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FURBEARERS

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Project Title: **Southeast Furbearer Population Management**

Project Location: Unit 1A (5,000 mi^2)
Ketchikan area including mainland areas draining into Behm and Portland Canals

Unit 2 (3,900 mi^2)
Prince of Wales and adjacent islands south of Sumner Strait and west of Kashevarof Passage and Clarence Strait

Project Objectives and Activities:

1. Regulate seasons and bag limits to maintain viewable and harvestable populations of furbearers.

2. Seal beaver, marten, otter, lynx, and wolverine pelts as they are harvested and presented for sealing.

3. Contact reliable observers to gather general information about the status and trends of furbearer populations, including the use of an annual trapper survey.

Work Accomplished During the Project Segment Period: We sealed furbearer pelts submitted by trappers. We also gathered anecdotal information about the status of furbearer populations from conversations with hunters and trappers, and more formal information through our trapper survey.

Progress Meeting Project Objectives: The following numbers of furbearers were harvested from Unit 1A and Unit 2 during this report period:

Species	Unit 1A	Unit 2
Beaver	18	279
Marten	256	1122
Otter	114	85
Wolverine	3	--

Beaver harvests were down 44% from last season in Unit 1A and up 7% in Unit 2; marten harvests increased 48% in Unit 1A and 6% in Unit 2; and otter harvests increased 43% in Unit 1A and declined 58% in Unit 2. Three wolverines were caught in Unit 1A, up from zero last season. Trappers believe the Unit 1A beaver population is presently common (*Index of Abundance* I_A = 50, n = 3), the marten population is abundant (I_A = 67, n = 6), and the otter population is abundant (I_A = 83, n = 6). Similarly, trappers in Unit 2 believe the beaver population in that unit is presently common (I_A = 33, n = 3), the marten population is abundant (I_A = 83, n = 3), and the otter population is abundant (I_A = 83, n = 3).

Project Location: Unit 1B (3,000 mi^2)
Southeast Mainland from Cape Fanshaw to Lemesurier Point

Unit 3 (3,000 mi^2)
All islands west of Subunit 1B, north of Unit 2, south of the centerline of Frederick Sound, and east of the centerline of Chatham Strait

Project Objectives and Activities:

1. Regulate seasons and bag limits to maintain viewable and harvestable populations of furbearers.

2. Seal beaver, lynx, marten, otter, and wolverine pelts as they are presented for sealing.

3. Contact reliable observers to gather general information about the status and trends of furbearer populations, including the use of an annual trapper survey.

Work Accomplished During the Project Segment Period: During the sealing process we gathered anecdotal information from trappers. The 1996/97 trapper questionnaires were mailed to area trappers, and data will be compiled when they are returned.

Progress Meeting Project Objectives: The following numbers of furbearers were harvested from Subunit 1B and Unit 3 during this report period:

Species	Unit 1B	Unit 3
Beaver	40	39
Marten	235	267
Otter	24	67
Wolverine	10	1

The number of furbearers harvested in Unit 1B increased substantially due to an increase in active trappers from 6 during the 1995/96 season to 12 during the 1996/97 season. Due to the extensive remoteness, most of the area in Units 1B and 3 is not trapped. We believe, therefore, the noted changes in harvest numbers reflect increased trapper effort rather than increased population levels.

Project Location: Unit 1C (7,600 mi^2)
Southeast mainland and the islands of Lynn Canal and Stephens Passage between Cape Fanshaw and the latitude of Eldred Rock, including Sullivan Island and the drainages of Berners Bay

Project Objectives and Activities:

1. Regulate seasons and bag limits to maintain viewable and harvestable populations of furbearers.

2. Seal harvested beaver, lynx, marten, otter, and wolverine pelts as they are presented for sealing.

3. Contact reliable observers to obtain general information about the status and trends of furbearer populations, including the use of an annual trapper survey.

Work Accomplished During the Project Segment Period: We collected fur harvest data through the mandatory sealing process and used a trapper questionnaire to gain additional information regarding target species abundance, prey abundance, trapping conditions, and trapping patterns.

Progress Meeting Project Objectives: The following numbers of furbearers were harvested from Subunit 1C during this report period:

Species	Unit 1C
Beaver	6
Marten	281
Otter	16
Wolverine	3

Unit 1C furbearer populations are healthy. Otter harvests remained the same as last season, while beaver and wolverine harvests declined. The harvest of marten increased. Other changes in the harvest from last season probably reflect changing trapper effort rather than changes in furbearer population levels. Through the use of trapper questionnaires, we will continue to examine fluctuations in fur harvest in future years.

Project Location: Unit 1D (2,700 mi^2)
Southeast mainland north of the latitude of Eldred Rock, excluding Sullivan Island and the drainages of Berners Bay

Project Objectives and Activities:

1. Regulate seasons and bag limits to maintain viewable and harvestable populations of furbearers.

2. Seal harvested beaver, lynx, marten, otter, and wolverine pelts as they are presented for sealing.

3. Contact reliable observers to gain general information about the status and trends of furbearer populations, including the use of an annual trapper survey.

Work Accomplished During the Project Segment Period: We collected fur harvest data through the mandatory sealing process. A trapper questionnaire was used to gain additional information regarding target species abundance, prey abundance, trapping conditions, and trapping patterns.

Progress Meeting Project Objectives: The following numbers of furbearers were harvested from Unit 1D during this report period:

Species	Unit 1D
Marten	108
Otter	1
Wolverine	8

Furbearer populations within Unit 1D appear consistent with historic levels. The marten harvest has rebounded from the low level observed in 1995.

Project Location: Unit 4 (5,800 mi^2)
Admiralty, Baranof, Chichagof, and adjacent islands

Project Objectives and Activities:

1. Regulate seasons and bag limits to maintain viewable and harvestable populations of furbearers.

2. Seal beaver, lynx, marten, otter, and wolverine pelts as they are presented for sealing.

3. Contact reliable observers to gain general information about the status and trends of furbearer populations, including the use of an annual trapper survey.

Work Accomplished During the Project Segment Period: Marten, otter, and beaver pelts were sealed within 30 days of harvest. Furs were examined at sealing to determine sex and take measurements. Trappers were contacted for opinions of furbearer abundance on their traplines.

Progress Meeting Project Objectives: The following numbers of furbearers were harvested from Unit 4 during this report period:

Species	Unit 4
Beaver	0
Marten	1374
Otter	100

Harvests may not reflect population levels. Marten harvest again increased across the unit, probably in response to decreased vole populations that forced martens to move extensively, thereby making them more vulnerable to trapping. The otter harvest decreased 45% from last season's harvest; however, there is no indication trapping has depressed otter or other furbearer populations in the unit.

Project Location: Unit 5 (5,800 mi^2)
Cape Fairweather to Icy Bay, East Gulf Coast

Project Objectives and Activities:

1. Regulate seasons and bag limits to maintain viewable and harvestable populations of furbearers.

2. Seal harvested beaver, lynx, marten, otter, and wolverine pelts as they are presented for sealing.

3. Contact reliable observers to obtain general information about the status and trends of furbearer populations, including the use of an annual trapper survey.

Work Accomplished During the Project Segment Period: Staff sealed furs in Yakutat. Harvest was analyzed from furbearer sealing certificates.

Progress Meeting Project Objectives: The following numbers of furbearers were harvested from Unit 5 during this report period:

Species	Unit 5
Beaver	0
Lynx	2
Marten	103
Otter	0
Wolverine	12

Commercial Fisheries Division staff in Yakutat sealed furbearers as they were presented at that ADF&G office. Residents of Yakutat and nonlocal outdoorsmen contributed anecdotal reports of furbearer sightings. The only substantial change in trapping levels was for wolverine, which were harvested at a rate much higher than normal. This was due to the intensive efforts by 1 trapper and probably cannot be sustained over time. Close harvest monitoring is required for this species.

Segment Period Project Costs:

	Personnel	Operating	Total
Planned	27.9	8.0	35.9
Actual	27.9	8.0	35.9
Difference	0.0	0.0	0.0

Submitted by:

Doug Larsen
Acting Management Coordinator

Project Title: Southcentral Alaska Furbearer Management

Project Location: Unit 6 (10,150 mi^2)
Prince William Sound and north Gulf Coast

Project Objectives: Develop measurable objectives for all furbearer species throughout the region.

Work Accomplished During the Project Segment Period: ADF&G staff sealed 206 pelts (74 beavers, 106 otters, 1 lynx and 25 wolverines). Trapper interest was minimal because of low pelt prices. We mailed 67 questionnaires to trappers, requesting information on trapping activity and furbearer abundance; we received 11 responses. Results will be available in fall 1997.

