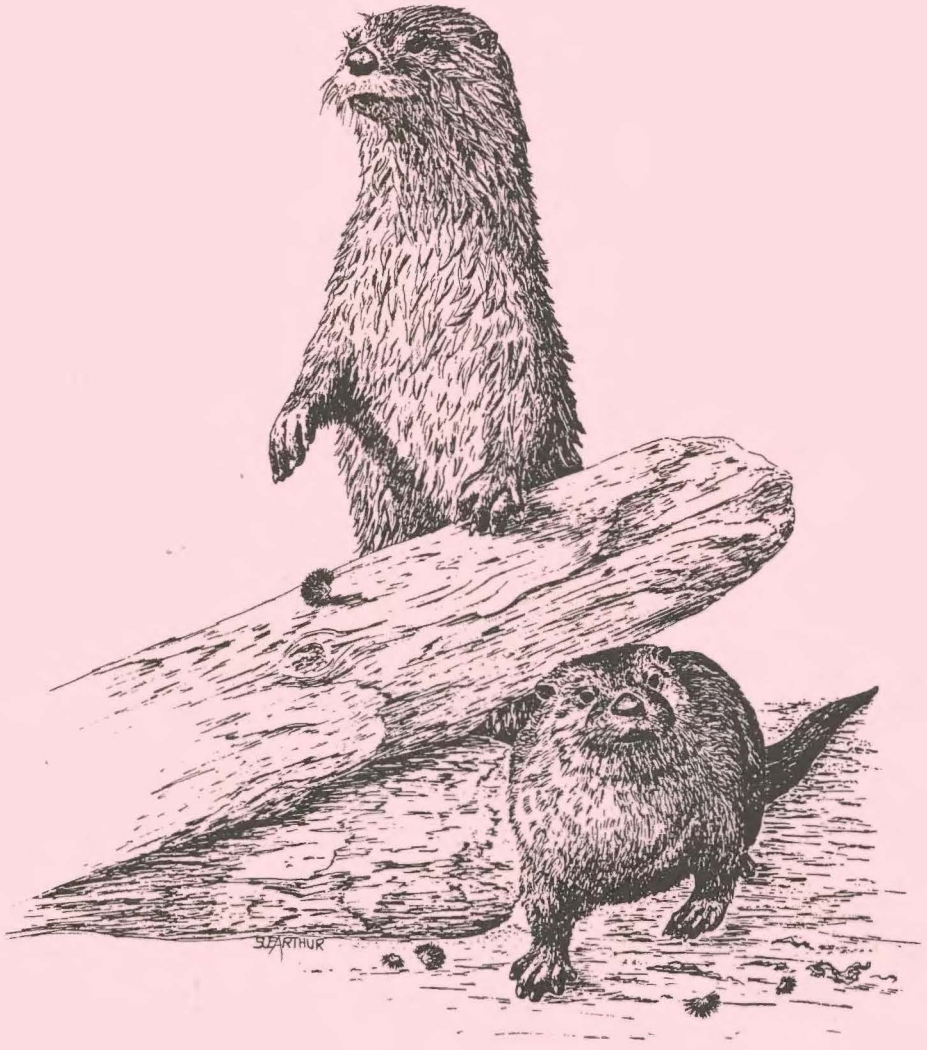
Alaska Department of Fish and Game
Division of Game
Federal Aid in Wildlife Restoration
Annual Report of Survey—Inventory Activities

FURBEARERS



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STATEWIDE HARVEST SUMMARY

In Alaska, 20 species of mammals are classified as furbearers by the Board of Game; however, only 13 of these species are normally harvested for entry into the fur trade. No harvest information is gathered for the arctic ground squirrel, flying squirrel, Alaskan marmot, hoary marmot, least weasel, or raccoon. The sea otter, which is also classified as a furbearer, is under federal management, and general hunting or trapping for that species are not allowed.

Estimates of Alaska's annual statewide furbearer harvests are derived from 3 sources: (1) furbearer sealing certificates, (2) fur export reports, and (3) reports of acquisition of furs. Since furs kept for personal use often are not reported, actual harvests exceed those estimated from these data sources. Of the 3 sources, pelt sealing gives us the most accurate and complete information. Five species (beaver, lynx, otter, wolf, and wolverine) must be sealed statewide, and marten must be sealed in southeast Alaska (Game Management Units 1-5). However, sealing data underestimate harvest in some areas of Alaska, especially in rural areas lacking a Department office or sealing agent. Rural people commonly home-dress and utilize beaver, wolf, and wolverine without bothering to get them sealed.

The number of animals sealed for each game management unit is presented in Table 1. The numbers in this table may not agree with the numbers reported for specific game management units in the unit reports that follow this summary. There are several reasons why a difference might occur: (1) pelts may have been sealed late, (2) certificates may have arrived late, (3) the GMU/subunit designation may have been incorrect for the specific location of harvest shown, then corrected at a later date, etc.

The total number of animals sealed statewide in 1985-86 (16,415) was 37% higher than the total number sealed in 1984-85 (11,966). This increase can be attributed to the increase in the number of beavers that were sealed. While the number of beavers sealed in 1985-86 rose 68%, the number of lynx, land otters, wolves and wolverines sealed declined by 12%, 23%, 35%, and 17%, respectively, from that in 1984-85. A slight increase in the price paid for beaver pelts and a decline in the economy were contributing factors to this substantial increase in beaver harvest.

Seasonal sealing data for wolves are presented in a separate survey-inventory activities report. Data from fur-export and acquisition-of-furs reports are summarized in Table 2. Compared with the previous season, these data show marked declines of dealer acquisitions and trapper exports for 7 species (coyote, mink, otter, red fox, white fox, wolf, and wolverine) and slight declines in dealer acquisitions for lynx and marten; however, trapper exports for these two species were down substantially: -81% and -71%, respectively. Although reports of dealer acquisitions of muskrats were 208% greater in 1985-86 than in 1984-85, reported trapper exports declined 87%, resulting in an estimated increase in the 1985-86 harvest over that in 1984-85. The beaver harvest showed a somewhat similar but less-dramatic pattern. Dealer acquisitions were up 58%, but trapper exports were down 75%; however, as noted above, the number of beavers sealed increased substantially.

The contrasting indications of dealer acquisitions and trapper exports are not easily explained, but these factors provide a challenge to managers attempting to use these data for estimating harvests. This is especially so for species we do not seal, because these data are all we have for unsealed species.

In 1984-85 the number of pelts reported purchased by dealers exceeded the number of pelts reported exported by dealers for all 13 species. The ratio of dealer acquisitions over dealer exports ranged from a low of 1.7:1 (weasel) to a high of 5.0:1 (wolverine); the overall mean was 2.9:1. In 1985-86 dealer acquisitions were less than dealer exports for all species but one (muskrat). The ratio of dealer acquisition to dealer export ranged from a low of 0.2:1 (red squirrel) to a high of slightly less than 1:1 (mink). The exception was muskrat; that ratio (2.8:1) was identical to the one in 1984-85.

From 1980-81 to 1984-85 there has been an increasing trend in the number of cases (=species) where reported dealer purchases have exceeded reported dealer exports; in 1985-86 this trend was abruptly reversed. Unfortunately, we lack the information needed to understand why this occurred.

As a general rule, one could expect the ratio of dealer acquisitions to dealer exports to be approximately 1:1, indicating dealers exported in the same season what they purchased from Alaska. If the ratio is greater than 1:1, this could indicate dealers have been holding furs over to another season or that they have found intrastate markets. If the ratio is less than 1:1, it could indicate that dealers have been exporting pelts acquired during more than 1 season or they have not been reporting all of their purchases. Without

more information, it is not possible to distinguish among the alternative explanations.

Statewide beaver populations continue to remain relatively high, even though the harvest has increased substantially. Coyotes appear to be increasing in some areas, especially in the east-central Interior region. Low pelt prices tend to discourage trappers from making sets to catch coyotes. Lynx populations are generally low throughout most of the state, but increases in snowshoe hares and signs of kittens in a few areas indicate the populations in these areas have the potential for increasing. Wolverine harvests show a declining trend in southcentral Alaska, and this could indicate a decline in population, a decline in trapper effort, or both. Because lynx populations are low, some trappers have reduced the number or temporarily eliminated the use of cubby sets for large carnivores. An overall reduction in the number of these sets could result in lower harvests of species, such as wolverine, that are commonly caught in them. However, we lack the data necessary to evaluate this possibility. No marked changes appear to be taking place in populations of other species.

Herbert R. Melchior
Statewide Furbearer Coordinator

Table 1. Number of beaver, lynx, otter (land), and wolverine sealed statewide during the 1985-86 regulatory year.

Unit	Species			
	Beaver	Lynx	Otter	Wolverine
1	81	1	121	14
2	378	--	141	--
3	64	--	51	5
4	4	--	141	--
5	6	2	3	--
6	61	2	51	6
7	57	14	13	8
8	241	--	250	--
9	368	45	67	34
10	--	--	--	--
11	56	22	4	10
12	6	73	2	23
13	199	23	29	33
14	468	8	38	17
15	184	47	53	5
16	444	2	41	13
17	1,457	8	106	26
18	2,409	13	206	3
19	1,536	33	76	40
20	1,830	251	52	68
21	1,814	166	53	58
22	--	23	10	38
23	34	41	5	36
24	667	203	13	38
25	479	513	15	45
26	--	5	--	16
Totals	12,843	1,495	1,541	536

Table 2. Reported fur dealer acquisitions, dealer exports, trapper exports, and number sealed for 13 species of furbearers, 1985-86.

Species	(1) Dealer Acquisitions	(2) Dealer Exports	(3) Trapper Exports	(4) Total Exports	(5) Col. (1) + Col. (3)	(6) Number Sealed
Beaver	7,876	9,709	1,789	11,498	9,665	12,843
Coyote	118	317	64	381	182	
Lynx	1,046	1,134	215	1,349	1,261	1,495
Marten	17,169	18,557	5,830	24,387	22,999	
Mink	4,110	4,116	1,460	5,576	5,570	
Muskrat	18,102	6,827	1,084	7,911	19,186	
Otter (land)	411	702	613	1,315	1,024	1,541
Red fox[a]	2,241	2,870	1,484	4,354	3,725	
Red squirrel	413	2,413	60	2,473	473	
Weasel (Ermine)	122	140	146	286	268	
White (Arctic) fox[b]	120	265	70	335	190	
Wolf	71	282	138	420	209	673
Wolverine	150	292	85	377	235	536
Totals	51,949	47,624	13,038	60,662	64,987	17,088

[a] Includes cross and silver fox.
[b] Includes blue fox.

FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNITS: 1A AND 2

GEOGRAPHIC DESCRIPTION: Ketchikan and Prince of Wales Island

PERIOD COVERED: 1 July 1985-30 June 1986

Season and Bag Limit

See Trapping Regulations No. 26 and Hunting Regulations No. 26.

Beaver

Beaver populations are probably increasing as colonies begin to use new habitat created by clearcut logging. Populations will probably continue to increase until the forest canopy closes in the cut-over areas, eliminating the understory vegetation. Trapping pressure is light in areas with poor access, but the trapping effort has been increasing along the road system in Unit 2. In Subunit 1A, 5 trappers took 20 beavers; 1 trapper accounted for 70% of the harvest. In Unit 2, 21 trappers took 292 beavers; 1 trapper was responsible for 41% of the harvest. If fur prices increase in the future, some overharvesting may occur, particularly in areas with good access. No changes in season or bag limit are recommended at this time.

Marten

Based on discussions with trappers, marten and mink populations are apparently holding at moderate-to-high levels. Generally, populations in accessible areas are lower because of concentrated trapping pressure there. Marten have been more affected than mink by increased trapping pressure because of their relatively higher pelt prices and ease of trapping.

In 1985-86 the sealing of marten pelts was required in Units 1-5 for the 2nd consecutive year. In Subunit 1A, 10 trappers took 156 marten (37% females); 4 trappers took 68% of the harvest. The harvest was 23% lower than last year. Most of the trappers have used the same areas during the past few years. Almost the entire harvest came from saltwater beach sites. The harvest in Unit 2 was 571 marten (56% males) taken by 38 trappers. The harvest was 45% lower than last year.

Six trappers took 46% of the marten harvest, averaging 44 marten each. The largest single harvest was 65 marten. About 58% of the trappers in Unit 2 used the logging-road system; they took slightly over 43% of the catch. The cause of the decrease in the marten harvest appears to be less trapper effort, which may have been caused by more snow last year. No changes in season or bag limit are recommended at this time.

Otter

Otter populations are probably still below levels observed during the early 1970's, but they are currently increasing. Lower pelt prices have reduced trapping pressure recently. In Subunit 1A, the otter harvest was 70 (71% males) taken by 11 trappers; 57% of the harvest was made by 3 trappers. The harvest was 8% higher than in 1984-85; 2 fewer trappers participated. In Unit 2, the otter harvest was 141 (59% males) taken by 24 trappers. Sixty-five percent of the harvest were taken by 4 trappers; their average harvest was 23 otters. The harvest was 27% lower than that for the previous season. No changes in seasons or bag limits are recommended.

Wolverine

The status of wolverines is unknown. These animals occur only on the mainland portions of Subunit 1A. Wolverines are seldom taken by trappers, especially during mild winters when beach areas are avoided. During 1985-86, no wolverines were taken. No changes in season or bag limit are recommended.

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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 1985-30 June 1986

Season and Bag Limit

See Trapping Regulations No. 26 and Hunting Regulations No. 26.

Beaver

Beaver populations and trapping effort have been increasing in both units. Sealing records indicate 62 beavers were taken in Unit 3: a 19% increase over the previous year's harvest. The harvest of beaver in Unit 1B at 37, representing an increase of 33 over that of the previous year, was probably due to anticipation of higher prices. Some trappers still seek beaver for use as wolf bait. No changes in season or bag limit are recommended.

Marten

Marten populations continue to be good in most areas and are highly sought by trappers. Although the sealing program aids us in determining the sex composition and size of the harvest, the catch may not reflect true sex ratios in the population because trapping may be sex selective. In Unit 1B, 83 marten were trapped; 58% (n = 48) were males (Table 1). The catch was 55% lower than last season. In Unit 3, 67 marten were taken; males composed 52% (n = 35) of the catch. All marten were taken by trapping.

The sealing records for marten show 150 marten were trapped in Units 1B and 3, compared with the 435 reported last season. The catch was only one-third of that of the previous season. This decrease may be the result of normal fluctuations in the trapper effort or a decline in the population.

The marten-sealing program should be continued to provide the baseline data needed to establish trapping and population trends. No changes in season or bag limit are recommended.

Otter

Otter populations continue to be good in most areas; these animals remain one of the species most sought by trappers.

In Unit 1B, 8 otters were harvested, compared with 15 last year; males composed 50% of the harvest (Table 2). Most of the otters were taken by trapping (Table 3). In Unit 3, the otter take decreased from 141 in 1984-85 to 51 in 1985-86; 59% were males. Sealing records reveal the sex composition and size of the otter harvest, but they may not reflect true sex ratios because trapping may be sex selective. No changes in season or bag limit are recommended.

Other Species

No systematic data were collected during the period, other than those obtained through hide sealing. Raccoons are not known to exist in Game Management Units 1B and 3. While red fox have not been known to exist, except as fur farm animals in Game Management Units 1B and 3, a single fox was trapped on Mitkof Island during the season. It is possible that this was a wandering animal from the interior of British Columbia that found its way down the Stikine River ice to Mitkof Island. Lynx and coyotes may occur in major drainages of Unit 1B, but none were trapped or reported during the period. Muskrats are found in low numbers throughout Units 1B and 3. Marmots are not trapped, but they are found in mainland alpine areas and on a few of the larger islands. Squirrels and weasels occur in both units and are taken incidental to mink and marten trapping. Mink are common in Units 1B and 3, but sealing is not required. The continuing low prices provides little incentive for harvesting mink. No changes in season or bag limit are recommended.

Wolverine

Wolverine are present in low numbers throughout most of the area and are usually incidentally caught in wolf sets. Two male and 3 female wolverines were taken in Unit 3. In Unit 1B, 2 males and 2 females were taken (Table 4). No changes in season or bag limit are recommended.

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Table 1. Marten harvest in Game Management Subunit 1B and Unit 3, 1985-86.

Month of kill	Unit 1B			Unit 3		
	Male	Female	%	Male	Female	%
December	31	20	61	24	18	63
January	10	8	22	9	12	31
February	7	7	17	2	2	6
Total	48	35	100	35	32	100

Table 2. Chronology and sex composition of otter harvest for Subunit 1B and Unit 3, 1985-86.

Month of kill	Unit 1B			Unit 3		
	Male	Female	%	Male	Female	%
December	2	3	62	9	7	31
January	0	1	13	19	7	51
February	2	0	25	2	7	18
Totals	4	4	100	30	21	100

Table 3. Otter harvest by method of take for Subunit 1B and Unit 3, 1985-86.

Method of take	Unit 1B			Unit 3		
	Male	Female	%	Male	Female	%
Shooting	0	0	0	7	4	22
Trapping	4	4	100	21	16	73
Snaring	0	0	0	1	1	5
Other	0	0	0	0	0	0
Totals	4	4	100	29	21	100

Table 4. Wolverine harvest Subunit 1B and Unit 3, 1978-86.

Season	Unit 1B				Unit 3			
	Male	Female	Unk	Total	Male	Female	Unk	Total
1978-79	2	4	0	6	1	0	0	1
1979-80	2	1	0	3	0	1	0	1
1980-81	1	0	1	2	0	0	1	1
1981-82	0	4	0	4	0	1	0	1
1982-83	2	2	0	4	1	0	1	2
1983-84	2	1	0	3	0	1	0	1
1984-85	2	2	0	4	3	0	0	3
1985-86	2	2	0	4	2	3	0	5
Totals	13	16	1	30	7	6	2	15

FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 1C

GEOGRAPHIC DESCRIPTION: Southeast mainland north of Cape Fanshaw to the latitude of Eldred Rock

PERIOD COVERED: 1 July 1985-30 June 1986

Season and Bag Limit

See Trapping Regulations No. 26 and Hunting Regulations No. 26.

Beaver

The harvest of 22 beavers in Subunit 1C represented 14 fewer animals than were taken the previous year (Table 1). A total of 4 trappers participated. The number of beavers/trapper ranged from 1 to 12. No changes in season or bag limit are recommended.

Lynx

No lynx were taken during 1985-86. No changes in season or bag limit are recommended.

Marten and Mink

Based on sealing information, the catch for Subunit 1C was 128 marten, including 88 males, 39 females, and 1 of unknown sex. The catch was 48% less than the previous season. Distribution of the harvest showed that 47 marten (33 males, 14 females) were taken west of Lynn Canal along the Chilkat Range and Gustavus area, 24 (15 males, 8 females, 1 sex unknown) in the Juneau area, 18 (13 males and 5 females) in the Taku River area, 10 (6 males, 4 females) south of Taku Inlet, and 29 (21 males, 8 females) in the Berners Bay area. No changes in season or bag limit are recommended.

