made in this unit. Wolf populations in adjacent Subunit 19B are considered to be very high. Aerial permits have been issued in Subunit 19B since 1979 in an attempt to reduce the size of the wolf population. Area residents reported a significantly increased number of observations of wolves during this reporting period and have expressed concern for the local moose population. Aerial surveys should be flown throughout Subunit 17B and in the Nushagak River

portion of 17C to determine wolf abundance. Surveys should be coordinated with those flown in Subunit 19B.

PREPARED BY:

Kenton P. Taylor
Game Biologist III

SUBMITTED BY:

Leland P. Glenn
Survey-Inventory Coordinator

Table 1. Unit 17 wolf harvest data[a], 1962-83.

Year	No. males	No. females	No. unknown	Total	Percent ground shot	Percent trapped or snared	Percent aerial shot
1962-63	8	7	--	15	--	--	100.0
1963-64	9	5	--	14	--	--	100.0
1964-65	1	--	--	1	100.0	--	--
1965-66	10	8	--	18	--	--	100.0
1966-67	9	16	--	25	46.2	3.8	50.0
1967-68	13	11	--	24	4.2	--	95.8
1968-69	6	8	--	14	26.7	6.7	66.7
1969-70	3	--	--	3	--	--	100.0
1970-71	5	6	--	11	--	--	100.0
1971-72	16	9	--	25	17.9	--	82.1
1972-73	10	9	--	19	70.0	20.00	10.0
1973-74	13	7	--	20	50.0	50.00	--
1974-75	56	54	--	110	93.7	6.3	--
1975-76	18	28	1	47	91.5	8.5	--
1976-77	31	12	2	45	88.9	11.1	--
1977-78	7	10	--	17	52.9	47.1	--
1978-79	13	7	--	20	85.0	5.0	--
1979-80	11	12	2	25	72.0	20.0	--
1980-81	4	3	1	8	62.5	37.5	--
1981-82	12	6	0	18	77.8	22.2	--
1982-83	25	13	3	41	48.8	26.8	--

[a] Data for 1962-69 compiled from bounty records; 1970-71 data from reported aerial wolf kills; 1972-83 data from sealing records.

WOLF

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 18

GEOGRAPHICAL DESCRIPTION: Yukon-Kuskokwim Delta

PERIOD COVERED: 1 July 1982-30 June 1983

Seasons and Bag Limits

See Fur Animal Hunting and Trapping Regulations No. 23.

Population Status and Trend

Wolf densities remain extremely low in most areas of Unit 18. Observations by department personnel and local residents indicate that the distribution of wolves generally reflects the distribution of moose; i.e., wolves are primarily confined to the eastern portion of the Unit in the upper Yukon and Kuskokwim River drainages. Although information is limited, we do not believe that wolves are common enough in the eastern portion of Unit 18 to seriously depress moose populations. Several residents of Russian Mission (a Yukon River village near the eastern border of the Unit) reported that wolves are routinely sighted upriver from their village. Wolves are only occasionally reported in the remainder of the Unit. A small wolf pack (less than 4 animals) was sighted twice on the north fork of the Andreafsky River in November 1982. We do not believe that this pack is resident to the area, however, because no evidence of its presence was observed during moose surveys conducted in December 1982 and January 1983.

No aerial surveys were conducted to specifically determine the population status and distribution of wolves in Unit 18.

Population Composition

No data were available.

Mortality

Sealing certificates indicated that 5 wolves were harvested in Unit 18 during the 1982-83 season. Three wolves were taken from Kuskokwim River drainages, 1 from the Delta area north of Bethel, and 1 from an unidentified location. According to past records, the harvest has consistently been very low, ranging from 0 to 4 wolves annually. Because wolf pelts are highly valued for the domestic manufacture of garments and parka ruffs, we believe the actual harvest is higher than that reported on sealing documents.

Reports of illegal aircraft hunting were not received this year. In the past, reports of such activities came primarily from residents of the Russian Mission--Holy Cross area. Illegal aircraft hunting of wolves is probably uncommon in Unit 18, because other units offer much better hunting opportunities.

Management Summary and Recommendations

The population density and the harvest of wolves both remain extremely low in Unit 18. Wolves are confined primarily to the eastern portion of the Unit and parallel moose in their distribution. Efforts should be continued to establish additional village sealing agents and to educate local residents about sealing requirements. Wolf surveys should be conducted in the Yukon River drainage above Russian Mission to better evaluate the impact of wolves on moose. No changes in seasons or bag limits are recommended at this time.

PREPARED BY:

Steven Machida
Game Biologist II

SUBMITTED BY:

David A. Anderson
Survey-Inventory Coordinator

WOLF

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 19

GEOGRAPHICAL DESCRIPTION: Upper and Middle Kuskokwim River Drainage

PERIOD COVERED: 1 July 1982-30 June 1983

Seasons and Bag Limits

See Fur Animal Hunting and Trapping Regulations No. 23.

Population Status and Trend

Snow conditions were unsuitable for conducting wolf surveys throughout Unit 19 most of the winter. Sightings during the year indicated that 6 wolf packs lived in the Upper Kuskokwim Controlled Use Area, and 7 packs occupied adjacent areas during winter 1982-83. Two packs totalling 21 wolves were seen several times south and west of McGrath.

Mortality

Ten hunters obtained aerial wolf hunting permits for Subunits 19A and 19B, but only 4 actually hunted. Permittees spent a total of just 6 days tracking wolves. No wolves were taken.

The reported harvest of 32 wolves (18 males and 14 females) by 16 hunters and trappers was the smallest take since the mandatory sealing requirement was initiated in 1971-72 (Table 1). The low harvest was due to the poor tracking conditions that existed during most of winter 1982-83 and to the absence of some of the more proficient local wolf hunters who directed their efforts elsewhere. Healthy wolf populations combined with suitable snow conditions and terrain made hunting in the Innoko drainage much more profitable than most areas of Unit 19.

