

Alaska Department of Fish and Game  
Division of Wildlife Conservation



Federal Aid in Wildlife Restoration  
Annual Performance Report  
Survey-Inventory Activities  
1 July 1999- 30 June 2000

# WOLF

Mary V Hicks, Editor



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Grant W-27-3  
Study 14.0  
September 2000

**STATE OF ALASKA**  
Tony Knowles, Governor

**DEPARTMENT OF FISH AND GAME**  
Frank Rue, Commissioner

**DIVISION OF WILDLIFE CONSERVATION**  
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Mary Hicks  
Publications Specialist  
ADF&G, Wildlife Conservation  
P.O. Box 25526  
Juneau, AK 99802  
(907) 465-4190

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1999-2000

**Project Title:** Southeast Wolf Population Management

**Project Location:** Unit 1A (5300 mi<sup>2</sup>)  
Ketchikan area, including the mainland draining into Behm and Portland Canals

**Project Objectives and Activities**

- Regulate seasons and bag limits to maintain viewable and harvestable populations of wolves.
- Seal wolf pelts as they are presented for sealing.
- Contact reliable observers to gain general information about the status and trends of wolf populations, including the use of an annual trapper survey.

**Work Accomplished During the Project Segment Period:** We sealed 47 Unit 1A wolf pelts. Information collected from successful trappers included sex, pelt color, transportation mode, method of take, and location and date of kill. We collected anecdotal information through informal discussions with hunters and trappers and more formal information through our trapper survey. We also collected foreleg bones to determine proportions of adults to subadults in the harvest.

**Progress Meeting Project Objectives:** The Unit 1A wolf harvest more than doubled from last season's harvest of 23 wolves. Trappers responding to the 1999-00 trapper survey indicated that they believe wolves are common in Unit 1A (*Index of Abundance* ( $I_A$ ) = 53,  $n = 26$ ). Wolf numbers appear to have remained stable in Unit 1A during the year.

**Project Location:** Unit 1B (3000 mi<sup>2</sup>)  
Southeast Mainland from Cape Fanshaw to Lemesurier Point

**Project Objectives and Activities**

- Regulate seasons and bag limits to maintain viewable and harvestable populations of wolves.
- Seal wolf pelts as they are presented for sealing.
- Contact reliable observers to gain general information about status and trends of wolf populations, including the use of an annual trapper survey.

**Work Accomplished During the Project Segment Period:** We sealed 10 wolves (5 males 4 females, and 1 unknown) taken by 5 active trapper/hunters in Unit 1B. We collected leg bones from 8 of 10 wolves sealed in Unit 1B. Foreleg bones were used to determine proportions of adults to subadults in the harvest; 63% of the aged wolves were adults (5 adults and 3 subadults).

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**Progress Meeting Project Objectives:** Discussions with trappers, hunters, and Forest Service biologists and information from a trapper questionnaire indicate the wolf population increased in the early 1990s and is currently stable.

**Project Location:** Unit 1C (7600 mi<sup>2</sup>)  
Southeast 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 and Activities**

- Regulate seasons and bag limits to maintain viewable and harvestable populations of wolves.
- Regulate Unit 2 wolf harvest for no more than 25% of the preseason population estimate.
- Seal wolf pelts as they are presented for sealing.
- Contact reliable observers to gain general information about status and trends of wolf populations, including the use of an annual trapper survey.

**Work Accomplished During the Project Segment Period:** 5 wolves (3 males, 2 females) were harvested and sealed during the 1999–00 season. Three were taken from the Nugget Creek drainage, 1 from the Gustavus Forelands, and 1 from the Cape Fanshaw area. As with other trapping efforts, a single trapper is often responsible for most of the catch.

We used a trapper questionnaire to gain additional information regarding target species abundance, prey abundance, trapping conditions, and trapping patterns.

**Progress Meeting Project Objectives:** Anecdotal information from trappers and recreationists suggest that wolves are present at the upper ends of most drainages along the Juneau road system. These wolves provide opportunities for hunters and trappers to harvest a wolf and offer nonconsumptive users the opportunity to hear and see wolves.