Harvest figures for mink were not available from records of fur dealer purchases or from trapper export records. These sources are the only ones used for harvest determination. No changes in season or bag limit are recommended.

Otter

The harvest of otter was 37 (23 males and 14 females), similar to the 34 taken in 1984-85. No changes in season or bag limit are recommended.

Red Fox

No information on pelts purchased by dealers or exported by trappers in Subunit 1C is available. However, no significant changes are known to have occurred.

Wolverine

The number of wolverines harvested (8) in 1985-86 was similar to that taken the previous year. Four trappers were successful. Although the season was extended, the harvest of wolverines did not substantially increase.

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Table 1. Harvest of furbearers in Subunit 1C and number of successful trappers, 1979-86.[a]

Season	Beaver	Lynx	Otter	Wolverine	Marten	No. of trappers
1979-80	--[b]	--	37	3	--[c]	15
1980-81	--	--	34	5	--	20
1981-82	10	--	19	6	--	12
1982-83	26	2	30	8	--	16
1983-84	96	1	41	5	--	15
1984-85	36	1	34	9	245	27
1985-86	22	0	38	8	128	24

[a] Data from furbearers sealing documents.

[b] No animals sealed during this time period.

[c] Marten were not sealed until 1984-85.

FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 1D

GEOGRAPHICAL DESCRIPTION: Upper Lynn Canal

PERIOD COVERED: 1 July 1985-30 June 1986

Season and Bag Limit

See Trapping Regulations No. 26 and Fur Animal Hunting Regulations No. 26.

Beaver

Beavers remain scarce in Subunit 1D, and the trapping season remained closed. An evaluation should be made of the factors that are possibly retarding population expansion, because the public has expressed interest in a beaver transplant. No changes in season or bag limit are recommended.

Lynx

Like the previous season, only 1 male lynx was sealed. These low harvest levels indicate that (1) the influx of lynx from the Yukon (thought to be the reason for the higher-than-average takes in 1982-83 and 1983-84) was a short-lived phenomenon and (2) lynx numbers have reverted to their normal level (Table 1). No changes in season or bag limit are recommended.

Marten

Seven trappers took 29 males (59%) and 20 females (41%) from Subunit 1D (Table 2). Most of the marten were trapped in the Taiya or Skagway Rivers and Porcupine Creek; approximately 63% were taken during December. The harvest declined 70%, compared with last season. Discussions with trappers indicated that the trapping effort has decreased, perhaps, because of a relatively wet and snow-free winter. No changes in season or bag limit are recommended at this time.

Otter

Two male and 3 female land otters were taken; this harvest level is similar to the 7-year mean of 5.4 (Table 1). Most otter were taken in the Little Salmon River and Chilkoot Lake

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

Wolverine

One male wolverine was trapped in the Chilkoot River area during January. This harvest level is the lowest on record (Table 1); the primary reason for this take was probably the reduced trapping effort caused by poor weather conditions. No changes in season or bag limit are recommended at this time.

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Table 1. Historical furbearer harvest Subunit 1D, 1979-86.

Year	Lynx	Marten	Otter	Wolverine
1979-80	1	--[a]	6	11
1980-81	0	--	8	3
1981-82	0	--	3	6
1982-83	37	--	2	9
1983-84	14	--	10	18
1984-85	1	166	4	14
1985-86	1	49	5	1
Mean	8	108	5	9

[a] Sealing of marten was not required 1949-50 through 1983-84.

Table 2. Marten harvest by sex by month in Subunit 1D, 1985-86.

Month	Males		Females		Totals
	n	%	n	%	
December	19	39	12	25	63
January	8	16	8	16	33
February	2	4	0	0	4
Totals	29	59	20	41	100

FURBEARER

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 4

GEOGRAPHICAL DESCRIPTION: Admiralty, Baranof, Chichagof, and adjacent islands

PERIOD COVERED: 1 July 1985-30 June 1986

Season and Bag Limit

See Trapping Regulations No. 26 and Hunting Regulations No. 26.

Beaver

Four beavers taken in Unit 4 during 1984-85 were presented for sealing during the reporting period (Table 1). All beavers were taken from Admiralty Island. No changes in seasons or bag limits are recommended.

Marten

Sealing documents reveal that 47 trappers presented 1,207 marten skins from Unit 4 for sealing as follows: 616 males, (51%); 481 females, (40%); and 110 sex unknown (9%) (Tables 2-4). Harvest per trapper ranged from 1 to 108 marten. Four major harvest areas produced 83% of the harvest: Peril Strait, West Chichagof, North Chichagof, and Tenakee Inlet (Fig. 1). The harvest of 1,207 marten was 11% lower than the previous season. No changes in season or bag limit are recommended; however, a change in the sealing procedure is needed.

People in the fur industry have contended that marten skins from Southeast Alaska are inferior in quality to those from Interior Alaska. The contention is not based on fact, because fur graders at the Seattle Fur Exchange report that the majority of skins from Southeast are of equal quality to those from elsewhere. The exception is a low percentage of skins described as "woolie and with spiky guard hairs." Because of these latter skins, fur buyers have traditionally paid less for all Southeast marten skins. Because skins are marked according to the region, their origins are easily identifiable; this enables buyers to offer lesser prices for Region I marten. Our sealing requirement could potentially penalize the trapper; nonpermanent marking will be used in the future.

Mink

No reliable harvest data are available. No changes in season or bag limit are recommended.

Otter

Preliminary data show that 140 otters were taken in Unit 4 during the 1985-86 season by 29 trappers (Table 5). Harvest per trapper ranged from 1 to 55. The harvest was somewhat lower, compared with the past 8 years that the sealing program has been in effect. No changes in season or bag limit are recommended.

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Table 1. Location and chronology of the historic harvests of otter and other furbearers in Unit 4.[a]

Reg. year	Otter: Location of % of harvest				Otter: Chronology of harvest by %					Other species: Harvest			
	Admiralty	Baranof	Chichagof	Unk/ other	Nov	Dec	Jan	Feb	Unk	Mink	Marten	Weasel	Beaver
1972-73	--	--	--	--	--	--	--	--	--	121	301	0	0
1973-74	--	--	--	--	--	--	--	--	--	408	662	0	0
1974-75	--	--	--	--	--	--	--	--	--	167	458	0	0
1975-76	--	--	--	--	--	--	--	--	--	256	797	0	0
1976-77	--	--	--	--	--	--	--	--	--	--	--	--	--
1977-78	--	--	--	--	1	22	34	40	3	271	811	0	8
1978-79	9	24	56	11	1	39	27	3	30	489	801	1	2
1979-80	16	39	46	0	1	38	28	11	23	475	1,074	3	1
1980-81	23	24	46	7	6	35	55	1	4	--	--	--	2
1981-82	26	15	51	7	2	55	29	14	1	--	--	--	9
1982-83	26	24	14	36	0	31	21	15	33	291	553	0	0
1983-84	21	34	29	16	0	23	32	0	45	221	657	0	0
1984-85	17	46	20	18	0	38	34	19	8	--	1,355	--	14
1985-86	20	15	54	12	0	18	8	10	64	--	1,207	--	4

[a] All beaver and otter data after 1977-78 and marten data after 1984-85 are from mandatory sealing. All other data are derived from Dealer Purchases from Trappers, Fur Dealer Export, and Trapper Export Reports.

Table 2. Marten harvest, major harvest location, chronology, sex, and number of trappers in Unit 4, 1985-86.

Major harvest area	Total catch	(%)	Males	(%)	Females	(%)	Chronology (by %)				No. Trappers[a]
							Dec	Jan	Feb	Unk	
X30	49	(5)	25	(51)	24	(49)	47	10	8	35	13
X31	14	(1)	9	(64)	5	(36)	93	7	--	--	5
X33	341	(28)	137	(59)	96	(41)	8	--	--	92	11
X34	123	(11)	80	(65)	41	(33)	29	47	--	24	5
X35	249	(23)	121	(49)	128	(51)	86	--	--	14	7
X36	308	(29)	170	(55)	138	(45)	--	--	1	99	8
X37	68	(6)	37	(54)	31	(46)	19	--	--	81	3
X38	1	(T)	1	(100)	0	(0)	100	--	--	--	1
X39	45	(4)	29	(64)	16	(36)	47	--	--	53	3
X41	9	(T)	7	(78)	2	(22)	100	--	--	--	2
Totals	1,207	(100)	616	(51)	481	(40)					58

[a] Some trappers in more than one major code area; 47 people actually trapped.

Table 3. Monthly female marten catch and percentage of females in monthly catch in Unit 4 by major harvest area, 1985-86.

Major harvest area[a]	Monthly catch									
	Dec		Jan		Feb		Month unknown		All months	
	n	% females	n	% females	n	% females	n	% females	n	% females
X30	11	48	4	80	2	50	7	41	24	49
X31	5	39	0	0	0	0	0	0	5	36
X33	13	25	0	0	0	0	83	38	96[b]	44
X34	20	56	18	31	0	0	3	10	41	33
X35	110	52	0	0	0	0	18	50	128	51
X36	0	0	0	0	1	50	137	45	138	45
X37	9	69	0	0	0	0	22	40	31	46
X38	0	0	0	0	0	0	0	0	0	0
X39	7	33	0	0	0	0	9	38	16	36
X41	2	22	0	0	0	0	0	0	2	22
Totals	177	38	22	5	3	T	279	57	481	40

[a] See Figure 1, this report.

[b] Does not include 108 unsexed marten.

Table 4. Marten catch by trap site location for each major harvest area by sex in Unit 4, 1985-86.

Major harvest area[a]	Trap site location description																
	Old growth beach fringe by boat			Old growth away from beach by boat or foot		Old growth[b] by boat or foot		Old growth leave strip along road		Old growth along road		Clearcut along road		Unknown			
	M	F	Unk	M	F	M	F	M	F	M	F	M	F	M	F	Unk	Total
X30	14	16	0	5	6	0	0	0	0	0	0	0	0	6	2	0	49
X31	0	0	0	0	0	0	0	0	0	7	3	0	0	2	2	0	14
X33	27	12	0	15	5	17	14	0	0	47	35	12	9	19	21	108	341
X34	64	21	2	4	14	0	0	0	0	0	0	0	0	12	6	0	123
X35	7	11	0	0	0	0	0	80	73	2	1	0	0	32	43	0	249
X36	0	0	0	1	1	0	0	0	0	0	0	0	0	169	137	0	308
X37	0	1	0	0	0	33	22	0	0	0	0	0	0	4	8	0	68
X38	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
X39	28	15	0	1	1	0	0	0	0	0	0	0	0	0	0	0	45
X41	7	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9

[a] See Figure 1, this report.

[b] Type of old growth unknown.

Table 5. Historical otter harvests in Unit 4, 1972-86.[a]

Regulatory year	Harvest				% Statewide	Harvest method by %		Number of persons presenting otter for sealing
	M	F	Unk	Total		Shot	Trapped	
1972-73	--	--	--	90	--	--	--	--
1973-74	--	--	--	121	--	--	--	--
1974-75	--	--	--	44	--	--	--	--
1975-76	--	--	--	113	--	--	--	--
1976-77	--	--	--	-	--	--	--	--
1977-78	78	77	0	160	7	25	75	24
1978-79	84	70	0	157	--	67	33	26
1979-80	95	78	0	173	8	23	77	36
1980-81	81	63	10	155	7	27	73	27
1981-82	82	91	11	184	10	46	54	28
1982-83	94	69	0	163	11	51	49	23
1983-84	61	55	1	117	6	61	39	20
1984-85	88	74	5	167	8	50	50	34
1985-86	70	70	0	140	--	27	73	29

[a] Data for 1972-76 computed from Dealer Purchases from Trappers, Personal Use Export, and Trapper Export Reports; data for 1977 to present are from mandatory sealing records.

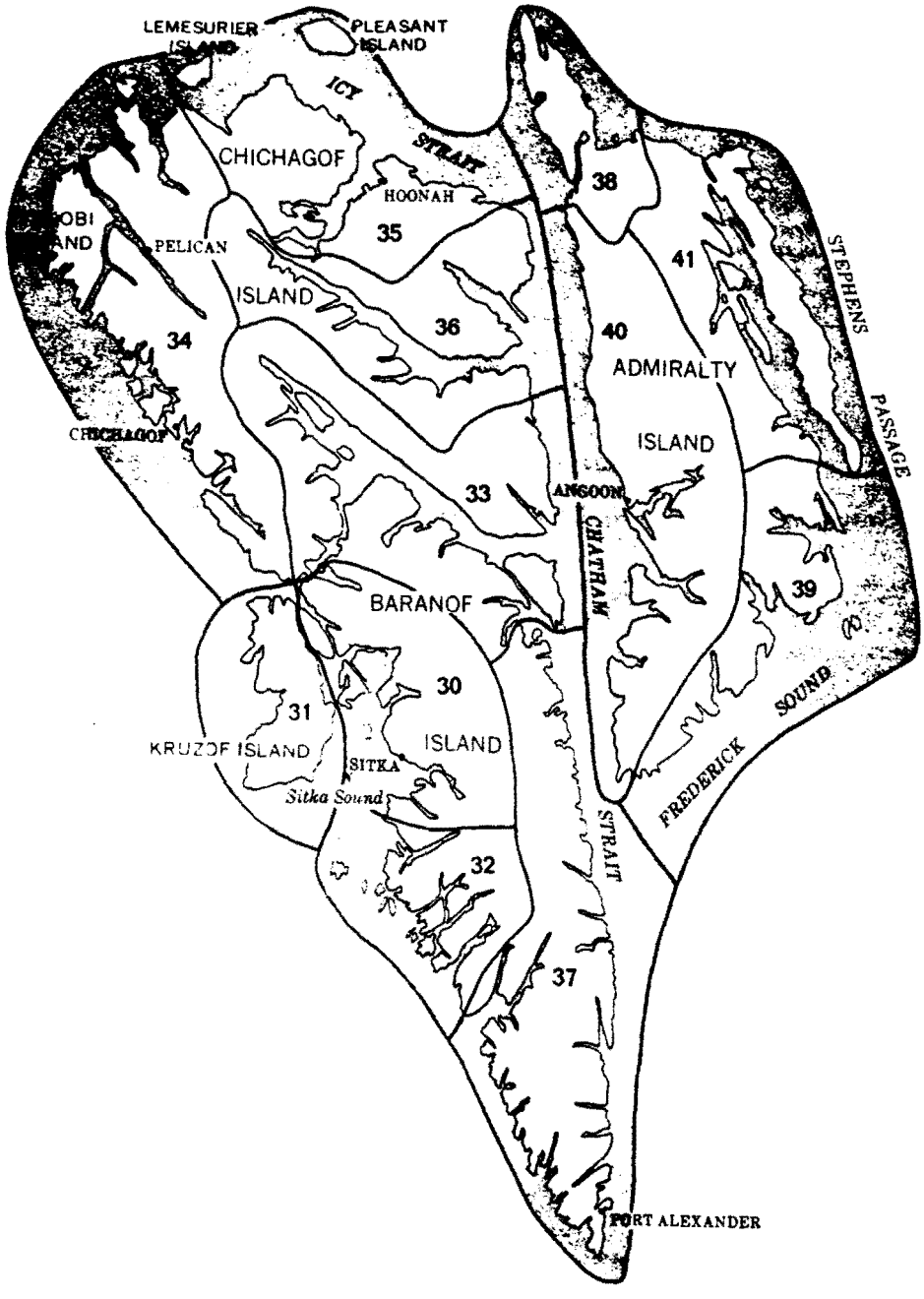

Figure 1. Major marten harvest areas in Game Managment Unit 4.

FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 5

GEOGRAPHICAL DESCRIPTION: Cape Fairweather to Icy Bay, eastern Gulf Coast

PERIOD COVERED: 1 July 1985-30 June 1986

Season and Bag Limit

See Trapping Regulations No. 26 and Fur Animal Hunting Regulations No. 26.

Beaver

Six beavers (Table 1) of unknown sex were reported taken by 1 trapper during May in the Tanis Mesa area. The low beaver harvest during the trapping season was a reflection of the poor weather for trapping and the low price paid for pelts. The beaver population remains low to moderate across the Yakutat Forelands. No changes in season or bag limit are recommended at this time.

Lynx

One male and 1 female lynx (adults) were shot by the same trapper in December. The low harvest was a reflection of reduced trapping pressure, rather than a population trend. Fewer lynx sightings were recorded, but numbers of hares were observed and reported. No changes in season or bag limit are recommended at this time.

Marten

No marten were reported taken by trappers. The lack of a harvest was probably caused by unfavorable trapping weather that resulted in a minimal trapping effort. No change in season or bag limits appear warranted.

Otter

Two land otters (1 male, 1 sex unknown) were taken by 2 trappers. As with other fur harvests, this low take probably is related to the inclement weather prevalent during the trapping season. No changes in season or bag limits are recommended at this time.

Wolverine

No wolverines were taken during the report period. Few wolverines are taken during a typical year, so the lack of a harvest does not indicate a depressed population. No changes in season or bag limits are recommended at this time.

Other Species

Trapper interviews were not conducted this year, but informal discussions with trappers indicated a low trapping effort. No harvest or sightings of coyote or red fox were documented. No marten were taken, but it is probable that few mink were taken. No changes in season or bag limit are recommended at this time.

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Table 1. Historical furbearer harvest for Subunit 5A.

Year	Beaver[a]	Lynx[a]	Marten	Mink	Otter[a]	Weasel	Wolverine[a]
1971-72	0	--	--	--	--	--	8
1972-73	0	--	9	40	36	21	7
1973-74	13	1	40	13	8	8	14
1974-75	6	2	9	21	0	1	1
1975-76	0	--	--	--	--	--	0
1976-77	0	--	--	--	--	--	1
1977-78	0	0	--	--	3	--	1
1978-79	0	1	--	--	5	--	2
1979-80	0	0	13	6	2	--	3
1980-81	0	1	200	120	4	--	2
1981-82	0	0	200	100	4	--	3
1982-83	3	5	30	8	1	0	1
1983-84	4	3	75	50	4	0	2
1984-85	1	0	63	58	1	7	2
1985-86	6	2	0	--	2	--	0

[a] Data from sealing certificates, trapper interviews, trapper export reports, and Survey and Inventory Progress Reports. Data on nonsealed species should be considered low estimates.

FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 6

GEOGRAPHICAL DESCRIPTION: Prince William Sound and North Gulf Coast

PERIOD COVERED: 1 July 1985-30 June 1986

Season and Bag Limit

See Trapping Regulations No. 26 and Hunting Regulations No. 26.

Beaver

The number of beavers range from common to abundant in most freshwater habitat in Unit 6. Beaver density is high east of Cordova and appears to be increasing. The 1964 earthquake uplifted a marsh area near the mouth of the Copper River (Subunits 6B & 6C) that once was influenced by tidal action. These uplifted lands, which developed into ideal beaver habitat, contain numerous ponds and old tidal guts with flowing water and are surrounded by dense stands of alder, willow, and poplar.