Data in Table 1 represent corrected harvest figures for years since sealing was made mandatory. Wolf harvests in Subunit 19A since 1971 have been about half that reported for each of the other subunits. The annual take has been between 5 and 6 wolves, except for 1978-79 when 29 wolves were taken by aerial hunters. Since 1971 half of the wolf harvest in Subunit 19A reportedly came from the Aniak River drainage. In Subunit 19A trapping and snaring accounted for nearly a quarter of the wolves taken. A similar percentage was taken by trapping and snaring techniques in Subunit 19D, but only 9 and 15% of the Subunit 19B and Subunit 19C harvests, respectively, were taken by these means.

In Subunit 19B most of the harvest since 1971 (78%) has been by hunters who use aircraft to track, land, and shoot wolves. On the average, hunters in Subunit 19B have been about 1½ times more successful than hunters in other portions of Unit 19. An individual take of 10-15 wolves a year has been common. Over 70% of the harvest occurred during February and March, the months when snow conditions are usually best for tracking and shooting wolves.

Aerial shooting in Subunit 19B has been authorized since 1978, but only 1 wolf has been reported taken by aerial permittees. Although over 65% of the Subunit 19B wolf harvest has reportedly come from the upper portion of the Stony River drainage, data regarding location of kill in Subunit 19B are probably inaccurate. The entire 1982-83 Subunit harvest reportedly was taken in the upper Stony drainage. This is unlikely.

Landing and shooting wolves accounts for 75% of the harvest in Subunit 19C since 1971. The take of wolves per individual has been lower than in other subunits. Since 1971, harvests have ranged from 45 (1975-76) to 2 (1982-83). Over half of the wolves were taken from the South Fork drainage and the Farewell area.

The area near McGrath, including the Nixon and Takotna River drainages, has accounted for over half of the Subunit 19D harvest. Shooting from the ground has been the predominant method of take (68%). Twenty-five percent of the wolves were taken by trapping or snaring.

Hunters who track wolves from the air and then land to shoot have accounted for 68% of the wolves taken from the entire Unit since 1971. Sixteen percent were trapped or snared. Only 16% were taken by aerial shooting, although this practice has been allowed in Subunits 19A and 19B for 5 years and throughout the Unit for 1 year.

During the 1982-83 season only 16 hunters and trappers reported taking wolves in Unit 19--the 2nd lowest number recorded since 1971. The 12-year average is 24 hunters and trappers per year. Only 15 wolves were taken during February and March, traditionally the most productive months for wolf hunters, compared to an average of 39 wolves during those 2 months the previous 11 years.

Management Summary and Recommendations

The poor tracking conditions in Unit 19 caused the more proficient wolf hunters to divert their efforts to Subunits 21A and 21E. Wolf sightings in Subunit 19D indicated that the wolf population was at similar or higher numbers than last year.

Trapping and snaring have not been effective methods of taking wolves in Unit 19. Aerial hunting and, to a lesser extent, landing and shooting have been the more proficient methods.

PREPARED BY:

Robert E. Pegau
Game Biologist III

SUBMITTED BY:

Jerry D. McGowan
Survey-Inventory Coordinator

Table 1. Wolf harvest data for Unit 19 (based on corrected sealing certificate data and Subunit boundaries in effect during 1982-83).

	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77	1977-78	1978-79	1979-80	1980-81	1981-82	1982-83	Total
Subunit 19A													
Ground shoot	--	--	--	8	9	3	3	4	1	11	1	2	42
Trap	--	--	4	1	--	3	1	1	2	1	8	2	23
Snare	--	--	1	--	--	--	2	--	--	--	--	--	3
Aerial permit	2	--	--	--	--	--	--	29	3[a]	--	--	--	34[a]
Unknown	--	--	--	--	--	--	--	--	--	--	--	--	0
Total wolves	2	0	5	9	9	6	6	34	6[a]	12	9	4	102
# of hunters	1	0	4	2	4	4	2	6	4	2	4	4	37
Subunit 19B													
Ground shoot	6	3	12	13	9	17	24	15	1	21	12	16	149
Trap	--	1	3	--	--	--	3	3	2	--	1	--	13
Snare	--	--	--	1	--	1	--	2	--	--	--	--	4
Aerial permit	25	--	--	--	--	--	--	--	--	--	1	--	26
Unknown	--	--	--	--	--	--	7	--	--	--	--	--	7
Total wolves	31	4	15	14	9	18	34	20	3	21	14	16	199
# of hunters	10	3	7	8	3	4	7	7	2	2	5	5	63
Subunit 19C													
Ground shoot	7	7	6	16	39	22	5	11	18	6	17	2	156
Trap	2	--	4	--	6	5	--	1	2	1	3	--	24
Snare	--	--	--	1	--	2	--	2	--	1	1	--	7
Aerial permit	19	--	--	--	--	--	--	--	--	--	--	--	19
Unknown	--	--	--	--	--	--	--	--	--	--	--	--	0
Total wolves	28	7	10	17	45	29	5	14	20	8	21	2	206
# of hunters	11	7	4	8	15	13	3	9	6	4	12	1	93
Subunit 19D													
Ground shoot	19	37	12	15	21	6	6	10	3	--	3	8	140
Trap	2	8	3	1	2	8	1	1	3	4	5	2	40
Snare	--	1	--	1	1	2	1	1	--	2	1	--	10
Aerial permit	17	--	--	--	--	--	--	--	--	--	--	--	17
Unknown	--	--	--	--	--	--	--	1	5	--	--	--	6
Total wolves	38	46	15	17	24	16	8	13	11	6	9	10	213
# of hunters	20	18	6	7	9	7	6	4	6	4	6	6	99
Entire Unit													
Ground shoot	32	46	30	52	78	55	38	40	23	38	33	28	493
Trap	4	10	14	2	8	10	5	6	9	6	17	4	95
Snare	--	1	1	3	1	4	3	5	--	3	2	--	23
Aerial permit	63	--	--	--	--	--	--	29	3[a]	--	1	--	96[a]
Unknown	--	--	--	--	--	--	7	1	5[a]	--	--	--	13
Total wolves	99	57	45	57	87	69	53	81	40[a]	47	53	32	720[a]
# of hunters	42	28	21	25	31	28	18	26	18	12	27	16	292

[a] One more wolf reported on aerial permit but not sealed.

