Alaska Department of Fish and Game
Division of Wildlife Conservation

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1 July 1997 - 30 June 1998

FURBEARERS

Mary V. Hicks, Editor

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STATE OF ALASKA
Tony Knowles, Governor

DEPARTMENT OF FISH AND GAME
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DIVISION OF WILDLIFE CONSERVATION
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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:

- Regulate seasons and bag limits to maintain viewable and harvestable populations of furbearers
- Seal beaver, marten, otter, lynx, and wolverine pelts as they are harvested and presented for sealing
- 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 sealed furbearer pelts submitted by trappers. We also obtained 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: Furbearers harvested from Units 1A and 2 during this report period are listed:

Species	Unit 1A	Unit 2
Beaver	30	140
Marten	158	1049
Otter	116	185
Wolverine	1	--

Beaver harvests were up 40% from last season in Unit 1A and down 50% in Unit 2, marten harvests decreased 38% in Unit 1A and 6% in Unit 2, and otter harvests remained the same in Unit 1A and increased 54% in Unit 2. One wolverine was caught in Unit 1A, down from 3 last season. Based on information collected from our 1996–97 trapper questionnaire, trappers believe the Unit 1A beaver population is common (*Index of Abundance* (I_A) = 50, n = 1), the marten population is abundant (I_A = 60, n = 5), the mink population is abundant (I_A = 70, n = 5), and the otter population is abundant (I_A = 60, n = 5). Unit 2 trappers believe the beaver population in that unit is common (I_A = 37, n = 4), the marten population is common (I_A = 50, n = 6), the mink population is common (I_A = 50, n = 4), and the otter population is common (I_A = 50, n = 5).

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 Unit 1B, north of Unit 2, south of the centerline of Frederick Sound, and east of the centerline of Chatham Strait

Project Objectives and Activities:

- Regulate seasons and bag limits to maintain viewable and harvestable populations of furbearers
- Seal beaver, lynx, marten, otter, and wolverine pelts as they are presented for sealing
- 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: 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: Furbearers harvested from Units 1B and 3 during this report period are listed:

Species	Unit 1B	Unit 3
Beaver	16	56
Marten	318	225
Otter	30	47
Wolverine	8	3

Due to difficult access, most of Units 1B and 3 are not trapped. Ten trappers sealed furbearers from Unit 1B and 26 trappers sealed furbearers from Unit 3. The beaver harvest decreased in Unit 1B and increased in Unit 3. The marten and otter harvests increased in Unit 1B and decreased in Unit 3. The 3 wolverine harvested in Unit 3 were from Mitkof Island, the highest harvest ever reported from there. We believe the noted changes in harvest numbers reflect changing trapper effort and weather conditions rather than changes in 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:

- Regulate seasons and bag limits to maintain viewable and harvestable populations of furbearers
- Seal beaver, lynx, marten, otter, and wolverine pelts as they are presented for sealing

- 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, and trapping patterns and conditions.

Progress Meeting Project Objectives: Furbearers harvested from Unit 1C during this report period are listed:

Species	Unit 1C
Beaver	21
Marten	122
Otter	15
Wolverine	4

Trappers sealed 21 beaver, 122 marten, 15 otter, and 4 wolverine. Unit 1C furbearer populations are healthy. Otter and wolverine harvest remained nearly the same as the previous year, marten harvest declined by more than 50%, and the beaver harvest increased. Differences in the harvest from the previous year are probably reflective of changing trapper effort and not furbearer population levels. We will continue to examine fluctuations in fur harvest with trapper questionnaires.

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:

- Regulate seasons and bag limits to maintain viewable and harvestable populations of furbearers
- Seal beaver, lynx, marten, otter, and wolverine pelts as they are presented for sealing
- 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. A trapper questionnaire was used to gain additional information regarding target species abundance, prey abundance, trapping conditions, and trapping patterns.

Progress Meeting Project Objectives: Furbearers harvested from Unit 1D during this report period are listed:

Species	Unit 1D
Beaver	6
Marten	81
Otter	3
Wolverine	3

Trappers harvested 81 marten, 3 river otter, 6 beaver, and 3 wolverine. Furbearer populations within Unit 1D are consistent with historic levels.

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

Project Objectives and Activities:

- Annually assess harvest, seasons, and regulations to maintain viewable and harvestable populations of furbearers
- Seal harvested beaver, marten, and river otter as they are presented for sealing
- Contact reliable observers to obtain general information about the status and trends of furbearer populations, including the use of an annual trapper survey
- Enlist and maintain sealing agents in villages in an effort to assure timely sealing and reporting of harvested furbearers

Work Accomplished During the Project Segment Period: Marten, beaver, and river otter were sealed within 30 days of the close of respective seasons. We examined furs at sealing and recorded data on sex and age classes of the harvest. The annual trapper survey was conducted from the Juneau office. Harvest data were analyzed by species.

Progress Meeting Project Objectives: Furbearers harvested from Unit 4 during this report period are listed:

Species	Unit 4
Beaver	0
Marten	1559
Otter	100

Harvest of furbearers does not readily reflect population trends or relative abundance. Pelt prices have recently declined, and trapper effort has correspondingly diminished. During the 1996–97 regulatory year, 1559 martens and 100 river otters were sealed. Marten harvest continued to increase and was the second highest documented since sealing began in 1984–85. River otter harvest, conversely, declined significantly from the previous year. Beaver populations are limited to a few select areas in Unit 4, and no harvest was reported. Harvest of mink is difficult to enumerate as there is no sealing requirement, but local trappers suggest that populations were depressed. There is no indication that trapper harvest has depressed 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 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: Furbearers harvested from Unit 5 during this report period are listed:

Species	Unit 5
Beaver	6
Lynx	0
Marten	227
Otter	7
Wolverine	4

Commercial Fisheries Division staff in Yakutat sealed furbearers as they were presented at the local ADF&G office. Residents of Yakutat and nonlocal outdoorsmen contributed anecdotal information concerning sightings of furbearers. Harvest of furbearers in Unit 5 included 7 otters, 6 beavers, 227 martens, and 4 wolverines. The marten harvest more than doubled over the previous year, while the wolverine harvest was down from 12 in 1996. The high marten harvest was the result of the intensive efforts of 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	16.2	11.0	27.2
Actual	16.2	11.0	27.2
Difference	0.0	0.0	0.0

Additional staff time was devoted to the collection, preparation, and analysis of marten samples.