Progress Meeting Objectives: Population objectives have not been established for furbearer species. Progress toward establishing objectives was limited by insufficient funding and inefficient methods to estimate populations.

Project Location: Units 7 and 15 (8,400 mi^2)
Kenai Peninsula

Project Objectives: Develop measurable objectives for all furbearer species by 1996.

Work Accomplished During the Project Segment Period: The Kenai Peninsula has a diverse complement of furbearers which includes all commonly recognized Alaskan furbearers except arctic fox, flying squirrels, and ground squirrels. The distribution and density of red fox and marten are limited on the Kenai. Red fox were abundant before 1930 according to long time Kenai residents; however, they quickly disappeared as coyotes established and rapidly increased during the 1930s. Marten are moderately abundant in Unit 7 but are rare in Unit 15. Since Marten have never been common in Unit 15, probably habitat rather than human-induced mortality controls their distribution on the Kenai. Beaver, land otter, wolverine, lynx, coyote, mink, and weasel are throughout the Kenai Peninsula at varying density levels, dependent upon habitat quality or prey abundance.

Harvested marten, beaver, land otter, wolverine and lynx must be reported to the department within 30 days of the kill for sealing. Sealing documents for these furbearers indicate the following harvests by Game Management Unit (GMU).

GMU	Marten	Beaver	Land Otter	Wolverine	Lynx
7	58	102	18	18	18
15	1	107	54	16	34
Total	59	209	72	34	52

Lynx hunting and trapping seasons have been closed since 1983-84 in Unit 15A. Hunting and trapping seasons were closed from 1987-88 to 1995-96 in the remainder of the Kenai due to low numbers of animals. Unit 7 and Units 15B and 15C were opened from January 1 to 31 in 1996-97.

The reported harvest revealed 18 lynx taken in Unit 7, 4 (incidental) in Unit 15A, 18 in Unit 15B and 12 in Unit 15C. The incidental take in Unit 15A included 2 lynx killed by highway vehicles and 2 capture mortalities during the FWS lynx study.

Carcasses were collected from 26 of the 34 lynx harvested in 1996-97. Necropsy data revealed 15 females and 11 males, including 14 adults (54%), 5 yearlings (19%) and 7 kittens (27%). Seven of the 10 subadult-adult females exhibited placental scars in their reproductive tracts. The number of placental scars ranged between 2 and 5.

Mink, weasel, muskrat, red fox, squirrel, marmot and coyote are also harvested on the Kenai; however, sealing is not required for this species. Catch reports from trapper questionnaires suggest the harvest of these furbearers was comparable to past years with the exception of coyotes. The harvest and reported sightings of coyotes indicate their numbers have increased.

The Board of Game adjusted several furbearer seasons during their spring 1997 meeting to make seasons on the Kenai consistent across subunits. Beaver, wolf, and coyote seasons are now November 10 to March 31; otter, wolverine, and fox are November 10 to February 28; mink, weasel, and marten are November 10 to January 31; muskrat is November 10 to May 15, and squirrel and marmot have no closed season.

Progress Meeting Objectives: Furbearer populations on the Kenai provide benefits to a diverse group of resource users, including both nonconsumptive and consumptive interests. However, due to low funding and lack of staff, we are not achieving our objectives for furbearer management. Lynx and beaver censuses have been conducted in small study areas and may be extended to estimate densities by subunits.

The current monitoring of harvests from sealing and reports from trappers indicates all furbearers are found in harvestable numbers and populations are stable. The lynx population declined during the late 1980s and started to increase in 1995. This increase was widespread enough to allow a January 1 to 31 season in Unit 7 and Units 15B and C in 1996-97. Due to an increase in the lynx population, the season should be extended to January 1 to February 15 and opened in Unit 15A during the 1997-98 season. No other change in season or bag limit is recommended for the 1997-98 season.

Project Location: Unit 8 (8,750 mi^2)
Kodiak Archipelago

Project Objectives: Develop measurable objectives for all furbearer species throughout the region.

Work Accomplished During the Project Segment Period: Twenty one trappers submitted pelts for sealing. Nineteen trappers harvested otters, and 8 trappers harvested beavers. A total of 127 river otters (62 males, 55 females and 10 unknown sex) and 38 beavers was sealed. Highest individual catches were 14 beavers and 31 otters. The average catch was 6.7 otters per trapper

and 4.8 beavers per trapper. We mailed trapper questionnaires to 39 individuals who had recently trapped in Unit 8. Seventeen (44%) questionnaires were returned. Fifteen of these respondents reported trapping during the 1996-97 season.

Progress Meeting Objectives: Trapper questionnaire resondents reported furbearer populations were high. Twenty two otters (17% of the Unit 8 harvest) were taken in the road-accessible area of Unit 8, down from last year's harvest of 53 otter there. With the current low harvest in other areas, developing management objectives for furbearers is not a high priority.

Project Location: Units 9 and 10 (45,500 mi^2)
Alaska Peninsula, Aleutian, and Pribilof islands

Project Objectives: Develop measurable objectives for all furbearer species throughout the region.

Work Accomplished During the Project Segment Period: During this report period we did not conduct surveys. We sent questionnaires to a select group of trappers, indirectly estimating furbearer population trends and relative abundance. Active trappers returned only 12 questionnaires. It is difficult to make inferences about population status from such a limited sample. Snow and weather conditions and low fur prices were not conducive to productive trapping.

We derived furbearer harvest information from furbearer sealing certificates. The preliminary harvest for 1996-97 in Unit 9 from sealing certificates was as follows: beavers-116; otters-117; lynx-20; and wolverines 34. No furbearers were sealed from Unit 10. Harvests of all species were up slightly from the previous year.

Progress Meeting Objectives: The lack of efficient methods to estimate and directly monitor populations, compounded by unreliable snow conditions, has hampered developing measurable population objectives for furbearers in Units 9 and 10. Research on several species continues in other areas, but unless budgets increase, it is unlikely efforts will be extended on the Alaska Peninsula.

The trapper questionnaire, opportunistic observations, and sealing requirements are adequate for management purposes as long as trapping effort remains relatively low. If fur prices and other factors lead to an increase in harvests, more intensive management may be required.

Project Location: Units 11 and 13 (38,300 mi^2)
Wrangell Mountains and Nelchina Basin

Project Objectives: Develop measurable objectives for all furbearer species throughout the region.

Work Accomplished During the Project Segment Period: Trapper questionnaires have been used for 10 years to help determine trapping pressure, harvests, and furbearer abundance. This year we sent questionnaires to 123 Unit 11 and 13 trappers, and to date only 43 (35%) have responded. Of those responding, 12 (28%) did not trap during the 1996-97 season. Trappers responding to the questionnaire reported an average of 18 years experience in Alaska. Most trappers averaged between 25 and 100 sets along traplines averaging 38 miles long, up 31% compared with the average trapline length of 29 miles in 1995-96. Trappers used highway vehicles or snowmachines as transportation. Unit 11 and 13 trappers reported numbers of most furbearers were similar to last year, but wolverine, lynx and hare numbers were increasing. This year the snow conditions were better, unlike last year when a lack of snow caused poor trapline conditions throughout both units during the trapping season.

Small mammals were trapped during September for the second year to determine the feasibility of developing a small mammal abundance index. This year's catch was much lower than last year's. During September 1996, 4 red-backed voles, 6 masked shrews, and 1 meadow vole were caught compared with 52 red-backed voles, 4 masked shrews, 4 meadow voles, and 1 pygmy shrew caught in 1995. Trapping effort (300 trap nights) was the same during both years and habitat representation was similar, but trap locations were different. Results indicate the number of red-backed voles decreased from 1995 to 1996 which may be a result of the 1995-96 winter that produced little snow for ground cover and thermal protection until February. Plans are in place to extend the small mammal trapping effort and continue this project annually.

Aerial transects, established in 1988 to monitor lynx abundance and population trends, were flown during late March 1997. Due to little fresh snow on most of the transect, results of 1997 data are difficult to interpret. Compared to 1996 data, it appears that lynx densities were similar or slightly higher in 1997. During 1997 24 fresh tracks and 54 old tracks were counted, compared to 20-30 fresh and 22-35 old tracks counted in 1996.

During the 1996-97 season, 44 wolverines (27 males, 17 females) were sealed in Unit 13 by 35 different trappers. In Unit 11, 4 trappers sealed 4 wolverines (1 male, 3 females). There were 200 lynx pelts sealed by 43 trappers from Unit 13, while 9 trappers sealed 37 lynx taken in Unit 11. This is the seventh year lynx trapping was allowed in these units after a 3-year closed season. Seventeen trappers sealed 37 otters (12 males, 6 females, and 19 sex undetermined) in Unit 13 during 1995-96. Nine otters (6 males, 3 females) were sealed by 3 trappers from Unit 11. In Unit 13, 25 trappers sealed 233 beavers; 19 beavers were taken in Unit 11 by 3 trappers. Six trappers sealed 37 marten taken from Unit 13E.