WOLF

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 20

GEOGRAPHICAL DESCRIPTION: Central Tanana Valley

PERIOD COVERED: 1 July 1982-30 June 1983

Seasons and Bag Limits

See Fur Animal Hunting and Trapping Regulations No. 23.

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 seem to be increasing in Subunit 20A as the ungulate populations increase. The wolf population may stabilize as pack and territory sizes reach levels that existed prior to wolf control.

Wolf numbers in Subunits 20B, 20D, and 20E have decreased since the previous year due to active Department control efforts. Wolf reduction efforts should continue until a ratio of 1 wolf:50 moose exists. Little information is available about wolf numbers in Subunits 20C and 20F. Although wolf density seems only moderate, wolf numbers are probably high compared to the abundance of ungulate prey.

Aerial surveys and reports from trappers indicate the following fall 1983 wolf population levels and wolf:moose ratios: Subunits 20A, 160-200 (1:36); 20B, 100-120 (1:47); 20D; 50-70 (1:47); and 20E, 70-80 (1:24). Similar data are unavailable for other Unit 20 subunits.

Population Composition

Based on sex and age composition data obtained from sealing certificates, females and pups composed 50% and 40%, respectively, of the Unit 20 harvest. Pups are taken in higher proportion than they exist in the population when harvests are by conventional methods (trapping, snaring, and shooting from the ground).

Mortality

The reported wolf mortality for the 1982-83 season was 157 wolves (Table 1), a 6% decrease from the previous year. Wolf mortality increased in Subunits 20B and 20D due to intensified control efforts, but decreased in Subunit 20A in the absence of an active Department wolf control effort. Wolf mortality decreased in Subunit 20E, primarily because a reduced number of wolves were available as a result of previous Departmental wolf reduction efforts. In areas approved for public aerial hunting, 21 permittees took 26 wolves.

Management Summary and Recommendations

Subunit 20A

Although wolf numbers have increased and may be approaching levels that existed prior to wolf control, the ungulate population continues to increase. However, moose calf and yearling survival rates are decreasing. Both wolf and ungulate numbers should be monitored closely. If wolf pack and territory sizes stabilize and the moose population continues to increase or stabilizes at a desired level, no further Department wolf control should be conducted.

Subunit 20B

A favorable wolf:moose ratio has been obtained in the Chatanika, Chena, and upper Salcha River drainages. A maintenance control operation should continue in these areas until the desired moose population level is reached. Wolf reduction efforts should focus on the western portion of Subunit 20B where the wolf:moose ratio is still about 1:19.

Subunit 20D

Wolf reduction efforts should continue in Subunit 20D until moose and caribou populations reach desired levels. Moose numbers are increasing slowly in the western portion of Subunit 20D, but are stable or possibly decreasing in the rest of the Subunit. A low caribou population exists. Aerial shooting permits should continue to be issued to the public.

Subunit 20E

Wolf reduction should be continued until desired moose and caribou populations are reached and public aerial shooting permits should be issued.

Subunits 20C and 20F

Current information needs to be gathered on wolf pack distribution, territory sizes, and wolf:moose ratios in these Subunits, so proper wolf management can be carried out in the future.

PREPARED BY:

Edward B. Crain
Game Technician III

Dale A. Haggstrom
Game Biologist II

SUBMITTED BY:

Jerry D. McGowan
Survey-Inventory Coordinator

Table 1. Unit 20 wolf harvest 1982-83.

Subunit	Sex			Age			Public aerial	Public hunt/trap	Department take	Total harvest
	Males	Females	Unknown	Adults	Pups	Unknown				
20A	8	4	--	3	6	3	4	8	--	12
20B	18	33	6	37	12	8	9	22	26	57
20C	5	2	--	4	2	1	--	7	--	7
20D	17	19	4	18	16	6	13	16	11	40
20E	23	16	--	17	15	7	--	24	15	39
20F	2	--	--	--	2	--	--	2	--	2
Totals	73	74	10	79	53	25	26	79	52	157

WOLF

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 21

GEOGRAPHICAL DESCRIPTION: Middle Yukon

PERIOD COVERED: 1 July 1982-30 June 1983

Season and Bag Limit

See Fur Animal Hunting and Trapping Regulations No. 23.

Population Status

No surveys were conducted during the report period; however, discussions with trappers suggest that the light harvest and favorable climatic conditions during winter 1981-82 resulted in an increase in wolf numbers throughout Unit 21.

Mortality

The wolf harvest during 1982-83 was well above that reported for the previous 5 years (Table 1). The harvest in 1981-82 had been the lowest since 1978 and was attributed to poor winter tracking conditions. Aerial tracking conditions were good during winter 1982-83. Seventy-seven percent of the 89 wolves for which method of take was reported were taken by landing and shooting. The reported harvest for Subunits 21A, 21B, 21C, 21D, and 21E was 43, 10, 0, 21, and 26, respectively. The harvest of 10 wolves from Subunit 21B is the 1st harvest in 3 years. Fifty males, 40 females, and 10 wolves of unknown sex were taken. The percentage of pups harvested, 32%, is a slight increase over the past several years. One brown, 30 black, and 48 gray wolves were taken.

