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Division of Wildlife Conservation
Federal Aid in Wildlife Restoration
Annual Performance Report of
Survey-Inventory Activities
1 July 1989-30 June 1990

WOLF



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PROJECT TITLE: Southeast Wolf Population Management

PROJECT LOCATION: Units 1A and 2 (8,900 mi²)
Ketchikan area including mainland areas
draining into Behm and Portland Canals and
Prince of Wales and adjacent islands south of
Sumner Strait and west of Kashevarof Passage
and Clarence Strait

POPULATION OBJECTIVES:

To maintain wolf populations capable of sustaining harvest at the
1984-85 level of 15 (Unit 1A) and 43 (Unit 2).

To develop population objectives.

WORK ACCOMPLISHED DURING THE PROJECT SEGMENT PERIOD:

A total of 32 wolves from Unit 1A and 32 from Unit 2 were sealed
between 1 July 1989 and 30 June 1990. Information obtained
included location and date of harvest, method of transport used,
and sex and color of the wolf. Anecdotal information was
collected through discussion with hunters and trappers and from
incidental observations by Fish and Game personnel.

PROGRESS TOWARD MEETING PROJECT OBJECTIVES:

Wolf populations in both units appear capable of sustaining the
levels of harvest stated in the objective. Considerable
variation in harvest levels occur between years, mainly because
of changes in trapping effort, but observations indicated stable
wolf populations in both units; the high population in Unit 2 was
supported by the 69% taken by shooting and the large pack sizes
reported by staff. Deer hunters in Unit 1A also reported more
wolf encounters than in past years, indicating an increasing
population.

PROJECT LOCATION: Units 1B and 3 (6,000 mi²)
Southeast Mainland from Cape Fanshaw to
Lemesurier Point and adjacent islands

PROJECT OBJECTIVES:

To maintain wolf populations capable of sustaining harvest at the
1984-85 level of 10 (Unit 1B) and 9 (Unit 3).

To develop population objectives.

WORK ACCOMPLISHED DURING THE PROJECT SEGMENT PERIOD:

All wolves harvested during the reporting period were examined and sealed. Anecdotal information on number and activities of wolves observed was collected from the hunters and trappers. In Unit 1B there were 12 male and 7 female wolves killed. This is more than the nine taken in the previous year and also greater than the previous 5-year average of nine. No reasons for the increase in the harvest were apparent.

A total of 21 wolves were taken in Unit 3: 12 males, 8 females, and 1 unknown. The harvest was up from the previous year's take of 10 but about the average for the 1978-1983 harvest of 20. Again, there was no discernable reason for the increased harvest.

PROGRESS TOWARDS MEETING PROJECT OBJECTIVES:

Harvest exceeded the management objectives. It appears that the population is stable or increasing, and there is no need to implement additional restrictions at this time.

PROJECT LOCATION: Unit 1C (7,600 mi²)
The southeast Alaska mainland, and the islands of Lynn Canal and Stephens Passage lying between Cape Fanshaw and the latitude of Eldred Rock, including Sullivan Island and the drainages of Berners Bay

PROJECT OBJECTIVES:

To maintain wolf populations capable of sustaining harvest at the 1984-85 level of 10.

To develop population objectives.

WORK ACCOMPLISHED DURING THE PROJECT SEGMENT PERIOD:

Twelve wolves were harvested and sealed during the 1989-90 season. A trapper questionnaire was used to gain additional information regarding target species abundance, prey abundance, trapping conditions, and trapping patterns. Trappers were also asked to comment on impacts of timber harvest or other development on their traplines. Compilation of results will be accomplished prior to the 1990-91 season.

PROGRESS TOWARDS MEETING PROJECT OBJECTIVES:

Wolf populations in Unit 1C were stable. The management goal of sustaining a harvestable surplus of 10 wolves was apparently met.

PROJECT LOCATION: Unit 1D (2,700 mi²)

That portion of the southeast Alaska mainland lying north of the latitude of Eldred Rock, excluding Sullivan Island and the drainages of Berners Bay

PROJECT OBJECTIVES:

To maintain wolf populations capable of sustaining harvest at the 1984-85 level of four.

To develop population objectives.

WORK ACCOMPLISHED DURING THE PROJECT SEGMENT PERIOD:

Three wolves were harvested and sealed during the 1989-90 season. A trapper questionnaire was used to gain additional information regarding target species abundance, prey abundance, trapping conditions, and trapping patterns. Trappers were also asked to comment on impacts of timber harvest or other development on their traplines. Compilation of results will be accomplished prior to the 1990-91 season.