The 1994-95 trapper questionnaire asked, for the first time, the number of furbearers taken by the responding trapper on a subunit basis. Interpreting this data is difficult because the percentage of the unitwide catch represented by the reported harvest is unknown. The value in this data may be in following a trend from year to year in the number of each species taken. The immediate value, however, is that it gives a minimum harvest estimate for important species that are not sealed, such as marten and red fox. In Unit 13 during 1995-96, individuals responding to the trapper questionnaire reported taking 332 marten and 261 red fox. In Unit 11 the reported take was 36 marten and 15 red fox. These numbers are much higher than those from 1995-96 when Unit 13

trappers reported 191 marten and 141 red fox, and Unit 11 trappers reported 25 marten and 3 red fox.

Sealing data for wolverine from Unit 13 showed an increase of 42% in the harvest this year. Part of this increase was attributed to 5 illegal wolverine (11%) taken out of season. Before this year, wolverine harvests were relatively stable, averaging only 32 animals a year since 1985. In Unit 13 from 1971 through 1984, the average annual wolverine take was 77 wolverines. Males historically average about 60% of the take. In Unit 11 the average annual wolverine take was 27 animals between 1971 and 1985, but since has averaged only 9. Yearling harvests fluctuate depending on trapping effort and conditions. Overall success rates for wolverine trappers remain low. All but 1 wolverine taken in Unit 11 were trapped or snared; one was shot. In Unit 13, 4 (13%) were ground shot with the rest trapped or snared.

The 1996-97 harvest of 200 lynx in Unit 13 was the highest reported since the last cycle peak in 1982, when 290 were taken. The harvest in 1995-96 was 74 lynx. The percent kittens in 1996-97 was 32%, down from the 44% reported last year. The percent kittens has been high for the last 3 years. Even though the price of lynx was low, the high harvest was attributed to increased trapping pressure as trappers took lynx once they found them more abundant on their traplines. In Unit 11 the lynx harvest also increased, with 37 lynx taken in 1997, compared to only 9 in 1995. Kittens accounted for 22% (n = 8) of the take. Hare numbers were up in portions of Units 11 and 13; in some parts of Units 13A, B and C, hare numbers are considered more abundant than in the past 15 years. The last hare cycle in Units 11 and 13 did not result in high hare numbers and lasted only 1 to 2 years during the early 1990s. The hare cycle is not following predictions for either the timing or magnitude of peak rabbit populations.

Otter harvests in Unit 13 have fluctuated between a high of 68 in 1983 and a low of 5 in 1989. These fluctuations in the take are not caused by changes in the otter population but relate more to trapping effort. The otter harvest was 37 this year, down from the average take of 54 otters during the past 3 years (1993-96) but still higher than the 5-year (1988-92) average of 18. The higher otter harvests over the last 4 years reflect increased effort by trappers because of increased demand and higher prices for otters. The otter harvests in Unit 11 were 3 times greater in 1996-97 than in 1994-95 (9 compared to 3). Reasons for the Unit 11 increase are similar to those reported for Unit 13.

The 1996-97 Unit 13 beaver harvest was 233, down from the levels observed during the last 2 years (268 in 1994-95 and 281 in 1995-96). The highest reported beaver harvest occurred in 1985-86 and 1986-87, when 333 and 300 beaver were sealed. Beavers seem abundant so harvest regulations have been liberalized in recent years to allow trappers a longer season during periods with less ice cover. In 1995 the BOG extended beaver season to May 10, starting with the 1995-96 season. In Unit 11 beaver harvests have fluctuated in recent seasons from a high of 59 in 1984-85 to a low of 0 in 1993-94. The 1996-97 Unit 11 harvest of 19 beavers was moderate and virtually unchanged from the reported harvest of 18 last year. In both units the catch per trapper has been fairly constant, but the number of beaver trappers fluctuated between years. Harvest chronology indicates most animals are taken either early in the trapping season or in late spring.

Lack of snow during the winter of 1995-96 led to speculation that beaver and muskrat populations may have been reduced in Unit 11 and 13. Without adequate snow cover, many ponds which retain water during most winters probably froze completely to the bottom. Record ice depths reported for lakes in the area support this assumption. Some ponds that have historically supported beaver were vacant during the spring and summer of 1996. Based on this year's harvest and composition, the magnitude of the winter kill due to "freeze out" for beaver at least does not appear to be as high as initially feared. Observations of muskrats and muskrat push-ups during 1996-97 were very low, indicating muskrat populations continue to be very low in both units.

Progress Meeting Project Objectives: Lynx are managed under a tracking harvest strategy that reduces or eliminates harvests during cyclic declines and lows. The assumption is if lynx are not taken during the cyclic low, more adults will be available for breeding during the upswing of the cycle and produce more kittens. The value of this strategy to trappers is they can take more lynx during the high portions of the population cycle simply because there will be more lynx present. Based on this management strategy, lynx seasons have been liberalized during the past 2 years because hares have increased, track counts are up, and the percent kittens in the harvest is high.

The observed increase in hares and lynx over the past 2 years is not what we predicted. Based on previous harvest records, we predicted a decline in lynx during the late 1990s because we should be in the low portion of the 10 year cycle. Ten years ago we had a closed season, few lynx, and no kitten production and/or survival. It is obvious the 10-year cycle is not following a predictable pattern. Because of the increase in lynx, the season for 1997-98 will be lengthened by 30 days, from 1 December-15 February.

Prior to the 1996-97 season, we had speculated that fur prices would increase. A slight climb in prices for some furs did occur early in the season but not to predicted levels. Because of early predictions, trapping activity was higher this year. Lower fur prices are projected for the next season because prices paid for raw fur during spring sales declined. The threat of the European boycott also continues to depress the fur market. Trapping pressure for long hair fur like fox and lynx is not expected to increase, although more lynx will be taken simply because they are more abundant. Marten continue to be the most important furbearers in both units, based on abundance, demand, and price.

During the March 1997 meeting, the Board of Game dropped the wolverine bag limit of 2 per season in Unit 11 and 13. Low harvests (comprising 60% males) did not limit wolverine numbers in Units 11 or 13. The low average catch per trapper indicates only those trappers in good habitats, such as the Chugach Mountains in Unit 13D and the Talkeetna Mountains in Unit 13A, will take more than 2 wolverine during the season after the bag limit is dropped. Radiocollared wolverine that dispersed from the Unit 13A study area left the unit (Golden, pers commun). Areas with low wolverine numbers such as the Lake Louise Flats are now considered poor wolverine habitat, and it is unlikely an appreciable increase will occur in these areas. Keeping the season closed during spring when kits are born is probably the most important management action limiting wolverine harvests.

Project Location: Units 14 and 16 (18,900 mi^2)
Upper Cook Inlet

Project Objectives: Develop measurable objectives for all furbearer species in the region.

Work Accomplished During the Project Segment Period:

Unit 14

During the 1996-97 trapping season, 279 beavers, 39 otters, 8 wolverines and 102 martens were sealed from Unit 14. In addition, 9 beavers were taken under nuisance beaver permits. Minimum harvest data for fur species for which sealing is not required were collected with a voluntary reporting form included with the annual trapper questionnaire. Trappers took at least 16 coyotes, 48 mink, 36 muskrats, 35 red foxes, 4 red squirrels, and 56 weasels in Unit 14.

Unit 16

During the 1996-97 trapping season, 166 beavers, 26 otters, 22 wolverines and 580 martens were sealed from Unit 16. In addition, 12 beavers were taken under nuisance beaver permits. Minimum harvest data for fur species for which sealing is not required were collected with a voluntary reporting form included with the trapper questionnaire. Trappers took at least 5 coyotes, 5 mink, 5 red foxes, 30 red squirrels, and 34 weasels in Unit 16.

Units 14 and 16

Twenty-five trappers responded to the department's trapper questionnaire. Of these, 21 trapped during 1996-97. Most trappers characterized trapping conditions as good. Snowfall was relatively heavy early in the season, then remained below normal during the rest of the winter. Lack of adequate fresh snow prevented data collection along 6 established track-count trend lines.