Management Summary and Recommendations

The light harvest and favorable climatic conditions in 1981-82 resulted in higher numbers of wolves being present during 1982-83. Good aerial tracking conditions in 1982-83 produced an above normal harvest of wolves which should benefit moose populations in the Unit.

PREPARED BY:

Timothy O. Osborne
Game Biologist III

SUBMITTED BY:

Jerry D. McGowan
Survey-Inventory Coordinator

Table 1. Total wolf harvest by year in Unit 21, 1977-1983.

1977-78	1978-79	1979-80	1980-81	1981-82	1982-83
47	86	82	78	38	100

WOLF

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 22

GEOGRAPHICAL DESCRIPTION: Seward Peninsula

PERIOD COVERED: 1 July 1982-30 June 1983

Season and Bag Limit

See Fur Animal Hunting and Trapping Regulations No. 23.

Population Status and Trend

In recent years, wolves have been sighted in all major drainages on the Seward Peninsula. Wolves inhabiting the western portion of Unit 22 apparently travel alone or in small packs, whereas wolves inhabiting the central and eastern portions more commonly form packs of at least 10 animals. No specific wolf surveys or research projects were conducted during the reporting period; information on wolf densities and pack sizes is limited to the observations of biologists conducting other surveys and to conversations with residents of the unit. Unit 22 trappers do not spend much time trapping wolves; most of the take is incidental to other activities.

Wolves appear to be increasing throughout the Peninsula and are now estimated to number 100 - 150 animals. This trend is expected to continue, as a result of relatively high moose densities and increasing numbers of reindeer.

Population Composition

No information was available.

Mortality

Although no data are available, natural mortality is probably low because wolves are not numerous and prey are abundant.

The recorded harvest during the reporting period consisted of 5 wolves (3 males, 2 females). All wolves were taken in Subunit 22B: 4 from the Koyuk and 1 from the Fish River drainage. Of the 4 wolves taken with firearms, 3 were shot by hunters traveling on snowmachines and 1 was taken with the aid of an aircraft.

The demand for wolf hides, specifically for ruffs, remains high in the villages. Personal communication with village sealers indicated that few harvested wolves were actually sealed. On this basis, I estimate the unitwide annual harvest to be 15-20 wolves.

Management Summary and Recommendations

Although wolves have been reported in all major drainages of the Seward Peninsula, this year's reported harvest (5 wolves) came entirely from 2 drainages of Subunit 22B. I estimate the actual harvest to be 15-20 wolves or 3-4 times that of the recorded harvest. Most hides are made into ruffs, and most people seal only those animals which are to be tanned or otherwise sold.

Reindeer occur throughout the Peninsula, and reports of wolf depredation are common in some portions of the unit. No aerial wolf hunting permits were requested this year, and it is questionable whether a unitwide predator control program is necessary. However, future requests for aerial permits should be considered if actual predation of wolves on reindeer can be verified.

Compliance with wolf sealing requirements is low in Unit 22. Active education and enforcement programs are needed to improve compliance with sealing regulations and to increase the reliability of harvest data. Because little is currently known about local wolf habits and population dynamics, programs should be initiated to explore these questions as well as to determine the impact of wolf predation on local reindeer and moose populations.

PREPARED BY:

Robert Nelson
Game Biologist II

SUBMITTED BY:

David A. Anderson
Survey-Inventory Coordinator

WOLF

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 23

GEOGRAPHICAL DESCRIPTION: Kotzebue Sound

PERIOD COVERED: 1 July 1982-30 June 1983

Season and Bag Limit

See Fur Animal Hunting and Trapping Regulations No. 23.

Population Status and Trend

The wolf population in Unit 23 appears stable. The population increase expected to accompany the rapid growth of the Western Arctic Caribou Herd during the past 7 years has not materialized. Circumstantial evidence suggests that the population has been stabilized at a low-to-moderate level by hunting, trapping, and perhaps other mortality.

Population Composition

No reliable estimate of wolf population density was obtained during this reporting period, because unsuitable snow conditions made it impractical to conduct aerial surveys. However, observations made during an attempt to radio-collar wolves in a portion of southern Unit 23 suggested a relatively low density of wolves.

On 2-4 March we attempted to locate and radio-collar wolves in the Selawik Hills-Tagagawik River-upper Selawik River area where 40,000-60,000 caribou were wintering. During 3 days of searching the 3,000-mi^2 area, a pilot-observer team in a Super Cub was able to locate only 1 pack of wolves and 26 additional sets of tracks. No wolves were seen by an on-the-ground observer using a spotting scope on high vantage points; this technique has been used successfully in the western and central Brooks Range in the past. However, very poor snow conditions in the Selawik Hills area (where most of the caribou were located) and marginal conditions to the east limited observation success. Wolves and wolf signs probably would have been observed more often under ideal tracking conditions. Even so, fewer wolves were observed than would be expected for an area in which 1/3 of the Western Arctic Caribou Herd was wintering.

Mortality

The reported harvest consisted of 19 wolves, including 13 males and 6 females. Five were taken in the Selawik River drainage, 4 in the Kobuk, 3 in the Tagagawik, 4 in the Buckland, 2 in the

Kugururok, and 1 in the Wulik. Undocumented reports indicated that 58 additional wolves were harvested but not sealed. As in the past, it appears that the reported wolf harvest was substantially lower than the actual harvest.

If the wolf population is low and if the estimate of actual harvest is accurate, then hunting and trapping mortality may be exceeding maximum sustained yield. This conclusion is premature, however, because conclusive data are not available. It is imperative that better wolf harvest data be obtained in the future.