**Project Location:** Unit 1D (2700 mi<sup>2</sup>)  
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 wolves.

- Seal wolf pelts as they are presented for sealing.
- Contact reliable observers to gain general information about status and trends of wolf populations, including the use of an annual trapper survey.

**Work Accomplished During the Project Segment Period:** Seven wolves (3 males and 4 females) were harvested and sealed in Unit 1D during the 1999–00 season. A trapper questionnaire was used to gain additional information regarding target species abundance, prey abundance, trapping conditions, and trapping patterns.

**Progress Meeting Project Objectives:** Wolf populations in Unit 1D are probably at moderate numbers. Moose and bear hunters commonly see wolves and wolf sign, but harvest of wolves remains low.

**Project Location:** Unit 2 (3600 mi<sup>2</sup>)

Prince of Wales Island and adjacent islands south of Sumner Strait and west of Kashevarof Passage and Clarence Strait

### **Project Objectives and Activities**

- Regulate the annual harvest so that it does not exceed 25% of the unitwide preseason population estimate.
- Regulate seasons and bag limits to maintain viewable and harvestable populations of wolves.
- Seal wolf pelts as they are presented for sealing.
- Contact reliable sources to gain general information about the status and trends of wolf populations, including use of the annual trapper survey.

**Work Accomplished During the Project Segment Period:** We sealed 82 Unit 2 wolf pelts. Information collected from successful trappers included sex, pelt color, transportation mode, method of take, and location and date of kill. We collected anecdotal information through informal discussions with hunters and trappers and more formal information through a trapper survey. We also collected foreleg bones to determine proportions of adults to subadults in the harvest.

**Progress Meeting Project Objectives:** The Unit 2 harvest was similar to last season's harvest of 91 wolves. We closed the hunting and trapping season 1 month early by emergency order when the known harvest approached an estimated 25% of the preseason population estimate. Trappers responding to our 1999–00 trapper survey indicated that they believe the wolf population is common in Unit 2 ( $I_A = 54$ ,  $n = 22$ ). Wolf numbers appear to have remained stable in Unit 2 during the past year.

**Project Location:** Unit 3 (3000 mi<sup>2</sup>)

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 wolves.
- Seal wolf pelts as they are presented for sealing.
- Contact reliable sources to gain general information about the status and trends of wolf populations, including use of the annual trapper survey.

**Work Accomplished During the Project Segment Period:** We sealed 57 wolves (29 males and 28 females) taken by 28 active trapper/hunters. We collected leg bones from 41 of 59 wolves sealed in Unit 3. The left foreleg bone was used to determine proportions of adults to subadults in the harvest; 39% of the aged wolves were adults (16 adults and 25 subadults).

**Progress Meeting Project Objectives:** Discussions with trappers, hunters, and Forest Service biologists and information from a trapper questionnaire indicate the wolf population increased in the early 1990s and is stable.

**Project Location:** Unit 5 (5800 mi<sup>2</sup>)

Cape Fairweather to Icy Bay, eastern Gulf Coast

### **Project Objectives and Activities**

- Regulate seasons and bag limits to maintain viewable and harvestable populations of wolves.
- Seal wolf pelts as they are presented for sealing.
- Contact reliable observers to gain general information about status and trends of wolf populations, including the use of an annual trapper survey.

**Work Accomplished During the Project Segment Period:** Harvest was analyzed from wolf sealing certificates.

**Progress Meeting Project Objectives:** Three wolves (1 male and 2 females) were sealed in Yakutat. This small harvest is due more to a lack of significant trapping effort than to a shortage of wolves. Heavy snows limited snowmachine travel to areas near Yakutat. Local airplane pilots noted a healthy population of wolves throughout the winter of 1999–00 and on numerous occasions observed wolves on moose carcasses. Two of the most avid trappers in Yakutat who usually trap numerous furbearers did not participate in trapping during the report period.

**Segment Period Project Costs**

	<u>Personnel</u>	<u>Operating</u>	<u>Total</u>
Planned	11.9	4.5	15.4
Actual	15.5	1.0	16.5
Difference	-3.6	3.5	-1.1

*Explanation of costs:* More time was spent on wolf-related issues by Ketchikan and Douglas area staff. Some additional time was spent on the POW emergency order closure issue.