Efforts to maintain a high water level, and more open water, in the mitigation area on Palmer Hay Flats State Game Refuge along the Glenn Highway have been largely unsuccessful. This is probably due to a combination of low water input and the ability of the vegetal mat to float. Muskrat pushup count areas along the Glenn Highway were ground-surveyed during 17-31 March. The number of pushups was 70% lower than that of the base year of 1991 but 67% higher than in 1996. Populations are recovering somewhat after the large decline attributed to the lack of snow cover and resulting record frost depths during winter 1995-96.

Progress Meeting Project Objectives: During March 1997 the Board of Game, responding to public proposals based on increased marten abundance, extended the marten trapping season by 3 weeks in Units 14 and 16A, and by 4 weeks in the northern portion of Unit 16B. They also established a hunting season for red fox in Unit 14. These changes take effect on 1 July 1997.

Harvest objectives, based on long-term average harvests, were established in 1992 for the fur species for which sealing is required (except marten). Harvest objectives were met for beavers, otters, and wolverines in Unit 14. In Unit 16 the wolverine harvest objective was met, but the harvest of otters and beavers was 65% and 47%, respectively, of the objective. With 5 years of marten sealing data, I recommend setting harvest objectives at 40 for Unit 14 and 225 for Unit 16.

These numbers represent the average 5-year harvest; however, we should expect harvests below these numbers in some years, since marten populations can fluctuate rapidly.

Developing direct, measurable furbearer population objectives is beyond the limit of our resources. However, track count transects can provide an index of population fluctuations, and these data could be correlated with harvest data. It may be possible, given several years' data, to develop indirect population objectives based on indices of furbearer abundance (e.g., tracks/km on transects). It will be important to continue track transects and also to gather data on track accumulation rates. However, because most trappers in this area trap for recreation, the investment necessary to collect data on actual population numbers and dynamics may not be warranted.

Project Location: Unit 17 (18,000 mi^2)
Northern Bristol Bay

Project Objectives: Develop measurable objectives for all furbearer species in the region.

Work Accomplished During the Project Segment Period:

Beaver: Preliminary data for the 1996-97 trapping season indicate a harvest of 867 beavers (17A-94; 17B-278; 17C-495). This was considerably higher than 1995-96 and near the 5-yr average of 772.6. Trappers again reported that beavers were abundant throughout the unit. Poor trapping conditions, including thick ice and lack of snow, hampered trappers again this year, but many were encouraged by initial reports of higher prices. Prices paid by local furbuyers averaged $25/pelt with a high of $55 for super blankets.

Coyote: No objective data were collected on coyote populations in the unit. Incidental observations indicate coyotes are becoming more common and extending farther west. Pelt prices were up to $25.

Fox: Red fox populations were increasing throughout the unit. Prices paid for foxes were comparable to recent years, averaging $20.

Land Otter: Preliminary data indicated a harvest of 181 otter (44% male) during this period (17A-35; 17B-41; 17C-105). This was almost twice the 5-yr average of 99.2. Trappers reported otter were abundant throughout the unit. Prices for otter pelts averaged $35 with a high of $70.

Lynx: Trappers harvested 6 lynx (17% male) during this reporting period (17A-0; 17B-1, 17C-5). Lynx numbers seemed to have stabilized throughout the unit, at a relatively low level. No data for lynx pelt prices were available this season.

Marten: We collected no data on the number of marten taken from the unit during this period. Trappers reported stable marten numbers along the Nushagak, Mulchatna and Wood River drainages. Marten prices were averaging $45/pelt.

Mink: We collected no data on the number of mink taken from the unit during this period. Trappers reported stable mink numbers throughout the unit. The highest price paid for a mink pelt was $10.

Muskrat: Muskrat populations seemed to remain at dangerously low levels. The only muskrats harvested were from the Snake, Weary and Igushik River drainages.

Wolverine: Preliminary data indicated a harvest of 47 wolverine during the 1996-97 season. This was above the 5-yr average harvest of 35.8. Trappers reported that wolverine populations remained stable throughout the unit. Prices were low again this year, with the highest price paid at $200.

Progress Meeting Objectives: We sealed pelts and informally interviewed trappers during sealing. Trapper questionnaires were given to selected local trappers during Beaver Round-up. Several questionnaires were completed; they are being analyzed. No surveys were conducted during this reporting period.

Segment Period Project Costs:

	Personnel	Operating	Total
Planned	92.4	6.2	98.6
Actual	92.4	6.2	98.6
Difference	0.0	0.0	0.0

Submitted by:

Michael G. McDonald
Assistant Management Coordinator

Project Title: **Interior Furbearer Population Management**

Project Location: Units 12 (9678 mi^2) and 20E (10,681 mi^2)
Upper Tanana and White River drainages; Charley, Fortymile, and Ladue River drainages

Project Objectives and Activities:

Unit 12

1. Maintain accurate annual harvest records and indices of population trends based on sealing documents and trapper questionnaires.
   a. Seal furs as they are harvested and presented for sealing and analyze harvest patterns.
   b. Administer trapper questionnaire and interviews for determining the status of various furbearer populations.
   c. Maintain a current map of active traplines in Unit 12 and Unit 20E.

2. *Lynx*: During the declining phase, the cyclic low, and during the initial recovery, seasons will be eliminated or reduced to less than 6 weeks, and the allowable take may be limited. During the peak population years to 1 year following the peak, seasons will run from 1 November to 28 February with no bag limit.
   a. Conduct annual lynx and hare track count surveys to determine population trends.
   b. Collect lynx carcasses from trappers to determine the sex and age of the harvested population and to estimate population reproductive performance.

3. *Wolverine*: Manage wolverine harvest based on wolverine population size, trend, and trapping intensity.
   a. Obtain a wolverine population estimate in southern Unit 12 and western Unit 20E by 1997.

Unit 20E

1. Maintain accurate annual harvest records and indices of population trends based on sealing documents and trapper questionnaires.
   a. Seal furs as they are harvested and presented for sealing and analyze harvest patterns.
   b. Administer trapper questionnaire and interviews to determine the status of various furbearer populations.
   c. Maintain a current map of active traplines in Unit 12 and Unit 20E.

2. *Lynx*: During the declining phase, the cyclic low, and the initial recovery, seasons will be eliminated or reduced to less than 6 weeks, and the allowable take may be limited. During the peak population years to 1 year following the peak, seasons will run from 1 November to 28 February with no bag limit.
   a. Conduct annual lynx and hare track count surveys to determine population trends.
   b. Collect lynx carcasses from trappers to determine the sex and age of the harvested population and to estimate population reproductive performance.

3. *Wolverine*: Manage wolverine harvest based on wolverine population size, trend, and trapping intensity.
   Estimate wolverine population in southern Unit 12 and western Unit 20E by 1997.

Work Accomplished During the Project Segment Period:

Unit 12

The reported 1996-97 furbearer harvest as of 18 June 1996 was 5 land otters, 27 beavers, 11 wolverines, and 145 lynx. Kitten lynx composed 26.2% of the harvest, exceeding levels found in 1992-93 (2.2%), 1993-94 (1.7%), 1994-95 (13.6%), and 1995-96 (23.4%), indicating the lynx population has increased rapidly since 1994. Furbearer harvest was higher in 1996-97 for all species compared to the past 2 years due to early market forecasts for higher fur prices, especially for marten, lynx, muskrat, and beaver. Lynx harvest almost doubled from 1995-96, even though the season was the same length.

Based on the trapper questionnaire and discussions with local trappers, beavers, ermine, marten, microtines, snowshoe hare and lynx were common in Unit 12 during 1996-97. Lynx and snowshoe hares increased their range to include all of Unit 12 except for the high mountains. Trappers unanimously supported extending the lynx season; most desired a 1 December to 28 February season. Based on population trend and range use data, the Unit 12 lynx population could support a 3-month season. However, to avoid confusion between adjacent units, the 1997-98 Unit 12 lynx season was set between 1 December to 15 February, consistent with Units 11, 13, and 20.

The marten population increased slightly and were common throughout suitable habitat. Marten harvest was higher this year because of higher pelt prices. Red fox populations declined in 1992-93 and remained at low levels until 1995. The fox population is increasing, especially in central Unit 12 in response to increasing numbers of snowshoe hares, microtines, and grouse. Wolverines were uncommon and stable, except in the mountainous country in southern Unit 12 where they are common. Most area trappers do not select for wolverines, but harvest is probably high enough to limit range extension or population growth in most of the unit. The muskrat population declined throughout the unit. Reduced water levels due to drought conditions last summer and extended periods of cold temperatures last winter reduced suitable habitat. Market prices improved slightly for marten, beaver, and muskrat but continued to be poor for wolves and fox.