Management Summary and Recommendations

Aerial wolf surveys were not conducted during this reporting period. Observations made during a wolf radio-collaring project suggested a relatively low number of wolves in a portion of southern Unit 23. The reported harvest (11 wolves) was far below the estimated harvest (77 wolves).

Wolf surveys should be a high priority for the next reporting period, and the hunting and trapping public should be better educated concerning wolf sealing requirements.

PREPARED BY:

David D. James
Game Biologist II

SUBMITTED BY:

David A. Anderson
Survey-Inventory Coordinator

WOLF

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 24

GEOGRAPHICAL DESCRIPTION: Upper Koyukuk River Drainage Above Dulbi River

PERIOD COVERED: 1 July 1982-30 June 1983

Season and Bag Limit

See Fur Animal Hunting and Trapping Regulations No. 23.

Population Status and Trend

Wolf surveys were not conducted in Unit 24 during this report period, but low harvests over the past 2 seasons suggest that the wolf population is stable or increasing.

Mortality

During the 1982-83 hunting and trapping season, 42 wolves from Unit 24 were sealed. This represents an increase over the previous season harvest, but is substantially lower than annual harvests since 1977. Conditions for landing and shooting wolves were poor throughout the unit. The harvest was composed of 17 males, 22 females, and 3 wolves of unknown sex. Among wolves harvested, there were 24 gray pelts, 12 black pelts, and 1 brown pelt. Pups composed 45% of the 31 known-age wolves taken. This is considered normal although it marks a sharp increase over the 14% pups in the 1981-82 harvest. Where method of take was known, landing and shooting accounted for only 48% of the wolves harvested.

Management Summary and Recommendations

Lack of surveys has hampered efforts to manage wolves in Unit 24. Surveys should be conducted to determine status and trend in specific areas. The low harvest should allow the population to stabilize or increase.

PREPARED BY:

Timothy O. Osborne
Game Biologist III

SUBMITTED BY:

Jerry D. McGowan
Survey-Inventory Coordinator

WOLF

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 25

GEOGRAPHICAL DESCRIPTION: Yukon Flats; Chandalar, Porcupine, and Black Rivers; Birch and Beaver Creeks

PERIOD COVERED: 1 July 1982-30 June 1983

Season and Bag Limit

See Fur Animal Hunting and Trapping Regulations No. 23.

Population Status and Trend

The western half of Subunit 25D was the only portion of Unit 25 where a systematic wolf survey was conducted. Tracks of 8 packs comprising an estimated 40 animals were observed during an aerial survey during 5-8 April 1983. Only 6 wolves were actually seen during the 42 hours of flying. Snow conditions were marginal and underestimation of the number of wolf packs was likely. In addition, 10-15% of the wolf population is normally composed of singles which go undetected under most survey conditions. Thus a minimum of 50-60 wolves are believed to inhabit the area.

Overall, wolf density in western Subunit 25D appears low (1 wolf/110-138 mi^2); however, when wolf distribution is compared to the distribution of moose, their major prey, it appears that locally the wolf:moose ratio may be quite high. Additional surveys are planned to more accurately assess the distribution and abundance of both wolves and moose.

Wolf populations in the remainder of Unit 25 are probably higher than those occurring in the survey area, based on incidental observations and responses to Departmental questionnaires to trappers.

Mortality

Sealing records provide the only available mortality information. Totals from records filed in the area office indicate that 59 wolves were taken during the 1982-83 season (Table 1). Most were taken in Subunits 25B and 25D. Comparisons between current and last year's harvests revealed several changes. The total Unit take declined by 5 animals, with every Subunit except 25D decreasing. The largest decrease was 11 in Subunit 25A. Harvest in Subunit 25D increased by 12 animals.

A harvest of 9 wolves was reported from the western half of Subunit 25D. Thus, present trapping efforts removed only 15-18% of the estimated population, which probably is insufficient to

limit wolf numbers. Generally, exploitation rates of greater than 30% are required to attain a population control.

Most wolves taken were adult males. The most common colors were gray (23) and black (21). Trapping was the most common harvest method (33), followed by snaring (20), and by ground shooting (5).

Management Summary and Recommendations

Wolves appear to be abundant over most of Unit 25. The exception is western Subunit 25D, where density is low. No information is available on population trend, and harvest appears to be lower than last year for most of the unit.

Moose are the primary prey for wolves in western Subunit 25D because few other big game animals occupy the area. Preliminary attempts to assess wolf and moose distribution and abundance indicate that there are probably fewer than 30 moose/wolf. Studies of moose:wolf relationships elsewhere in interior Alaska have indicated that at 20-30 moose/wolf, predation can be the primary factor controlling numbers of moose. Therefore, wolves are probably overutilizing their prey, given present human harvest which occurs in the area. Moose numbers should be increased to benefit both wolves and humans. Management efforts to accomplish this increase will require reductions in both wolf predation and the human take of moose. The harvest of wolves by conventional trapping methods is insufficient to effect a wolf decline; therefore, other methods to temporarily reduce wolves will be a necessary part of any moose rehabilitation plan.

A wolf survey in western Subunit 25D should be repeated under better tracking conditions during winter 1983-84 to improve the wolf population estimate and to determine the number of wolves that must be removed to allow recovery of the moose population. Current studies of moose movements and density will be continued, to allow an improved assessment of wolf-moose relationships. A wolf reduction program should be tentatively scheduled for winter 1984-85. Wolf surveys should also be extended to portions of eastern Subunit 25D.

PREPARED BY:

Roy A. Nowlin
Game Biologist III

SUBMITTED BY:

Jerry D. McGowan
Survey-Inventory Coordinator

Table 1. Unit 25 wolf harvest sex and age composition, 1982-83.