PROGRESS TOWARDS MEETING PROJECT OBJECTIVES:

Wolf populations in Unit 1D were stable. The management goal of sustaining a harvestable surplus of four wolves was met, although only 3 wolves were harvested this year. Local trappers and other sportsmen have reported an increase in numbers of wolves or wolf sign in recent years; however, harvests have remained stable.

PROJECT LOCATION: Unit 5 (5,800 mi²)

Cape Fairweather to Icy Bay, eastern gulf coast

PROJECT OBJECTIVES:

To maintain wolf populations capable of sustaining harvest at the 1984-85 level of 14.

To develop population objectives.

WORK ACCOMPLISHED DURING THE PROJECT SEGMENT PERIOD:

The harvest was analyzed from sealing certificates. Anecdotal information about abundance was collected opportunistically from hunters, Department staff, and Fish & Wildlife Protection officers. No planning meetings were held during the reporting period, and no surveys were conducted.

PROGRESS TOWARDS MEETING PROJECT OBJECTIVES:

Department and Fish and Wildlife Protection Division staff in Yakutat sealed wolves as they were presented to them. Residents of Yakutat, as well as nonlocal residents, contributed anecdotal information concerning sighting of wolves.

Seven male and 6 female wolves were sealed during the reporting period; 11 wolves were shot and two were trapped. Eight nonresidents, 1 nonlocal resident, and 4 local residents harvested 1 wolf each. The harvest was spread from September through May.

Comments were made to Habitat Division and U.S. Forest Service staffs regarding wolf habitat concerns. Roding and logging in Unit 5A have impacted wolf and their prey.

SEGMENT PERIOD PROJECT COSTS:

	<u>Personnel</u>	<u>Operating</u>	<u>Total</u>
Planned	5.6	2.8	8.4
Actual	5.6	0.2	5.8
Difference	0.0	2.6	2.6

Actual personnel costs are estimated. No aerial wolf surveys were conducted during the reporting period, so operational costs were less than planned.

SUBMITTED BY:

David M. Johnson
Regional Management Coordinator

PROJECT TITLE: Southcentral Population Wolf Management

PROJECT LOCATION: Unit 6 (10,100 mi²)
Prince William Sound and north Gulf Coast

Units 7 and 15 (8,400 mi²)
Kenai Peninsual

Units 9 and 10 (43,300 mi²)
Alaska Peninsula and Unimak Island

Unit 11 (12,800 mi²)
Wrangell Mountains

Unit 13 (23,400 mi²)
Nelchina Basin

Unit 14 (6,600 mi²)
Upper Cook Inlet

Unit 16 (12,300 mi²)
West side of Cook Inlet

Unit 17 (18,800 mi²)
Northern Bristol Bay

PROJECT OBJECTIVES:

Unit 6

To maintain a population in a minimum of 5 packs that will sustain an annual harvest of at least 10 wolves.

Units 7 and 15

To maintain the posthunting population in Unit 15A and the Kenai National Wildlife Refuge portion of Unit 7 at 25 to 35 wolves.

To maintain the population in the remainder of Unit 7 and Units 15B and 15C at a maximum ratio of 1 wolf to 50 moose.

To maintain a posthunting population of 28 wolves in Unit 15A.

Unit 9

To maintain a population that will sustain a 3-year average annual harvest of up to 50 wolves.

Unit 11

To maintain the posthunting population at a minimum of 50 wolves.

Unit 13

To maintain the posthunting population at a minimum of 125 wolves.

Unit 14A and 14B

To maintain a posthunting population at 35 wolves.

Unit 14C

To maintain a posthunting population at 20 wolves.

Unit 16

To maintain a population that will sustain an annual harvest of up to 25 wolves.

Unit 17

To maintain a population that will sustain an annual harvest of up to 25 wolves.

WORK ACCOMPLISHED DURING THE PROJECT SEGMENT PERIOD:

Unit 6

One wolf was sealed and measured in the Cordova office during the reporting period. For the 1989-90 season, 6 wolf pelts were sealed in Unit 6 (4 from Unit 6A and 1 each from Units 6B and 6C). There were 3 males, 2 females, and 1 unknown.

Two significant observations were recorded. On 9 January, during a Subunit 6B moose survey, tracks of 5 wolves were located in the range of the Ragged Mountain pack, and a guide heard wolves howling in the Sheep Bay area during October.

Units 7 and 15

Five wolves were harvested (4 shot, 1 trapped) during the reporting period in Unit 15A. Since the management objective was not attained during the scheduled season, the trapping season was extended to include 1-31 March 1990. Although wolves were abundant, trappers showed no interest because of poor weather conditions and the accumulation of ash from the Mount Redoubt volcano. Wolf harvests in the remainder of Unit 15 were 10 and one in Units 15B and 15C, respectively. Unit 7 had a reported harvest of three; total harvest for Units 7 and 15 was 19 wolves, which was 58% below the average annual harvest of 45 for the previous 10 years.