Submitted by:

Bruce Dinneford
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: Appointed sealers and ADF&G staff sealed 132 pelts (80 beavers, 77 otters, and 16 wolverines). Trapper interest was minimal because of low pelt prices.

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

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

Project Objectives: Develop measurable objectives for all furbearer species by 2000.

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, red fox quickly disappeared as coyotes established and rapidly increased during the 1930s. Marten are moderately abundant in Unit 7 but rare in Unit 15. Since Marten have never been common in Unit 15, it is suspected that 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 densities, dependent upon habitat quality or prey abundance.

Harvested marten, beaver, land otter, wolverine and lynx must be reported to the department within a specified period of time for sealing. Sealing documents for these furbearers indicate the following harvests by unit were reported in 1997–98:

Unit	Marten	Beaver	Land Otter	Wolverine	Lynx
7	39	64	1	7	26
15	1	78	38	9	119
Total	40	142	39	16	145

Lynx hunting and trapping seasons were closed from 1983 to 1997 in Unit 15A and from 1987 to 1996 in the remainder of the Kenai Peninsula due to low numbers of animals during an extended low in the snowshoe hare density. Units 7 and 15 were opened from January 1 to February 15 in 1997–98. The reported harvest revealed 26 lynx taken in Unit 7, 80 in Unit 15A,

22 in 15B and 17 in 15C. The harvest was composed of 40 kittens (11 males, 28 females, and 1 unspecified), 101 adults (59 males, 41 females, and 1 unknown) and 4 of unknown sex and age. In 1997–98 kittens composed 28% of the harvest.

Carcasses were collected from 43 of the 145 lynx harvested in 1997–98. Necropsy data revealed 30 (70%) adults, 2 (5%) subadults and 11 (26%) kittens. Fourteen of the 16 subadult-adult females exhibited placental scars in their reproductive tracts. The number of placental scars ranged between 2 and 7.

Mink, weasel, muskrat, red fox, squirrel, marmot and coyote are also harvested on the Kenai; however, sealing is not required for these species. Catch reports from trapper questionnaires indicate harvest of these furbearers was comparable to past years.

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. Squirrel and marmot have no closed seasons.

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 meeting objectives for furbearer management. Lynx and beaver censuses have been conducted in small study areas and will possibly be extended to estimate densities by subunits in the future.

Monitoring of harvests from sealing and reports from trappers indicates furbearers are in harvestable numbers and populations are stable, except for lynx, which is increasing. The lynx population declined during the late 1980s and started to increase in 1995. This increase was widespread enough to allow a January 1–31 season in Unit 7 and Units 15B and C in 1996–97 and a January 1–February 15 in Units 7 and 15 in 1997–98.

The beaver trapping season has been extended on Kenai Peninsula twice in the past decade. Opening the season November 10 instead of December 1 resulted in 32% of the harvest reported being taken in November. However, due to low prices and lack of trapping effort, the 1997–98 harvest (142) was 32% lower than the previous year's harvest of 209.

No other change in season or bag limit is recommended for 1998–99.

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: During the 1997–98 season, 17 trappers brought in 148 otters for sealing yielding an average of 8.7 otters/trapper. The harvest

comprised 70 males (47%), 53 females (36%), and 25 of undetermined sex (17%). Most trappers were local residents (82%), and trapping was the most common method of take (86%). Boats were the most common mode of transportation used by otter trappers (68%), and December was the most productive month (49%). Twenty otters (14%) were harvested along the Kodiak road system.

There were 33 beavers brought in by 11 trappers, yielding an average harvest of 3 beavers/trapper. Most trappers were local residents (64%), and trapping was the most common method of take (46%). Highway vehicles were the most common method of transportation used by beaver trappers (55%), and the harvest was evenly distributed during December (27%), February (27%), and November (24%). Twenty-eight (85%) beavers were harvested along the Kodiak road system.

Progress Meeting Objectives: Trapper questionnaire respondents reported that furbearer populations were high. 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; however, the low number of returns makes it difficult to interpret population status of various species. Snow and weather conditions were relatively favorable in 1997–98, but low fur prices reduced trapping effort.

We derived furbearer harvest information from furbearer sealing certificates. The preliminary harvest for 1997–98 in Unit 9 from sealing certificates was as follows: beavers-92; otters-71; lynx-19; and wolverines 47. No furbearers were sealed from Unit 10. Harvests of all species were up slightly from the previous year.

During spring 1998 several red fox carcasses and 1 coyote from Unit 9E tested positive for rabies. This was the first confirmed rabid coyote in Alaska. The extent of mortality in 1998 among canids in Unit 9 is not fully known at this time.

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 102 Unit 11 and 13 trappers, and to date only 36 (35%) have responded. Of those responding, 6 (17%) did not trap during the 1997–98 season. Trappers responding to the questionnaire reported an average of 21.4 years experience in Alaska. Most trappers averaged between 50 and 100 sets along traplines averaging 48 miles long, up 26% compared to the average trapline length of 38 miles in 1996–97 and 65% from the 29 miles in 1995–96. Trappers used highway vehicles or snowmachines as transportation. Although lynx and hare numbers were increasing, Unit 11 and 13 trappers reported numbers of most furbearers were similar to those of last year. This year, snow conditions were spottier, with some areas receiving deep snow, while other areas had average snowfall.