	Sex			Age			
Subunit	Male	Female	Unknown	Adult	Pup	Unknown	Total
25A	3	6	0	6	3	0	9
25B	9	11	0	11	6	3	20
25C	4	4	0	4	4	0	8
25D (west)	4	4	1	7	2	0	9
25D (east)	10	3	0	1	0	12	13
Totals	30	28	1	29	15	15	59

WOLF

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 26A

GEOGRAPHICAL DESCRIPTION: Arctic Slope west of the Itkillik River

PERIOD COVERED: 1 July 1982-30 June 1983

Season and Bag Limit

See Fur Animal Hunting and Trapping Regulations No. 23.

Population Status and Trend

Wolf numbers continue to be low on the western North Slope. The most recent population estimate is that of James (1982), placing the Subunit 26A population at 144-310 wolves during the winter of 1981-82. No wolf surveys were done during the present reporting period. No wolves were observed by the Barrow area biologist on flights in the subunit between March and September 1983. Although part of the Western Arctic Caribou Herd wintered in the vicinity of the Chandler and Anaktuvuk Rivers in 1982-83, no kill sites, ravens, or wolf tracks were noted by department biologists. Nor were any wolves observed on the Utukok River calving grounds in June 1983 (Anderson and James 1983).

Population Composition

Sealing certificates indicate a reported harvest of only 7 wolves (3 females and 4 males). All of these animals were killed by Anaktuvuk Pass residents in the vicinity of Chandler Lake. The reported harvest is insufficient for estimating the composition of the Subunit 26A wolf population.

Mortality

The total 1982-83 reported harvest in Subunit 26A was 7 wolves, all trapped or shot by residents of Anaktuvuk Pass. By comparison, 21 wolves were sealed during the 1981-82 reporting period, all but one of which were killed by people living outside the subunit.

This decline in reported harvest and shift in hunter residency can be explained by a recent regulatory change. The present reporting period is the first time that landing and shooting wolves has been illegal under 5AAC 84.060 (9) (p. 13 of the 1982-83 Alaska Trapping Regulations). It would thus appear that wolf hunters and trappers using aircraft either are no longer

hunting in Subunit 26A or are no longer reporting their harvest as taken from the subunit. Whether aircraft-assisted harvest of wolves has actually been eliminated from Subunit 26A cannot be determined at this time. Wolves killed in Subunit 26A may simply be reported now as taken in units where landing and shooting is still allowed.

The total harvest of wolves in Subunit 26A cannot be accurately estimated at this time, because wolf sealing is actively being done in only 1 of the 6 communities in or near the subunit, namely Anaktuvuk Pass. It is also not possible at this time to estimate the amount of "same day airborne" wolf hunting that may actually be continuing in the subunit.

We do know that residents of Point Lay and visiting hunters from Wainwright killed at least 8-10 wolves in the western end of Subunit 26A. None of these animals was sealed. The total known harvest is therefore 15-17 wolves, which is certainly an underestimate of the actual harvest.

No estimate of natural mortality is available at this time.

Management Summary and Recommendations

The present level of knowledge about wolves in Subunit 26A is unsatisfactory for management purposes, and reflects the absence, until recently, of a permanent departmental presence on the North Slope. Active sealing and wolf harvest estimation efforts will be undertaken in 1983-84 in all communities in Subunit 26A. I will also gather existing information from individuals and agencies in order to assess the need for a documented research project on wolf population dynamics.

No changes in wolf seasons or bag limits are recommended at this time. Wolf numbers are apparently low, local demand for pelts is high, and the impact of snowmachine hunting on North Slope wolf populations is unknown. Elimination of the land-and-shoot practice in Unit 26 is thus seen as a desirable stopgap measure until we obtain a more focused picture of the status of wolves in Subunit 26A.

If the Western Arctic Caribou Herd continues to grow, associated wolf populations may be expected to do likewise.

R. Boertje (pers. commun.) and other Region III biologists have begun to detect increases in wolf abundance on the central and eastern North Slope where caribou populations are also continuing to grow. If we anticipate a period of more active wolf management in the future in Subunit 26A, wolf data gathering and data assimilation must begin now.

Literature Cited

Anderson, D. A., and D. D. James. 1983. Caribou survey-inventory progress report. Pages 41-48 in R.A. Hinman, ed. Annual Report of Survey-Inventory Activities. Alaska Dep. Fish and Game. Fed. Aid in Wildl. Rest. Part II, Vol. XIII. Proj. W-22-1, Job 3.0. Juneau. 55pp.

James, D. D. In press. Wolf survey-inventory progress report. A. Seward, ed. Annual Report of Survey-Inventory Activities. Alaska Dep. Fish and Game. Fed. Aid in Wildl. Rest. Part VII, Vol. XIV. Proj. W-22-2, Job 7.0, 14.0, and 15.0. Juneau.

PREPARED BY:

John N. Trent
Game Biologist III

SUBMITTED BY:

David A. Anderson
Survey-Inventory Coordinator

WOLF

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNITS: 26B and 26C

GEOGRAPHICAL DESCRIPTION: Arctic Slope east of Nanushuk River drainage and east bank of Colville River

PERIOD COVERED: 1 July 1982-30 June 1983

Season and Bag Limit

See Fur Animal Hunting and Trapping Regulations No. 23.

Population Status and Trend

Although no wolf population surveys were conducted in Unit 26 during the 1982-83 regulatory year, observations by pilots and Department and U.S. Fish and Wildlife Service biologists suggest that 40-80 wolves occupy Subunits 26B and 26C. Wolf packs have been observed in the upper Sagavanirktok, Canning, Hulahula, and Kongakut drainages in recent years, and single wolves have been observed along the Jago and Aichilik Rivers and the Arctic coast. It is possible that additional packs occur in the upper Itkillik, Ivishak, Kavik, and/or Sadlerochit drainages. Wolves are rare on the Arctic coastal plain.