**Submitted by**

Bruce Dinneford  
Management Coordinator

**Project Title:** Southcentral Population Wolf Management

**Project Location:** Unit 6 (10,100 mi<sup>2</sup>)  
Prince William Sound and north Gulf Coast

**Project Objectives:** Maintain a population in a minimum of 5 packs that will sustain an annual harvest of at least 10 wolves.

**Work Accomplished During the Project Segment Period:** No wolf surveys were completed in Unit 6 during 1999–00. Incidental observations, reports from trappers and guides, and preliminary data from a U.S. Forest Service wolf ecology study indicated a stable population of about 50–65 wolves in 8 packs.

Sealing records indicated a unit harvest of 8 wolves, including 5 males and 3 females. Trapping effort was normal.

**Progress Meeting Project Objectives:** The unit wolf population could have sustained additional harvest. Wolf harvest in the unit was below the project objective of 10 wolves.

**Project Location:** Units 7 and 15 (8400 mi<sup>2</sup>)  
Kenai Peninsula

**Project Objectives:** Maintain the posthunting population in Unit 15A and the Kenai National Wildlife Refuge (KNWF) portion of Unit 7 at 35 wolves.

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

**Work Accomplished During the Project Segment Period:** Reports from trappers and staff suggest that wolf density is stable or slightly increasing due to reduced harvest over the past 5 years. The current estimate is 200 wolves for Units 7 and 15.

Hunters and trappers took 36 wolves during the 1999–00 season in Units 7 and 15. Although wolves were abundant, trappers showed little interest in trapping due primarily to the presence of lice-infested wolves and difficulties related to checking traps every 4 days or snares every 7 days on a portion of the refuge. Wolf harvest was as follows: 14 in Unit 7, 8 in Unit 15A; 3 in 15B; and 11 in 15C. Hunters reported 50% (18 of 36) of the harvest, the second highest nontrap harvest on record.

In April 1998, 18 wolves from the Tok area were relocated on Kenai Peninsula as part of the 40-Mile Caribou Recovery Plan. Released wolves in Unit 15C comprised 15 pups (9 males, 6 females) and 3 adults (1 male and 2 females). By June 30, 1999 3 wolves were taken by hunters, 2 moved off the Kenai and were harvested by trappers, 4 were trapped on the Kenai, 2 died of unknown causes, and 1 was killed by a moose. Six of the 18 wolves relocated were still alive and



on the Kenai Peninsula at the beginning of this reporting period. Two wolves died between July 1, 1999 and June 30, 2000. One was shot during moose season and one died of unknown causes. Relocated wolves are monitored 3 to 5 times per year.

**Progress Meeting Project Objectives:** The harvest of 36 wolves represents 18% of the early winter population estimate of 200 and the third highest harvest in 10 years for Units 7 and 15. Since wolves are still infested with lice, resulting in low or no pelt value, increased interest in trapping is either related to an increase in lynx trapping or an increase in the wolf population. An area census should be conducted during the winter of 2000–01 to estimate the wolf population. With this rate of harvest, the wolf population is expected to increase where prey is available.

**Project Location:** Units 9 and 10 (43,300 mi<sup>2</sup>)  
Alaska Peninsula and Unimak Island

**Project Objectives:** Maintain a population that will sustain a 3-year average annual harvest of up to 50 wolves.

**Work Accomplished During the Project Segment Period:** Direct observation surveys were not conducted during this reporting period. An indirect survey for estimating wolf abundance was accomplished by mail-out questionnaires sent to a select group of trappers. Active trappers returned only a few questionnaires, limiting our inferences about wolf abundance. However, most trappers believed wolves were increasing, compared to the previous year. A preliminary tally of the 1999–2000 wolf-sealing certificate indicates 149 wolves were taken in Unit 9.

**Progress Meeting Project Objectives:** Snow conditions and lack of funding have hampered progress developing measurable objectives for wolf populations in Units 9 and 10. Research on wolves continues in other areas, but unless budgets increase, it is unlikely that effort will be extended on the Alaska Peninsula. The trapper questionnaire, incidental observations, and sealing requirements are adequate for management purposes as long as trapping effort remains light. If pelt prices and other factors lead to increased harvest, more intensive management may be required.