An interagency survey conducted by U.S. Fish and Wildlife Service and Department staffs resulted in an estimated minimum fall

population of 51 wolves in Unit 15A. Wolf surveys were not conducted in the remainder of Unit 15 or in Unit 7. Reports from trappers and staff observations suggested that populations in these areas were stable or slightly increasing because of reduced harvest over the past 2 years. The estimated fall population was 200 wolves for Units 7 and 15.

Units 9 and 10

The 1989-90 reported harvest was 38 (20 males, 18 females); 57 were reported during 1988-89. One female was sealed from Unit 10, compared with 5 wolves in 1988-89. The 3-year-mean harvest for Unit 9 (44) was within the management objective.

Unit 11

A total of 24 wolves (15 males, 8 females, 1 unknown) were harvested by 10 hunters and trappers during the 1989-90 season, similar to the previous year's take of 25 wolves. Two of the successful hunters were nonresidents, while the remainder of the harvest was taken by local residents. Chronology data indicated that 71% (15) of the harvest occurred between November and January. Four wolves were taken in August. Nineteen wolves were trapped or snared, and 5 were shot. Snow machines were the most popular method of transportation used by successful hunters and trappers.

Unit 13

A total of 84 wolves (43 males, 36 females, and 5 unknowns) were harvested by 38 hunters and trappers during the 1989-90 season, appreciably higher (150%) than the 32 wolves reported during the 1988-89 season but still below the 5-year (1983-88) average of 102. Sixteen (42%) successful hunters and trappers were local residents, two (5%) were nonresidents, and the remainder were nonlocal residents. Units 13B and 13D had the highest harvests (35 and 22 wolves, respectively). The most wolves were taken during November ($N = 21$), the first month of the trapping season, followed by January, March ($N = 16$ each), and December ($N = 13$). Extremely cold temperatures and heavy snowfall in February affected trapping pressure and success. Fifty-one percent of the wolves were ground-shot, and 49% were trapped or snared. Snowmachines were the most popular method of transportation (61%) used by successful hunters and trappers. Dog sleds or skis (13%) and aircraft (13%) were used to a lesser extent.

Wolf track surveys were completed on the Upper Susitna River trend count area during late March. Three packs (totaling 30 animals) were located in the study area. The resulting density estimate was approximately 6 wolves/1,000 km². Extrapolation of the Upper Susitna River population estimate to the remainder of Unit 13 resulted in an overall unit estimate of 270 wolves for the spring of 1990.

Wolf track aerial surveys were conducted in 2 study areas in Unit 13 during February and March 1990, as part of a research project designed to estimate densities. One study area covered 4,556 km² in Units 13B and 13C, extending from the Chistochina and Gakona Rivers west to the Susitna River and encompassing the Alphabet Hills. The density in this area was 14 wolves/1,000 km². The 2nd study area covered 5,201 km² within Unit 13A and included most of the Lake Louise Flats; the observed density was 10 wolves/1,000 km².

Reports from hunters and trappers, along with incidental sightings by Department personnel, were used to estimate densities in the remainder of Unit 13. The spring (postharvest) 1990 population estimate for Unit 13 was 275 wolves.

Unit 14

During the 1989-90 trapping season, 2 wolves (both males) were sealed in Unit 14 (1 each from Units 14A and 14B). Both trappers used snowmachines for access. One was trapped, and one was shot from the ground. No wolves were taken in Unit 14C. A questionnaire was mailed to all trappers who sealed fur in Unit 14 and Unit 16A. Thirty-nine trappers, with an average of 19 years trapping experience, responded to the trapper questionnaire; 29 trapped during 1989-90. Only 7 trappers made sets specifically for wolves, and 5 trappers listed wolves as "not present" on their traplines. When asked to categorize the number of wolves on their trapline, 12 of 19 respondents listed them as "scarce," five categorized them as "common," and two reported them as "abundant." When asked to compare the number of wolves in their area during 1989-90 with those for the winter of 1988-89, five of 25 (20%) said wolves were not present on their lines, seven (28%) listed them as "fewer," eight (32%) reported "same," and five (20%) said "more."

Unit 16

Sealing records indicated 11 wolves (4 males, 5 females, and 2 unknowns) were harvested from Unit 16. Four were killed by ground shooting (3 with snowmachine access, 1 with dogsled). The remaining seven were trapped (2 with airplane access, 5 with snowmachines).