Slight increases in wolf numbers have likely occurred in Subunits 26B and 26C since the period 1976-78 when high wolf harvests were reported. However, wolves have not increased in proportion to the recent dramatic increases in the arctic caribou herds. The wolf population will probably continue to increase as caribou numbers increase. To eliminate the highly effective tracking, landing, and shooting of wolves, the regulation (July 1982) prohibiting same-day-airborne hunting should be enforced. This, in turn, would allow wolf numbers to increase.

Mortality

Seven wolves were known killed in Subunits 26B and 26C during this reporting period. Of these, 2 were presented for sealing; both were shot by hunters residing outside Unit 26. Approximately 5 wolves were trapped by Kaktovik resident(s) in the Arctic National Wildlife Refuge but were not sealed.

Previous harvest figures for the area now defined as Subunit 26B and 26C are as follows: 15 wolves sealed in 1981-82; 7 in 1979-80; 3 in 1978-79; 22 in 1977-78; 20 in 1976-77; 3 in 1974-75; 3 in 1973-74; and in 8 1972-73. An additional 7 wolves were known to have died from rabies in 1977-78.

Although rabies infected the coastal arctic fox population near Kaktovik during winter 1981-82 and dramatic declines in fox numbers occurred during summer 1982, the wolf population was not obviously affected.

Management Summary and Recommendations

If present regulations prohibiting same-day-airborne hunting of wolves in Unit 26 are complied with, the wolf population will likely increase in the near future. Caribou populations are increasing dramatically and sheep and moose populations appear stable. Expanding oil exploration in Subunit 26C should not seriously affect wolf populations there, because hunting and trapping by exploration personnel are prohibited during assignments within the Arctic National Wildlife Refuge.

A high demand exists among Unit residents for wolf fur for ruffs and parka trim. The harvest of wolves by local residents is not sufficient to meet this demand at present wolf densities. The high numbers of caribou in this area suggest that higher wolf numbers could be accommodated without detrimental impact on either the caribou or the hunting success of people relying on caribou for meat. The short-term management objective should be to increase wolf numbers to a level that more adequately balances the high local demand for wolf pelts with lesser concerns about predation levels on area ungulate populations.

No changes in seasons or bag limits are recommended.

PREPARED BY:

Rodney D. Boertje
Game Biologist II

SUBMITTED BY:

Jerry D. McGowan
Survey-Inventory Coordinator

WOLVERINE

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 9

GEOGRAPHICAL DESCRIPTION: Alaska Peninsula

PERIOD COVERED: 1 July 1982-30 June 1983

Season and Bag Limit:

See Fur Animal Hunting and Trapping Regulations No. 23.

Population Status and Trend

No data were available.

Population Composition

No data were available.

Mortality

Sixty-eight wolverines (39 males, 28 females and 1 of undetermined sex) were reported killed during the 1982-1983 season. The harvest was consistent with the previous 10-year mean annual harvest of 73 wolverines (Table 1). Trappers took 72% of the harvest (49 animals) and 25% (17 animals) were taken by shooting. The chronology of harvest is presented in Table 2. Only 2 wolverines were reported taken by hunters prior to the opening of the trapping season.

As in previous years, the greatest proportion of the reported harvest (65%) was taken in Subunit 9E and males were taken more often than females. Presented in Table 3 are the sex composition data for the harvest by subunit.

Management Summary and Recommendations

Without quantitative information on the population status, it is impossible to draw definite conclusions as to effects of the current level of harvest. The long term stability of harvest suggests a stable population level, but a low male:female ratio (1.4 males:1 female) in the 1982-83 harvest may indicate increased exploitation of a reduced population.

Annual fluctuations in the sex ratio of the male:female harvest have occurred, with low ratios often followed by high ratios; therefore, based on available information, no changes in season or bag limit are recommended.

PREPARED BY:

Mark E. McNay
Game Biologist II

SUBMITTED BY:

Leland P. Glenn
Survey-Inventory Coordinator

Table 1. Unit 9 wolverine harvest by year and sex, showing the ratio of males to females and the total kill, 1972-1983.

Year	Males	Females	Sex unknown	Males: females	Total kill
1972-73	42	22	7	1.9	71
1973-74	54	33	2	1.6	89
1974-75	48	18	6	2.7	72
1975-76	49	27	39	1.8	115
1976-77	32	13	1	2.5	46
1977-78	43	23	20	1.9	86
1978-79	46	22	11	2.1	79
1979-80	38	25	1	1.5	64
1980-81	26	11	2	2.4	39
1981-82	42	20	10	2.1	72
1982-83	39	28	1	1.4	68

Table 2. Unit 9 wolverine harvest chronology, 1982-1983.

Month	Number	Percent
September	0	0
October	2	3
November	0	0
December	8	12
January	16	23
February	31	46
March	10	15
Unknown Date	1	1
Total	88	100

Table 3. Sex composition of Unit 9 wolverine harvest by Subunit 1982-1983.

Subunit	Males	Females	Unknown sex	% of total
9A	0	0	0	0
9B	5	3	0	12
9C	7	5	1	19
9D	2	1	0	4
9E	25	19	0	65
Total	39	28	1	100

WOLVERINE

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 13

GEOGRAPHICAL DESCRIPTION: Nelchina Basin

PERIOD COVERED: 1 July 1982-30 June 1983

Season and Bag Limit:

See Fur Animal Hunting and Trapping Regulations No. 23.

Population Status and Trend

Density estimates for wolverines in the upper Susitna River area averaged 1 wolverine/209 km^2 (Whitman 1983). No unitwide population data were available.