Unit 20E

The following furbearers were sealed during 1996-97: 0 land otter, 2 beavers, 6 wolverines, and 30 lynx. Harvest levels were comparable to last year's level, except that lynx and beaver harvests continue to be 50% of the 5-year average. The percentage of kittens in the harvest was 23, exceeding levels during 1995-96 (17%), 1994-95 (13%), 1993-94 (2.3%), and 1992-93 (4.5%). Kitten harvest extended between the southeastern corner to the central portion of the subunit. Last year most of the kitten harvest occurred in the Ladue River area in the southeastern portion of the unit.

Track surveys, comments by local trappers, and observations by department personnel indicate the marten population is increasing and marten are now common throughout suitable habitats. Microtine populations, especially red-backed voles, remained common; the red fox population

increased; the wolverine population remained low but stable; snowshoe hares and the lynx were common in most of the subunit and were extending their range use. The lynx trapping season was 1 month (15 December-15 January) in 1996-97 but will be increased to 2 1/2 months in 1997-98 (1 December-15 February).

Progress Meeting Project Objectives: We maintained accurate annual harvest records for the 4 species sealed. Data from lynx carcass collections, trapper questionnaires, and field observations by department personnel, hunters, and trappers provided adequate information about furbearer population status and trend. For the third consecutive year, we conducted a lynx and snowshoe hare abundance and distribution survey in Units 12 and 20E. Data will be analyzed and presented in the next furbearer management report. A wolverine census is being planned for Unit 20E to determine population size in relation to the current Fortymile caribou herd size. To monitor trapper effort, distribution, and probable effects on the furbearer populations, we mapped the active traplines in Unit 12 and Unit 20E, tracked fur prices, and interviewed a sample of trappers on trapping intensity.

Project Location: Units 19, 21A, and 21E (59,756 mi^2)
Kuskokwim, Middle Yukon, and Nowitna River drainages

Project Objectives and Activities:

1. Annually determine current status and population trends for each furbearer species and their primary prey species, assess trapper effort and distribution, and collect estimates of harvest for all furbearer species.
   a. Seal furs as they are harvested and presented for sealing and analyze harvest patterns.
   b. Conduct trapper questionnaire and interviews for determining the status of various furbearer populations.

Beaver

1. Manage the various subpopulations to maintain a mean pelt size >50 inches and <25% kits in the annual harvest.
2. Manage the population to maintain a mean density of not less than 1 active colony per 3.2 km of suitable waterway, as determined through periodic fall cache surveys.

Marten

1. Collect accurate estimates of annual harvests through comparisons of Fur Acquisition Reports, Fur Export Reports, and trapper questionnaires.
2. Manage the population to maintain >50% males in the annual harvest and a ratio of young:adult females of not less than 2:1 in the annual harvest.

Lynx, River Otter, and Wolverine

1. Maintain accurate annual harvest records based on sealing documents.
2. Manage the wolverine population to maintain >50% males in the annual harvest.

Work Accomplished During the Project Segment Period: Because all sealing documents for the 1996-97 season have not yet been processed, data for this report are based on the 1995-96 trapping season. We sent questionnaires to 102 trappers in the area to evaluate status and trends in populations as well as numbers harvested. Fifty-four responses were returned. Results have been tabulated for the 1995-96 season. Marten carcass collections were continued. We sealed pelts throughout the trapping seasons and analyzed harvest of beaver, river otter, lynx and wolverine by evaluating sealing documents.

Furbearer harvests rebounded slightly during the 1995-96 season, and again increased during the 1996-97 season, undoubtedly due to increasing pelt prices. Fourteen of the 54 respondents to the trapper survey indicated they did not trap. The primary reasons for not trapping were low fur prices and the chance to "let the line rest."

During the 1996-97 trapping season, 830 marten carcasses were collected and sex and age ratios evaluated. The male:female ratio in the harvest was 1.21:1 and the young:adult female ratio was 2.03:1. Although marten harvests were high, the young:adult female ratios found in the harvested segment of the population indicates cause for concern. Since the 1992-93 season, there has been a decline in the young:adult female ratios in the harvest. I suspect the 1997-98 season will reveal lower marten populations than observed during the previous 5-year period.

Progress Meeting Project Objectives: For Unit 19, 76 beaver, 10 coyotes, 151 red fox, 11 lynx, 823 marten, 203 mink, 20 muskrats, 6 river otters, and 37 wolverines were estimated harvested during the 1995-96 season. These numbers represent the minimum actually taken, and updates to the Fur Acquisition and Fur Export Reports will undoubtedly increase those figures dramatically. According to Unit 19, 21A, and 21E trapper questionnaires, coyotes were stable but still scarce, lynx were stable but scarce, red fox remained at moderate levels, marten were common and stable, muskrats increased but were judged to be still relatively scarce, mink were stable at moderate populations, beaver populations declined to moderate levels, wolverines were stable at moderate populations, and river otter were common at stable population levels.

All harvest objectives for furbearers were met during FY96. Sealing of furbearer pelts was accomplished through the use of several village sealing agents, traveling furbuyers, or by department personnel. Analyses of harvest and population trends will be completed for the 1996-97 season when we receive all sealing certificates, acquisition, export, and trapper questionnaires.

Population assessment objectives were not met. Weather and budget constraints did not permit track surveys. Beaver cache counts were conducted over 408 km^2, and 147 active lodges were noted. These data indicate a significant increase in beaver numbers, probably due to increases in survey effort rather than actual increases in beaver populations. Other sources of information (i.e., trapper questionnaires, flights for other reasons) indicate healthy populations, supporting the cache survey results.

During the March 1996 Board of Game meetings, changes in beaver season lengths and legal methods and means of harvest were enacted. Increased opportunity to harvest beavers by legalizing spring trapping and shooting seasons should result in increases in the beaver harvest.

Small mammal trapping surveys were completed during summers 1996 and 1997 to assess availability of prey utilized by various furbearer populations. Small mammal abundance, based on 3374 trapnights in various cover types, indicated very depressed populations, with only 11.6 small mammals captured per 1000 trapnights. Unburned white spruce stands harbored highest densities (19.6 captures/1000 trapnights), followed by burned black spruce stands (12.4 captures/1000 trapnights) and unburned black spruce (2.7 captures/1000 trapnights).

Project Location: Units 20A, 20B, 20C, 20F, and 25C (39,228 mi^2)
Tanana Flats, Central Alaska Range, drainages into the north and south banks of the Tanana River, the west bank of the Nenana River, and the south bank of the Yukon River

Beaver

1. Manage beaver in the lower Chena River portion of Unit 20B for an annual fall beaver colony density of <0.5 colonies/km of river and mitigate problems arising from beaver activities.
   a. Conduct annual fall beaver cache surveys in the lower Chena River and Badger Slough. Open a limited registration trapping season if densities are ≥0.5 colonies/km.
   b. Issue nuisance beaver permits to remove problem animals.
   c. Coordinate with Department of Transportation and Public Facilities (DOT&PF) to minimize dammed culverts and flooded roads.
2. Manage beaver in Units 20A, 20C, 20F, 25C and the remainder of 20B for an annual unit harvest that includes <20% kits when the harvest for that unit exceeds 50 beavers.

Lynx

1. Manage lynx with a tracking harvest strategy that assures seasons are most liberal when lynx are abundant and most conservative when lynx are scarce.
   a. Estimate the annual sex and age of harvested lynx by examining carcasses from Units 20A and 20B.
   b. Develop and implement aerial track surveys in Units 20A and 20B to provide indices to trend in lynx and hare populations.
   c. Determine whether or not lynx pelt measurements can be used to index the number of kittens in the harvest.
   d. Develop maps of trapline distribution through interviews with successful trappers.

Wolverine

1. Manage wolverine harvests in Unit 20A based on estimates of sustainable yield derived from density estimates and modeling.
   a. During winter 1997-1998, complete aerial surveys to estimate density of wolverine in Unit 20A.
   b. Use the model of Gardner et al. (1993) to estimate sustainable wolverine harvests in 20A.

Work Accomplished During the Project Segment Period: Preliminary sealing certificate data for 1995-96 indicate trappers harvested 949 beavers, 260 lynx, 59 otters, and 37 wolverines from

the Fairbanks area. The unit harvest of these 4 species, respectively, was 122, 43, 6, and 6 in Unit 20A; 546, 96, 40, and 13 in Unit 20B; 244, 86, 8, and 11 in Unit 20C; 29, 13, 1, and 11in Unit 20F; and 8, 29, 1, and 6 in Unit 25C.

Responses to the Trapper Questionnaire were synthesized for the 1995-96 season statewide report. The mailing list for 1996-97 was reviewed. In April 1997, 73 questionnaires were sent out, 25 responses were received as of this date, and a reminder letter is being sent to all nonreporting trappers.