In September 1995 small mammal trapping was initiated to develop a population abundance index. The objectives were to participate in a statewide effort to document small mammal population trends and determine if an index of prey abundance could be used to predict furbearer population trends. This was the third year of this project, and trapping intensity was increased to 100 traps for 3 nights in 4 different habitat types. Respective catch rates for 1995, 1996, and 1997 were 0.2 (n = 61), .05 (n = 11), .09 (n = 106) catches per trap night. Trapping results indicate small mammals were more abundant in 1995, declined in 1996, and increased slightly in 1997.

During late March 1998 we monitored by plane transects established in 1988 to examine lynx abundance and population trends. Snow conditions for most of the count were excellent with only 2 days between fresh snow and the survey flight. Compared to 1997 data, lynx densities were higher in 1998. In all surveys during 1998, we counted 43 fresh tracks and 15 old tracks, compared to 24 fresh and 54 old tracks in 1997. Old tracks were more numerous in 1997 because of a lack of fresh snow before the surveys.

During the 1997–98 season, 34 wolverines (21 males, 12 females) were sealed in Unit 13. In Unit 11, trappers sealed 24 wolverines (16 males, 8 females). There were 379 lynx pelts sealed in Unit 13, while trappers sealed 48 lynx in Unit 11. Trappers sealed 27 otters (14 males, 12 females, 1 unspecified) and 191 beavers in Unit 13 during 1997–98. No otters or beavers were sealed from Unit 11 during the 1997–98 season. Trappers sealed 84 martens taken from Unit 13E.

Harvest information is generally unavailable for those furbearers for which sealing is not required. In Units 13 and 11, the two most important species in this category are red fox and marten. Some indication of the catch per trapper comes from the trapper questionnaire. In 1994 the trapper questionnaire asked trappers to report their catch by species. This does not provide a unit harvest estimate but represents a minimum harvest estimate and catch per trapper. In both units during 1997–98, 27 trappers reported taking 314 red foxes (11.6/trapper) and 362 martens (13.4/trapper). These reports are similar to the 276 foxes and 368 martens taken in 1996–97.

The 1997 harvest of 34 wolverines in Unit 13 is 23% lower than the 1996 take of 44 but similar to the 10 year (1985–96) average take of 32 wolverines per year. Harvest composition data indicate males composed 71% of the take. The 1997 wolverine harvest in Unit 11 of 24 is the highest reported since 1984. In Unit 11 the wolverine take has averaged only 9 animals per year since 1985. The harvest increase this year occurred when 2 individuals increased their annual take because of the removal of the 2-wolverine bag limit. Historically, success rates for trappers taking wolverine have been low, but it is evident that if trappers with lines in good wolverine habitat target wolverine, they can be successful.

The 1997–98 harvest of 379 lynx in Unit 13 was the highest reported since sealing was required in 1997. The 1996 harvest was 200, while the previous harvest record was 290 in 1982. The percent kittens in the harvest was 40% in 1997–98 compared to 32% for 1996–97. The percent kittens has been high for the last 4 years. Even though the price of lynx was low, the high harvest was attributed to increased trapping pressures as trappers took lynx because they were more abundant on their traplines than expected and because the lynx season was extended 31 days in 1998. In Unit 11 the lynx harvest also increased, with 48 lynx taken in 1998 compared to 37 in 1997. Kittens accounted for 37% of the take. Hare numbers were up in portions of Units 11 and 13 and are considered more abundant than observed in the last 15 years. The last hare cycle in Units 11 and 13 did not result in very high hare numbers and lasted only 1 to 2 years during the early 1990s. It is apparent the hare cycle is not following predictions for either the timing or magnitude of peak hare populations.

The last 10 years otter harvests in Unit 13 have averaged 30 (range = 5–61) animals per year. Harvest fluctuations are not caused by changes in the otter population but relate more to trapping effort. Harvests have been declining since 1994 when 61 were taken. Trapping pressure for otters peaked in the mid-1990s when demand and prices for otter pelts peaked. Otter harvests peaked in Unit 11 at 12 otters in 1995 and have declined since.

The 1997–98 Unit 13 beaver harvest of 191 was lower than the 1992–96 reported average of 246 beavers a year. Beavers are abundant in Unit 13, so fluctuations in harvests are thought to reflect trapping effort. Trapping pressure was down because the price paid for beaver declined. There were no beaver reported taken in Unit 11 in 1997. In Unit 11 beaver harvests have averaged 12 per year for the prior 5 years (range = 0–24). Market conditions also dictate trapping effort for beaver in Unit 11. In both units harvest chronology indicates most animals are taken either early in the trapping season or late spring.

Progress Meeting Project Objectives: We manage lynx under a tracking harvest strategy that reduces or eliminates harvests during cyclic declines and lows. 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 is that trappers can take more lynx during high portions of the population cycle simply because more lynx will be present. Based on this management strategy, lynx seasons have been liberalized during the past 3 years because hares have increased track counts are up, and the percent kittens in the harvest is high. I recommend no changes in season length and dates.

Prices declined for most of the important furbearers taken in Units 11 and 13 during the 1997–98 season. By spring 1998 commercial fur markets had declined so much that local trappers were trying to market their furs through other sources such as taxidermists, tourists, and "cottage" garment makers. Unless the price of fur increases in 1999, it is doubtful many local trappers can meet expenses. During the 2-year decline in fur prices, trapper response has been either to quit trapping or increase their effort and catch to offset price declines.

The Board of Game dropped the wolverine bag limit of 2 per season in Units 11 and 13 during the March 1997 meeting. Low harvests comprising 60% males were not limiting wolverine numbers in Units 11 or 13. Before this action, the low average catch per trapper indicated only those trappers in good habitats such as the Chugach Mountains in Unit 13D and the Talkeetnas in Unit 13A would be able to take more than 2 wolverines during the season. Harvest data show that 2 individual trappers in Unit 11 concentrated on wolverine and had a much higher harvest than other trappers. These traplines are in very good wolverine habitat where higher sustainable harvests can occur.