Trappers harvested 61 beaver in Unit 6. This harvest represents a 5-year high, but it is still well below the 1971-80 mean harvest of 115.5 (range 9-244). Beaver harvest and trapper effort in Unit 6 fluctuates with fur prices and weather conditions and does not necessarily reflect beaver density.

Coyote

Coyotes were common to abundant during the reporting period, but poor trapping weather and low fur prices discouraged trapping effort. An abundance of coyotes on the Copper River Delta has been identified as a primary factor in the declining production rates for dusky Canada geese.

Land Otter

Land otters are common to abundant throughout Unit 6. Otters have benefited from the land uplift in Subunits 6B and 6C, and they are beginning to exploit habitat that has been created from the increased activities of beavers.

Trappers sealed 58 otter skins during this period. This harvest represents a 5-year high, but it falls below the the 1971-80 mean of 99.7 otters (range 36-177). Because fur prices have been low in recent years, the trend in reported otter harvests has not reflected actual otter population densities.

Lynx

Trappers sealed 2 adult male lynx; this is the highest harvest since 1977-78 when seven were taken. Lynx have been uncommon in the coastal habitat of Unit 6 since 1930, when records of the species' occurrence were first documented.

Marten

Marten appear to be increasing and are repopulating heavily trapped areas of Unit 6. Recreational trapping near Valdez in Subunit 6D, however, has reduced the local population. Trapping pressure throughout most of Unit 6 is minimal because of low fur prices and the higher costs of marten trapping.

Mink

Mink were common to abundant during this reporting period. Depressed fur prices reduced trapper effort in most areas, except for limited recreational trapping. Recreational trapping occurred in Subunit 6C primarily on the road system and near most communities in Prince William Sound.

Muskrat

Muskrats are scarce in Subunits 6C and 6B. Little or no information is available for the other subunits. Muskrats were once abundant on the Copper River Delta prior to the 1964 earthquake. Since then, numbers have declined, but in some areas populations have rebounded for short periods. In 1985-86 muskrat populations were low. Local trappers believe that muskrats suffer higher mortality rates during winters characterized by frequent freezing and thawing; the last 6 winters fit that weather pattern.

Red Fox

Red foxes are scarce in Unit 6 but occur occasionally in the Lowe River drainage and along the Copper River. Harvest was very low.

Wolverine

During this period hunters and trappers sealed 6 wolverines: 4 males, 1 female, and 1 of unspecified sex. According to

sealing records for the previous 14 years, the mean annual harvest in Unit 6 was 21 wolverines. For the past 6 winters, however, poor trapping conditions (lack of snow) resulted in a mean harvest of only 10 animals. One trapper was responsible for 50% of all wolverines trapped in Unit 6 between 1971 and 1979; however, during the past 6 winters this person has not trapped because of the poor conditions.

In Unit 6 the wolverine harvest is not a reliable indicator of abundance during winters with little snow. Low trapping effort has probably allowed wolverine numbers to increase in recent years.

Management Recommendations

Trapping and hunting seasons and bag limits for coyotes should be liberalized in Subunits 6B and 6C. High coyote density on the Copper River Delta is probably adversely affecting other species in addition to dusky Canada geese; red fox populations are probably being held low in areas where they were once common. It is unlikely that a liberal harvest of coyotes on the Delta will significantly reduce coyote abundance in Unit 6.

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FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNITS: 7 & 15

GEOGRAPHICAL DESCRIPTION: Kenai Peninsula

PERIOD COVERED: 1 July 1985-30 June 1986

Season and Bag Limit

See Trapping Regulations No. 26 and Hunting Regulations No. 26.

Beaver

Beavers are common in suitable habitat on the Kenai Peninsula. In the Kenai Lowlands, woody vegetation (e.g., young birch, aspen, and upland willows) that support beaver colonies, is at an early seral stage in the north. The vegetation predominately changes to riparian willows south of Tustumena Lake. Population abundance and trends have not been measured and are poorly understood in most areas. Incidental observations and the trend in nuisance complaints indicate that beaver populations in Subunit 15C peaked in 1984 and have since declined slightly. Midwinter flooding is common on the lower peninsula and may be a significant source of mortality for beavers in some years.

According to sealing certificates, since 1980 the annual beaver harvests have exceeded 200 animals in three of 6 years and averaged 178 beavers (Table 1). A gradual upward harvest trend has been apparent in 3 of 4 game management units or subunits since 1983. The order of magnitude of harvest in recent years has been 15A > 15C > 7 > 15B. Recreational trappers are responsible for most of the beaver harvest; few trappers take more than 10 beavers annually.

River Otter

River otters are fairly common in inland waters and sheltered coastal areas of the Kenai Peninsula. Little is known about the population dynamics of this species. Observations of animal sign and harvest information indicate that otters are most abundant in drainages that support large numbers of anadromous fish and sheltered coastal waters such as the south shore of Kachemak Bay.

Otter harvests have shown little variation in recent years. The annual mean for the 6-year harvest has been 55 otters (SD = 6.7), ranging from 47 to 65 (Table 2). Males have consistently outnumbered females in the harvests; the mean 6-year sex ratio was 1.6:1.

Wolverine

Wolverines are most commonly found in the Kenai Mountains (including the west slope of the range), the Caribou Hills, and the hilly terrain that forms the headwaters of the Deep Creek and Anchor River drainages. Wolverines are seldom observed in the northern lowlands or the western fringes of the lower peninsula. The historical distribution of wolverines on the Kenai Peninsula has not been documented.

In the past 6 years, the reported wolverine harvest has been relatively stable. The annual mean for the 6-year harvest is 17 wolverines (SD = 3.2), ranging from 12 to 22 (Table 3). Males have consistently predominated in the harvests; the mean 6-year sex ratio is 1.8:1.

Lynx

Lynx are cyclically abundant in the forest habitats of the Kenai Peninsula. Early seral, mixed deciduous-coniferous forests in the northern lowlands appear to have a higher carrying capacity for snowshoe hares; consequently, lynx numbers are usually higher in these areas than in the subclimax spruce forests south of Tustumena Lake. Lynx populations on the Kenai increased noticeably during the early 1980's in response to an abundance of hares. The populations in the northern lowlands (i.e., Subunit 15A) appeared to peak in either 1985 or 1986; however, lynx are still increasing in the southern lowlands (i.e., Subunit 15C).

Lynx harvests in Units 7 and 15 have steadily increased since 1980, in spite of trapping closures in Subunit 15A in regulatory years 1984 and 1985 (Table 4). The reported harvest of 64 lynx in 1985-86 was the largest on record since mandatory sealing began in 1977. The proportion of kittens in the harvest has gradually declined from 37% in 1981-82 to 19% in 1985-86. Since 1980 the sex ratio of harvested lynx has been 1.3 females:1 male.

Management Recommendations

Current regulations and harvest levels for beaver do not seem excessive. Conversely, beaver populations are probably being underutilized in Subunit 15C. Establishment of beaver-cache surveys along several representative drainages in Subunit 15C

is recommended to monitor population trends and determine whether additional harvesting is warranted.

River otter and wolverine harvests have been stable over the the past 6 years. No changes in otter and wolverine seasons or bag limits are recommended at this time.

Lynx management on the Kenai Peninsula, particularly on the Kenai National Wildlife Refuge, has become a controversial issue in recent years. The U. S. Fish and Wildlife Service believes lynx have been overexploited on the refuge during the last decade, especially in accessible areas (Bailey et al. 1986). The Department believes recent trapping effort on the peninsula during periods when lynx populations were high has not exceeded sustained-yield levels; however, as lynx numbers decline and enter the low population cycle, restrictions on trapping closures are advisable to maintain optimum lynx numbers prior to entering the population's rebuilding phase. Interagency and public discussions of lynx management on the Kenai Peninsula have resulted in a number of decisions by the Department and the Board of Game that have either closed (i.e., Subunit 15A in 1984-85 and 1985-86) or shortened (i.e., Unit 7 and Subunits 15B and 15C) trapping seasons.

During a lynx population decline in Alberta, Canada, Brand and Keith (1979) suggested trapping mortality was additive to natural mortality. Using computer modeling, they showed that more lynx would be produced and greater long-term harvest achieved if trapping was curtailed for 3-4 years, starting with the 2nd year after the peak in the lynx harvest. This harvest strategy should be implemented on the Kenai Peninsula. Hare and lynx cycles in Subunits 15A and 15C are not synchronous, so implementations of trapping closures should be considered.

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Brand, C., and L. Keith. 1979. Lynx demography during a snowshoe hare decline in Alberta. J. Wildl. Manage. 43(4):827-849.

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Table 1. Summary of beaver harvests on the Kenai Peninsula by game management unit, 1980-86.

Regulatory year	Game Management Unit[a]					
	7	15A	15B	15C	All of Unit 15	Total
1980-82	52	--	--	--	169	221
1981-82	19	--	--	--	79	98
1983-84	50	--	--	--	141	191
1983-84	31	56	5	16	77	108
1984-85	36	92	16	64	172	208
1985-86	56	111	7	66	184	240
Totals	244				822	1,066
$\bar{x}$	41				137	178

[a] Subunit breakdown for Unit 15 not available for years 1980-84.

Table 2. Summary of river otter harvests on the Kenai Peninsula by game management unit, 1980-86.

Regulatory Year	GMU	Sex			Total
		Male	Female	Unk	
1980-81	7	5	3	0	8
	15A	16	14	1	31
	15B	3	0	4	
	15C	11	2	0	13
	Subtotal	33	22	1	56
1981-82	7	5	2	0	7
	15A	14	13	0	27
	15B	1	0	0	1
	15C	7	5	0	12
	Subtotal	27	20	0	47
1982-83	7	1	1	0	2
	15A	13	6	1	20
	15B	10	5	0	15
	15C	9	2	0	11
	Subtotal	33	14	1	48
1983-84	7	5	2	0	7
	15A	9	5	0	14
	15B	0	2	0	2
	15C	19	9	1	29
	Subtotal	33	18	1	52
1984-85	7	9	8	0	17
	15A	10	11	0	21
	15B	2	0	0	2
	15C	11	11	0	22
	Subtotal	32	30	0	62
1985-86	7	8	2	1	11
	15A	12	4	0	16
	15B	6	5	0	11
	15C	17	8	2	27
	Subtotal	43	19	3	65
Totals		201	123	6	330
$\bar{x}$		34	21	1	55

Table 3. Summary of wolverine harvests on the Kenai Peninsula by game management unit, 1980-86.

Regulatory Year	GMU	Sex			Total
		Male	Female	Unk	
1980-81	7	8	2	1	11
	15A	0	0	0	0
	15B	2	0	0	2
	15C	4	3	0	7
	Subtotal	14	5	1	20
1981-82	7	6	4	0	10
	15A	1	2	0	3
	15B	1	0	0	1
	15C	0	2	0	2
	Subtotal	8	8	0	16
1982-83	7	8	2	0	10
	15A	2	0	0	2
	15B	2	0	0	2
	15C	1	1	0	2
	Subtotal	13	3	0	16
1983-84	7	7	1	2	8
	15A	1	1	0	2
	15B	0	0	1	1
	15C	3	3	0	6
	Subtotal	11	5	1	17
1984-85	7	9	8	0	17
	15A	1	0	1	2
	15B	0	0	0	0
	15C	1	2	0	3
	Subtotal	11	10	1	22
1985-86	7	6	1	0	7
	15A	0	0	0	0
	15B	0	1	0	1
	15C	2	2	0	4
	Subtotal	8	4	0	12
Totals		65	35	3	103
$\bar{x}$		11	6	.5	17

Table 4. Summary of lynx harvests on the Kenai Peninsula by game management units, 1980-86.

Regulatory Year	GMU	Adults			Kittens					
		M	F	Unk	M	F	Unk	%	Unclass.	Total
1980-81	7	0	0	0	0	0	0		0	0
	15A	1	2	0	0	0	0		0	3
	15B	0	0	0	0	0	0		0	0
	15C	0	0	0	0	0	0		0	0
	Subtotals	1	2	0	0	0	0		0	0
1981-82	7	1	1	0	1	0	0		0	3
	15A	5	3	0	4	3	0		0	15
	15B	0	4	0	0	0	0		0	4
	15C	0	1	0	1	0	0		0	2
	Subtotals	6	9	0	6	3	0	37.5	0	24
1982-83	7	1	2	0	1	0	0		0	4
	15A	4	11	0	1	3	0		0	19
	15B	5	5	0	5	3	0		0	18
	15C	0	0	0	0	0	0		0	0
	Subtotals	10	18	0	7	6	0	31.7	0	41
1983-84	7	1	1	0	0	0	0		0	2
	15A	6	3	0	1	2	0		0	12
	15B	3	8	0	4	4	0		2	21
	15C	1	2	0	0	1	0		0	4
	Subtotals	11	14	0	5	7	0	30.7	2	39
1984-85	7	1	1	0	0	0	0		0	2
	15A	0	0	0	0	0	0		0	0
	15B	8	7	0	5	4	0		0	24
	15C	0	3	0	0	0	0		0	3
	Subtotals	9	11	0	5	4	0	31.0	0	29
1985-86	7	6	8	0	2	1	0		1	18
	15A	0	2	0	0	0	0		0	2
	15B	9	6	4	2	2	1		0	24
	15C	5	11	0	1	3	0		0	20
	Subtotals	20	27	4	5	6	1	18.7	0	64
Totals		57	81	4	28	26	1		3	200

FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 9

GEOGRAPHICAL DESCRIPTION: Alaska Peninsula

PERIOD COVERED: 1 July 1985-30 June 1986

Seasons and Bag Limits

See Trapping Regulations No. 26 and Hunting Regulations No. 26.

Trapping Conditions

In Unit 9, weather conditions were generally mild throughout most of the trapping season and limited snow hampered overland travel.

Beaver

No beaver-cache surveys were conducted in 1985. General observations during other survey flights, comments from trappers, complaints from the public, and responses to the 1985-86 Trapper Questionnaire (Unit 9) indicated that the beaver population remained high north of Subunit 9D. Of 20 trappers ranking beaver populations, ten ranked them at high levels and nine at moderate levels (Table 1). Most trappers (11) thought populations were about the same as the previous year, five thought there were more beavers, and three said there were fewer. These responses were similar to those of the previous year. Three hundred sixty-eight beavers were sealed in Unit 9 (Table 2), composing the largest harvest since 1981. Subunits 9B and 9C produced 49% and 34%, respectively, of the total harvest. Most of the increased harvest in these subunits came from the Kvichak and Alagnak Rivers.

Kits composed 21% of the harvest; this percentage is higher than the 11% and 12% recorded for 1983 and 1984, respectively, but similar to the long-term mean of 20%. The percentage of kits in the harvest may be affected by the composition of the beaver population and/or by selectivity and intensity of trapping. Low fur prices and relatively light trapping pressure in 1983 and 1984 probably reflect minimal trapping intensity, rather than low beaver productivity.

As in past years, complaints about perceived conflicts between beavers and salmon were voiced by local residents, particularly in Subunit 9B. Extremely weak salmon escapements in the Kvichak system for the past several years have increased pressure to remove dams that block salmon passage to spawning grounds. Local residents have advocated lengthening the beaver season with a fall opening and legalizing shooting as a means of taking beavers. Unless pelt prices and/or favorable weather provide incentive for trappers to extend trap lines, liberalized regulations will not resolve most problems in remote areas. Nevertheless, recent harvests have been below historic levels, and beaver populations throughout Unit 9 can support a larger harvest. To allow for greater opportunity to trap and help standardize the regulations in Unit 9, I recommend that the trapping season be opened from 1 January to 31 March and the bag limit increased to 40 beavers.

Lynx

In Unit 9, lynx occur in suitable habitat in Subunits 9B, 9C, and 9E as far south as Cinder River. Although populations fluctuate with prey abundance, a well-defined 10-year cycle is not evident. Even within the unit, independent local variations in lynx densities are common. According to responses from the Trapper Questionnaire, 6 trappers indicated there were fewer lynx, four said there were about the same number, and three said there were more lynx than the previous winter. In 1982-85 the mean lynx harvest was 59; 45 lynx were sealed in 1985-86 (Table 3). Most of the harvest (62%) occurred in February.

Lynx populations appear abundant in Unit 9 and do not generally follow the sharp cyclic peaks and lows that are characteristic of Interior Alaska. In addition, several refugia exist within national parks and in remote areas where access is difficult. No changes in regulations are recommended at this time.

Otter

Along with red fox and mink, otter showed the greatest decline in population levels after the crash of microtine populations in the fall of 1984. Results of the Trapper Questionnaire showed a trend index of 3.3 (Table 1), which indicated a moderately wide-spread decline. Only 64 otters were sealed during 1985-86, representing a 55% drop from the mean of the previous 8 years (Table 4). For the 1st time since sealing began in 1977-78, females composed more than half the harvest (55%). If signs of a population recovery are not evident

after the 1986-87 trapping season, some regulations restricting otter trapping may have to be implemented.

Wolverine

Wolverine populations appear to be relatively stable at low densities throughout Unit 9. Ten of 13 trappers reported that the population was about the same as in 1984-85. The other three reported a decline in numbers (Table 1).

Thirty-five wolverines (including 19 males, 13 females, and 3 of unspecified sex) were sealed in 1985-86. This is the lowest harvest ever reported and is indicative of a steady decline over the past 5 years (Table 5). This same harvest trend has been observed in other areas of the state, but whether a decline in numbers has occurred has yet to be determined. The population status of wolverines in Unit 9 is not absolutely clear; but if trapping restrictions are imposed over a large geographic area, I recommend that Unit 9 also be included.

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Table 1. Furbearer and small game population abundance and trend indices based on Unit 9 Trapper Questionnaire.

Species	Abundance in 1985-86				Compared with 1984-85			
	Low	Mod	High	Index[a]	Fewer	Same	More	Index[b]
Red fox	16	10	1	2.8	16	7	1	2.5
Mink	9	14	2	3.9	11	10	1	3.2
Lynx	11	5	0	2.3	6	4	3	4.1
Wolf	4	9	2	4.5	3	7	3	4.7
Otter	10	11	4	4.0	9	9	1	3.3
Wolverine	7	9	0	3.2	3	10	0	4.1
Beaver	1	9	10	6.8	3	11	5	5.5
Coyote	9	2	0	1.7	3	3	2	4.5
Weasel	3	6	2	4.6	0	5	4	6.8
Muskrat	8	1	1	2.2	3	4	2	4.6
Marten	3	1	0	2.0	1	2	0	3.7
Rabbit	14	1	2	2.2	6	4	4	4.4
Spruce Grouse	6	6	2	3.9	2	6	4	5.7
Ptarmigan	11	5	7	4.3	3	10	6	5.6

[a] Index was calculated from the number of answers to each question; not all cooperators answered every question. Low values indicate scarcity; high values indicate that a species is common.