Beaver cache count data from the Chena River indicates a healthy population, within our population guidelines. Nuisance beaver permits number were down slightly during the 1996 summer, but the number of permits issued to date during 1997 indicate strong beaver populations. Coordination with DOT to minimize nuisance summertime trapping has produced positive feedback.

Lynx carcasses were purchased from trappers during the 1996-97 season. Data was collected from these carcasses as part of the tracking harvest strategy. Analysis of the data is not complete at the time of this report.

We began to map trapline locations of area trappers.

Progress Meeting Project Objectives: We are meeting the objective of maintaining accurate fur harvest records and our objective to maintain seasons during the peak of primeness, except for nuisance beavers.

We are meeting our objectives for beaver populations, including cache densities, limited urban harvest, nuisance beaver problems, coordination with DOT/PF on the negative effects of beavers, and maintaining low percentages of kits in the harvest.

The lynx tracking harvest strategy seems to be working well to adjust the lynx harvest in relationship to population cycles.

We are working toward completing the area trapline maps.

We did not meet our activity objective to aerial survey wolverines in Unit 20A. The funds originally intended for wolverine work were reallocated to another program. Therefore, we are not meeting our objective of using the model to estimate sustainable harvest.

We recommend the following change to the objectives:

- Change the wolverine aerial survey date from winter "1997-1998" to 1998-1999.

Project Location: Unit 20D (5,637 mi^2)
Central Tanana Valley near Delta Junction

Project Objectives and Activities:

1. Monitor furbearer population trends and annual harvest of furbearers using sealing documents, fur acquisition reports, fur export reports, trapper questionnaires, and trapper interviews.
   a. Seal furs as they are harvested and presented for sealing and analyze harvest patterns.
   b. Conduct trapper questionnaire and interviews to determine the status of various furbearer populations.

2. Monitor trends in abundance of furbearer prey species by establishing snowshoe hare and small mammal trend surveys.
   - Conduct snowshoe hare track surveys and small mammal trapline surveys to monitor prey abundance.

Lynx

Determine lynx reproductive status by purchasing and examining lynx carcasses and reproductive tracts as needed.

Work Accomplished During the Project Segment Period: Pelts were sealed for beaver, lynx, otter, and wolverine trapped in Unit 20D during the 1996-97 trapping season. Preliminary trapper harvest totaled 9 beavers, 47 lynx (including 2 caught out of season and 1 found dead), 1 otter, and 2 wolverine.

We mailed trapper questionnaires to trappers in Unit 20D. Responses were tabulated to quantify trapper responses to furbearer abundance and population trends. No small mammal abundance data were collected in fall 1996 due to higher priority tasks in Unit 20D.

No lynx carcasses were purchased during this reporting period.

Progress Meeting Project Objectives: Management objectives were accomplished during this reporting period by sealing furs of beavers, lynx, otters, and wolverine and analyzing harvest patterns. We mailed trapper questionnaires to trappers and analyzed the results. No trends in prey abundance were monitored. No lynx carcasses were purchased this reporting period.

Project Location: Units 21B, 21C, and 21D (20,655 mi^2)
Lower Nowitna River and Yukon River between the Melozitna and Tozitna rivers; Dulbi River above Cottonwood Creek and Melozitna River above Grayling Creek; and Yukon River from Blackburn to Ruby and Koyukuk River drainage below Dulbi Slough

Project Objectives and Activities:

1. Manage furbearer populations to sustain furbearers at levels high enough to provide maximum consumptive and nonconsumptive use.
   a. Seal furs and analyze harvest patterns.

b. Conduct trapper questionnaire and interviews to determine the status of various furbearer populations.

Work Accomplished During the Project Segment Period: Sealing certificates received in Galena through June 23, 1996 indicate a harvest of 160 beavers, 12 lynx, 11 otters, and 11 wolverines from Units 21B, 21C, and 21D. Harvest of beavers continues to be low although beaver are abundant. Many trappers reported high marten numbers. Several trappers made record marten catches. Trappers interviewed while sealing furs indicated lynx numbers may have increased slightly in the last few years, but they did not target lynx because of low prices. Hare numbers in the unit are increasing in the area earlier than normal in their 10-year cycle. Based on evidence from tracks observed in the snow, otter continue to be abundant.

With a priority on marten, most unit trappers set incidentally for lynx, otter, and wolverine. Forecasted higher marten and beaver prices resulted in increased trapping effort.

Progress Meeting Project Objectives: A variety of circumstances influence trapper effort and catch within the unit. Fur prices, social activities, cultural backgrounds, and weather conditions all contribute to trapper effort. These factors keep harvests low enough to meet management objectives.

Project Location: Unit 24 (26,055 mi^2)
Koyukuk River drainage above Dulbi River

Project Objectives and Activities:

1. Manage furbearer populations to sustain furbearers at levels high enough to provide maximum consumptive and nonconsumptive use.
   a. Seal furs and analyze harvest patterns.
   b. Conduct trapper questionnaire and interviews to determine the status of various furbearer populations.

Work Accomplished During the Project Segment Period: Preliminary analysis of sealing certificates through June 23, 1997 indicates a harvest of 41 otters, 21 wolverines, 23 lynx, and 450 beavers from Unit 24. The number of lynx harvested in this unit continues to be low, almost 100 less than in prior years.

Most unit trappers targeted beaver and marten. The beaver harvest almost doubled over last year, because forecasted higher prices resulted in increased trapper effort. Marten prices were also forcasted to be higher than last year, and many trappers reported higher than average marten numbers and catches. Most furbearers, except perhaps lynx, are abundant throughout the unit. Winter weather conditions this past winter were conducive to trapping activities.

Progress Meeting Project Objectives: A variety of circumstances influence trapper effort and catch within the unit. Fur prices, social activities, cultural backgrounds, and weather conditions all

directly affect trapper effort. These factors keep harvests low enough to meet management objectives.

Project Location: Units 25A, 25B, 25D, 26B, and 26C (73,800 mi^2)
Upper Yukon River Valley and the north slope of the Brooks Range and Arctic Coastal Plain east of the Itkillik River

Project Objectives and Activities:

1. Maintain accurate annual harvest records and indices of population trends based on sealing documents and trapper questionnaires.
   a. Seal furs as they are harvested and presented for sealing and analyze harvest patterns.
   b. Conduct trapper questionnaire and interviews to determine the status of various furbearer populations.
2. Develop more specific population objectives for furbearers by 1995.
3. Cooperate with local residents and USFWS in investigating the relationship between beaver and local fish populations.
4. Test the feasibility of aerial track counts in monitoring lynx and hare population trends.

Work Accomplished During the Project Segment Period: Harvest data for sealed species including lynx, wolverine, beaver, and otter are being compiled and analyzed based on sealing forms. Final harvest figures are not available, but as in previous years the harvest of sealed species was greatest in Unit 25. Fur prices have remained low for several years, and trapping effort has declined accordingly. The remaining trapping effort is focused primarily on marten and lynx. Snowshoe hare numbers are starting to increase, and lynx harvests are increasing. Small mammals and furbearer populations have recovered from an extended flood in May 1992 on the flats around Fort Yukon. Considerable effort was devoted to developing revised beaver trapping regulations in response to local interests in harvesting more beaver for food and in reducing beaver numbers on creeks where beaver dams are reducing migratory whitefish populations. Beaver trapping regulations were changed in 1995-96 to allow people to shoot 1 beaver per day between April 16 and June 1. The bag limit for shooting was raised to 2 per day for 1996-97. An aerial reconnaissance of the Christian River and Marten Creek drainages revealed that fish movements between rivers and some adjacent lakes could be affected by beaver dams, especially during low water. A plan to evaluate aerial track counts to monitor lynx and hare populations was not pursued in the Fort Yukon area, although the method was tested with positive results near Fairbanks.

Progress Meeting Project Objectives: Harvests of all furbearer species sealed by ADF&G personnel were within population management objectives. We are meeting objectives involving maintaining accurate harvest records, sealing furs, and obtaining trapper observations on furbearer numbers. Population objectives for furbearers are being developed.

Segment Period Project Costs:

	Personnel	Operating	Total
Planned	128.3	14.8	143.1
Actual	70.3	12.1	82.4
Difference	58.0	2.7	60.7

Explanation: Staff position vacancies, regional staff salary charges to nonfederal aid projects, and salary charges to federal aid research rather than S&I contributed to lower than expected personnel costs. Operating costs were lower than expected because of a decision not to purchase lynx carcasses in Unit 20D and other minor savings in several different budgets.