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

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

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

Work Accomplished During the Project Segment Period:

Unit 14

During the 1997–98 trapping season 241 beavers, 39 otters, 2 lynx, 13 wolverines, and 138 martens were sealed from Unit 14. In addition, 3 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 10 coyotes, 35 mink, 10 muskrats, 17 red foxes, 18 red squirrels and 27 weasels in Unit 14. Track count data were collected on 1 transect in Unit 14A.

Unit 16

During the 1997–98 trapping season 111 beavers, 24 otters, 12 wolverines, 1 lynx and 297 martens were sealed from Unit 16. No beavers were reported 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 4 coyotes, 17 mink, 2 red foxes, 63 red squirrels, and 72 weasels in Unit 16.

Units 14 and 16

Thirty trappers responded to the department's trapper questionnaire. Of these, 23 trapped during 1997–98. Most trappers characterized trapping conditions as fair to good. Snowfall was relatively heavy early in the season, then remained below normal during the rest of the winter. Lack of time and adequate fresh snow prevented data collection along 5 established track count trend lines.

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. During 1996–97 marten harvests increased in Unit 14 but declined dramatically in Unit 16. The decline in Unit 16 was probably due to a drop in marten prices.

Harvest objectives, based on long-term average harvests, have been established for the fur species for which sealing is required. Harvest objectives were met for beaver, otter, wolverine and marten in Unit 14. In Unit 16 the marten harvest objective was met, but the harvests of beaver, otter and wolverine were 32%, 60% and 60%, respectively, of our harvest objectives. Harvests should be expected to fluctuate in response to trapping conditions, prey densities, and market conditions.

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 throughout the region.

Work Accomplished During the Project Segment Period:

Beaver — Preliminary fur sealing data for the 1997–98 trapping season indicates a harvest of 351 beavers (17A-115, 17B-19, 17C-217). This was considerably lower than the 1996–97 harvest (867) and the previous 5-yr average of 706. This is the lowest reported harvest since

sealing records began in 1956. Depressed economic conditions in the Bristol Bay region probably contributed to decreased local trapper effort.

Coyote — No objective data were collected on coyote populations in the unit. Incidental observations indicate coyotes were becoming more common and extending farther west.

Fox — Red fox are abundant throughout the unit and may be increasing.

Land Otter — Preliminary fur sealing data for the 1997–98 trapping season indicate a harvest of 82 otters (52% male) during this period (17A-23, 17B-9, 17C-50). This was less than half the previous year's harvest (181) and less than the 5-yr average of 118. Trappers reported otters were abundant throughout the unit.

Lynx — Preliminary fur sealing data for the 1997–98 trapping season indicate a harvest of 14 lynx (52% male and 79% adult; 17A-1, 17B-1, 17C-12), twice the 1996–97 harvest and equal to the previous 5-yr average. Throughout the unit lynx numbers have stabilized at a relatively low level.

Marten — We collected no data on the number of marten taken from the unit during this reporting period. Trappers reported stable marten numbers along the Nushagak, Mulchatna, and Wood River drainages.

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.

Muskrat — Muskrat populations remained at dangerously low levels. We collected no data on the numbers of muskrats taken from the unit during this reporting period.

Wolverine — Preliminary fur sealing data for the 1997–98 trapping season indicate a harvest of 48 wolverine during the 1997–98 season. This was 1 more wolverine than taken during 1996–97 and greater than the previous 5-yr average harvest of 36. Trappers reported that wolverine populations remained stable throughout the unit.

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

Segment Period Project Costs:

	Personnel	Operating	Total
Planned	88.2	2.1	90.3
Actual	88.2	2.1	90.3
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 and 20E (20,659 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 to determine the status of various furbearer populations

   c. Maintain a current map of active traplines in Units12 and 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 after 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 and trend and on trapping intensity.

   - 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 Units 12 and 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 after 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 and trend and on trapping intensity

   - Obtain a wolverine population estimate in southern Unit 12 and western Unit 20E by 1997

Work Accomplished During the Project Segment Period:

Unit 12

Preliminary reported harvest was 1 land otter, 23 beavers (17% kits), 14 wolverines, and 331 lynx (31% kits). The percent kittens in the lynx harvest increased annually since 1993 and currently the lynx population is at a high level. Percent kits in the beaver harvest averaged 6% since 1995, compared to 1% between 1992–1994. Fur harvest was lower in 1997–1998 because trapper participation was lower. The exception was lynx because early market forecasts predicted higher prices. Market prices were barely adequate for marten and lynx early in the season, but during late season prices dropped to levels that caused most local trappers to pull their traps. The lynx season was 1 month longer than in the past 2 years. Lynx harvest increased by 102% from 1996–1997.

Observations by department personnel, the trapper questionnaire, and discussions with local trappers indicated that fox, ermine, snowshoe hare, lynx, and marten were common to abundant in during 1997–1998. Marten distribution was irregular across the unit, ranging from very low to abundant. Most trappers thought marten were declining in response to low microtine populations. Lynx and snowshoe hares increased in number and distribution to include all suitable habitat and were common to abundant. Trappers unanimously supported extending the lynx season. Most desired a 1 December to 28 February season to time harvest with fur primeness, but a few wanted a 1 November opening to coincide with fox, marten, and wolverine seasons. After talking with trappers and the primary fur buyers and evaluating harvest data, the 1998–1999 lynx season was set at 1 December to 28 February throughout interior Alaska. Red fox populations declined in 1992–1993 and remained low until 1995. The fox population appeared to increase in response to increasing numbers of snowshoe hares and grouse. Wolverines were uncommon and stable, except in the mountainous country in southern Unit 12 where they were common. We did not complete a wolverine population survey in Unit 12 during 1997–1998. Most area trappers do not select for wolverines, but harvest was probably high enough to limit range extension or population growth in most of the unit. The muskrat population declined throughout the unit 2 years ago and remained low.