[b] Index values range from 1.0 through 9.0 and were derived by assigning 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 for each species was divided by the number of answers to that question. Low values indicate that a species was less abundant than the previous year; high values indicate that a species was more abundant than during the previous year.

Table 2. Historical beaver harvest and number of trappers in Unit 9, by subunit, 1974-86.

Year	9A		9B		9C		9E		Total Unit 9		Beavers per trapper
	Trapper numbers	Beaver harvest	Trapper numbers	Beaver harvest	Trapper numbers	Beaver harvest	Trapper numbers	Beaver harvest	Trapper numbers	Beaver harvest	
1974-75	4	126	20	231	3	15	7	66	35	439	12.5
1975-76	1	40	18	173	5	44	8	80	43	451	10.5
1976-77	-	-	-	-	-	-	-	-	-	686	-
1977-78	1	40	34	355	19	196	10	132	40	724	11.1
1978-79	1	1	24	191	6	46	8	92	40	332	8.3
1979-80	4	47	40	448	10	85	7	68	66	660	10.0
1080-81	0	0	23	271	15	119	5	57	53	508	9.6
1081-82	2	6	11	76	14	116	6	64	37	286	7.7
1982-83	0	0	16	138	17	171	3	7	37	315	8.5
1983-84	1	2	9	84	9	79	7	17	26	182	7.0
1984-85	2	15	16	107	17	103	4	14	39	239	6.1
1985-86	2	27	20	181	13	126	6	34	41	368	9.0

Table 3. Lynx harvest in Unit 9, 1977-86.

Year	Subunit 9B	9C	9E	Total
1977-78	104	57	11	172
1978-79	36	48	45	129
1979-80	60	61	23	144
1980-81	41	25	52	118
1981-82	32	18	10	60
1982-83	40	12	45	97
1983-84	16	0	10	26
1984-85	41	3	8	52
1985-86	22	2	21	45

Table 4. Otter harvest in Unit 9, 1977-86.

Year	Subunit 9A	9B	9C	9D	9E	Total Unit 9
1977-78	6	46	17	2	49	120
1978-79	4	48	5	0	46	103
1979-80	6	42	36	8	45	137
1980-81	0	46	23	8	67	145
1981-82	5	35	58	15	38	151
1982-83	0	75	46	23	61	205
1983-84	1	31	16	28	44	120
1984-85	6	36	60	8	36	146
1985-86	7	23	12	9	10	64

Table 5. Wolverine harvests in Unit 9, 1977-86.

Year	Males	Females	Sex unknown	Total	Males per female
1977-78	43	23	20	86	1.9
1978-79	46	22	11	79	2.1
1979-80	38	25	1	64	1.5
1980-81	26	11	2	39	2.4
1981-82	42	20	10	72	2.1
1982-83	39	28	1	68	1.4
1983-84	31	16	4	51	1.9
1984-85	26	12	11	49	2.2
1985-86	18	12	3	33	1.5

FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 12

GEOGRAPHICAL DESCRIPTION: Upper Tanana and White River drainages

PERIOD COVERED: 1 July 1985-30 June 1986

Season and Bag Limit

See Hunting Regulations No. 26 and Trapping Regulations No. 26.

Trapping Conditions

Trapping conditions throughout most of Unit 12 were good during winter 1985-86: mild temperatures and normal to below-normal snow accumulations. Snow cover persisted longer in the spring than during most years.

Beaver

Beavers exist at moderate-to-low densities throughout much of Unit 12; areas of high density are in the northeastern portion of the Northway-Tetlin flats. Predation on beavers by wolves is believed to be a more important mortality factor than legal trapping, and predation probably accounts for observed differences in beaver density. Only 6 beavers were reported taken during this reporting period, compared with 44 in the 1984-85 season and 41 in the 1983-84 season. The inactivity of the few normally active beaver trappers is responsible for the low harvest this season.

Land Otter

Two land otters were reported taken, the same as in 1984-85. Otters are not abundant in Unit 12, and few trappers make sets specifically for them.

Lynx

Only 73 lynx were reported taken during this reporting period, compared with 82 in 1984-85, 167 in 1983-84, and 205 in 1982-83. It is not known whether the 11% reduction in harvest that occurred between the 1984-85 and 1985-86 seasons was caused by lower numbers of available lynx or the short

December-January season for 1985-86. It appears, however, that lynx numbers approached their cyclical low during the 1985-86 season. Of the 73 lynx reported taken, seven (10%) had pelts ≤ 35 inches long and were presumed to be kittens. Using this criterion, kittens composed 12% and 3% of the 1984-85 and 1983-84 harvests, respectively. This indicates that kitten production and survival are now higher than during the cyclic low occurring earlier in the 1980's.

During this reporting period, hare numbers increased noticeably in riparian areas and on south-facing slopes. There were still large areas with only small numbers of hares in Unit 12. Both hare and lynx numbers are expected to increase within the next year or two.

Marten

Based on trapper observations, the marten harvest declined by 40-60% throughout much of Unit 12 during the 1985-86 season, apparently in response to the microtine die-off in July 1984. Few signs of microtines were reported by trappers during the 1984-85 or 1985-86 seasons. Marten and lynx are the primary terrestrial furbearers sought by trappers in Unit 12. As trapping pressure in accessible portions of the unit increases, marten populations may be depressed in these areas.

Muskrat

Muskrats were relatively abundant and much sought after in the Northway-Tetlin flats. High water levels during summer and fall 1985 probably contributed to high numbers of muskrats. Except in locally accessible areas near Northway and Tetlin, muskrats are underutilized throughout Unit 12. Therefore, populations are susceptible to wide fluctuations or cycles in abundance because of water levels and "eat-outs." The traditional practice of trapping and shooting muskrats in spring is contrary to recommended muskrat population management, which involves harvesting muskrats heavily in the fall to enhance overwinter survival of the remaining population. Heavier fall harvests should be encouraged.

Red Fox

More red foxes were present during the 1985-86 reporting period than during the previous year, but low pelt prices discouraged many trappers from trapping specifically for them.

Wolverine

Twenty-three wolverines were reported taken in Unit 12 during the 1985-86 season, compared with 19 in 1984-85 and 21 in 1983-84. Of these, 16 (70%) were males; approximately the same percentage of males was reported for the 1984-85 season. Although wolverine harvests and abundance have declined noticeably over the past 15 years, recent harvests indicate a stable population. Nearly all accessible areas are now heavily trapped each year; whereas, trapping pressure was much lower in the early 1970's. In addition to increased trapping pressure on wolverines, moose numbers have decreased dramatically in many areas since the early 1970's, presumably reducing the availability of carrion for scavengers, including wolverines.

Management Summary and Recommendations

Harvests of most terrestrial furbearers were lower than harvests reported during the previous period. Lynx, wolverine, and marten numbers were relatively low; red fox numbers increased somewhat. Beaver, otter, and muskrat harvests were low, in relation to the apparent abundance of these species. Increased trapping pressure on lynx, marten, and wolverines may warrant adjustments in seasons or methods and means of taking. In contrast, higher catches are recommended for wolves, red foxes, coyotes, beavers, and muskrats to either effect better management or to maximize the value of these species to trappers.

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FURBEARERS

SURVEY INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 13

GEOGRAPHICAL DESCRIPTION: Nelchina Basin

PERIOD COVERED: 1 July 1985-30 June 1986

Season and Bag Limit

See Trapping Regulations No. 26 and Hunting Regulations No. 26.

Lynx

Trappers sealed 22 lynx from Unit 13 in 1985-86, down 54% from the 1984-85 take of 48. Harvests have declined in Unit 13 each year since the peak of the cycle in 1982 when 274 lynx were sealed. Of the 22 lynx sealed, only one (5%) had an overall pelt length considered small enough (<35 in) to be classified as a kitten, suggesting low kitten production or survival. Twelve (55%) lynx were harvested in December and ten (46%) were taken in January. Snowshoe hares, the primary prey of lynx, were scarce in Unit 13 during 1985-86, and as a result, lynx numbers were low and not expected to increase substantially in the near future.

Wolverine

Thirty-two wolverines were sealed in Unit 13 during the 1985-86 season, a substantial decline from the previous year's reported take of 55. Males composed 53% (17) of the harvest and females 44% (14); 3% (1) were unspecified. Trapping accounted for 25 (78%) of the wolverines sealed, while seven (22%) were shot. Of these seven, 6 (19%) were taken by the land-and-shoot method. Harvest chronology was as follows: September, 1 (3%); November, 3 (9%); December, 6 (19%); January, 6 (19%); February, 11 (34%); March, 1 (3%); and date unknown, 4 (13%).

The 42% decline in the wolverine harvest is partially attributed to the 31-day reduction in season length. This was the 1st year that wolverines could not be taken legally during the month of March. The management goal in shortening the season was to reduce the wolverine harvest by 20-40%; this was successfully accomplished.

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FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 14A and 14B

GEOGRAPHICAL DESCRIPTION: Upper Cook Inlet

PERIOD COVERED: 1 July 1985-30 June 1986

Season and Bag Limit

See Trapping Regulations No. 26 and Hunting Regulations No. 26.

Beaver

Beavers exist at moderate-to-high densities throughout most of Subunits 14A and 14B. Numerous complaints of flooded roads and basements and damaged timber have been received from people in areas where development has encroached on traditional beaver habitat. The total reported harvest for the 1985-86 season was 445 beavers, compared with a harvest of 274 beavers in the 1984-85 season.

Interest in beaver trapping has been relatively low for the past several years because of low pelt prices. As the value and demand for beaver pelts increase and the market for beaver carcasses expands, the interest in beaver trapping should follow. This should help alleviate beaver problems in accessible areas.

Muskrat

Muskrats are found in the marsh habitat throughout Subunits 14A and 14B; however, the greatest numbers are located in the Palmer Hayflats State Game Refuge and the Knik River drainage. Muskrat are eagerly sought by trappers for both pelts and carcasses, which are used as bait in other trapping activities. Muskrat density in the Palmer Hayflats State Game Refuge and in the Knik River drainage appeared to be declining. It is unknown if this decline was due to trapping pressure or to a gradual change in available habitat.

Fox

Foxes, in all their color phases, are found throughout Subunits 14A and 14B and are eagerly sought for their valuable

pelts. Trappers from Moose, Willow, and Goose Creek drainages have reported a very high percentage of "Samson fox" (a poor or worthless pelt because of a lack of guard hair) in the population. Several of these carcasses have been examined for ectoparasites and other diseases. To date, the cause of the condition has not been identified.

Wolverine

Fifteen wolverines were sealed during the 1985-86 season, compared with a harvest of 10 wolverines for the previous season. Wolverines do not normally frequent areas of human habitation. Because of the large human population in Subunits 14A and 14B, wolverine range is restricted primarily to the Talkeetna and Chugach mountains.

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FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 16

GEOGRAPHICAL DESCRIPTION: West Side of Cook Inlet

PERIOD COVERED: 1 July 1985-30 June 1986

Season and Bag Limit

See Trapping Regulations No. 26 and Hunting Regulations No. 26.

Beaver

Beavers are abundant throughout most of Unit 16. Trapping pressure was light, as indicated by a total harvest of 435 beavers: 250 from Subunit 16A and 185 from 16B. Only 10% of the harvest was composed of kits. Trapping is strongly recreational in nature rather than being profit-motivated, and this situation is not expected to change unless pelt prices increase substantially.

Land Otter

The harvest of 41 otters was divided almost equally between the 2 subunits: 16A, 20 otters; 16B, 21 otters. Otter sign is abundant, and the harvest reflects low trapping pressure.

Lynx

Two lynx were harvested from Unit 16. Both lynx were taken by a single trapper in Subunit 16A. Lynx numbers remain low.

Wolverine

All wolverines that were harvested (13 animals) came from Subunit 16B (8 males, 1 female, and 4 sex unspecified). Ground-shooting accounted for 6 wolverines; the remainder were taken by traps or snares. Wolverines are not abundant in the area, and harvest levels continue to show a long-term decline.

Management Summary and Recommendations

Trapping pressure in Unit 16 is primarily recreational because the area has few resident trappers. Although Subunit 16A is smaller than 16B, 57% of the beaver harvest was taken in that

area because of its proximity to the road-system communities and better access. The airplane is a significant method of transportation for trappers in Subunit 16B, but it is seldom reported as a means of transportation in taking fur species sealed from 16A. Because of low pelt prices for most species and the high trapping-related costs in most of the area, commercial trapping is limited to a few individuals in remote locations.

Wolverine-trapping seasons should be reduced if the harvest appears excessive. No changes in season or bag limits are recommended for other species.

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FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 17

GEOGRAPHICAL DESCRIPTION: Northern Bristol Bay

PERIOD COVERED: 1 July 1985-30 June 1986

Season and Bag Limit

See Trapping Regulations No. 26 and Hunting Regulations No. 26.

Beaver

Beavers maintained relatively high densities during this reporting period throughout most of Unit 17; surveys in October 1985 indicated the average density of "live houses" was 1.3 per mile of stream. Populations were highest in Subunit 17B along the Mulchatna River, tributaries downstream from the Chilchitna River, upper Nushagak River, and tributaries above the Nuyakuk River. Lowest densities were in the lower portions of the Togiak valley.

The reported harvest declined from 1,661 to 1,456 beavers in 1985 and 1986, respectively. Poor trapping conditions throughout most of the season and average pelt prices were responsible for the reduced harvest. Kits composed only 16% of the harvest; this was the lowest percentage in 4 years.

Land Otter

Land otters are abundant in Unit 17. General indications are that the otter population has been increasing since 1980. Harvest rose steadily from 166 in 1980-81 to 219 in 1984-85; the harvest declined to 101 during this reporting period, primarily because of poor trapping conditions. Composition of harvest was 49 males, 46 females, and 6 of unspecified sex. Three otters were taken in Subunit 17A, 26 in Subunit 17B, and 72 in Subunit 17C. Pelt prices for otter were low in 1986.

Lynx

Lynx occur throughout most of Unit 17, but nowhere are they very abundant; in Subunit 17A they were very scarce. Reported harvests have ranged from a high of 40 lynx in 1980-81 to a

low of eight in 1985-86. No trend in harvest or change in lynx numbers have been apparent. Until 1983-84 most lynx were taken in Subunit 17B. Since then, however, the majority of the annual harvest has come from Subunit 17C. As with many other species in Unit 17, most lynx are taken by beaver trappers during beaver season.

Marten

Marten were uncommon in most of Unit 17 prior to 1970. Marten began increasing in the Wood-Tikchik Lake system during the mid- to late 1970's, but they are still very rare in Subunit 17A and in the southern third of Subunit 17C. Prior to 1975-76 few marten were sold to local fur buyers in Unit 17. Since then, fur-buyer records indicate that annual marten purchases have fluctuated between a high of 146 in 1982-83 and a low of 23 in 1985-86.

Muskrat

Long-term residents of the northern Bristol Bay area have stated that muskrats were quite common prior to 1940 in the Dillingham area and along the lower Nushagak River drainages. Since then, populations have declined to low levels throughout Unit 17 and have been relatively scarce during the past 10 years. The highest reported take since 1972-73 was 53 muskrats in 1980-81. The annual mean for reported harvests has been 13 muskrats.

Red Fox

In the past decade, the red fox population has undergone large fluctuations. Numbers peaked in 1979-80 when 1,076 foxes were purchased by fur buyers in Unit 17. A rabies outbreak occurred during 1979-80, and since then the population has been at substantially lower levels. From general indications, I believe the fox population during this reporting period was at its lowest level since 1979.

Wolverine

Wolverines are present throughout Unit 17, but general observations indicate they are most common in Subunit 17B. Since 1971-72 annual reported harvests have ranged from 14 in 1983-84 to 78 in 1974-75. Harvest levels were relatively constant from 1975-76 to 1982-83; the mean annual harvest during this period was 47 wolverines.

The 1985-86 reported harvest was 23 wolverines: 13 males, 8 females, and 2 of unspecified sex. Trapping has been the most

common method of take; 65% were trapped during this reporting period.

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FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 18

GEOGRAPHICAL DESCRIPTION: Yukon-Kuskokwim Delta

PERIOD COVERED: 1 July 1985-30 June 1986

Season and Bag Limit

See Trapping Regulations No. 26 and Hunting Regulations No. 26.

Summary

Except for muskrat and lynx, furbearers are abundant in all areas with suitable habitat in Unit 18. Muskrat population densities remain low because of heavy overwinter mortality caused by several consecutive winters of thick ice, cold temperatures, and little snow. Lynx densities are low because of a scarcity of snowshoe hares and substantial trapping pressures. With the exception of lynx, the abundance and distribution of furbearers appear to be related more to weather and habitat factors than to mortality caused by trapping.

Foxes are abundant throughout the unit and have been implicated as significant predators of coastal-nesting waterfowl. Black brant, cackling Canada, emperor, and white-fronted geese populations have declined markedly in recent years. These species concentrate their nesting activity in a relatively small coastal fringe that presents ideal foraging conditions for foxes. Although foxes probably did not cause the initial population decline, their population may now be high enough to effectively prevent goose numbers from increasing. Predator control may be necessary in some of the more heavily impacted goose-nesting areas.

Efforts to improve the sealing program should continue. Most furs used domestically for garments and handicrafts are not sealed. This problem is particularly serious for those furbearers that are either low in price or high in demand locally; e.g., beaver and wolverine. Both of these factors would discourage the sealing and sale of pelts to fur buyers and would encourage their utilization at home. Numerous villages, particularly those along the Bering Sea coast and the Kuskokwim River, do not have a village sealing agent. We

need to expand our network of sealing agents and continue to publicize the requirement that domestically utilized furs as well as those sold commercially need to be sealed.

Beaver

Beaver densities remain high throughout Unit 18. Densities are highest southeast of the Kuskokwim River in the Kilbuck Mountains. Densities are lowest in the vast expanse of Delta lowland adjacent to the Bering Sea primarily because of a scarcity of willows and other hardwood shrubs.

Sealing-certificate data indicate that trappers in Unit 18 harvested 2,253 beavers during the 1985-86 trapping season. The 1985-86 harvest is substantially higher than the 1983-84 and 1984-85 harvests (940 and 1,550 beavers, respectively) and is only slightly lower than the record 1980-81 harvest (2,396 beavers). Higher prices, the influx of several active fur buyers, and the recent downturn in the state economy probably all contributed to the increased interest in beaver trapping. Since many beaver pelts are used domestically and are not sealed, the actual harvest is not known with certainty. We estimate, however, that the harvest is probably 30-50% higher than the reported harvest. Most of the reported harvest (52%) was taken during January and February. Although some trappers prefer taking beaver during November and December because the ice over the ponds is thinner, the pelts are most prime during late January and February.

The harvest increase was most pronounced in the Kuskokwim drainage, particularly in the vicinity of Bethel (Table 1). The 1985-86 reported harvest from the Johnson, Kwethluk, and Kisaralik River drainages, which are all adjacent to Bethel, was 1,209 beavers, accounting for 54% of the total harvest. The reported harvest from the Yukon drainage and the Delta lowland northwest of Bethel increased only slightly from the 1984-85 reported harvest.