Submitted by:

David James
Management Coordinator

Project Title: **Western Alaska Furbearer Population Management**

Project Location: Unit 18 (42,000 mi^2)
Yukon-Kuskokwim Delta

Project Objectives:

1. Maintain furbearer population at existing levels in Unit 18.
   a. Estimate abundance and use of selected furbearers in Unit 18.
   b. Provide support to the fur sealing program.
2. Minimize adverse interactions between furbearers and the public.
3. Develop updated population management objectives in consultation with the public and other agencies.

Work Accomplished During the Project Segment Period: Public notices were sent to all village post offices and fur sealers for the sixth year, informing hunters and trappers that all harvests of beaver, lynx. otter, wolves, and wolverines need to be sealed. Also, notices were sent explaining the use of fur export permits and the importance of reporting all furbearer harvests. All fur sealers were contacted about proper procedures for sealing pelts and filling out fur acquisition reports. Twenty-five fur sealers were active in Unit 18 during the 1996-1997 season.

A trapper questionnaire was not sent out during March 1997 due to the death of the area biologist in November 1996.

Pelts from Unit 18 and other game management units were sealed at the Bethel ADF&G office and in the villages opportunistically, usually incidental to public meetings and license vending. Fur sealing certificates were coded and filled out properly so harvests for different drainages could be evaluated.

Progress Meeting Project Objectives: Abundance of all species of furbearers probably remained high, especially beaver, fox, marten, muskrat, and otter. However, since no questionnaire was sent out, and the area biologist position was vacant, this assessment is based on incidental reports, similar numbers of fur sealing certificates, and informal conversations with relatively few trappers in Unit 18.

The preliminary harvest of furbearers in Unit 18 during the 1996-1997 regulatory year is estimated at <1000 beaver, 500 foxes (red and white combined), 40 lynx, 100 marten, 2000 mink, 1000 muskrats, and 500 otters. These harvest records indicate very little interest in the sale of pelts, except beaver, red fox, mink, and otter. Observations by trappers and staff indicate that all furbearer species are abundant and continue to increase throughout the Yukon-Kuskokwim Delta. Lynx, wolf, and wolverine numbers continue to increase steadily and all 3 species have been trapped in close proximity to villages where they were rarely seen in previous years. With the continued increased use of Unit 18 by the Mulchatna Caribou Herd, wolf and wolverine sightings and harvest are likely to increase.

The department responded to nuisance beaver complaints, and it was agreed by all parties that trapping of beavers during the open season was the best solution to the problem. Compliance with

fur sealing requirements has increased, presumably because of public notices posted in all the villages and the personal contacts made by department staff..

Project Location: Unit 22 (25,230 mi^2)
Seward Peninsula and eastern Norton Sound

Project Objectives:

1. Establish and maintain viable numbers of furbearers in Unit 22.
   a. Assess harvest, interview hunter/trappers, and seal all furs presented for sealing.
   b. Establish and maintain license vendors and sealers in all Unit 22 villages.
   c. Improve compliance with current sealing requirements through public communication and education.
2. Minimize adverse interactions between furbearers and the public.
3. Develop updated population management objectives in consultation with the public and other agencies.

Work Accomplished During the Project Segment Period: Fur management activities in Unit 22 consisted of distributing regulations, preparing public information releases, and supporting license vendors and fur sealing agents. We collected the following harvest data through the furbearer sealing program:

Beaver - Unit 22 residents harvested 6 beaver (5 from Unit 22C and 1 from Unit 22D). In November, 2 were reported taken and 4 were taken in March. Three were snared, 2 trapped and one collected by ground shooting. Six of the 7 beavers were taken with the aid of a highway vehicle, and a snowmachine was used to approach the only other animal reported.

Lynx - One individual trapping from a snowmachine in Unit 22A killed 3 lynx, sex unknown, in April 1997.

Red Fox - In June 1997 we experienced a rabies outbreak among red foxes in Units 22B and 22C. Two foxes causing problems with domestic dogs were destroyed and tested positive for rabies. We used public information announcements to describe the behavior of rabid foxes and to educate people about rabid animals and having their pets immunized.

River Otter - One male river otter was harvested in Unit 22B, 3 in Unit 22C (1 male, 1 female and 1 of unknown sex) and 2 in Unit 22D (sex unknown) for a total of 6. One was trapped in December and the rest were taken by ground shooting: 1 in January, 1 in February, and 3 in March.

Wolverine - We sealed 19 wolverines (53% male, 37% female and 10% unknown) in Unit 22. Nine were from Unit 22B, 4 from Unit 22C, 3 from Unit 22E, 2 from Unit 22D and 1 from Unit 22A. Only 4 were harvested before January; 5 were harvested each month in January, February and March. All but 1 were taken with the aid of a snowmachine. Ground shooting accounted for 63% of the harvest. All but 1 of the remainder were caught by trapping.

Progress Meeting Project Objectives: We suspect there is considerable unreported harvest of furbearers each year in Unit 22. Efforts to inform the public of the importance of wildlife conservation and the need for regulations are starting to show results in some communities; the number of individuals purchasing licenses has increased. We need additional contact with local residents, primarily within the villages, if more complete compliance with current regulations is to be realized.

As beaver populations grow in Units 22B, 22C and 22D, there are increasing nuisance and damage complaints from road crews and the public. We need to work more closely with landowners and managers to minimize or alleviate problems. Public sentiment against beavers could perhaps be eased if the public was informed about the prime silver salmon rearing habitat created by beaver dams.

Project Location: Unit 23 (43,000 mi^2)
Kotzebue Sound and Western Brooks Range

Project Objectives:

1. Maintain furbearer populations capable of sustaining harvests at the 1985-1995 levels, recognizing that populations will fluctuate in response to environmental factors.
2. Increase the number of fur sealers in Unit 23 villages.
3. Minimize adverse interactions between furbearers and the public.

Work Accomplished During the Project Segment Period: We collected information regarding the population status of beavers, lynx, river otters, and wolverines from fur sealing certificates, conversations with unit residents, and our opportunistic observations of furbearers. We maintained furbearer sealing and furbuyer reporting programs.

Beaver - Beaver sign continues to increase in the lower Noatak, Baldwin Peninsula, and Squirrel River drainage. Kobuk River residents report beaver populations at "medium" levels, and either stable or increasing in abundance. Selawik beaver populations remain high based on observations of beavers in marginal habitat.

Lynx - Lynx population levels remained low during 1996-1997 but are increasing. Snowshoe hares increased noticeably in the Selawik drainage and numerous lynx sightings occurred. Arctic hares are reestablishing themselves in the Kiwalik, Buckland, Inmachuk, and lower Kobuk drainages. We anticipate significant increases in lynx within the next few years. Four lynx were sealed from the Buckland River.

Mink and Marten - Based on information from active trappers and staff, marten populations are high in isolated areas throughout the lower Kobuk and lower Noatak. Trappers report marten at medium and increasing levels in the upper Kobuk.

Red Fox - The public requested 1 fox and 1 dog from the unit be tested for rabies. Both were rabid. Cases of rabies were documented north and south of the unit, indicating high levels of rabies in the fox population. We issued public service announcements describing the behavior of

rabid animals and ways to prevent exposure to rabies. There were no incidents of human exposure to rabies. A distemper outbreak occurred in domestic dogs during spring 1997. Its presence in fox and wolf populations is unknown.

River Otter - Based on observations during other wildlife surveys, river otters are at high levels in the Noatak and Kobuk drainages. Two trappers sealed 4 river otters from the Kobuk drainage in 1996-1997. Interest in otter trapping is not related to otter abundance in Unit 23.

Wolverine - Based on opportunistic sightings by staff and residents, wolverine populations are high in some portions of the unit. During the 1996-1997 regulatory year, 14 hunters sealed 40 wolverines. Twenty-one wolverine were trapped or snared and 19 ground shot. Over half the reported harvest was from the lower Kobuk and upper Eli drainages. All wolverine were harvested in the winter/spring. Only 1 nonlocal resident participated in this hunt. Due to noncompliance with sealing requirements, actual harvests are undoubtedly much higher than the number sealed. The U.S. Fish and Wildlife Service completed the third year of a wolverine carcass collection program. No progress or annual report is available to the state from this study.

Progress Meeting Project Objectives: The department continued to maintain open communication with area trappers to assess trapper effort and distribution. We encouraged interested residents to become fur sealers. Current furbearer populations seem capable of sustaining target harvest levels, with the exception of lynx.

Lynx densities remained low but are increasing. Observations of both hare and lynx tracks allowed us to identify general areas which may be suitable for trend count areas as populations increase. Potential trend count areas include the northern Seward Peninsula, lower Kobuk River, and Selawik River drainages.