**Project Location:** Unit 11 (13,345 mi<sup>2</sup>)  
Wrangell Mountains

**Project Objectives:** Maintain the posthunting population at a minimum of 50 wolves.

**Work Accomplished During the Project Segment Period:** The fall 1999 prehunting season population estimate for Unit 11 was 100–115 wolves. This estimate was similar to last year's estimated population of 100–125 wolves. The current estimate is based on hunter and trapper reports and sightings from department personnel and the public. We do not conduct systematic wolf surveys in Unit 11.

The 1999–2000 preliminary harvest of 22 wolves is down 39% from the previous year's harvest of 36; it is 12% below the 10-year average of 25 wolves. We estimated this year's harvest rate at 20% of the fall population. Most individuals taking wolves in Unit 11 are local residents living in the park resident zone. Unit 11 trappers trapped or snared their wolves using snowmachines as the primary method of transportation. A wolf captured, tagged, and treated for lice in Unit 14 during spring 1999 was caught on the Sanford River during January 2000. There was no evidence of lice, but effects of the prior infestation on the hide were apparent. The threat of introduction of the dog louse into Unit 11 wolves is apparent.

**Progress Meeting the Project Objectives:** Despite the relatively low abundance of primary prey species such as moose and caribou in Unit 11, wolves are considered abundant in Unit 11. Fluctuations in annual estimates may reflect either variability in deriving the estimates or actual changes in numbers. In some years localized harvests have reduced wolf numbers somewhat within heavily trapped areas; however, the wolf harvest has not been effective in reducing unit-wide numbers. Increases in the Unit 11 wolf population may be restricted by habitat suitability and prey availability. Because much of Unit 11 is mountainous or glaciated, wolves are limited to the more gentle slopes and river valleys. In addition, ungulate numbers are lower in Unit 11 than in the adjacent Unit 13. Wolf dispersal occurs into suitable habitat in Unit 13 where ungulate numbers are higher and provide a larger prey base.

The wolf harvest in Unit 11 declined this year after 2 seasons of high harvests. Yearly fluctuations in harvest often reflect pelt prices, trapper effort, and snow conditions as much as wolf abundance. The price paid for wolves declined appreciably last year, and fewer trappers are putting effort into taking wolves because of current market conditions. According to harvest reports, most of the wolf harvest was in the northern portion of the unit. In more remote areas, wolf packs received little or no hunting or trapping pressure. Most trappers and hunters concentrate their activities near access points, especially those areas along the Nabesna and McCarthy Roads. They also concentrate along the Copper River adjacent to the Tok Cut-off. Because unit hunting and trapping pressure is low and not expected to increase, we expect Unit 11's wolf population to continue yearly fluctuations based on some intense localized harvests and dispersal, with the overall trend to stabilize wolf numbers at or near current levels. Finally, the threat of Unit 11 wolves becoming infected with the biting dog louse is very real. This would have a negative impact on the trapping economy because infected wolf pelts are economically worthless.

**Project Location:** Unit 13 (25,000 mi<sup>2</sup>)  
Nelchina Basin

**Project Objectives:** To maintain the posthunting population at a minimum of 135–165 wolves.

**Work Accomplished During the Project Segment Period:** We conducted wolf survey flights in Unit 13 during November 1999 and March 2000. The area covered during these flights included large areas of Unit 13A, 13B, 13C, and 13D, but only small portions of 13E. We used reports from hunters, trappers, guides, incidental sightings by department personnel, and track survey data to estimate wolf densities for all of Unit 13. The fall 1999 Unit 13 population

estimate was 500–550 wolves in 55–60 packs. This yielded a unitwide density estimate of 12 wolves/1000 km<sup>2</sup>. The preliminary spring 2000 population estimate was 300–350 wolves.

Preliminary harvest figures indicate hunters and trappers harvested 174 wolves during the 1999–00 season in Unit 13. This preliminary harvest is virtually the same as the 1998–99 harvest of 176 wolves. Harvest the last 2 years was up 17% from the 5-year (1993–97) average harvest of 149 wolves. The preliminary wolf harvest rate in Unit 13 was approximately 34% of the estimated fall population.