The proportion of kits harvested during the 1985-86 season was significantly greater than that during 1984-85 ($X^2 = 45.87$; $P < 0.001$). Why this occurred is not known with certainty. Libby (1955) concluded that overharvesting occurs when the proportion of kits harvested exceeds 20%. This conclusion was based on trapping techniques characteristic of Interior Alaska: trap sets are usually selective of the larger, more valuable adult animals. Most trappers in Unit 18 do not use trapping techniques that are highly selective for adults, and the age structure of the harvest there may more closely reflect the age structure of the population than observed elsewhere in Alaska. The 1985-86 harvest data from Unit 18 may therefore reflect an actual increase in the proportion of

kits in the population. Another plausible explanation concerns marketing conditions. When beaver prices are low, many trappers only seal and sell the larger, more valuable pelts and utilize the smaller, unsealed pelts at home. Under such circumstances, our data would not reflect the actual proportion of kits harvested. When prices are higher, more kits would show up in the harvest because more would be sealed and sold.

In summary, beavers remain numerous in Unit 18. Observations reported by the public and by agency personnel indicate that beavers are abundant in all areas of suitable habitat. Many local residents believe that beaver dams significantly affect salmon, whitefish, and blackfish migration patterns, and they would like to see beaver numbers reduced. Studies ascertaining the effect of beaver dams on fish populations are recommended.

Fox

Although Arctic fox are found in all coastal habitats in Unit 18, they are apparently abundant only from Nunivak Island northward to the Yukon Delta. Arctic fox numbers are subject to wide annual fluctuations, and they can be very abundant in some years in localized areas. Necropsies were performed on 30 female Arctic fox carcasses taken during April 1986 from Kikigak Island near Cape Romanzof. None were found to be pregnant. Such an unusual finding does not confirm that fox numbers in Unit 18 are declining because the sample was taken from a small area and the mating season may not have been completed. However, it does agree with other evidence indicating that fox numbers are subject to abrupt increases and declines. Because Arctic and red foxes have been implicated as major predators of coastal nesting geese, many individuals believe that Arctic foxes are presently very common. These species of geese concentrate their nesting activities in a narrow coastal fringe, and the situation presents an ideal foraging opportunity for predators; foxes may be attracted to the area from considerable distances. Therefore, it would be difficult to evaluate the relative abundance of foxes in Unit 18 solely on the basis of how many were seen on the nesting grounds.

Red fox numbers were reported to be very high during the winter of 1985-86, particularly in the Kuskokwim drainage. Although they are found in all areas of suitable habitat, red foxes are most common in willow stands containing an abundance of ptarmigan and snowshoe hares. Since fox prices are very low, I do not believe the harvest was unusually high during the 1985-86 winter. However, since we did not circulate our annual Trapper Questionnaire at the end of the trapping season

and the fur dealer acquisition data for 1985-86 are not currently available, I do not know with certainty the magnitude of the harvest.

Lynx

Lynx were reported to be low in abundance throughout Unit 18 during 1985-86 because of a scarcity of snowshoe hares and, in some areas, heavy trapping pressure. Sealing-certificate data indicate that trappers harvested only 13 lynx during the 1985-86 trapping season. Because lynx currently command very high prices in the fur market, I believe the sealing data accurately reflect the actual harvest level. Harvests have steadily declined since 1982, when hares were very abundant and trappers reportedly harvested 63 lynx.

Although lynx are heavily trapped because of their high value, some refugia exist in the northern Andreafsky and Chuilnak Mountains and in the Kilbuck Mountains east of Bethel. Such refugia are necessary for repopulating depleted areas because lynx are easily trapped and could conceivably be eliminated from local areas. Because the potential for overharvesting is high, better-quality data regarding population status are needed for making meaningful management decisions. Survey techniques for evaluating lynx population trends need to be developed and tested. Season closures during periods of population increase may result in higher harvests during the long term and should be implemented if trapping pressure continues to increase.

Mink

Mink are found in all suitable habitats throughout Unit 18 and are most common in the Delta lowland north and west of the Kuskokwim River. Highest densities are found in the Kashunak, Black, and Johnson River drainages; the coastal flats; and the vicinity of Baird Inlet and Dall Lake.

Since we did not circulate our annual Trapper Questionnaire this year and fur dealer acquisition data are not available, I do not know the magnitude of the mink harvest. However, knowledgeable observers believe the harvest was low (5,000-8,000 mink) because of unfavorable trapping conditions. Mink are among the most valuable of all Delta furbearers, and additional efforts to evaluate harvest levels and population status are warranted.

Otter

River otters are abundant throughout Unit 18, particularly in the delta lowland north and west of the Kuskokwim River.

According to harvest-sealing data, the mean length of harvested otters has not changed significantly in the past 2 years (1984-85, 41 inches; 1985-86, 40 inches). The relative proportion of young and adult animals, as indicated by mean length of harvested pelts, has apparently remained constant, indicating a stable population. Admittedly, the mean length of sealed pelts is a crude gauge of population trend, and it should not be used as the sole basis for evaluating population status.

During the winter of 1985-86, trappers sealed 190 otters. The current harvest is much lower than the 1984-85 harvest of 587 and only slightly higher than the 1982-83 harvest of 171. Trapping and travel conditions were very poor during November through January when most otter trapping occurs. As observed in past years, most of the harvest (73%) occurred during this November-to-January period.

Wolverine

Wolverines are relatively rare in Unit 18 and are regularly observed only in the remote portions of the Kilbuck Mountains east of Bethel and in the Andreafsky and Chuilnak Mountains north of the Yukon River. During the winter of 1985-86, 3 wolverines were sealed. Because domestic utilization of wolverines is common and many pelts are not sealed, the actual harvest is much higher, but it probably does not exceed 10-15 animals. Because much of Unit 18 is characterized by open terrain, wolverines are especially vulnerable to hunters using snowmachines, and overharvesting may be a problem during winters with heavy snowfall and good travel conditions. Development of survey techniques for assessing population status is recommended.

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Table 1. Harvest of kit and adult beavers in Unit 18, 1984-86.

Drainages	1984-85			1985-86		
	No. kits[a]	No. adults	% Kits	No. kits[a]	No. adults	% Kits
Yukon River	54	259	17	106	266	28
Kuskokwim River	179	663	21	343	1,104	24
Delta lowland	59	285	17	96	284	25

[a] Kits are defined as those with pelts that are 52 inches or less in size.

FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 19

GEOGRAPHICAL DESCRIPTION: Upper and Middle Kuskokwim River drainages

PERIOD COVERED: 1 July 1985-30 June 1986

Season and Bag Limit

See Hunting Regulations No. 26 and Trapping Regulations No. 26.

Beaver

Beavers were abundant throughout Subunits 19A and 19D, and there is some evidence of population expansion into Subunits 19B and 19C. The 1985-86 beaver harvest in Unit 19 increased markedly from harvests reported for the 3 previous seasons (Table 1). Similarly, the number of trappers and the success rate among trappers increased; several trappers closely approached the seasonal bag limit of 40 beavers. Sealing records for the 1985-86 season indicate a harvest of 1,536 beavers by 120 trappers (approximately 13 beavers per trapper). During the previous 3 seasons, the average annual harvest was only 597, or approximately 9 beavers per trapper. Factors contributing to these increases are thought to be (1) a renewed interest in beaver trapping resulting from higher pelt prices and (2) an increase in beaver populations, particularly in Subunits 19A and 19D where the vast majority of the harvest occurs. Six percent of the beavers sealed were kits, and large adult beavers (65 inches or more) composed 48% of the 1985-86 harvest.

This was the 1st year on record when the take from Subunit 19D (766 beavers) exceeded that from Subunit 19A (716 beavers). Harvests in Subunits 19B and 19C (46 and 8 beavers, respectively) were lower than during the 1984-85 season. The low harvest in these subunits reflects limited and spotty beaver distribution. Nearly half of the Subunit 19A harvest occurred in the Holitna, Hoholitna, and George River drainages; the most productive beaver trapping areas in Subunit 19D were the North Fork, Takotna, and Swift River drainages. Most beavers were taken during February and March, but in Subunit 19A substantial harvests also occurred in January and April.

Despite increased interest and success among beaver trappers, the 1985-86 harvest is considered well within the safe, sustainable range for beaver populations in Unit 19.

Land Otter

Otters continued to be abundant throughout Subunits 19A and 19D, and numbers appeared to increase in Subunits 19B and 19C. Unlike beaver trapping pressure in Unit 19, otter trapping effort did not increase during the 1985-86 season; 76 otters were taken (Table 1). The average annual take has been 67 otters for the previous 7 years. Most trappers in Unit 19 consider pelt prices too low to justify the effort required to specifically trap for otters. Male otters composed 56% of the known-sex take, compared with the long-term average of 61% males among otters harvested. December continued to be the most productive month for otter trapping and, for the 1st time, more otters were taken with snares than with traps.

Lynx

Lynx populations were low throughout Unit 19, and most lynx occurred in scattered locations along the Kuskokwim River. Thirty-three lynx were sealed; this is only slightly more than the 30 sealed during the 1984-85 season, which represents the lowest harvest since the sealing requirement was initiated in 1977 (Table 1). No lynx were reported taken in the Kilbuck Mountains, which was the most productive trapping area when lynx populations were high during the early 1980's. Few trappers took more than 1 lynx, and the most successful trapper presented only 4 lynx for sealing. The 1985-86 season marked the 1st year since lynx numbers started to decline (1982-83) that a substantial number of kits occurred in the harvest.

Marten

Marten are the principal target species of nearly all trappers in Unit 19. Marten population densities varied considerably among areas. Some trappers reported near-normal densities, but most felt that marten populations remained low. Catches often varied greatly even within relatively small areas. The 1985-86 season was the first since 1982-83 that marten numbers were thought to be increasing anywhere in the unit. Weather and snow conditions were favorable throughout most of the trapping season, and the estimated harvest in Unit 19 was at least 3,000 marten.

Red Fox

Red fox populations remained low throughout most of Unit 19, but numbers appeared to be increasing slightly in the extreme western portion.

Wolverine

The wolverine harvest declined to 40 for 1985-86 (Table 1), the lowest take since the early 1970's in Unit 19. Wolverine tracks were relatively common, and the reduced harvest was likely a result of the poor tracking conditions rather than low populations. Males composed 62% of the wolverines taken, which is similar to the previous 14-year average of 64% males. Most wolverines were taken during February and March. Trapping and snaring accounted for 71% and 21% of the harvest, respectively. Shooting from the ground accounted for only 8% of the harvest; previously, 23% of the harvest resulted from shooting.

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Table 1. Furbearer harvests in Unit 19, 1977-86.

Season	Beaver		Land otter	Lynx		Wolverine
	Harvest	% Kits[a]	harvest	Harvest	% Kits[b]	harvest
1977-78	1,338	12	165	94	10	75
1978-79	636	14	58	150	15	59
1979-80	1,647	20	66	215	22	62
1980-81	1,572	8	55	271	17	53
1981-82	1,280	13	86	283	16	70
1982-83	644	13	69	147	1	66
1983-84	449	6	58	54	3	59
1984-85	700	15	80	30	0	60
1985-86	1,536	6	76	33	15	40

[a] Combined length plus width of 52 inches or less.

[b] Combined length plus width of 42 inches or less.

FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 20

GEOGRAPHICAL DESCRIPTION: Central Tanana Valley

PERIOD COVERED: 1 July 1985-30 June 1986

Season and Bag Limit

See Hunting Regulations No. 26 and Trapping Regulations No. 26.

Beaver

Sealing documents indicate 1,830 beavers were harvested from Unit 20 during the 1985-86 season. The reported harvest by subunit was as follows: 20A, 214; 20B, 935; 20C, 557; 20D, 76; 20E, 6; and 20F, 42. In Subunits 20A, 20B, and 20C, less than 10% of the beaver take were kits (pelt size $\leq$ 53 inches) and over 79% of the pelts were adults that measured $\geq$ 60 inches. Among the 76 beavers taken in Subunit 20D, 20% were kits and 64% were adults; pelt size was used as an indicator of age. Applying the same criterion, the take in Subunit 20F was composed of 2% kits and 50% adults.

Most beavers taken in Subunit 20A were trapped in the Wood River drainage. In Subunit 20B, the greatest number of beavers (245) came from the Tolovana River drainage; the next largest take in this subunit (129 beavers) was from the Chena River drainage. The Kantishna River drainage produced the highest beaver harvest (339) in Subunit 20C. In Subunit 20D, 17 beavers were caught in the Goodpaster River drainage, and Shaw Creek produced 13 beavers. In Subunit 20F the Tozitna River drainage produced 20 of 42 beavers taken in the subunit.

The beaver harvest in 1985-86 (1,830) increased dramatically, compared with the 1984-85 take (655). The 1985-86 take is considered relatively high. Harvests in Unit 20 for the 1979-80, 1980-81, and 1981-82 seasons were 1,955, 1,310, and 946 beavers, respectively. Trappers reported moderate-to-high numbers of beavers in Unit 20, and the proportion of kits in the harvest for the unit as a whole (8%) indicates beavers are not being overharvested. When harvest consists of more than 20% kits, a closer look at the population may be needed to prevent overharvesting. Although the proportion of kits in Subunit 20D was 20%, the total number of beavers taken was small (76); consequently, the proportion of kits in the harvest may not be a reliable indicator of the population.

As the human population increases in Unit 20, conflicts between beavers and humans also increase. Beavers inhabiting sloughs in the greater Fairbanks area have damaged vegetation and plugged culverts. Although many urban and suburban homeowners enjoy watching beavers, it has become necessary to harvest more of these animals in areas where conflicts consistently occur.

Land Otter

According to sealing records, 52 land otters (21 males) were trapped in Unit 20 during the 1985-86 season. The number of otters taken in each subunit follows: 20A, 13; 20B, 20; 20C, 18; 20D, 0; 20E, 0; and 20F, 1. The otter harvest occurred throughout the season; 14 otter (27%) were taken in November, 11 (21%) in December, 12 (23%) in January, 5 (10%) in February, 8 (15%) in March, and 2 (4%) in April.

The land otter harvest during the 1985-86 season (52) was more than twice that of the previous year (20) but about the same as in 1983-84 (47). The otter population in Unit 20 has remained fairly stable over the past several years.

Lynx

Sealing records indicate that 251 lynx were harvested in Unit 20 during the 1985-86 season. The reported harvest by subunit follows: 20A, 48; 20B, 76; 20C, 43; 20D, 22; 20E, 18; and 20F, 44. The harvest was distributed throughout the season: 1 in November, 131 in December, 110 in January, 7 in February, and 1 in March. In 1985-86 the lynx harvest in Unit 20 increased from that of 1984-85 (222). The higher harvest may reflect increased lynx populations.

Wolverine

Sealing documents indicated 66 wolverines (40 males) were harvested from Unit 20 during the 1985-86 season. The reported harvest by subunit follows: 20A, 18; 20B, 14; 20C, 9; 20D, 13; 20E, 8; and 20F, 4. The wolverine harvest occurred throughout the season; 2 were taken in September, 5 in November, 13 in December, 19 in January, 10 in February, 13 in March, and 2 in April. The date of harvest for 2 wolverines was unknown. The wolverine harvest in Unit 20 (66) was similar to that for the preceding season (63).

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FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 21

GEOGRAPHICAL DESCRIPTION: Middle Yukon River drainages

PERIOD COVERED: 1 July 1985-30 June 1986

Seasons and Bag Limits

See Hunting Regulations No. 26 and Trapping Regulations No. 26.

Trapping Conditions

The weather was mild for most of the trapping season, although snowfall delayed the start for some trappers. Hare populations were low throughout Unit 21, except in a few isolated communities along the major rivers. As a result of flooding during June 1985, rodent densities were also low in the Yukon and Koyukuk River lowlands.

Beaver

Sealing records indicate that 1,802 beavers were taken in Unit 21 during the 1985-86 season (Table 1). This is the highest beaver harvest on record for this area. Subunit 21D had the highest harvest (759). In recent years most of this harvest has come from the Kaiyuh Flats; during the 1985-86 season, beavers from the Kaiyuh Flats composed less than half the take in Subunit 21D. The harvest in Subunit 21E was 624 beavers, which is 2.6 times the 1984-85 take. The overall harvest continued to be lower than the estimated harvestable surplus.

Coyote

Coyotes continue to be common in the Galena area, but few are harvested each year. There is a resident group immediately north of the Galena Air Force Base.

Land Otter

Otters continued to be very abundant in Unit 21, but low prices and low trapper interest kept harvests down. Only 52 otters were sealed (Table 1). Otters are usually taken incidentally to beaver trapping; with the high beaver harvest, more otters were probably taken than sealing records indicate.

Lynx

Harvest of 162 lynx (Table 1) suggests that lynx populations throughout Unit 21 have reached their low point and are now increasing. Extremely high fur prices caused increased trapping effort. Upper drainages of the Nulato, Gisasa, and Kateel Rivers (not normally trapped) were all subject to increased pressure from trappers residing in Units 22 and 24. The increased effort was probably responsible for the slight rise in take in some portions of Unit 21 (Table 2).

Marten

At the start of the 1985-86 season, prices for marten pelts were moderate, but they increased rapidly as the season progressed. Nevertheless, harvests were about average.

Mink

Mink continued to be of minor importance to trappers in Unit 21. The price for wild-caught, Interior mink is very low, and few trappers actively trapped for mink.

Red Fox

Fox populations were high along the major rivers, but pelt prices influence fox harvests more than regulations do. Because fox prices were low, few foxes were taken.

Wolverine

The take of 55 wolverines (Table 1) is considered normal for trappers in Unit 21, but poor aerial-hunting conditions led to a decrease in the number of wolverines taken by landing and shooting.

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Table 1. Furbearer harvests in Unit 21, 1981-86.

Species	1981-82	1982-83	1983-84	1984-85	1985-86
Beaver	593	882	984	700	1,802
Lynx	484	364	121	123	162
Otter	55	32	103	68	52
Wolverine	43	78	32	57	55

Table 2. Lynx harvest by subunit in Unit 21, 1981-86.

Subunit	1981-82[a]	1982-83[a]	1983-84[a]	1984-85[a]	1985-86[a]
21A	18	16	2	2	20
21B	92	49	5	13	31
21C	9	13	0	1	4
21D	350	236	86	82	86
21E	11	43	21	25	21
Total	480	357	114	123	162

[a] Hand count of certificates in Galena.

FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 22

GEOGRAPHICAL DESCRIPTION: Seward Peninsula

PERIOD COVERED: 1 July 1985-30 June 1986

Season and Bag Limit

See Trapping Regulations No. 26 and Hunting Regulations No. 26.