Unit 20E

Reported harvest was 0 land otters, 0 beavers, 6 wolverines, and 102 lynx (25% kitten). Harvest was comparable to last year, except that lynx take increased by over 200%. The percentage of kittens in the harvest has increased annually since 1993. Kitten harvest extended between the southeastern corner to the central portion of the subunit. Little trapping occurs in the northern portion of the unit, but based on tracks observed, the lynx population increased in that area.

Comments by local trappers, track surveys, and observations by department personnel suggested fox, lynx, and snowshoe hare were abundant and increasing. Otters increased but were still scarce unitwide. Area trappers seldom set for otters because of their low numbers. Marten declined unitwide in response to low microtine numbers, but they were locally abundant in several areas along the Mosquito Fork and Charley River. Microtine populations were recovering based on incidental observations during May 1998. The wolverine population remained low but stable. The 1997–1998 trapping season for lynx was 2 1/2 months. The season will be extended to 3 months in 1998–1999 (1 December–28 February) based on percent kittens in the harvest and on estimates of lynx productivity. We estimated productivity using data from carcass collections and estimates of snowshoe hare abundance. We did not complete a wolverine population survey in Unit 20E during 1997–1998.

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. We mapped the active traplines in Units 12 and 20E, tracked fur prices, and interviewed a sample of trappers to monitor trapper effort, distribution, and probable effects on the furbearer populations. Results from our interviews substantiated that income from trapping is important and is the primary variable determining effort. Most trappers in Units 12 and 20E have a long history of trapping in the area (average = 19 years), extensive lines (average = 50 miles), and between 50 and 400 traps to monitor. During each trapping season, the fur market primarily drives trapper effort. These trappers are able to manage the furbearer populations along their lines because other trappers respect established traplines. Furbearer populations along the road system are trapped much more intensively (especially marten, lynx, and fox) because area trappers consider public road corridors open lines. This attitude sometimes creates intense competition for the resource.

I recommend deleting the objective of conducting a wolverine population estimation survey in Units 12 and 20E. To conduct a survey, certain snow conditions are necessary. These same conditions are also conducive to wolf work. Currently, our priorities are the Fortymile Caribou Management Plan and the associated nonlethal wolf control program. We have neither the personnel nor time to do both the wolverine and wolf surveys. The wolverine survey is important, but I suggest it be added to the unit objectives following the completion of the Fortymile Caribou Management Plan in year 2001.

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

Project Objectives and Activities:

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

1. Seal furs as they are harvested and presented for sealing and analyze harvest patterns
2. Conduct trapper questionnaire and interviews to determine 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
3. 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: We have not processed sealing documents from the 1997–1998 season.

Progress Meeting Project Objectives: All harvest monitoring objectives were met. Sealing of furbearer pelts was accomplished through the use of several sealing agents in villages, traveling fur buyers, or department personnel. Population assessment objectives were not met. We assume population objectives for beaver, marten, lynx, river otter, and wolverine were met.

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

Project Objectives and Activities:

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, and 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) 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 beaver

Lynx

Manage lynx with a tracking harvest strategy whereby seasons are most liberal when lynx are abundant and most conservative when lynx are scarce

1. Estimate the annual sex and age of harvested lynx by examining carcasses from Units 20A and 20B

2. Develop and implement aerial track surveys in Units 20A and 20B to provide indices to trend in lynx and hare populations

3. Determine whether or not lynx pelt measurements can be used to index the number of kittens in the harvest

4. By interviewing successful trappers, develop maps of trapline distribution

Wolverine

Manage wolverine harvests in Unit 20A based on estimates of sustainable yield derived from density estimates and modeling

1. During winter 1998–1999, complete aerial surveys to estimate density of wolverine in Unit 20A

2. Use the model of Gardner et al. (1993) to estimate sustainable wolverine harvests in 20A

Work Accomplished During the Project Segment Period: We sealed beaver, lynx and wolverine to estimate timing, distribution, age class, and magnitude of the harvest. We purchased lynx carcasses to estimate the age, sex, and reproductive characteristics of harvested animals. We did not complete aerial track counts of lynx due to poor snow conditions throughout the winter. We conducted beaver cache counts on the Chena and Chatanika Rivers.

Progress Meeting Project Objectives: We met objectives to maintain accurate fur harvest records and to maintain seasons during the peak of pelt primeness, except for nuisance beavers. We also met our objectives for beaver populations, including cache densities, urban harvest, nuisance beaver, coordination with DOT, and percentage kits in the harvest. The lynx tracking harvest strategy was implemented to adjust harvest in relation to population cycles. We have not mapped area traplines, and I recommend deleting this objective. We have not met the objective to complete wolverine surveys in Unit 20A. We may be able to complete this survey next year.

Project Location: Unit 20D (5,633 mi^2)
Central Tanana Valley near Delta Junction

Project Objectives and Activities:

1. Monitor furbearer population trends and annual harvest, 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 questionnaires 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. Preliminary trapper harvest was 6 beavers, 110 lynx, 6 otters, and 8 wolverines.

We mailed questionnaires to trappers and tabulated responses to summarize trapper observations concerning furbearer abundance and population trends. No small mammal abundance data were collected. In June 1997 we evaluated hare abundance trends as part of a Breeding Bird Survey. Data indicated the hare population increased.

Thirty-four lynx carcasses were purchased and necropsied. Data from the Unit 20D carcass necropsies were pooled with data from other carcasses collected in Unit 20. Unit 20 results indicated 32% of lynx carcasses were kittens, 30% were adult females (58% pregnant), and 38% were adult males.