**Progress Meeting the Project Objectives:** The spring 2000 population estimate of 300–350 wolves in Unit 13 exceeds the spring population objective for Unit 13 set by the Board of Game by 135 or more wolves. The closest the spring population estimate has come to approaching the posthunt management objective for wolves was in 1995 when an estimated 180 wolves remained postharvest. During the last few years, wolves have not been limited by prey availability in Unit 13 because moose numbers have been moderate and caribou numbers high. Although the Nelchina Caribou Herd was estimated at over 30,000 animals in the fall of 1999, virtually the entire herd migrated into Unit 12 and 20E during the winter of 1999–2000. As a result, caribou were unavailable during the winter to wolves in Unit 13, and moose became the most important prey species from early October until late April. In addition, hares are at a 30-year high in Unit 13, and some trappers reported observations of wolves specifically taking hares, making use of an abundant alternate prey.

The 1999–2000 wolf harvest stabilized at a level similar to last year's take. Wolf harvests have averaged 145 (range = 122–179) the last 5 years (1993–97). Yearly fluctuations in harvests reflect snow conditions, weather, trapper effort, and wolf abundance or distribution in relation to established traplines. Current harvest levels, coupled with natural mortality, have not been high enough to limit further growth of the wolf population. Under existing legal methods and means of harvesting wolves, trappers do not harvest enough wolves to reduce the spring wolf population to current management objectives. Prices paid for wolf pelts are currently low, and decline in pelt prices may result in a decline in trapping effort. Additional monetary incentives may increase harvest of wolves in some areas, but more remote portions of Unit 13 will probably continue to have abundant wolf populations with low harvest pressure. In addition, one wolf tagged and treated for lice in Unit 14 was captured along the Copper River in Unit 11. The threat of lice infection among Unit 13 wolves is very real; wolves infected with the dog louse have no commercial value.

The Board of Game set the current spring population objective of 135–165 wolves for Unit 13. We have not approached that objective using normal seasons and bag limits for wolves. In order to achieve this management objective, the board passed a wolf control implementation plan for Unit 13A, B, and E that allows snowmachine hunting of wolves in the control area, beginning in 2000–01. In addition, the legislature passed a bill allowing same-day-airborne hunting of wolves in wolf control implementation areas.

**Project Location:** Unit 14 (6600 mi<sup>2</sup>)  
Upper Cook Inlet

### **Project Objectives**

#### *Units 14A and 14B*

Maintain a posthunting population at 35 wolves.

#### *Unit 14C*

Maintain a posthunting population of 20 wolves.

**Work Accomplished During the Project Segment Period:** During the 1999–00 season, 16 wolves were sealed from Unit 14. Of these, 9 were taken in 14A and 6 were taken in 14B. Two wolves (1 adult and 1 subadult) were killed in vehicle collisions on the Glenn Highway in Unit 14C. Trappers and hunters took no wolves. A questionnaire was mailed to all trappers who sealed fur taken in Unit 14. Although few trappers made sets specifically for wolves, those that did were very effective.

The dog-biting louse *Trichodectes canis* continues to infest wolves and coyotes in Units 14B, 16A, and 16B. The threat of low quality fur has reduced some trappers' interest. The dog-biting louse (*Trichodectes canis*) infestation has not been confirmed in Unit 14C wolves, despite the unit's location between the Kenai Peninsula and Unit 14B where infestations exist. Lack of confirmation may be due to the low numbers of trapped wolves in Unit 14C that can be examined when their pelts are sealed. Railroad employees reported wolves in Placer River valley with fur in poor condition in late winter of this reporting period.

Sealing records, the lice-control project of 1998–99, and observations from staff and the public indicate a minimum of 19 packs occupied the following areas: Upper Talkeetna River, Wells Mountain, Lower Talkeetna River, Iron Creek, Montana Creek, Kashwitna River-Little Willow Creek, Willow Mountain, Bald Mountain, Lower Little Susitna River, Goose Bay, Kings River-Moose Creek, Chickaloon River, Carpenter-Wolverine Creeks, Knik River, Lake George, Eklutna River, Elmendorf-Fort Richardson, Ship Creek, and Twenty-mile River/Portage Creek.