Summary

Furbearers are most abundant in Subunits 22A and 22B where spruce and riparian-willow vegetation predominates. Research studies specifically designed for evaluating the population status of furbearers have never been conducted on the Seward Peninsula; therefore, accurate assessments of furbearer numbers are nonexistent. Furbearer population densities have apparently fluctuated in past years; however, it is not known with certainty whether these fluctuations were caused by human or by natural factors. I believe that only hunting and trapping pressure in the area immediately adjacent to villages affects furbearer numbers.

During the reporting period, limited information on furbearer distribution and densities was obtained from biologists' observations, general conversation with unit residents, and responses from Trapper Questionnaires sent to 43 unit residents who had sealed furs during the past 2 years. Nineteen individuals (44%) responded to the Trapper Questionnaire. No reminder letters were sent. Harvest information was obtained from sealing records (Tables 1 and 2) and the Trapper Questionnaire (Table 3).

Beaver

Although beavers continued to expand their range westward onto the Seward Peninsula, their greatest densities are still found in Subunits 22A and 22B. As observed in past years, beaver-trapping efforts were minimal because pelt prices remained low and very few local residents were skilled in trapping beaver. According to sealing-certificate data, no beavers were taken during the reporting period. Responses to the Trapper

Questionnaire, however, indicate 20 beavers were harvested by local trappers. I estimate the harvest of beavers in Unit 22 was fewer than 50 animals.

Lynx

Because snowshoe hare populations remained extremely low, lynx densities continued to decline in Unit 22 . The reported harvest of 23 lynx for the 1985-86 season is the lowest on record for Unit 22. A combination of low lynx densities, poor winter-traveling conditions, and reduced trapper effort was responsible for the small harvest. The sex composition of the harvest was 45% male and 55% female. Fifty-two percent of the harvest was taken in Subunit 22A, 30% in 22B, and 18% in 22D. Most of the harvest was taken during January, February, and March. All the lynx were taken by 11 individuals, and 91% were caught with traps or snares. In previous years, most lynx pelts were sealed and sold because fur prices were quite high. I believe the same occurred this year and the total harvest of lynx in Unit 22 was probably less than 30 animals.

River Otter

Although increasing slightly in number, river otter populations remain low throughout Unit 22; trapper effort was low as well. Sealing records indicate that 10 otters were taken during the reporting period and, as observed in past years, most of the harvest came from Subunit 22A. The sex composition was 6 males and 4 females. I estimate the actual harvest of river otters in Unit 22 to be less than 20 animals.

Wolverine

The 1985-86 harvest of 38 wolverines is the highest on record for Unit 22. Trappers accounted for most of the harvest (82%). The harvest in Subunit 22C was higher than those documented in past years; the increase was probably due to increased activity by Nome residents. Animals were taken from October through March, and 34% (13) of the wolverines were taken during January. I estimate the unit-wide harvest was less than 50 animals.

Muskrat

Muskrat densities remain low or nonexistent throughout the unit, a continuing trend for the past 5 years.

Mink

Although not abundant, I believe mink numbers are stable in Unit 22. Harvests are usually very low, and responses to the Trapper Questionnaire indicated that only 1 mink was taken during the reporting period.

Marten

As observed last year, marten numbers appear to be increasing slightly. Results from the Trapper Questionnaire indicate that a minimum of 26 marten were harvested during 1985-86.

White Fox

White fox numbers remain low throughout the unit; occasional animals or tracks were found during the winter months along the northern portion of the Seward Peninsula. Harvest was reportedly low, and responses from the Trapper Questionnaire indicate only 1 white fox was taken during the reporting period.

Red Fox

Red fox numbers increased throughout the unit as prey species (e.g., ptarmigan and small rodents) continued to increase. Responses from the Trapper Questionnaire indicate a minimum of 137 red foxes was harvested.

Weasel

As observed in past years, weasel numbers are very low throughout Unit 22, and none were reported taken.

Management Summary and Recommendations

Obtaining accurate harvest data continues to be a problem in Unit 22. Although fur-sealing agents are available in all villages in Unit 22, the accuracy of our furbearer harvest data still needs improvement. A significant portion of the furs taken is not sealed and sold but made into garments and handicrafts. It is still unclear to most village trappers why they need to seal furs. Continued public contact by biologists and law-enforcement personnel is recommended to explain the need for a sealing requirement. The Department also requires furbuyers to fill out and send in a "Report of Acquisition of Furs and Hides." During the past 2 years, these data have not been summarized and made available to area biologists. These data provide a minimum harvest figure for

those species not sealed (e.g., mink, muskrat, fox, etc.) and often are used for assessing harvest trends.

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

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Table 1. Historical reported harvest of lynx, otter, and wolverine in Unit 22, 1978-86.

Species/ year	Total take[a]	Percent male	Subunit					
			22A	22B	22C	22D	22E	Unk
Lynx								
1978-79	238	50	39	199	0	0	0	0
1979-80	260	47	29	220	0	0	0	11
1980-81	86	61	2	78	0	0	0	6
1981-82	479	51	168	311	0	0	0	0
1982-83	820	52	377	442	0	0	1	0
1983-84	443	58	311	132	0	0	0	0
1984-85	156	47	101	47	0	2	6	0
1985-86	23	45	12	7	0	4	0	0
Wolverine								
1978-79	18	63	5	11	1	1	0	0
1979-80	18	53	10	6	1	0	0	1
1980-81	16	80	3	8	2	3	0	0
1981-82	10	60	1	7	1	1	0	0
1982-83	14	79	3	7	2	2	0	0
1983-84	35	54	16	16	1	2	0	0
1984-85	21	55	8	8	3	1	1	0
1985-86	38	56	9	14	11	4	0	0
Otter								
1978-79	9	60	9	0	0	0	0	0
1979-80	14	73	6	7	0	0	0	1
1980-81	5	100	2	3	0	0	0	0
1981-82	8	83	8	0	0	0	0	0
1982-83	2	50	2	0	0	0	0	0
1983-84	8	83	7	1	0	0	0	0
1984-85	6	50	2	3	1	0	0	0
1985-86	10	60	2	4	1	3	0	0

[a] All figures derived from sealing certificates.

Table 2. Chronology of the furbearer harvest in Unit 22 for 1985-86.

Species	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Total
Lynx	1	0	1	7	8	6	0	23
Otter	0	0	0	4	1	0	5	10
Wolverine	1	3	6	13	8	7	0	38

Table 3. Furbearer harvest computed from 1985-86 Trapper Questionnaire, Unit 22.

Species	Harvest
Lynx	18
Wolverine	20
Mink	1
Muskrat	0
Marten	26
Otter	5
White Fox	1
Other Fox	137
Weasel	0
Beaver	20

FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 23

GEOGRAPHICAL DESCRIPTION: Kotzebue Sound

PERIOD COVERED: 1 July 1985-30 June 1986

Seasons and Bag Limits

See Trapping Regulations No. 26 and Hunting Regulations No. 26.

Summary

Most of the information regarding the population status of furbearers in Unit 23 was reported by trappers responding to our annual Trapper Questionnaire. This Questionnaire has been sent out annually since 1983 and has become one of our best sources of information. Responses to our 1985-86 Trapper Questionnaire indicate that trappers were concerned about the population status of wolverines and, to an even greater extent, lynx. We also have become increasingly concerned about the status of these 2 species because relatively little evidence of their presence was observed during aerial big-game surveys or travels between communities during 1985-86.

No regulatory restrictions for lynx and wolverine are recommended at this time; however, we are concerned about the status of these 2 species and anticipate a future need for restrictions.

Beaver

Responses from our 1985-86 Trapper Questionnaire suggest that beaver densities are moderate to high in the Kobuk and Selawik River drainages and in parts of the northern Seward Peninsula. Most trappers believe the beaver population is still growing, and Selawik residents reported that extensive dam building in the Selawik River drainage significantly impedes the migratory movements of fish. Consequently, many Selawik residents would like the bag limit increased from 30 beavers per season to "no limit."

During September 1986, we conducted an aerial beaver-cache survey on a 139-mi^2 trend area in the Selawik River drainage. Results from the survey revealed a density of 0.52 caches/mi^2

of rivers surveyed; this is nearly identical to the results obtained during our 1985 survey (Table 1). Apparently, the density of beaver caches has increased gradually since 1981.

Thirty-two beavers were sealed in Unit 23 during the 1985-86 trapping season. Thirty-one beavers were from the Pah River drainage, and one was from the Kobuk River drainage. This harvest distribution is radically different from that reported for the 1984-85 season when 26 beaver were sealed from the Kobuk River drainage and two from the Selawik River drainage. However, it is important to note that some beavers are used locally for clothing or food and are not sealed. Therefore, the sealing records probably do not accurately reflect the distribution of the beaver harvest.

Fox

Information about white foxes is limited to what was reported through our Trapper Questionnaire. As in the prior 2 seasons, trappers again reported low numbers of white foxes throughout the unit. However, we do not believe the white fox population declined below the level observed during the 2 previous seasons. Because fur-dealer purchase and trapper export data summaries were not available at the time of writing, we do not have any data regarding harvests.

Opinions and observations about red fox population levels varied considerably among trappers responding to our Trapper Questionnaire. In general, most trappers reported that red foxes were low in number in the Kivalina, Wulik, and Noatak River drainages. Trappers in the Kobuk and Selawik River drainages reported that red fox numbers ranged from high to low. The same was reported by trappers from the Buckland-northern Seward Peninsula area. Numbers of red foxes observed during spring and fall moose surveys declined from 0.7 foxes/hour in 1984-85 to 0.3 foxes/hour in 1985-86 (Table 2). Fox numbers may have declined during the past year following what appeared to be an increase from 1981 to 1985.

Lynx

Forty lynx were sealed during the 1985-86 trapping season (Table 3). Although the current harvest is higher than that of 1984-85 (26 lynx), it is substantially lower than harvest levels reported during past years. Such low harvests are not surprising because of the cyclic nature of lynx populations and the fact that they are currently near the low point of that cycle. Harvests will probably remain low until the cyclic increase of snowshoe hare numbers is well underway. Nearly all of the trappers responding to our 1985-86 Trapper Questionnaire believed that the lynx population is presently

low. We need to be especially careful to avoid excessive harvests that could prevent effective recovery of lynx populations during low periods.

Marten

Results from the Trapper Questionnaire suggest that marten populations have remained at low-to-moderate densities throughout Unit 23. Most trappers indicated that marten numbers seem to be remaining stable at low levels. Because data summaries for fur-dealer purchases and trapper exports were not available, harvest trends could not be assessed.

Mink

Trappers responding to our Trapper Questionnaire indicated that mink numbers are presently at a low-to-moderate level. Most trappers indicated that mink densities seem to be stable with no signs of decrease. Data summaries for fur-dealer purchases and trapper export were not available, and harvest trends could not be evaluated.

Muskrat

Results from the Trapper Questionnaire indicate that trappers believe muskrat numbers are low to moderate throughout most of the unit; however, trappers in the Kivalina and Wulik River drainages and the northern Seward Peninsula reported that muskrat numbers were high. Likewise, our observations of muskrat push-ups near the community of Selawik indicated that muskrat numbers may be high in at least the western end of the Selawik River drainage. Data summaries for fur-dealer purchases and trapper exports for 1985-86 were not available, and we could not evaluate harvest trends.

Otter

Five river otters were sealed during the 1985-86 trapping season (Table 3). Very few otters were sealed between 1981 and 1985; however, this does not necessarily reflect low otter densities. Many otter pelts used locally for clothing and handicrafts were never sealed. Responses to our Trapper Questionnaire indicate that otter numbers were moderate to high throughout the unit; however, a few isolated responses indicate low-to-moderate numbers.

Wolverine

Thirty-two wolverines were sealed during the 1985-86 trapping season (Table 3). This is the lowest reported harvest since 1980. In the past, the northern part of Unit 23 has generally

had the highest abundance of wolverine; the southern part of the unit, the lowest abundance. However, trappers responding to our 1985-86 Trapper Questionnaire indicated that wolverine populations were low in density throughout the unit. The majority of the responding trappers also indicated that the numbers of wolverines observed are lower than or equal to the level noted during the 1984-85 season. In discussing the status of wolverine populations with trappers and other interested individuals, however, we were told that they appeared to be on the rebound. Nevertheless, we remain concerned about their population status. We anticipate having a research program underway next year that will develop techniques for censusing wolverine populations. At present, we have no quantitative way of evaluating their population status or density.

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Table 1. Results from aerial beaver-cache surveys over a 139 mi^2 trend area in the Selawik River drainage, 1981-86.

Year	Survey time (min)	Active caches	Inactive caches	Density of active caches (cache/mi^2)
1981	--	52	25	0.37
1982	75	37	41	0.27
1985	195	73	42	0.53
1986	238	72	41	0.52

Table 2. Red fox observations during Unit 23 fall and spring moose surveys and recorded cases of fox rabies, 1976-86.

Report period	Survey time (hrs)	Foxes observed	Foxes/hr	Reported cases of rabies in red foxes
76-77	32.9	14	0.4	3
77-78	28.7	12	0.4	1
78-79	26.7	34	1.3	0
79-80	37.0	29	0.8	11
80-81	21.7	22	1.0	0
81-82	40.8	61	1.5	2
82-83	47.1	4	0.1	0
83-84	62.5	19	0.3	1
84-85	62.5	42	0.7	0
85-86	46.5	12	0.3	0

Table 3. Reported harvest of lynx, otter, and wolverine from Unit 23, 1977-86.

Species	Total take	% Male	Method of take				Chronology						Area[a]				
			Shot	Trapped	Snared	Unk	Nov	Dec	Jan	Feb	Mar	Apr	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	46	62	72	80	17	1	17	128	143	14
1981-82	483	54	7	444	0	32	23	68	77	154	148	19	1	77	133	238	34
1982-83	277	--	6	265	1	5	24	36	39	69	70	34	4	5	34	149	83
1983-84	98	--	3	93	0	2	9	23	25	25	10	5	0	10	14	27	42
1984-85	26	61	3	23	0	0	3	8	2	4	7	2	1	8	8	4	5
1985-86	40	51	6	33	0	1	4	3	12	11	7	3	9	3	14	9	2
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	27	2	0	21	4	2	0	0	2	0	3	6	20	0
1982-83	7	--	0	9	0	0	5	0	1	3	0	0	0	0	4	4	1
1983-84	8	--	1	7	0	0	3	3	2	0	0	0	0	1	5	1	0
1984-85	5	--	0	5	0	0	2	2	1	0	0	0	1	1	1	1	1
1985-86	5	--	1	4	0	0	1	1	1	2	0	0	0	0	3	0	2

Table 3. (Continued).

Species	Total take	% Male	Method of take				Chronology						Area[a]				
			Shot	Trapped	Snared	Unk	Nov	Dec	Jan	Feb	Mar	Apr	1	2	3	4	5
Wolverine																	
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	37	67	16	20	1	0	3	2	3	13	12	4	2	21	6	3	5
1983-84	46	59	17	27	1	1	2	8	17	7	5	3	0	23	9	6	7
1984-85	37	61	19	15	2	2	1	5	7	3	13	7	0	15	11	5	6
1985-86	32	77	7	24	1	0	0	4	10	5	12	1	0	15	14	0	3

[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 northern Seward Peninsula drainages.

FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 24

GEOGRAPHICAL DESCRIPTION: Koyukuk River drainage above Dulbi River

PERIOD COVERED: 1 July 1985-30 June 1986

Season and Bag Limit

See Hunting Regulations No. 26 and Trapping Regulations No. 26.

Trapping Conditions

The weather was mild for most of the 1985-86 trapping season, but warm temperatures were responsible for frequent flooding that caused difficulties; in 1985 it reduced the vole populations in the southern part of Unit 24 lowlands. Hare abundance remains low, but populations are starting to recover.

Beaver

Based on sealing records, 595 beavers were taken during the 1985-86 season (Table 1). Only 41 beaver were taken in the unit above the confluence of the Alatna and Koyukuk Rivers.

Land Otter

Thirteen otters were reported taken during the 1985-86 season (Table 1). Although otters are abundant, almost all were taken incidentally to beaver trapping. With prices low, otter trapping effort was also low.

Lynx

Two hundred and three lynx were reported taken during the season (Table 1). Harvest data indicate that lynx numbers have reached the cyclic low and are now starting to increase. Even with increased trapper activity, lynx were not observed in the Brooks Range portions of the unit.

Wolverine

The wolverine harvest (38) was about average (Table 1). The true harvest may have been higher because furs used locally are seldom sealed. However, 1 trapper in the Kanuti area caught six and all were sealed.

Other Furbearers

Red fox continued to be abundant, but there is little trapper interest. Marten were moderately abundant in southern Unit 24, and this species is the primary furbearer sought by trappers.

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Table 1. Furbearer harvest in Unit 24, 1981-86.

Species	1981-82	1982-83	1983-84	1984-85	1985-86
Beaver	163	383	508	236	595
Lynx	798	698	430	162	203
Otter	11	13	28	19	13
Wolverine	24	45	36	19	38

FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 25

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

PERIOD COVERED: 1 July 1985-30 June 1986

Season and Bag Limit

See Hunting Regulations No. 26 and Trapping Regulations No. 26.

Trapping Conditions

Access problems caused by lack of snow early in the season and high prices for pelts were the 2 major factors influencing trapping in Unit 25. These factors probably had somewhat opposing effects on the harvest: access problems caused reduced take and higher prices stimulated effort.

Beaver

Sealing records indicate that 479 beavers were harvested (Table 1); most were taken in Subunits 25D (63%) and 25B (35%), and only 11 beavers were taken in the other 2 subunits. Most beavers harvested (67%) were adults (Table 2), and 83% of the take occurred during February and March (Table 3). Snaring was the most common method of take (89%), and snow machines provided most of the transportation (63%) (Table 4).

The harvest trend is definitely upward. It has risen by 106% over the past 3 years; 96% of the increase occurred in Subunit 25. Higher pelt prices undoubtedly stimulated the increase in trapper effort and, consequently, was a major factor influencing take. Beaver populations in the unit are likely large enough to support the harvest, particularly in Subunit 25D where food cache surveys by U.S. Fish and Wildlife Service biologists and incidental observations indicate density is relatively high and numbers may be slightly increasing.

Land Otter

The harvest of 15 land otters was reported; seven were taken in Subunit 25D. The harvest occurred from November through

March. Five otters were trapped, and 10 were snared; snow machines were used most commonly for transportation. Incidental observations indicate otter density is low in most of Unit 25. The exception is Subunit 25D where density is moderate, reflecting higher quality habitat. Harvest was probably not excessive in any portion of the unit.

Lynx

Information on relative abundance and distribution of lynx in Subunit 25D and central Subunit 25B was collected as part of a cooperative study with the U.S. Fish and Wildlife Service (Golden 1987). Density of tracks along aerial transects was 0.0 to 0.40/mile, with nearly 80% having <0.06/mile. The highest densities (0.04-0.40 tracks/mile) were found in the upper Black, Little Black, Hodzana, and Hadweenzic River drainages; the area between the Porcupine and Christian Rivers; and the extreme southwestern portion of Subunit 25D. No significant differences were found in elevational distribution when data were broadly stratified as lowland, bench, and hills. Also, the overall density was lower than those reported for other areas.