Progress Meeting Project Objectives: Management objectives were accomplished by sealing furs of beavers, lynx, otters, and wolverines and analyzing harvest patterns. We mailed trapper questionnaires to trappers and analyzed the results. Snowshoe hare population trend was increasing based on a Breeding Bird Survey route. We purchased lynx carcasses, assessed sex and age classes, and determined. pregnancy rates.

Project Location: Units 21B, 21C, and 21D (20,655 mi^2)
Lower Nowitna River and Yukon River between Melozitna and Tozintna rivers; Dulbi River above Cottonwook 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:

Manage furbearer populations to sustain furbearers at levels high enough to provide maximum consumptive and nonconsumptive use

1. Seal furs and analyze harvest patterns
2. Conduct trapper questionnaire and interviews to determine the status of various furbearer populations

Work Accomplished During the Project Segment Period: Preliminary data from sealing forms indicated a harvest of 274 beavers, 10 lynx, 18 otters, and 12 wolverines. Beaver harvest increased from the previous year but was low compared to abundance. Many trappers reported high marten numbers, and several trappers made record marten catches. Trappers interviewed during sealing indicated lynx numbers may have increased slightly in the last few years, but trappers did not target lynx because of low prices. Hare numbers were increasing. Otters were abundant, based on evidence from tracks observed in the snow. 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 influenced trapper effort and catch within the unit. Fur prices, social activities, cultural backgrounds, and weather conditions all contributed to trapper effort. These factors kept harvests low enough to meet the objectives.

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

Project Objectives and Activities: Manage furbearer populations to sustain furbearers at levels high enough to provide maximum consumptive and nonconsumptive use

1. Seal furs and analyze harvest patterns

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

Work Accomplished During the Project Segment Period: Preliminary data from sealing forms indicated a harvest of 481 beavers, 33 lynx, 20 otters, and 21 wolverines. The number of lynx harvested in this unit continued to be low, almost 100 less than in prior years.

Most trappers targeted beaver and marten. The beaver harvest increased compared to previous years because forecasted higher prices increased trapper effort. Although marten prices were expected to be low, several trappers reported higher than average marten catches. They also reported higher marten numbers. Lynx numbers increased in some areas of the unit.

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

Project Location: Units 25A, 25B, 25D, 26B, and 26C (73,800 mi^2)
Upper Yukon River Valley, 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. Cooperate with local residents and FWS in investigating the relationship between beaver dams and local fish populations

Work Accomplished During the Project Segment Period: Harvest data for sealed lynx, wolverine, beaver, and otter are being compiled and analyzed based on sealing forms. Preliminary data indicated the harvest of sealed species was greatest in Unit 25. Fur prices have remained low for several years, and trapping effort has declined. Trapper effort focused primarily on marten and lynx. Snowshoe hare numbers are high, and lynx harvests are

increasing. Considerable effort was devoted to developing revised beaver trapping regulations in response to local interests in harvesting more beaver for food and 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 16 April and 1 June. The bag limit for shooting was raised to 2 per day for 1996–1997. However, relatively few beavers were taken during the spring season.

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

Segment Period Project Costs:

	Personnel	Operating	Total
Planned	111.4	12.8	124.2
Actual	174.0	8.7	182.7
Difference	-62.6	4.1	-58.5

Explanation: During the last 7 months of this report period, Region III staff initiated a new time accounting procedure. In December 1997 staff began recording time spent on specific federal aid projects. Previously, staff had recorded only total time which was then prorated to either federal aid or nonfederal aid time according to a fixed percentage that varied among staff positions. Therefore, the "Actual" expenditures for "Personnel" in this report are estimates derived from 7 months of specific project time extrapolated to 12 months. The new procedure unavoidably resulted in what appear to be substantial discrepancies between "planned" and "actual" personnel expenditures for most of the FY98 federal aid projects. However, most of these "discrepancies" are not real, and the explanation and justification are presented in the explanation section of each project report. This is a transitional phenomenon and, unlike this year, the FY99 performance reports will reflect 12 months of actual project time accounting.

Personnel — Additional staff time was required to complete the triennial furbearer management report, and several management staff participated in a reevaluation of the harvest tracking strategy program used to monitor population status of lynx. These and most other furbearer management activities took place after the first of the calendar year which was after the initiation of actual project time accounting. Less furbearer management activity took place during the first 5 months of the report period. Therefore, the extrapolation of former to the latter may have resulted in an overestimate of actual time spent on federal aid furbearer projects.

Operating — The operating allocation was 11.1, a budgetary decision made after we submitted the Work Plan. Nevertheless, operating funds were underspent because the McGrath, Galena, and Rural area staff were unable to travel to villages to seal furs.

Submitted by:

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David D. 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 fursealing program

   c. Minimize adverse interactions between furbearers and the public

2. Develop updated population management objectives in consultation with the public and other agencies

Work Accomplished During the Project Segment Period: Information was provided to members of the public (including city offices, trappers, and others) informing hunters and trappers that all harvests of beaver, lynx, otter, wolf, and wolverine need to be sealed. Also, a radio show was initiated that aired essays explaining the importance of reporting all furbearer harvests. All fur sealers were contacted about proper procedures for sealing pelts and filling out fur acquisition reports. Fur sealers were active in most Unit 18 villages.

During March 1998 we mailed a trapper questionnaire; to date we have received 41 responses.

Pelts from Unit 18 were sealed at the office in Bethel and in the villages on an opportunistic basis, 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, and materials were made available to fur sealers.

One particularly active fur buyer, who was interviewed extensively, has been instrumental in providing valuable information regarding fur harvests and trapping activity.