**Progress Meeting Project Objectives:** Through staff observations and discussions with trappers and hunters, we estimated the spring 2000 (pre-pupping) wolf population in Unit 14 at 90–120 wolves, including 65–85 in Units 14A and 14B, and 25–35 in Unit 14C. Population objectives were met, and prey densities are declining only in 14B. To adequately assess wolf numbers, the department should continue to refine a systematic method to estimate wolf numbers and apply this method every 5 years.

A growing problem in Unit 14C is the number of free-ranging wolf hybrids. Two loose wolf hybrids mortally injured a radiocollared moose in January. One wolf hybrid was subsequently shot at the moose carcass. Four other wolf hybrids were known to be loose on the Hillside and in Connors Bog for at least 2 months in spring and summer 2000. In addition, 2 wolf hybrids escaped in downtown Anchorage on March 10. The municipality's animal control staff estimates

at least 200 wolf hybrids in the municipality. When these animals escape or are allowed to run free, they have the potential to interact and breed with wolves. This has the potential to alter the genetic integrity of the wild wolf population and to infest wolves with lice or disseminate diseases. Wolf hybrids are capable of harassing and killing wildlife, including adult moose. The municipal hybrid policy is more lenient than the state regulation, which prohibits ownership of wolf hybrids as pets. The state needs to enforce this regulation, at least to prohibit the advertisement and sale of hybrids.

**Project Location:** Unit 16 (12,300 mi<sup>2</sup>)  
West Side of Cook Inlet

**Project Objectives:** Maintain a population that will sustain an annual harvest of 25 wolves.

**Work Accomplished During the Project Segment Period:** During the 1999–00 trapping/hunting season, 47 wolves (13 from Subunit 16A, 34 (1 illegal and 1 vehicle collision) from Subunit 16B) were reported taken from Unit 16. Results from a questionnaire mailed to all trappers who sealed fur taken in Unit 16 indicated few trappers made sets specifically for wolves. Weather conditions produced generally difficult travel and trapping conditions.

Trappers caught a minimum of 5 wolves infested with the dog-biting louse (*T. canis*) in Unit 16. Two infested wolves were caught in Unit 16B and the others were taken in the previously infested Deshka pack in 16A. These captures confirmed that our attempt to capture and treat all infested wolves during 1998–99 failed. We made only 3 overflights to radiotrack tagged wolves during 1999–2000 and learned very little, as most radioed wolves had disbursed from the area, been trapped, or slipped their collars.

The efforts associated with the lice infestation yielded a more accurate assessment of wolf pack distribution and abundance than is possible in most years. In Unit 16 we confirmed packs occupying the following areas: Kahiltna River, Kahiltna Glacier, Upper Yentna River, Deshka River, Lake Creek, Alexander Creek-Eightmile, Theodore River, and Beluga River. Sealing records and observations from biologists, trappers, and pilots indicate packs inhabit additional areas, including the Tokositna River, Happy River, McArthur-Big River, and Drift River.

**Progress Meeting Project Objectives:** The population objectives for this unit were met. With information from sealing certificates and public and staff observations, we estimated that 100–120 wolves, in a minimum of 16 packs, inhabited Unit 16 during spring (pre-pupping) 2000. The current population could sustain a harvest of more than 60 wolves annually.

**Project Location:** Unit 17 (18,800 mi<sup>2</sup>)  
Northern Bristol Bay

**Project Objectives:** Maintain a population that will sustain an annual harvest of 25 wolves.

**Work Accomplished During the Project Segment Period:** Preliminary sealing data for the 1998–99 trapping and wolf-hunting season indicate a reported harvest of 78 wolves, including 50 males (64%) and 28 females (36%). This level of harvest is slightly higher than the previous 5 year average of 72 wolves/year but less than the number of wolves taken the previous year (93). There were 14 (18%) wolves reported harvested in Unit 17A, 38 (49%) were taken in Unit 17B, and 26 (33%) from Unit 17C. Unit 17 residents reported harvesting 59 wolves (76%), Alaska residents from outside the unit harvested 10 (13%) wolves, and nonresident hunters harvested 9 (11%).