Sealing records indicate a harvest of 513 lynx; most (67%) were taken in Subunit 25D. Fifty-eight percent were taken during December, and 41% were harvested during January. These were the only 2 months when the season was open. Trapping was the most common method of take (55%), and snow machines were the most popular means of transportation (56%).

Compared with the 1984-85 season, the lynx harvest decreased by 104. This continues a downward trend that began in 1983-84; during 1982-83 the harvest peaked at 1,576. The downward trend in harvest suggests that the lynx population also has peaked and is declining. This appears to be confirmed by the recent aerial-track counts that indicate the population density is relatively low.

During this reporting period, the lynx-trapping season was shortened from 4.5 to 2 months. The objective was to reduce harvest and thereby protect the population while density is low. This objective was probably not achieved; although harvest did decline by 104 animals, most of this can be attributed to scarcity of lynx and not to the reduced season length. Reports from a fur buyer and several disgruntled trappers indicated trapping was widespread in November (before the season opened) and in February (after it closed). This occurred because (1) there is very little enforcement of fish and wildlife regulations in Unit 25 and (2) pelt prices were very high. Until these circumstances change, the existing season will not significantly limit the harvest of lynx.

Wolverine

Harvest of 45 wolverines was reported. Most of the take was from Subunits 25A (33%), 25B (29%), and 25D (31%). Thirty-three percent of the wolverines were taken during January, the most productive month for wolverine trapping. Trapping was the most common method of take (60%), and most individuals (56%) used snow machines for transportation.

Incidental observations and harvest reports indicate that wolverine populations are stable and the harvest is not excessive. Density is probably low in all subunits.

Literature Cited

Golden, H. M. 1987. Survey of furbearer populations on the Yukon Flats National Wildlife Refuge. Final Rep. 14-16-007-84-7416. Alaska Dep. of Fish and Game and U.S. Fish and Wildlife Service, Yukon Flats National Wildlife Refuge. 86pp.

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Table 1. Furbearer harvest in Unit 25, 1985-86.

Species	Subunit 25A	25B	25C	25D	Total
Beaver	7	166	4	302	479
Land Otter	4	4	0	7	15
Lynx	57	104	6	346	513
Wolverine	15	13	3	14	45

Table 2. Unit 25 beaver harvest by pelt size category, 1985-86.

Subunit	Pelt size in inches (length plus width) 0-52[a]	53-59	60-64[b]	≥65[b]	Unk
25A	0	1	4	2	0
25B	38	16	49	65	0
25C	0	0	2	2	0
25D	46	41	88	112	15
Total	84	58	143	179	15

[a] Kits.
[b] Adults.

Table 3. Chronology of furbearer harvest from Unit 25, 1985-86.

Species	Month Nov	Dec	Jan	Feb	Mar	Apr	Unk
Beaver	15	11	27	86	313	25	2
Land Otter	3	3	3	1	5	0	0
Lynx	0	295	208	1	2	0	7
Wolverine	6	12	15	5	7	0	0

Table 4. Method of take and transportation used in furbearer harvest from Unit 25, 1985-86.

Species	Method of take				Method of transportation			
	Ground-shooting	Trapping	Snaring	Unk	Airplane	Dog sled	Snow machine	Unk
Beaver	0	52	427	0	111	36	300	32
Land Otter	0	5	10	0	1	1	9	4
Lynx	0	280	231	2	9	32	288	184
Wolverine	5	27	12	1	7	6	25	7

FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 26A

GEOGRAPHICAL DESCRIPTION: Western Arctic Slope

PERIOD COVERED: 1 July 1985-30 June 1986

Season and Bag Limit

See Hunting Regulations No. 26 and Trapping Regulations No. 26.

Fox

No harvest data are available for Arctic fox. Informal interviews with recreational trappers in the Barrow area suggest that Arctic foxes remain abundant. No changes in season and bag limit are recommended.

No information regarding harvest or population status are available for red foxes. However, during 15.5 hours of aerial moose surveys on the Colville River and its tributaries in late April 1986, only 2 red foxes and 3 wolverines were observed. No changes in season or bag limit are recommended.

Lynx

During 1985-86, 5 lynx were reported taken in Subunit 26A. On 4 April 1986 a single lynx was observed resting at the confluence of Piedmont Creek and the Okokmilaga River (Killik River drainage). No changes in season or bag limit are recommended.

Wolverine

Magoun (1984) estimated a minimum fall population of 821 wolverines in Subunit 26A. This estimate was based on a wolverine density of 1/48 km^2 (1/19 mi^2) in the foothills and 1/139 km^2 (1/54 mi^2) for the entire subunit. Magoun's model indicated the population could, under certain circumstances, sustain an annual harvest of nearly 300 wolverines. This high harvest rate would be sustainable only if no more than 90 females were harvested and the reproductive rate of 0.60 kits/female/year (observed in the Driftwood study area) was valid throughout the unit.

Sealing records indicate that 12 wolverines were killed by hunters during 1985-86. The actual harvest is certainly much higher. Magoun (1984) estimated that in some years less than 10% of the wolverines taken in Subunit 26A were sealed and only rarely were more than 50% sealed. I believe that the actual harvest is approximately 100 wolverines, assuming an average annual harvest of 15-20 for each of the 6 communities located in Subunit 26A. If Magoun's population estimate and assumptions are still valid, overharvesting is probably not occurring in Subunit 26A; however, the potential for overharvesting exists. Local demand for pelts is high, and prices often exceed $400 for raw skins. Wolverines can be especially vulnerable to skilled hunters and trappers using snowmachines, many of whom commonly travel more than 100 miles from their home communities in search of them.

Problems and proposed solutions for dealing with the shortcomings in furbearer harvest reporting have been documented in earlier reports (Trent 1984, 1985). The best solutions would include assigning either part-time Department representatives living in each community or an assistant area biologist the task of improving furbearer harvest reporting. These are long-term management goals for Subunit 26A.

An investigation of the subsistence use of all species by the residents of Barrow and Wainwright was recently begun by the U.S. Minerals Management Service. Within a year we should know whether this study will allow us to estimate the wolverine harvest for these 2 communities. Integrating the results of this and other subsistence research studies might provide an independent estimate of current harvest on the western North Slope. If no new insights into wolverine harvests are available by the end of FY 88, I will recommend a skull-purchasing program for wolverines. Such a program could provide reliable data on sex and age composition (Magoun 1984) as well as an independent estimate of the harvest. Public acceptance of these activities should be relatively easy to achieve.

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

Literature Cited

Magoun, A.J. 1984. Population characteristics, ecology, and management of wolverines in northwestern Alaska. Ph.D Dissertation, Univ. Alaska, Fairbanks. 197pp.

Trent, J. N. 1984. Unit 26A furbearer survey-inventory progress report. Pages 77-79 in B. Townsend, ed. Annual report of survey-inventory activities. Part XIV.

Furbearers. Vol. XV. Alaska Dep. Fish and Game. Fed. Aid in Wildl. Rest. Prog. Rep. Proj. W-22-3. Job 7.0. Juneau. 100pp.

Trent, J. N. 1985. Unit 26A furbearer survey-inventory progress report. Pages 72-73 in B. Townsend, ed. Annual report of survey-inventory activities. Part XIV. Furbearers. Vol. XVI. Alaska Dep. Fish and Game. Fed. Aid in Wildl. Rest. Prog. Rep. Proj. W-22-4. Job 7.0. Juneau. 94pp.

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FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 26B and 26C

GEOGRAPHICAL DESCRIPTION: Arctic Slope east of and including the Itkillik drainage and east of the Colville River

PERIOD COVERED: 1 July 1985-30 June 1986

No furbearers were sealed from either Subunits 26B or 26C during regulatory year 1985-86. No furbearer surveys of any kind were conducted by ADF&G. There are no data available from the public or from other agencies to indicate that any changes in furbearer numbers or in harvest have occurred relative to past years. In summary, no data are available for completing S&I reports for these subunits.

Appendix. Results of 1985-86 Trapper Questionnaire

FURBEARERS

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNITS: 12, 13, 19, 20, 21, 24, and 25

GEOGRAPHICAL DESCRIPTION: Interior Alaska

PERIOD COVERED: 1 July 1985-30 June 1986

Trapper Questionnaire

The Trapper Questionnaire was sent to 300 trappers in Units 12, 13, 19, 20, 21, 24, and 25 in spring 1985; as in 1984-85, the Glennallen area (Unit 13) was included. Although no reminder letters were sent, 185 questionnaires (62%) were returned. Of these, 23 respondents indicated they had not trapped and therefore provided no other information. One hundred fifty-two responses provided data regarding harvest and population trends (Tables 1 and 2).

Questionnaire Results - Harvest and Population Levels

Beavers:

Trappers reported moderately high numbers of beavers, amounting to a slight increase over that of the previous year. Responses from trappers from Fairbanks, Galena-Nulato, Aniak-Lower Kuskokwim, McGrath, Hughes-Huslia, Manley-Livengood-Minto, and Tanana-Ruby areas indicated high beaver numbers. Trappers from the Fort Yukon, Nenana-Clear, Tok-Northway-Tetlin-Chicken, Beaver-Stevens Village-Rampart, and the Manley-Livengood-Minto areas also reported increased beaver populations.

Coyote:

Less than half the respondents had comments regarding coyote abundance, and few trappers reported catching them. Delta trappers reported catching 35 coyotes in 1985-86; whereas, they reported a catch of 50 coyotes in 1984-85. Coyote populations were reported at moderate levels in the Delta and Glennallen areas. Generally, however, populations of coyotes were reported to be low or nonexistent, representing little change from 1984-85.

Land Otter:

Land otter abundance was reported to be moderately low throughout the Interior. Trappers in the Galena-Nulato, Tanana-Ruby, and Manley-Livengood-Minto areas reported otters to be moderately abundant and little changed from 1984-85.

Lynx:

Lynx catches in the Interior declined in 1985-86, compared with 1984-85. Cooperators reported catching 265 lynx in 1985-86 (Table 1), compared with 385 in 1984-85. However, many trappers do not reveal their catch. The sealing records would show the actual harvest for the region.

Fewer lynx were reported taken in the Fort Yukon area in 1985-86 than during the previous year, and the average number of lynx per trapper decreased. Fairbanks area trappers also reported lower catches of lynx in 1985-86, as did trappers from most other areas. Lynx populations were reported low to moderately low throughout the Interior. All respondents, except those from the Beaver-Stevens Village-Rampart, Nenana-Clear, Lake Minchumina, and Tanana-Ruby areas, reported decreasing lynx population levels, compared with 1984-85.

Marten:

Regionwide, the total marten harvest and the average catch of marten per trapper decreased in 1985-86 (Table 1), compared with 1984-85. Only trappers from Hughes-Huslia, Lake Minchumina, McGrath, and Manley-Livengood-Minto areas reported increases in marten taken. Elsewhere in the Interior, cooperators reported significant decreases in marten numbers.

Marten populations were reported to be moderately low and decreasing slightly in the Interior. Trappers from Aniak, Lower Kuskokwim, McGrath, Tanana-Ruby reported moderate numbers of marten. Numbers increased in the Hughes-Huslia area but remained much the same or declined somewhat in most other areas.

Mink:

Mink populations were reported low to moderately low, representing little change from 1984-85 levels. Reports from the Hughes-Huslia and Manley-Livengood-Minto areas indicated moderately high numbers of mink. Populations declined slightly in most areas but increased in the Hughes-Huslia, Beaver-Stevens Village-Rampart, and Manley-Livengood-Minto areas.

Muskrat:

Muskrat populations were reported as low to moderately low in the Interior and little changed from 1984-85. Tok-Northway area trappers reported moderate numbers of muskrats, but in most other areas muskrat populations were thought to be moderately low and little changed from 1984-85.

Red Fox:

Interior trappers reported an average harvest of 8 red foxes per trapper (Table 1), slightly less than in 1984-85. The total number of foxes reported taken in the Interior was less (570 compared with 897 the previous year), but the number of trappers reporting was also less. McGrath trappers reported taking the most foxes (98). Glennallen trappers reported the highest average number of foxes per trapper (24.3), an increase from that (21.7) in 1984-85. Fox populations were reported as moderately low regionwide and as less abundant than in 1984-85.

Red Squirrel:

Numbers of red squirrels were thought to be moderate to moderately high in 1985-86, representing little change from 1984-85.

Wolf:

Overall, trappers reported that wolf populations in the Interior were moderate to moderately low and their numbers were just slightly lower than in 1984-85. Respondents from Aniak-Lower Kuskokwim, Circle-Central, Fort Yukon, Galena-Nulato, Lake Minchumina, McGrath, Nenana-Clear, and Tok-Northway-Tetlin-Chicken areas all reported moderate numbers of wolves and some increase in populations, compared with the previous year. Trappers from Cantwell-Denali Park, Glennallen, Hughes-Huslia, and Beaver-Stevens Village-Rampart areas reported low numbers of wolves and a decline in numbers from 1984-85.

Wolverine:

Respondents indicated wolverine populations were moderately low to low throughout the Interior and a slight decline in numbers from 1984-85. Increased numbers of wolverines were reported taken from the Hughes-Huslia area.

Grouse:

Grouse populations were reported to be moderately low to moderate in the Interior, but compared with 1984-85, the

numbers have increased. Increased populations were reported from most areas; only Glennallen cooperators reported a slight decline.

Ptarmigan:

Trappers indicated low ptarmigan populations throughout the Interior, but reports suggested an increase from 1984-85 levels. Trappers from Aniak-Lower Kuskokwim, Brooks Range, and Glennallen areas reported a slight decline in ptarmigan abundance.

Snowshoe Hare:

Snowshoe hare numbers were reported as low throughout the Interior. Populations were thought to have remained approximately the same in all areas, except in the Aniak-Lower Kuskokwim, Brooks Range, Cantwell-Denali Park, Circle-Central, and Glennallen areas, which reported a decline in the number of hares.

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Table 1. Lynx, fox, and marten harvests as indicated by the Trapper Questionnaire, 1985-86.

Area	Number trappers[a] responding	Number lynx taken	Number lynx/ trapper[a]	Number fox taken	Number fox/ trapper[a]	Number marten taken	Number marten/ trapper[a]
Aniak-Lower Kuskokwim	5	0	0	6	2	184	61.3
Beaver-Stevens Village-Rampart	5	18	4.5	29	7.3	187	62.3
Brooks Range	10	31	4.4	36	5.1	214	30.6
Cantwell-Denali Park	5	10	10	41	13.3	30	30.0
Circle-Central	8	9	4.5	10	3.3	133	26.6
Delta	13	10	2.0	50	8.3	99	16.5
Fairbanks	25	16	4.0	25	12.5	341	24.4
Fort Yukon	11	87	10.9	65	8.1	353	44.1
Galena-Nulato	6	5	1.7	4	4.0	114	28.5
Glennallen	7	0	0.0	73	24.3	23	11.5
Hughes-Huslia	4	3	3.0	10	3.3	202	67.3
Lake Minchumina	4	7	2.3	6	2.0	227	75.7
Manley-Livengood-Minto	6	15	3.0	35	8.8	218	43.6
McGrath	13	10	3.3	98	14.0	789	78.9
Nenana-Clear	7	3	3.0	6	3.0	106	35.3
Tanana-Ruby	3	9	4.5	4	2.0	291	145.5
Tok-Northway-Tetlin-Chicken	20	32	4.6	72	8.0	609	35.8
Interior totals	152	265	2.7	570	8.1	4,120	42.9

[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 questionnaire, divided by the number of trappers listing any catch.

Table 2. Interior Alaska beaver population abundance and trend indices based on Trapper Questionnaire, 1985-86.

Area	Abundance in 1985-86 season[a]				Compared with 1984-85[a]			
	Low	Mod	High	Index[b]	Fewer	Same	More	Index[b]
Aniak-Lower Kuskokwim	0	2	2	7.0	0	3	1	6.0
Beaver-Stevens Village-Rampart	0	3	1	6.0	0	2	1	6.3
Brooks Range	1	1	1	5.0	1	2	0	3.7
Cantwell-Denali Park	0	2	0	5.0	0	1	1	7.0
Circle-Central	0	4	2	6.3	0	5	0	5.0
Delta	4	5	1	3.8	2	7	1	4.6
Fairbanks	1	5	8	7.0	0	9	4	6.2
Fort Yukon	1	7	1	5.0	0	6	3	6.3
Galena-Nulato	0	2	2	7.0	1	1	1	5.0
Glennallen	2	3	1	4.3	1	4	1	5.0
Hughes-Huslia	0	0	4	9.0	0	1	3	8.0
Lake Minchumina	0	1	3	8.0	0	3	0	5.0
Manley-Livengood-Minto	0	2	3	7.4	0	3	2	6.6
McGrath	0	4	4	7.0	1	5	2	3.0
Nenana-Clear	0	4	1	5.8	0	3	1	6.0
Tanana-Ruby	0	0	2	9.0	0	2	0	5.0
Tok-Northway-Tetlin-Chicken	5	1	2	3.5	2	3	1	4.3
Interior totals	14	46	38	6.0	8	60	22	5.6

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

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

Table 3. Interior Alaska coyote population abundance and trend indices by species based on Trapper Questionnaire, 1985-86.