Progress Meeting Project Objectives: Abundance of all species of furbearers remained high, especially beaver, fox, marten, and otter. The preliminary harvest of furbearers in Unit 18 during the 1997–1998 regulatory year is estimated at <1000 beavers, 500 foxes (red and white combined), 40 lynx, 100 martens, 2000 mink, 1000 muskrats, and 500 otters. These harvest records indicate little interest in the sale of pelts except beaver, red fox, mink, and otter. Observations by trappers and staff indicate all furbearer species are abundant throughout the Yukon–Kuskokwim Delta. Lynx and wolverine numbers continue to increase steadily and all three species have been trapped near villages where they were rarely seen previously. With the continued increased use of Unit 18 by the Mulchatna Caribou Herd, wolverine sightings and harvests will probably increase.

The department responded to nuisance beaver complaints and trapped a small number of beavers. However, trapping beavers during the open season is usually the best solution to the problem.

Compliance with fur sealing requirements has stayed the same or slowly increased because of public notices posted in villages and because department staff continue personal contacts.

Project Location: Unit 22 (25,230 mi^2)
Seward Peninsula and the adjacent mainland drained by all streams flowing into 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, interviewing hunter/trappers, and supporting license vendors and fur sealing agents. We collected the following harvest data through the furbearer sealing program:

Beaver — Seven Unit 22 residents harvested 39 beaver (12 from Unit 22A, 13 from Unit 22C and 14 from Unit 22B). All 25 beavers from Units 22A and 22C were trapped or snared and in Unit 22B 9 were shot and 5 trapped. Thirty-seven beavers were taken with the aid of a snowmachine; a boat was used to hunt the other two beavers.

Lynx — In Unit 22A 1 trapper used a snowmachine for transportation and killed 2 male lynx.

River Otter — Seven otters were harvested by 6 hunter/trappers. One female was trapped in Unit 22A, 1 otter of unknown sex was shot in Unit 22A and 1 in Unit 22B, 2 male otters were trapped in Unit 22C, 1 male was shot in 22B and 1 in 22D.

Wolverine — We sealed 26 wolverines (73% male, 23% female, and 4% unknown) taken by 10 hunter/trappers in Unit 22. Five wolverines were from 22A, 18 from 22B, 2 from 22D and 1 from 22E. All were taken with the aid of a snowmachine. Trapping accounted for 57% of the harvest, shooting accounted for 38%, and the method of take was unknown for 5% of the harvest.

Beaver continued to extend their range westward and now are present in all Unit 22 subunits. Densities are increasing dramatically in Units 22C and 22D, and beaver are well established in the Serpentine River drainage in Unit 22E. In October 1997 the Board of Game extended the beaver trapping season in Units 22C, 22D and 22E, creating a uniform season throughout Unit 22 from 1 November through 10 June, effective with the 1998–1999 regulatory year.

We interviewed trappers who sealed furs at the Nome Fish and Game office. All hunter/trappers interviewed reported that in portions of Units 22C and western Unit 22**B**, beaver numbers are high and increasing, otter are stable and of medium density, and red fox are still fairly common but greatly reduced in number from the previous year. Wolverine in Unit 22C are reported scarce and decreasing, but in western Unit 22B hunter/trappers report wolverine numbers have been increasing for the last couple years and are now fairly common.

Since the mid-1980s lynx have been reported scarce throughout the unit. Hares, their primary food source, are few, but reports of lynx unitwide suggest hare numbers are increasing.

Progress Meeting Project Objectives: Fur sealing data provide only minimum estimates of harvest. Although fur sealing agents are available in all Unit 22 villages, a significant portion of the harvest is never sealed. Many furs are kept, bartered, or sold locally for clothing or handicrafts. Increased contact with hunter/trappers throughout the unit is desirable to encourage harvest reporting and to gain information about furbearer abundance. Efforts are underway to develop a short questionnaire that will be mailed to hunter/trappers at the end of each season to better assess harvest and abundance of furbearers in Unit 22. We are also considering the feasibility of conducting village surveys to assess harvest of furbearers and big game species.

As beaver become more abundant, complaints increase from unit residents, particularly in the Nome area. Recreational boaters complain about the blockage of waterways; other residents are concerned about increased reports of giardia and that beaver dams are preventing salmon from returning to their spawning grounds. We need to work more closely with landowners and managers to minimize or alleviate problems. Perhaps negative reactions toward beavers could be eased if the public were better educated about beavers and natural benefits they provide the public, such as beaver ponds that create prime silver salmon rearing habitat.

Efforts to inform the public of the importance of wildlife conservation and the need for regulations are starting to show results in some communities because 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.

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

Project Objectives and Activities:

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 fur buyer reporting programs.

Beaver — Beaver sign continues to be present in the lower Noatak River, Baldwin Peninsula, and Squirrel River drainage. New lodges have been observed above the village of Noatak in the Noatak River drainage. Kobuk River residents report beaver populations at medium levels and either stable or increasing in abundance. Selawik beaver populations remain high with numerous animals in marginal habitat, indicating prime habitat is fully occupied. Five beavers from Unit 23 were sealed this year.

Lynx — Lynx numbers remained low throughout the unit. Lynx are now regularly sighted in the Selawik and Lower Kobuk River drainages, but the population recovery is progressing at a very slow rate. Snowshoe hares are increasing in the Selawik River drainage where the highest number of lynx sightings have occurred. Arctic hares are reestablishing local populations in the Kiwalik, Buckland, Inmachuk and lower Kobuk River drainages. No lynx were sealed this year.

Marten and Mink — Trappers in the Kobuk report locally abundant populations of marten. As in past years most marten trapping is in the upper Kobuk River drainage. No information is available on mink.

Red Fox — The public requested we test 6 foxes from the Kotzebue, Noatak, and upper and lower Kobuk River drainages for rabies. Five of 6 foxes tested positive for rabies. We issued public service announcements describing the behavior of rabid animals and ways to prevent exposure to rabies. A rabies and distemper clinic was held in Kotzebue. Public health employees traveled to some villages to administer rabies vaccinations. Several domestic dogs had to be destroyed due to fox bites and poor vaccination histories. There were no incidents of human exposure to rabies.