Trappers reported using snowmachines to take 65 (83%) wolves and aircraft to take 9 (12%) wolves. Sixty-eight (87%) of the wolves harvested during this reporting period were shot, 5 (6%) were snared, and 4 (5%) were trapped. Eleven (14%) of the wolves were taken during the main big game hunting season (August–October), 1 (1%) in November, 15 (19%) in December, 25 (32%) in January, 15 (19%) in February, and 11 (14%) in March. Abundant snow throughout the unit improved travel by snowmachine.

**Progress Meeting Objectives:** We have no objective data on the population density of wolves in Unit 17. Local trappers noted that wolf populations appeared to be increasing unitwide during this reporting period. Wolves responded favorably to increasing ungulate populations, and trappers and hunters harvested a large number of these wolves.

**Segment Period Project Costs**

	<u>Personnel</u>	<u>Operating</u>	<u>Total</u>
Planned	29.0	4.0	33.0
Actual	29.0	4.0	33.0
Difference	0.0	0.0	0.0

**Submitted by:**

Michael G. McDonald  
Assistant Management Coordinator

**Project Title:** Interior Wolf Population and Habitat Management

**Project Location:** Unit 12 (9978 mi<sup>2</sup>)  
Upper Tanana and White River drainages; includes the North Wrangell, Nutzotin, and Mentasta Mountains and the eastern Alaska Range

### **Objectives**

1. Provide opportunity to participate in hunting, trapping, and viewing wolves.
  - a. Monitor harvest through sealing records and trapper questionnaires.
  - b. Temporarily close the wolf-trapping season if the population declines below 100 wolves.
2. Monitor wolf numbers and population characteristics.
  - a. Conduct fixed-wing aerial surveys during the winter in selected areas.
  - b. In cooperation with U.S. Fish and Wildlife, radiocollar and monitor selected packs.

### **Activities Planned**

1. Write management report and review and revise management objectives (all objectives).
2. Monitor the harvest of wolves, interview trappers, and seal all pelts brought in for sealing (objective 1).
3. Conduct aerial surveys in the eastern part of the unit (objective 2).

### **Activities Accomplished**

1. Conducted aerial population estimation surveys during February–April 2000 (objectives 1 and 2).
2. Monitored radiocollared packs and individual wolves (objective 2).
3. Reviewed management objectives using input from advisory committees. No changes were necessary to meet biological or public needs or to comply with the intensive management law. Data was presented at the Alaska Board of Game meeting in March 2000 (all objectives).
4. Assisted with the local advisory committee and Fish and Wildlife Protection in developing a proposal to mark wolf snare sites in Unit 12 and presented the proposal to the Alaska Board of Game in March 2000 (objective 2).
5. Completed the Unit 12 wolf management report covering 1 July 1996–30 June 1999 (all objectives).

**Project Location:** Units 19, 21A, and 21E (59,756 mi<sup>2</sup>)  
Drainages of the Kuskokwim River upstream from the village of Lower Kalskag; Yukon River drainage from Paimiut upstream to, but not including, the Blackburn Creek drainage; the entire Innoko River drainage; and the Nowitna River drainage upstream from the confluence of the Little Mud and Nowitna Rivers

### **Objectives**

1. Manage to maintain a harvestable population of wolves capable of sustaining an annual harvest of at least 100 wolves, assuming no further restrictions in current harvest regulations and bag limits.
2. In areas where wolf predation is thought to be significantly affecting ungulate populations through calf or adult mortality, attempt to redirect wolf harvest efforts and/or increase trapper/hunter effectiveness in those areas through trapper seminars.
3. Continue to refine annual wolf population estimates in the area, based on incidental sightings, hunter interviews, trapper questionnaires, and a thorough evaluation of sealing documents.
4. Where needed, conduct wolf population surveys to obtain statistically bounded estimates.

### **Activities Planned**

1. Write management report and review and revise management objectives (all objectives).
2. Monitor the harvest of wolves, interview trappers, and seal all pelts brought in for sealing (objectives 1–3).
3. Conduct aerial surveys in conjunction with FWS in Unit 21 (all objectives).