Unit 17

Sealing records indicated that 9 trappers killed 25 wolves in Unit 17 during this reporting period (2.8 wolves/trapper). None were reported from Unit 17A, 24 (96%) from Unit 17B, and one (4%) from Unit 17C. All trappers used aircraft for access, and all ground-shot their wolves. Males composed 52% of the harvest. Prices paid by local fur buyers ranged from \$200 to \$350 per wolf. The reported harvest of 25 wolves in this unit coincided with the objective of 25 wolves. A harvest of 23 wolves had been reported for 1988-89.

PROGRESS TOWARDS MEETING PROJECT OBJECTIVES:

Unit 6

Wolf population objectives have been greatly exceeded. The population estimate for the winter of 1989-90 was 82-120 in at least 15 packs. Although the harvest of 16 wolves was allowable under conservative harvest strategies, only six were reported taken from the unit during this reporting period.

Units 7 and 15

A minimum population estimate was determined for Unit 15A only. The repeated eruptions of Mount Redoubt made winter track surveys extremely difficult and limited flying opportunities. The result of the Unit 15A census indicated the management objective was exceeded at the end of the 1990 season. The extended wolf trapping season also failed to provide adequate harvest to achieve the population objective.

To achieve population objectives, funding will be necessary to continue the census surveys in Unit 15A. A liberalization of U.S. Fish and Wildlife Service restrictions on trappers will also be necessary. The current refuge requirement of checking traplines every 4 days has virtually eliminated the opportunity for trappers to effectively pursue wolves on much of the refuge. The average annual harvest since the 4-day trapline check was initiated in 1988 was 21, compared with 48 for the 10 years prior to the restriction.

The harvest of 19 wolves represented 10% of the early winter population estimate of 200 for Units 7 and 15. With this low rate of harvest, the wolf population is expected to increase where prey is adequate.

Units 9 and 10

There were an estimated 180-220 wolves in Unit 9 in 15-18 packs during the fall and winter of 1989-90. In Unit 10 there were an estimated 15-25 wolves in 2 packs. The management objectives for Unit 9 (i.e., maintaining a population that will sustain a 3-year harvest mean of up to 50 wolves) was achieved. Trapper interest and activity, not wolf population status, was the reason for this relatively low harvest. Fur prices and changing snow conditions contributed to the variability of trapper effort.

Unit 11

The postharvesting population estimate for Unit 11 in the spring of 1990 was 100 wolves, well above the population objective. This estimate was based on sightings obtained from both Department personnel and the general public as well as hunter and

trapper reports. This figure is slightly higher than the past year's estimated population range of 70-90 wolves, but similar to the 5-year average of 105 wolves in the spring.

Current harvest levels are low enough to allow the wolf population to increase; however, limitations of habitat and prey populations may prevent a significant increase. Many packs in Unit 11 experienced little or no harvest. Also, most trappers and hunters tend to concentrate their activities near access points, especially along the Nabesna and McCarthy Roads. Since hunting and trapping pressure was low and not expected to increase, the Unit 11 wolf population is expected to remain at high levels in relation to their prey base.

Unit 13

The spring 1990 population estimate of 275 wolves in Unit 13 significantly exceeded the minimum population objective of 125 wolves. For over 10 years spring population estimates fluctuated between 100 and 175 wolves, depending upon the harvest. Wolf numbers in Unit 13 have for many years been directly controlled by human harvests, as documented by extensive research. The current increase in the wolf population is attributed to harvest restrictions implemented in 1988-89 by the Board of Game and to the high moose and caribou populations in the unit.

Examination of reported harvest locations in 1989-90 suggested that remote portions of the unit had been underharvested. Increased wolf predation on moose and caribou in such areas will probably occur. A more even distribution of the wolf harvest throughout the unit is desired. Reestablishment of land-and-shoot hunting by permit will allow harvests to occur in more remote sections of the unit.

Unit 14

Responses from the trapper questionnaire and observations by the Department and public indicate that 30-40 wolves inhabited Units 14A and 14B and 20+ wolves occur in Unit 14C. These estimates, although imprecise, indicated the population objectives have been attained. To more accurately determine the size of the wolf population a census would be needed. However, extensive forest cover would make a census difficult and expensive to accomplish.

Unit 16

No wolf surveys were conducted in Unit 16. Observations made during moose surveys and information from trappers indicated there were between 30 and 40 wolves in 6 packs. Wolf numbers were below management objectives and may not increase substantially because of the large die-off of moose that occurred during the winter of 1989-90.

Unit 17

The fall-winter population status was an estimated 145-240 wolves in 16-29 packs. The population is thought to be relatively high and stable. The management objective was met.