River Otter — Based on observations during other wildlife surveys, river otters are at high levels in the Noatak and Kobuk drainages. Five trappers sealed 10 river otters from the Kobuk River and lower Noatak River drainage in 1997–1998.

Wolverine — Based on opportunistic sightings by staff and residents, wolverine populations are high in portions of the unit (upper Kobuk). During the 1997–1998 regulatory year, 8 hunters sealed 18 wolverines. All reported wolverines were harvested in the winter and spring. Due to noncompliance with sealing requirements, actual harvests are undoubtedly much higher than the number sealed. The U.S. Fish and Wildlife Service (FWS) completed the fourth year of a wolverine carcass collection program. No progress or annual report is available to the department at this time.

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 very slowly. 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. Monitor harvest through the statewide sealing program and by interviewing knowledgeable people in the villages and develop a better monitoring system
3. Minimize adverse interactions between furbearers and the public
4. 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 currently 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 3 wolverines during 9 hours of moose count flights in Unit 26A during 31 March–2 April 1998.

Ten wolverines from Unit 26A were sealed during 1997–1998. Two were females and 8 were males. Nine were ground shot and 1 was trapped. Trappers used snowmachines for transportation

for 9 wolverines and a boat for 1. One was taken during September, 1 during October, 2 during November, 1 during February, 4 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, which was a larger harvest than in 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 to other species.

The department has assisted the North Slope Borough to develop a harvest-monitoring program in North Slope villages. 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.

Segment Period Project Costs:

	Personnel	Operating	Total
Planned	20.4	0.5	20.9
Actual	20.4	0.3	20.6
Difference	0	0.2	0.3

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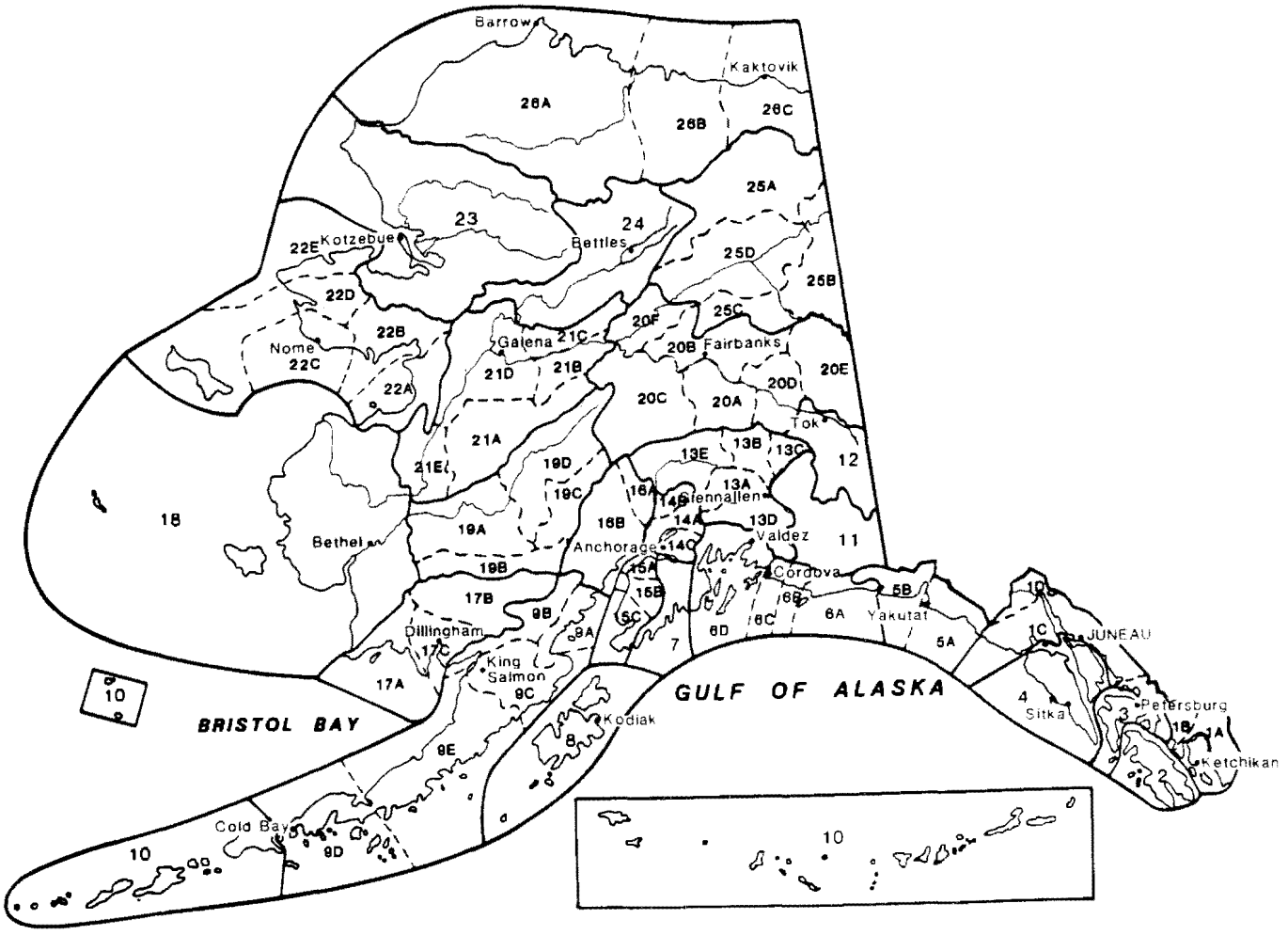
Survey–Inventory Coordinator

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.

RICHARD BLOOMQUIST