Population Composition

Ninety-seven wolverine carcasses were examined in conjunction with the Susitna hydroelectric research project (Whitman 1983). The sex composition was 49 males, 44 females and 1 sex unknown. Juveniles comprised 40% of the total number of carcasses examined.

Mortality

Preliminary sealing records indicated 98 wolverines (44 males, 47 females, and 7 sex unknown) were taken during the 1982-83 season. The harvest is summarized by chronology and method of take in Table 1.

Management Summary and Recommendations

Wolverine harvests have increased over the past 4 years and are now similar to the high levels reported during the early 1970's. Research data for the upper Susitna Basin suggest that harvest levels have not caused an unbalanced sex ratio, and that reproduction and recruitment into the population is occurring. It was not known, however, if this situation existed unit-wide and if the annual recruitment was sufficient to maintain continued high harvests as reported this year.

This year's harvest may be a result of increased hunting/trapping pressure in conjunction with favorable weather conditions and may not indicate a population increase.

No changes in season dates or bag limits are recommended.

Literature Cited

Whitman, J. S. and W. B. Ballard. 1983. Susitna Hydroelectric Project. Phase II Progress Report. Volume VII - Wolverine. Alaska Department of Fish and Game. 25 pp.

PREPARED BY:

James W. Lieb
Game Biologist II

SUBMITTED BY:

Leland P. Glenn
Survey-Inventory Coordinator

Table 1. Unit 13 wolverine harvest for 1982-83[a].

Method of take	No. harvested	%
Ground Shooting	24	25
Trapping	72	73
Snare	1	1
Other	1	1
Chronology of harvest		
September	3	3
October	1	1
November	9	9
December	19	19
January	12	12
February	35	36
March	19	19
Total	98	

[a] Harvest data are based on sealing data only.

WOLVERINE

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 16

GEOGRAPHICAL DESCRIPTION: West Side of Cook Inlet

PERIOD COVERED: 1 July 1982-30 June 1983

Season and Bag Limit

See Fur Animal Hunting and Trapping Regulations No. 23.

Mortality

Twenty-six wolverines (13 males, 11 females, and 2 of unknown sex) were reported killed. Fourteen were taken by trapping, and 12 were taken by ground shooting. Most of the harvest (19 wolverines) occurred during the months of January and February.

Management Summary and Recommendations

For the past 3 years, the wolverine harvest has been well below the 1971-1981 average of 55. Mild winters throughout much of the unit have restricted trapper mobility and efficiency, and recent harvest levels are not indicative of the population status.

No change in seasons or bag limits are recommended.

PREPARED BY:

James B. Faro
Game Biologist III

SUBMITTED BY:

Leland P. Glenn
Survey-Inventory Coordinator

WOLVERINE

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 17

GEOGRAPHICAL DESCRIPTION: Northern Bristol Bay

PERIOD COVERED: 1 July 1982-30 June 1983

Season and Bag Limit:

See Fur Animal Hunting and Trapping Regulations No. 23.

Population Status and Trend

Observations of wolverine tracks and reports from trappers indicate the wolverine population has remained relatively stable for the past 5 years. Wolverine densities in the Wood-Tikchik drainages are reportedly lower than they were prior to the 1970's.

Population Composition

No data were available.

Mortality

The reported take of 52 wolverines (34 males, 17 females, and 1 of unknown sex) was higher than the preceding 11-year average of 44 (Table 1). Of these 52 wolverines, 1 was taken in Subunit 17A, 43 were taken in Subunit 17B, and 8 were taken in Subunit 17C. Unlike most previous years, the majority (51.9%) were taken by ground shooting. The chronology of harvest was as follows: 2 in October, 4 in November, 13 in December, 5 in January, 15 in February, 5 in March, and 8 in April during the closed season.

Management Summary and Recommendations

The wolverine harvest in Unit 17 has remained relatively constant since the 1975-76 season (range 38-53). Uniform annual harvests, however, are not necessarily indicative of a stable population, since hunting and trapping pressure during this time period appears to have increased.

The statewide harvest generally consisted of a greater percentage of males than females. Males have larger home ranges than females and therefore are more vulnerable to hunting and trapping. In all but 3 of the past 12 years the harvests in Unit

17 contained 2 times as many males as females. As long as the sex ratios in the harvest remain skewed towards a preponderance of males, the wolverine population is probably not being over-harvested.

More information on population size and rate of turnover will be required before precise management practices can be implemented.

PREPARED BY:

Kenton P. Taylor
Game Biologist III

SUBMITTED BY:

Leland P. Glenn
Survey-Inventory Coordinator

Table 1. Unit 17 wolverine harvest data from 1962 through 1983[a].

Year	No. of males	No. of females	No. of unknown	Total	Percent ground shot	Percent trapped/ snared
1962-63	--	--	--	8	--	--
1963-64	--	--	--	70	--	--
1964-65	--	--	--	7	--	--
1965-66	--	--	--	27	--	--
1966-67	--	--	--	31	--	--
1967-68	--	--	--	35	--	--
1968-69	--	--	--	24	--	--
1969-70	ND	ND	ND	ND	ND	ND
1970-71	ND	ND	ND	ND	ND	ND
1971-72	10	5	6	21	0.0	100.0
1972-73	27	18	--	45	4.4	91.1
1973-74	14	7	1	22	4.5	90.9
1974-75	50	25	3	78	39.7	59.1
1975-76	37	12	2	51	49.0	43.1
1976-77	37	15	1	53	52.8	45.3
1977-78	32	14	3	49	12.3	85.7
1978-79	26	14	3	43	30.2	60.4
1979-80	28	19	--	47	--	--
1980-81	30	10	--	40	--	--
1981-82	28	10	--	38	--	--
1982-83	34	17	1	52	51.9	42.3

[a] Data for 1962-1969 obtained from bounty records; 1971-1983 data from sealing records.