SEGMENT PERIOD PROJECT COSTS:

	<u>Personnel</u>	<u>Operating</u>	<u>Total</u>
Planned	11.6	8.5	20.1
Actual	11.6	6.7	18.3
Difference	11.6	-1.8	-1.8

Expenditures on wolves were less than planned because of strong interagency cooperation, weather conditions, staff time demands made by the Exxon Valdez oil spill, and the winter moose mortality issue on the Mat-Su Valley and Kenai Peninsula.

SUBMITTED BY:

Kenneth W. Pitcher and John N. Trent
Regional Management Coordinators

PROJECT TITLE: Interior Wolf Population And Habitat Management

PROJECT LOCATION: Unit 12 (10,000 mi²)
Upper Tanana and White River drainages,
including the northern Alaska Range east of
the Robertson River, and the Mentasta,
Nutsotin, and northern Wrangell Mountains

Unit 19 (36,500 mi²)
Drainages of the Middle Fork and upper
Kuskokwim River upstream from the village of
Kalskag

Unit 20 (50,400 mi²)
Tanana Valley, Central Alaska Range, White
Mountains, Tanana Hills

Unit 21 (44,000 mi²)
Koyukuk River drainages upstream from the
Dulbi River

Unit 25 (53,100 mi²)
Eastern north slope of the Brooks Range

Units 26B and 26C (25,800 mi²)
Upper Yukon River drainage

PROJECT OBJECTIVES:

To determine distribution, abundance, predation rates, and population trends in selected areas.

WORK ACCOMPLISHED DURING THE PROJECT SEGMENT PERIOD:

Units 12 and 20E

Hunters and trappers harvested only 19 wolves in Unit 12 during the 1989-90 seasons; one was taken by a hunter in the fall, and the rest were taken by 9 trappers during the winter (\bar{x} = 2 wolves/successful trapper). This harvest is far below the mean harvest of 30 wolves that occurred before land-and-shoot harvesting was prohibited, but is comparable to the 16 wolves sealed in 1988-89. The harvest of 19 wolves during the 1989-90 season is only 11% of the fall population estimate, far below the sustained yield of this wolf population.

The wolf harvest in Unit 20E was determined from mandatory sealing of wolf pelts. Fifteen wolves (7 males, 6 females, 2 unknowns) were sealed during the 1989-90 season, compared with a mean harvest of 25 prior to the prohibitions against the land-and-shoot method (fall 1988). This represents only a 7% harvest

of the fall population. As a result of a low harvest the population will likely increase over the next several years.

Units 19, 21A, and 21E

Based on sealing documents, incidental discussions with wolf hunters and trappers, field observations, and the trapper questionnaire, size of the wolf populations per unit are as follows:

Unit 19A = 95-125 wolves in 14-16 packs
Unit 19B = 75-100 wolves in 9-11 packs
Unit 19C = 110-135 wolves in 10-12 packs
Unit 19D = 150-170 wolves in 14-18 packs
Unit 21A = 190-260 wolves in 15-20 packs
Unit 21E = 100-150 wolves in 10-14 packs

During the 1989-90 season sealing documents indicated hunters and trappers harvested 137 wolves from Unit 19. Based on preseason estimates, this represents approximately 26-32% of the population of 430-530 wolves. Units 19B and 19C produced the majority (64%) of the reported harvest. Although the 1989-90 reported take represented the 2nd-highest harvest of wolves since sealing of pelts was initiated in 1971, populations appeared capable of sustaining them. The postdenning population in the late summer of 1990 is anticipated to again be composed of approximately 500 wolves.

Reported harvests in Units 21A and 21E were 60 and 5 wolves, respectively. Assuming the preseason estimate of 290-410 in these 2 units is accurate, the 1989-90 harvest represents a moderate 16-22% of the population.

Units 20A and 20B

Trappers and hunters reported taking 31 wolves in Unit 20A. Nine were shot, 21 were trapped, and 1 wolf was salvaged and sealed by a trapper after it had been killed by a moose. In Unit 20B, 35 wolves were reported taken; six were shot and 29 were trapped. Discussions with trappers at the time pelts were sealed suggested wolf numbers were increasing in both Units.

Units 20C, 20F, and 25C

Sixteen wolves were reported harvested in Unit 20C; six were shot and 10 were trapped. In Unit 20F, 14 wolves were reported taken; two were shot and 12 were trapped. Hunters and trappers questioned at the time the pelts were sealed indicated that wolf numbers have recently increased. In Unit 25C, 7 wolves were harvested, all by shooting. Land-and-shoot hunting of wolves was a legal method in Unit 25C and five of the 7 harvested wolves were taken by land-and-shoot hunters.

Unit 20D

Six wolves (2 males, 4 females) were sealed from Unit 20D.

Units 21B, 21C, 21D, and 24

During the reporting period 121 wolves were harvested. The population was increasing.