Area	Abundance in 1985-86 season[a]				Compared with 1984-85[a]			
	Low	Mod	High	Index[b]	Fewer	Same	More	Index[b]
Aniak-Lower Kuskokwim	1	0	0	1.0	1	0	0	1.0
Beaver-Stevens Village-Rampart	2	0	0	1.0	0	1	0	5.0
Brooks Range	1	0	0	1.0	0	1	0	5.0
Cantwell-Denali Park	2	1	0	2.3	1	2	0	3.7
Circle-Central	6	0	0	1.0	3	2	0	2.6
Delta	3	6	2	4.6	2	5	4	5.7
Fairbanks	12	1	0	1.1	3	6	2	4.6
Fort Yukon	4	0	0	1.0	1	3	0	4.0
Galena-Nulato	2	0	0	1.0	0	1	0	5.0
Glennallen	2	2	2	5.0	2	2	2	5.0
Hughes-Huslia	2	0	0	1.0	1	1	0	3.0
Lake Minchumina	1	0	0	1.0	0	1	0	5.0
Manley-Livengood-Minto	3	0	0	1.0	0	3	0	5.0
McGrath	3	0	1	3.0	2	2	0	3.0
Nenana-Clear	2	1	0	2.3	0	2	0	5.0
Tanana-Ruby	--	--	--	--	--	--	--	--
Tok-Northway-Tetlin-Chicken	10	3	0	1.9	6	7	0	3.2
Interior totals	56	14	5	2.3	22	39	8	4.2

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

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

Table 4. Interior Alaska grouse population abundance and trend indices by species based on Trapper Questionnaire, 1985-86

Area	Abundance in 1985-86 season[a]				Compared with 1984-85[a]			
	Low	Mod	High	Index[b]	Fewer	Same	More	Index[b]
Aniak-Lower Kuskokwim	2	0	3	5.8	2	2	1	4.2
Beaver-Stevens Village-Rampart	2	2	0	3.0	1	1	1	5.0
Brooks Range	3	2	0	2.6	2	2	1	4.2
Cantwell-Denali Park	1	0	1	5.0	0	1	1	7.0
Circle-Central	1	5	1	5.0	0	3	3	5.3
Delta	1	10	0	4.6	0	6	5	6.8
Fairbanks	11	8	1	3.0	2	8	6	6.0
Fort Yukon	2	4	4	5.8	1	2	7	7.4
Galena-Nulato	0	0	1	9.0	--	--	--	--
Glennallen	2	4	0	3.7	2	4	0	3.7
Hughes-Huslia	0	3	0	5.0	0	2	1	6.3
Lake Minchumina	2	2	0	3.0	0	2	1	6.3
Manley-Livengood-Minto	2	2	0	3.0	0	2	2	7.0
McGrath	1	8	0	4.6	0	6	3	6.3
Nenana-Clear	2	4	1	4.4	0	2	4	7.7
Tanana-Ruby	0	2	0	5.0	0	2	0	5.0
Tok-Northway-Tetlin-Chicken	9	7	1	3.1	3	9	4	5.3
Interior totals	41	63	13	4.0	13	54	40	6.0

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

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

Table 5. Interior Alaska land otter population abundance and trend indices by species based on Trapper Questionnaire, 1985-86.

Area	Abundance in 1985-86 season[a]				Compared with 1984-85[a]			
	Low	Mod	High	Index[b]	Fewer	Same	More	Index[b]
Aniak-Lower Kuskokwim	1	3	0	4.0	1	2	1	5.0
Beaver-Stevens Village-Rampart	1	1	2	5.8	1	1	1	5.0
Brooks Range	2	1	0	2.3	1	2	0	3.7
Cantwell-Denali Park	1	1	0	3.0	0	2	0	5.0
Circle-Central	3	1	0	2.0	0	2	0	5.0
Delta	5	1	0	2.3	1	5	0	4.3
Fairbanks	7	2	0	1.9	1	7	0	4.5
Fort Yukon	4	2	1	3.3	3	3	1	3.9
Galena-Nulato	0	1	1	7.0	0	1	0	5.0
Glennallen	2	4	0	3.7	1	4	1	5.0
Hughes-Huslia	0	3	0	5.0	0	3	0	5.0
Lake Minchumina	1	2	1	5.0	0	3	0	5.0
Manley-Livengood-Minto	0	2	1	6.3	0	3	0	5.0
McGrath	4	4	1	3.7	2	6	1	4.6
Nenana-Clear	1	2	0	3.7	0	2	0	5.0
Tanana-Ruby	0	1	1	7.0	0	2	0	5.0
Tok-Northway-Tetlin-Chicken	5	2	0	2.1	1	5	0	4.3
Interior totals	37	33	8	3.5	12	53	5	4.6

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

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

Table 6. Interior Alaska lynx population abundance and trend indices by species based on Trapper Questionnaire, 1985-86.

Area	Abundance in 1985-86 season[a]				Compared with 1984-85[a]			
	Low	Mod	High	Index[b]	Fewer	Same	More	Index[b]
Aniak-Lower Kuskokwim	4	0	0	1.0	2	2	0	3.0
Beaver-Stevens Village-Rampart	4	1	0	1.8	1	2	1	5.0
Brooks Range	6	1	0	1.6	6	1	0	1.6
Cantwell-Denali Park	2	1	0	2.3	2	1	0	2.3
Circle-Central	7	0	0	1.0	5	1	0	1.7
Delta	10	1	0	1.4	5	6	0	3.2
Fairbanks	17	0	0	1.0	4	10	1	4.2
Fort Yukon	7	3	0	2.2	4	3	3	4.6
Galena-Nulato	3	0	0	1.0	1	1	0	3.0
Glennallen	6	0	0	1.0	4	1	1	3.0
Hughes-Huslia	3	0	0	1.0	2	1	0	2.3
Lake Minchumina	3	1	0	2.0	0	1	2	7.4
Manley-Livengood-Minto	6	1	0	1.6	4	2	1	3.3
McGrath	9	0	0	1.0	4	4	1	3.7
Nenana-Clear	6	1	0	1.6	0	5	1	5.7
Tanana-Ruby	1	1	0	3.0	0	1	1	7.0
Tok-Northway-Tetlin-Chicken	18	0	0	1.0	8	6	4	4.1
Interior totals	112	11	0	1.4	52	48	16	3.8

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

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

Table 7. Interior Alaska marten population abundance and trend indices by species based on Trapper Questionnaire, 1985-86.

Area	Abundance in 1985-86 season[a]				Compared with 1984-85[a]			
	Low	Mod	High	Index[b]	Fewer	Same	More	Index[b]
Aniak-Lower Kuskokwim	1	4	0	5.2	1	4	0	4.2
Beaver-Stevens Village-Rampart	3	1	0	2.0	1	2	0	3.7
Brooks Range	1	5	0	4.3	2	5	0	3.9
Cantwell-Denali Park	1	1	0	3.0	1	1	0	3.0
Circle-Central	3	4	0	2.7	3	2	0	2.6
Delta	7	2	0	1.9	4	4	1	3.7
Fairbanks	9	8	2	3.5	5	7	3	3.4
Fort Yukon	4	5	1	3.8	6	3	1	3.0
Galena-Nulato	2	1	0	2.3	1	1	0	3.0
Glennallen	2	4	0	3.7	3	1	2	4.0
Hughes-Huslia	1	2	0	3.7	0	2	1	6.3
Lake Minchumina	2	1	1	4.0	1	1	1	5.0
Manley-Livengood-Minto	2	3	1	4.3	3	2	1	3.7
McGrath	2	7	1	4.6	4	5	1	3.8
Nenana-Clear	3	4	0	3.3	4	2	0	2.3
Tanana-Ruby	0	2	0	5.0	1	1	0	3.0
Tok-Northway-Tetlin-Chicken	11	8	0	2.7	14	4	0	1.9
Interior totals	54	62	6	3.4	54	47	11	3.5

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

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

Table 8. Interior Alaska mink population abundance and trend indices by species based on Trapper Questionnaire, 1985-86.

Area	Abundance in 1985-86 season[a]				Compared with 1984-85[a]			
	Low	Mod	High	Index[b]	Fewer	Same	More	Index[b]
Aniak-Lower Kuskokwim	2	2	0	3.0	1	3	0	4.0
Beaver-Stevens Village-Rampart	3	1	0	3.0	1	0	2	6.3
Brooks Range	3	0	0	1.0	2	1	0	2.3
Cantwell-Denali Park	1	1	0	3.0	0	2	0	5.0
Circle-Central	6	1	0	1.6	1	5	0	6.0
Delta	4	3	0	2.7	1	6	0	4.4
Fairbanks	9	5	0	1.7	1	10	1	5.0
Fort Yukon	4	2	0	2.3	3	2	1	3.7
Galena-Nulato	2	1	0	2.3	1	1	0	3.0
Glennallen	5	1	0	1.7	3	2	1	3.7
Hughes-Huslia	0	2	1	6.3	0	1	2	7.7
Lake Minchumina	2	2	0	3.0	3	0	0	1.0
Manley-Livengood-Minto	2	3	1	4.3	0	3	2	6.6
McGrath	2	3	2	5.0	1	4	2	3.0
Nenana-Clear	0	2	0	5.0	1	2	0	3.7
Tanana-Ruby	1	1	0	3.0	1	1	0	3.0
Tok-Northway-Tetlin-Chicken	8	1	0	1.4	4	5	0	3.2
Interior totals	54	31	4	2.8	24	48	11	4.4

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

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

Table 9. Interior Alaska muskrate population abundance and trend indices by species based on Trapper Questionnaire, 1985-86.

Area	Abundance in 1985-86 season[a]				Compared with 1984-85[a]			
	Low	Mod	High	Index[b]	Fewer	Same	More	Index[b]
Aniak-Lower Kuskokwim	3	0	0	1.0	2	1	0	2.3
Beaver-Stevens Village-Rampart	3	1	0	2.0	1	0	2	6.3
Brooks Range	3	0	0	1.0	2	1	0	2.3
Cantwell-Denali Park	1	0	0	1.0	0	1	0	5.0
Circle-Central	2	4	0	3.3	2	1	2	3.4
Delta	5	2	0	2.1	0	6	1	5.6
Fairbanks	4	5	1	2.8	1	6	3	5.8
Fort Yukon	4	3	2	4.1	2	3	4	5.9
Galena-Nulato	1	0	0	1.0	--	--	--	--
Glennallen	4	0	1	2.6	3	1	1	3.4
Hughes-Huslia	1	2	0	3.7	0	1	2	7.7
Lake Minchumina	2	0	0	1.0	1	1	0	3.0
Manley-Livengood-Minto	1	3	0	4.0	0	2	2	7.0
McGrath	3	2	0	2.6	1	4	0	4.2
Nenana-Clear	1	0	0	1.0	--	--	--	--
Tanana-Ruby	1	1	0	3.0	0	1	1	7.0
Tok-Northway-Tetlin-Chicken	5	0	5	5.0	1	3	4	6.5
Interior totals	44	23	9	3.2	16	32	22	5.3

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

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

Table 10. Interior Alaska ptarmigan population abundance and trend indices by species based on Trapper Questionnaire, 1985-86.

Area	Abundance in 1985-86 season[a]				Compared with 1984-85[a]			
	Low	Mod	High	Index[b]	Fewer	Same	More	Index[b]
Aniak-Lower Kuskokwim	3	1	0	2.0	2	2	0	3.0
Beaver-Stevens Village-Rampart	3	1	0	2.0	1	1	1	5.0
Brooks Range	0	2	6	8.0	0	2	6	8.0
Cantwell-Denali Park	1	1	1	5.0	2	0	1	3.7
Circle-Central	2	2	3	5.6	0	1	5	8.3
Delta	5	4	0	2.8	2	5	2	5.0
Fairbanks	13	4	1	2.3	2	10	3	5.3
Fort Yukon	2	5	3	5.4	1	2	7	7.4
Galena-Nulato	0	1	0	5.0	--	--	--	--
Glennallen	3	3	0	3.0	3	3	0	3.0
Hughes-Huslia	0	3	0	5.0	1	0	2	6.3
Lake Minchumina	1	3	0	7.0	0	1	2	7.7
Manley-Livengood-Minto	2	1	0	2.3	0	1	2	7.7
McGrath	5	3	0	2.5	3	3	2	4.5
Nenana-Clear	4	3	0	2.7	0	1	5	8.3
Tanana-Ruby	2	0	0	1.0	0	0	2	9.0
Tok-Northway-Tetlin-Chicken	5	8	3	4.5	0	7	8	7.1
Interior totals	51	45	17	3.8	17	39	48	6.2

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

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

Table 11. Interior Alaska red fox population abundance and trend indices by species based on Trapper Questionnaire, 1985-86.

Area	Abundance in 1985-86 season[a]				Compared with 1984-85[a]			
	Low	Mod	High	Index[b]	Fewer	Same	More	Index[b]
Aniak-Lower Kuskokwim	2	3	0	3.4	2	3	0	3.4
Beaver-Stevens Village-Rampart	2	2	1	4.2	1	3	0	4.0
Brooks Range	4	4	1	3.7	1	7	0	4.5
Cantwell-Denali Park	1	2	0	3.7	1	2	0	3.7
Circle-Central	5	1	1	2.7	3	3	0	3.0
Delta	7	5	0	2.7	6	6	0	3.0
Fairbanks	11	8	1	3.0	4	8	5	5.2
Fort Yukon	6	4	0	2.6	6	2	2	3.4
Galena-Nulato	2	1	0	2.3	1	1	0	3.0
Glennallen	2	4	0	3.7	4	2	0	2.3
Hughes-Huslia	1	2	0	3.7	0	3	0	5.0
Lake Minchumina	2	2	0	3.0	1	2	0	3.7
Manley-Livengood-Minto	4	2	0	2.3	2	3	1	4.3
McGrath	3	5	2	4.6	2	5	3	5.4
Nenana-Clear	3	2	2	4.4	3	3	0	3.0
Tanana-Ruby	1	1	0	3.0	0	2	0	5.0
Tok-Northway-Tetlin-Chicken	13	4	0	1.9	10	6	0	2.5
Interior totals	69	52	8	3.1	47	61	11	3.8

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

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

Table 12. Interior Alaska red squirrel population abundance and trend indices by species based on Trapper Questionnaire, 1985-86.

Area	Abundance in 1985-86 season[a]				Compared with 1984-85[a]			
	Low	Mod	High	Index[b]	Fewer	Same	More	Index[b]
Aniak-Lower Kuskokwim	1	3	0	4.0	0	3	1	6.0
Beaver-Stevens Village-Rampart	1	1	2	5.8	1	1	1	5.0
Brooks Range	1	2	1	5.0	1	2	1	5.0
Cantwell-Denali Park	0	2	0	5.0	0	2	0	5.0
Circle-Central	1	4	2	5.6	0	4	2	6.3
Delta	0	7	2	5.9	1	8	0	4.6
Fairbanks	2	6	5	5.9	1	8	3	4.9
Fort Yukon	1	5	4	6.2	0	6	4	6.6
Galena-Nulato	0	1	0	5.0	0	1	0	5.0
Glennallen	1	5	0	3.5	2	2	1	4.2
Hughes-Huslia	0	1	2	7.7	0	2	1	6.3
Lake Minchumina	0	3	1	6.0	0	2	1	6.3
Manley-Livengood-Minto	0	4	0	5.0	0	3	1	6.0
McGrath	0	3	5	7.5	1	4	3	6.0
Nenana-Clear	0	4	2	6.3	0	5	0	5.0
Tanana-Ruby	0	1	1	7.0	0	1	1	7.0
Tok-Northway-Tetlin-Chicken	4	8	2	4.4	5	7	2	4.1
Interior totals	12	60	29	5.7	12	61	22	5.4

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

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

Table 13. Interior Alaska snowshoe hare population abundance and trend indices by species based on Trapper Questionnaire, 1985-86.

Area	Abundance in 1985-86 season[a]				Compared with 1984-85[a]			
	Low	Mod	High	Index[b]	Fewer	Same	More	Index[b]
Aniak-Lower Kuskokwim	4	0	0	1.0	2	2	0	3.0
Beaver-Stevens Village-Rampart	3	1	0	2.0	1	0	2	6.3
Brooks Range	5	2	0	2.1	4	2	1	3.3
Cantwell-Denali Park	2	0	0	1.0	1	1	0	3.0
Circle-Central	7	0	0	1.0	4	0	2	3.7
Delta	9	1	0	1.4	3	6	1	4.2
Fairbanks	14	5	0	2.1	3	8	5	5.5
Fort Yukon	6	2	2	3.4	2	4	4	5.8
Galena-Nulato	1	1	0	3.0	0	1	0	5.0
Glennallen	6	0	0	1.0	3	3	0	3.0
Hughes-Huslia	3	0	0	1.0	1	1	1	5.0
Lake Minchumina	4	0	0	1.0	1	0	2	6.3
Manley-Livengood-Minto	4	1	0	1.8	1	3	1	5.0
McGrath	8	1	1	2.6	4	3	3	4.6
Nenana-Clear	6	1	0	1.6	1	3	2	4.0
Tanana-Ruby	2	0	0	1.0	0	2	0	5.0
Tok-Northway-Tetlin-Chicken	15	2	0	1.5	2	8	6	6.0
Interior totals	99	17	3	1.8	33	47	30	4.9

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

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

Table 14. Interior Alaska wolf population abundance and trend indices by species based on Trapper Questionnaire, 1985-86.

Area	Abundance in 1985-86 season[a]				Compared with 1984-85[a]			
	Low	Mod	High	Index[b]	Fewer	Same	More	Index[b]
Aniak-Lower Kuskokwim	1	2	1	5.0	0	2	2	7.0
Beaver-Stevens Village-Rampart	3	1	0	2.0	1	2	0	3.7
Brooks Range	3	3	1	3.9	1	3	3	6.1
Cantwell-Denali Park	3	0	0	1.0	3	0	0	1.0
Circle-Central	2	2	3	5.6	1	2	3	6.3
Delta	8	3	0	2.1	4	4	3	4.6
Fairbanks	10	4	2	3.0	4	6	3	4.7
Fort Yukon	3	2	3	5.0	2	2	4	6.0
Galena-Nulato	1	0	1	5.0	0	0	1	9.0
Glennallen	3	3	0	3.0	3	3	0	3.0
Hughes-Huslia	3	0	0	1.0	2	1	0	2.3
Lake Minchumina	2	0	2	5.0	1	2	0	3.7
Manley-Livengood-Minto	1	3	0	4.0	0	2	2	7.0
McGrath	1	4	4	6.3	1	2	6	8.1
Nenana-Clear	1	2	4	5.3	0	1	4	8.2
Tanana-Ruby	0	0	2	9.0	0	0	2	9.0
Tok-Northway-Tetlin-Chicken	7	7	5	4.6	4	6	8	5.9
Interior totals	52	36	28	4.2	52	36	28	4.2

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

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

Table 15. Interior Alaska wolverine population abundance and trend indices by species based on Trapper Questionnaire, 1985-86.

Area	Abundance in 1985-86 season[a]				Compared with 1984-85[a]			
	Low	Mod	High	Index[b]	Fewer	Same	More	Index[b]
Aniak-Lower Kuskokwim	1	2	1	5.0	1	3	0	4.0
Beaver-Stevens Village-Rampart	3	0	0	1.0	1	2	0	3.7
Brooks Range	3	4	0	3.3	2	4	1	4.4
Cantwell-Denali Park	2	1	0	2.3	1	2	0	3.7
Circle-Central	4	3	0	2.7	0	6	0	5.0
Delta	8	3	0	2.1	4	4	3	4.6
Fairbanks	12	4	0	2.0	6	7	0	3.2
Fort Yukon	3	5	0	3.5	2	6	0	4.0
Galena-Nulato	1	1	0	3.0	0	1	0	5.0
Glennallen	4	2	0	2.3	4	1	1	3.0
Hughes-Huslia	1	0	1	5.0	0	1	1	7.0
Lake Minchumina	2	2	0	3.0	2	1	0	2.3
Manley-Livengood-Minto	3	1	0	2.0	0	4	0	5.0
McGrath	3	6	0	3.7	4	3	2	3.2
Nenana-Clear	6	1	0	1.6	1	5	0	4.3
Tanana-Ruby	2	0	0	1.0	1	1	0	3.0
Tok-Northway-Tetlin-Chicken	10	6	0	2.5	8	7	2	3.6
Interior totals	68	41	2	2.6	37	58	10	4.0

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

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