Project Location: Unit 26A (53,000 mi^2)
Western North Slope

Project Objectives:

1. Maintain productive populations and allow harvest opportunities within sustained yield limits.
2. Minimize adverse interactions between furbearers and the public.
3. Develop updated population management objectives in consultation with the public and other agencies.

Work Accomplished During the Project Segment Period:

Arctic Fox - Arctic foxes were fairly abundant in Unit 26A. Because hunters and trappers are not required to seal foxes, harvest data are not available for arctic foxes. Low fur prices resulted in relatively few foxes being trapped.

Coyote - Coyotes are very rare in Unit 26A. No population or harvest data are available.

Lynx - Lynx population density is very low in Unit 26A. No lynx were reported harvested in the Unit.

Red Fox - No population data are available for red foxes in Unit 26A. No red foxes were reported harvested.

River Otter - Although river otters are found in Unit 26A, their densities are very low. No river otters were reported harvested during 1996-1997.

Wolverine - In 1984 the department estimated a minimum population of 821 wolverines in Unit 26A. We do not have a more recent estimate of population size. We observed 5 wolverines during 9 hours of moose count flights in Unit 26A during 1-2 April 1997.

Eleven wolverines from Unit 26A were sealed during 1996-1997. Four were females, and 7 were males. Five were ground shot and 6 were trapped. Trappers used snowmachines for transportation for all 11 wolverines. Four were taken during November, 2 during December, 1 during January, 2 during February, 1 during March, and 1 during April. We believe many more wolverines were harvested and not reported; however, reliable data for the unreported harvest are not available. Sixteen wolverines were sealed in both 1994-1995 and 1995-1996, a larger harvest than those of previous years. Hunters and trappers reported seeing more wolverines than normal.

Progress Meeting Project Objectives: It is difficult to determine whether current harvest levels are within sustained yield limits because of limited population and harvest information. Additional efforts are needed to assess the status of furbearer populations. Inventory of furbearer populations, other than wolves, remains a low priority in Unit 26A compared with other species. The department has assisted the North Slope Borough to develop a harvest monitoring program in each North Slope village. Results from this study indicate the following wolverine harvest for 1994-1995: 3 for Anaktuvuk Pass, 8 for Nuiqsut, and 10 for Atqasuk (Brower and Opie, 1996 and 1997). During 1994-1995, 1 wolverine was sealed in Anaktuvuk Pass and none was sealed in Nuiqsut or Atqasuk, indicating the sealing program is an ineffective way to monitor harvest in northern Alaska.

Rabid furbearers, particularly arctic foxes, continue to be a problem around human settlements. We work with the North Slope Borough to educate people about rabid animals and having their pets immunized. Rabid arctic foxes are destroyed when they are reported near villages.

Literature Cited

Brower, H.K., and R.T. Opie. 1996. North Slope Borough Subsistence Harvest Documentation Project: Data for Anaktuvuk Pass, Alaska for the Period July 1, 1994, to June 30, 1995. Department of Wildlife Management, North Slope Borough, Barrow, Alaska. 36 pages.

——. 1997. North Slope Borough Subsistence Harvest Documentation Project: Data for Nuiqsut, Alaska for the Period July 1, 1994, to June 30, 1995. Department of Wildlife Management, North Slope Borough, Barrow, Alaska. 44 pages.

——. 1997. North Slope Borough Subsistence Harvest Documentation Project: Data for Atqasuk, Alaska for the Period July 1, 1994, to June 30, 1995. Department of Wildlife Management, North Slope Borough, Barrow, Alaska. 40 pages.

Segment Period Project Costs:

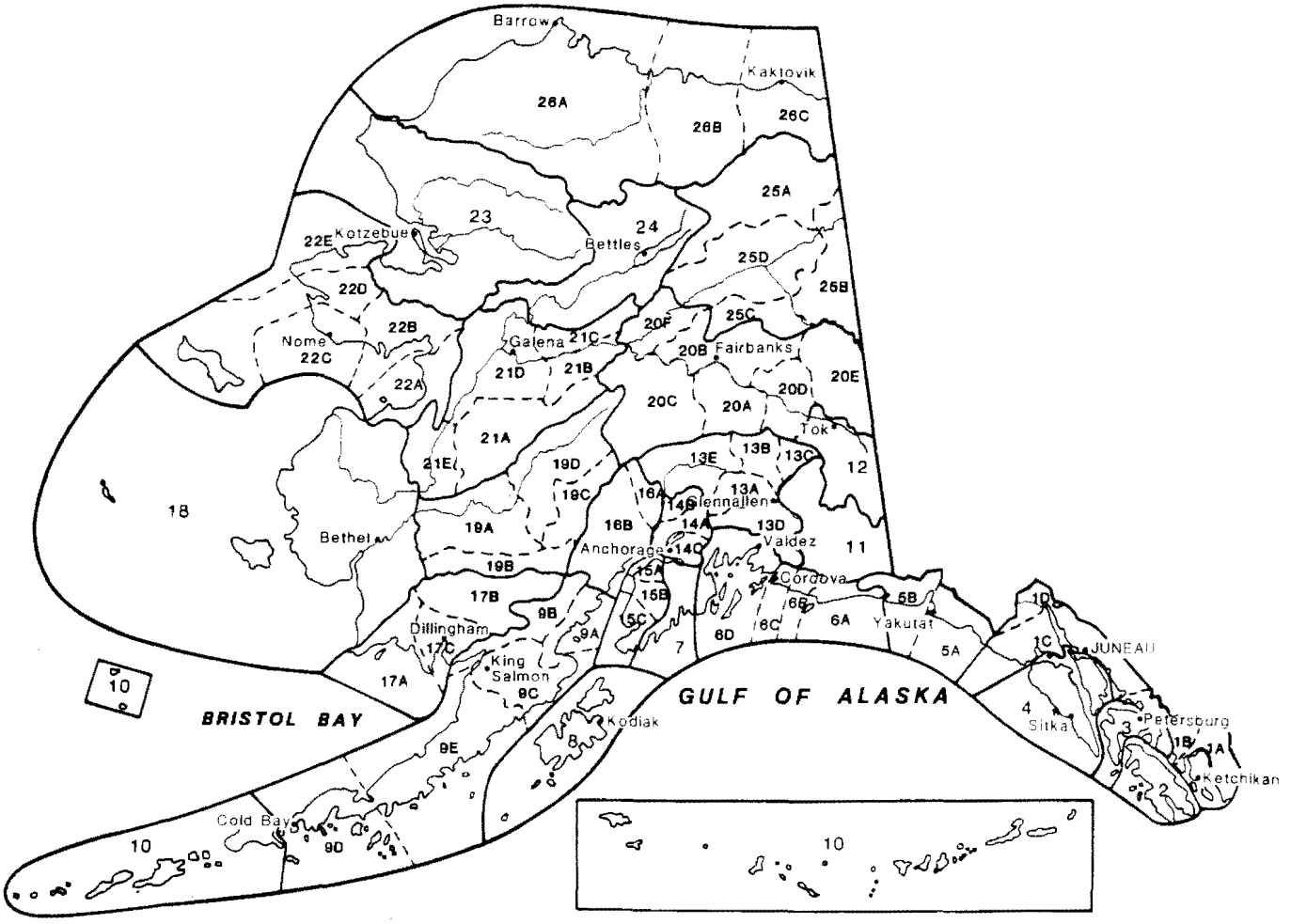
	Personnel	Operating	Total
Planned	27.9	10.4	38.3
Actual	29.8	0.4	30.2
Difference	-1.9	10.0	8.1

Explanation: Cost summary is approximate. Region V did not have administrative support for a fiscal summary at the close of the reporting period. Unit 18 activities were not completed after the accidental death and subsequent vacancy of the Unit 18 Area Biologist. This resulted in surplus operating monies at the close of the reporting period.

Submitted by:

Peter Bente
Survey-Inventory Coordinator

Alaska's Game Management Units



The Federal Aid in Wildlife Restoration Program consists of funds from a 10% to 11% manufacturer's excise tax collected from the sales of handguns, sporting rifles, shotguns, ammunition, and archery equipment. The Federal Aid program allots funds back to states through a formula based on each state's geographic area and number of paid hunting license holders. Alaska receives a maximum 5% of revenues collected each year. The Alaska Department of Fish and Game uses federal aid funds to help restore, conserve, and manage wild birds and mammals to benefit the public. These funds are also used to educate hunters to develop the skills, knowledge, and attitudes for responsible hunting. Seventy-five percent of the funds for this report are from Federal Aid.

Tom Schumacher