Units 25A, 25B, 25D, 26B and 26C

Hunters and trappers harvested 39 wolves from Unit 25 and 12 wolves from Unit 26. This was higher than last year's harvest of 42 for both units; i.e., an increase of 15 from Unit 25 and a reduction of six from Unit 26. The ratio of males:females in the overall harvest was 69:100 because of a greater harvest of females in Unit 25 (59% females vs. 36% males). Fifty-seven percent of wolves taken in all areas were gray, 36% were black, and 7% were white. Forty percent of the wolves were shot, 36% were trapped, and 22% were snared. Most hunters and trappers used snow machines (50%), and the rest used aircraft (17%), dogsleds, skis or snowshoes (17%), and highway vehicles (15%).

Units 12 and 20E

Twenty-one hours of aerial track surveys were conducted with PA-18 Supercub aircraft during the period 7 March to 3 April 1990; 30 hours were also spent in lynx and moose surveys, during which wolf sign was recorded. The fall 1989 population estimate was 178 wolves, compared with 136 wolves for the fall of 1988. The spring 1990 estimate was 157, compared with 113 for the spring of 1989, suggesting that the wolf population has increased.

Thirty-one of the wolves observed during the fall of 1989 were members of "border" packs. Their territories straddled the common boundary between Units 12 and 20E. The fall 1989 density was about 1 wolf/63 mi².

Unit 20D

Aerial wolf surveys were conducted in southern Unit 20D during March 1990. The wolf population has increased since 1988-89: 35-40 wolves in 5-6 packs. I believe wolves in northern Unit 20D increased at least 10% since 1988-89 to 59-73 wolves in 8-9 packs.

Units 21B, 21C, 21D, and 24

Surveys were conducted on the Nowitna, Koyukuk, and Kanuti National Wildlife Refuges in conjunction with a radio-collaring project. No population estimates were made from the surveys.

Units 21B, 21C, 21D, and 24

Thirty-five wolves from 13 packs were darted and fitted with radio collars. They were tracked on a weekly basis.

PROGRESS TOWARDS MEETING PROJECT OBJECTIVES:

Units 12 and 20E

Objectives to monitor the population and harvest were met. The annual harvest, however, was far below the sustainable yield of this population because of recent restrictions placed on the use of aircraft for hunting wolves.

Units 19, 21A, and 21E

Estimates of distribution and abundance of wolves were made. Achieving statistically sound moose:wolf ratios in Unit 19D is unlikely, given current funding levels. The project objectives should be modified to reflect this.

Units 20A, 20B, 20C, 20F, and 25C

A population estimate from data collected in 1988 was finalized during the reporting period. Population estimates were also derived for Units 20B, 20C, 20F, and 25C from trapper reports and incidental observations of wolves by pilots and biologists. An estimate of wolf kill rates on moose in Unit 20A was used to help establish harvest goals for moose in Units 20A and 20B.

Unit 20D

Wolves were sealed, and a population estimate was made for southern Unit 20D. Prey population data, primarily that for moose, are inadequate for determining a prey:wolf ratio. A more accurate moose population estimate is needed to determine this relationship.

Units 21B, 21C, 21D, and 24

The wolf radiotelemetry project initiated in cooperation with the U.S. Fish and Wildlife Service will provide better population estimates and information on distribution and abundance of wolves within the area.

Units 25A, 25B, 25D, 26B, and 26C

The project objective was partially fulfilled through analysis of hunter and trapper harvests, which provided data on general distribution and population trend. Aerial surveys are planned for FY91 to improve distribution and abundance information on wolves in selected areas and to establish an additional measure of population trend.

SEGMENT PERIOD PROJECT COSTS:

	<u>Personnel</u>	<u>Operating</u>	<u>Total</u>
Planned	82.5	20.0	102.5
Actual	82.5	20.0	102.5
Difference	0.0	0.0	0.0

SUBMITTED BY:

Kenton P. Taylor
Regional Management Coordinator

PROJECT TITLE: Arctic Wolf Population Management

PROJECT LOCATION: Unit 18 (42,000 mi²)
Yukon-Kuskokwim Delta

PROJECT OBJECTIVES:

To establish and maintain viable wolf populations.

WORK ACCOMPLISHED DURING THE PROJECT SEGMENT PERIOD:

Sealing-certificate data indicated that 4 wolves were harvested during the reporting period. In addition, sightings of wolves and of prey believed to have been killed by wolves were reported by local trappers, hunters, and pilots, and by Department and U.S. Fish and Wildlife Service staff engaged in other activities.

A trapper questionnaire was sent to 200 local trappers and hunters. Results of that questionnaire are being analyzed, and they will be reported in the next progress report. Notices were sent to all villages for the second year informing the public that wolves and some furbearers taken by hunters and trappers need to be sealed.

PROGRESS TOWARDS MEETING PROJECT OBJECTIVES:

Information reported by the staff and the public indicated that several wolf packs occupied the entire length of the Yukon River and portions of the Kilbuck Mountains and Delta lowlands near the mouth of the Kuskokwim River. Most wolves, however, remained on the periphery of Unit 18 near Units 19A and 21E, where ungulate densities were substantially greater. The overall population for Unit 18 was estimated to range from 50 to 75 wolves in 6-7 packs. Several wolf kills of moose and caribou were documented during the previous 2 years. However, no sightings of predation activity were reported.

Sealing-certificate data indicated that the reported harvest of wolves was substantially lower in 1990, compared with that of the previous year. Four wolves were reported harvested during 1990, compared with 17 wolves in 1989, 10 wolves in 1988, 2 wolves in 1987, 1 wolf in 1986, and 3 wolves in 1985. The magnitude of the reported wolf harvests seems to be related to fur prices. The increase in reported harvests noted for 1988 and 1989 correlated to the higher prices paid for some furs. During 1990 fur prices fell dramatically, and either fewer trappers pursued wolves or fewer trappers had their wolves sealed and sold. When fur prices are low, proportionately more furs are used domestically and therefore not sealed.

The public notices that were sent to all villages did not appear to increase compliance with the sealing requirement. A separate notice aimed at wolves will be sent out during the upcoming season.

PROJECT LOCATION: Unit 22 (23,000 mi²)
Seward Peninsula and that portion of the
Nulato Hills draining west into Norton Sound.

PROJECT OBJECTIVES:

To establish and maintain viable wolf populations.

To cooperate with reindeer herders to develop methods that will reduce adverse interactions between wolves and reindeer.

To develop a wolf management plan in consultation with the public, interested local organizations, and other agencies.

WORK ACCOMPLISHED DURING THE PROJECT SEGMENT PERIOD:

The reported harvest during the reporting period was the highest on record. Forty-two wolves (28 males, 13 females, 1 unknown). A breakdown of the harvest by Unit is as follows: Unit 22A, 32; 22B, 6; and 22D, 4. All of the wolves were ground-shot. Snowmachines were used as transportation.

A school program developed several years ago explaining the importance of wildlife management concepts, rules, and regulations was used extensively throughout schools in Unit 22. Several trips were also made to villages to explain the need for regulations and harvest reporting as well as assisting license vendors. Numerous meetings and impromptu discussions were held with reindeer herders to discuss possible ways of reducing adverse wolf/reindeer interactions.

PROGRESS TOWARDS MEETING PROJECT OBJECTIVES:

We believe that the magnitude of unreported harvests of wolves each year has been substantial. 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. Additional contact with local village residents is needed if more complete compliance with regulations is to become a reality.

Limited progress was made in reducing confrontations between wolves and reindeer. Discussions with local reindeer herders have resulted in some of them making attempts at reducing wolf-

reindeer interactions by spending more time with their herd, particularly at fawning time, and keeping reindeer in areas where wolf densities appear to be lower. Actual development of a wolf management plan has not occurred, although initial steps were taken during the past year by communicating our intent with local residents and representatives of several governmental agencies.

PROJECT LOCATION: Unit 23 (43,000 mi²)
Kotzebue Sound/Western Brooks Range

PROJECT OBJECTIVES:

To establish and maintain viable wolf populations.

To minimize adverse conflicts between wolves and the public.

To establish population management goals in consultation with the public, interested local organizations, and other agencies.

WORK ACCOMPLISHED DURING THE PROJECT SEGMENT PERIOD:

During the reporting period, 53 wolves (27 males, 25 females, and 1 unknown) were reported harvested. Eleven wolves (21%) were taken using aircraft, two (4%) using boats, and 32 (60%) using snowmachines; the methods used for harvesting 8 wolves (15%) were unknown. Eight wolves (15%) were trapped, and 45 (85%) were taken by ground shooting. Four wolves were taken during September, 10 during November, 13 during December, four during January, two during February, 15 during March, and two during April.

During the spring of 1990, 200 questionnaires were sent to local hunters and trappers. Forty-three individuals responded to the questionnaire, and indices of abundance and population trend were calculated from the responses, according to procedures outlined by Brand and Keith (1979). The index of abundance¹ (0.61) calculated from the response data indicated that a significant proportion of the respondents perceived population densities to be high. The index of population trend¹ indicated a significant proportion of the respondents felt that wolf densities were also increasing.

PROGRESS TOWARDS MEETING PROJECT OBJECTIVES:

Available data indicated that wolf populations remained healthy during the reporting period. An ongoing research project in the Kobuk and Selawik River drainages should yield additional population information needed for establishing more definitive population management goals. The study will also provide an in-depth assessment of feasible census techniques for Unit 23.

Efforts to contact local hunters and trappers to exchange information concerning population status, regulatory changes, and the value of harvest information should remain a high priority.

Although progress has been made in recent years in improving harvest reporting among local residents, efforts need to be continued. Because many local residents view the regulations as excessively complicated and culturally irrelevant, many regulations, including mandatory harvest reporting, have not been adhered to. Anything that can be done to simplify regulations should improve the situation. Making the hunting and trapping seasons and bag limits the same should reduce some of the confusion. In addition, allowing the same methods and means for trapping as for hunting should likewise reduce some of the inconsistencies perceived by local hunters.

LITERATURE CITED

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

¹ Index of abundance/trend = $100(R_i - n)/2n$ where R_i = numerical value assigned to the i'th response ($R_i=1$ when population abundance reported to be low or trend decreasing, $R_i=2$ when population abundance reported to be medium or trend stable, $R_i=3$ when population abundance reported to be high or trend increasing). The population is reported to be abundant or trend increasing if the index is greater than 50 or stable, medium or stable if the index is greater than 20 but less than 50, and low or decreasing if the index is less than 20.

PROJECT LOCATION: Unit 26A (53,000 mi^2)
Western North Slope

PROJECT OBJECTIVES:

To establish and maintain viable wolf populations in Unit 26A.

To conduct an in-depth review of information collected in the past to obtain population trend information.

WORK ACCOMPLISHED DURING THE PROJECT SEGMENT PERIOD:

James (1982) estimated that the population numbered between 144 and 310 wolves. Trent (1988) surveyed several count areas during 1986 and 1987 and provided overall density estimates of 1 wolf/147 mi^2 and 1 wolf/119-144 mi^2 , respectively. More current population information are not available.

During the reporting period, 14 wolves were sealed. Nine (69%) were males, four (31%) were females, and one was unknown. Five wolves (38%) were ground-shot and eight (62%) were trapped. Two wolves (15%) were taken using aircraft as transportation, and 11 (85%) were taken using snowmachines. The chronology of the harvest follows: September, 2; November, 1; December, 2; January, 2; February, 2; and March, 5.

Knowledgeable individuals in each village were interviewed to determine the magnitude of the harvest attributable to local residents. A minimum of 4 wolves were taken by Atgasuk hunters, seven by Wainwright hunters, 12 by Nuiqsut hunters, three by Barrow hunters, and 31 by Anaktuvuk Pass hunters during the reporting period.

PROGRESS TOWARD MEETING PROJECT OBJECTIVES:

Although current information concerning the population status of wolves are not available, we believe that harvest levels are probably within sustained-yield limits. Because same-day airborne hunting of wolves is no longer permitted, extensive areas in Unit 26A receive little hunting pressure. In addition, many local hunters, particularly those residing in coastal villages, believe that wolf numbers are increasing. The harvest data collected since 1986 have shown no dramatic increase or decline in the number of wolves harvested (i.e., 51-60 wolves annually).

To better determine whether harvests are within sustained-yield limits, more accurate harvest and population status information are needed. The current method of interviewing local hunters provides reasonably accurate harvest figures, but it could be improved by hiring Department representatives in each village to collect the information. In addition, more informational and educational efforts are needed to increase compliance with the fur sealing requirement. An extensive survey is needed to determine the current density of wolves in various portions of Unit 26A. This survey will be conducted either during spring 1991 or spring 1992.

LITERATURE CITED

James, D. D. 1982. Unit 26A wolf survey-inventory progress report. Pages 114-115 in J. A. Barnett, ed. Annual report of survey-inventory activities. Part VII. Beaver, Furbearers, Lynx, Wolf, and Wolverine. Vol. XII. Alaska Dep. Fish and Game. Fed. Aid in Wildl. Rest. Prog. Rep. Proj. W-22-1. Job 7.0, 14.0, and 15.0. Juneau. 126pp.

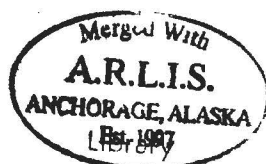
Trent, J. N. 1988. Unit 26A wolf survey-inventory progress report. Pages 60-63 in S. O. Morgan, ed. Annual report of survey-inventory activities. Part XV. Wolf. Vol. XVIII. Alaska Dep. Fish and Game. Fed. Aid in Wildl. Rest. Prog. Rep. Proj. W-22-6, Job 14.0. Juneau. 64pp.

SEGMENT PERIOD PROJECT COSTS:

Fiscal information for wolves has been included with that for furbearers. See the performance report for furbearers (1989-90).

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