### **Activities Accomplished**

1. Completed a draft of the management report and reviewed and revised the management objectives (all objectives).
2. Monitored harvests in key areas, interviewed trappers, and sealed pelts (objectives 1–3).
3. Conducted no surveys (objective 4).
4. Held wolf-trapping clinics in 3 villages (Aniak, Sleetmute, and Anvik) that were well received by the public (objective 2).



**Project Location:** Units 20A, 20B, 20C, 20F, and 25C (39,228 mi<sup>2</sup>)  
Lower Tanana Valley, Central Yukon Valley

### **Objectives**

1. Monitor harvest through sealing certificates.
2. Estimate wolf population size and distribution from aerial survey and harvest in Units 20A, 20B, and 25C.
  - a. Maintain a sample of radiocollared wolves in the Tanana Flats portion of Unit 20A to facilitate aerial surveys and moose/wolf research.
  - b. Conduct a TIP (Track Intercept Probability Estimator) in the Minto Flats portion of Unit 20B.
  - c. Conduct aerial surveys in Units 20C, 20F, and 25C by spring 1998.
3. Conduct calf mortality study of moose and/or caribou in Unit 20A.

### **Activities Planned**

1. Write management report and review and revise management objectives (all objectives).
2. Monitor the harvest of wolves, interview trappers, and seal all pelts brought in for sealing (objectives 1 and 2).
3. Conduct aerial surveys during winter in selected areas to estimate the wolf population (objective 2).

### **Activities Accomplished**

1. Completed wolf management report covering 1 July 1996–30 June 1999 (all objectives).
2. Monitored the harvest of wolves through pelt sealing (objectives 1 and 2).
3. Conducted aerial surveys during spring to estimate pack sizes on the Tanana Flats portion of Unit 20A (objective 2).

**Project Location:** Unit 20D (5637 mi<sup>2</sup>)  
Central Tanana Valley near Delta Junction

### **Objectives**

1. Manage for a population of 15–125 wolves.
2. Determine distribution, abundance, predation rates, and population trends in selected areas.

- a. Seal hides taken by hunters and trappers; interview hunters and trappers to assess relative abundance of wolves.
- b. Conduct aerial surveys during the winter in selected areas.
- c. Radiocollar and monitor selected packs.

#### **Activities Planned**

1. Write management report and review and revise management objectives (all objectives).
2. Monitor the harvest of wolves, interview trappers, and seal all pelts brought in for sealing (all objectives).
3. Conduct an estimation survey in a portion of the unit (objective 2).

#### **Activities Accomplished**

1. Wrote a management report and review management objectives (all objectives).
2. Monitored harvest by trappers and hunters (all objectives).
3. Conducted no aerial surveys due to inadequate survey conditions (objective 2).

**Project Location:** Unit 20E (10,680 mi<sup>2</sup>)  
Fortymile, Ladue, and Charley River drainages

#### **Objectives**

1. Monitor wolf numbers, population characteristics, and harvests.
  - a. Monitor harvest through sealing records and trapper questionnaires.
  - b. Conduct fixed-wing aerial surveys during the winter in selected areas.
  - c. Radiocollar and monitor selected packs.
2. Provide for the maximum harvest of wolves in western Unit 20E.
  - a. Through seasons and bag limits, allow for increased harvest within and near the Fortymile Caribou Herd.
3. Reduce the number of wolves on the Fortymile caribou herd's calving and summer range by relocating all members of up to 15 packs other than the dominate pair and controlling fertility among dominant pairs.

- a. Monitor relocated wolves to determine survival, homing instinct, and establishment of territory.
- b. Monitor sterilized wolves to determine pack size, territory size and usage, and kill rates.
- c. Close trapping if the wolf population in the control area is reduced to 30 wolves.

#### **Activities Planned**

1. Write management report and review and revise management objectives (all objectives).
2. Monitor the harvest of wolves, interview trappers, and seal all pelts brought in for sealing (objectives 1 and 2).
3. Conduct aerial surveys in the eastern part of the unit (all objectives).
4. Continue monitoring radiocollared wolves to determine range use, natality, and mortality (all objectives).

#### **Activities Accomplished**

1. Completed nonlethal control including relocation and fertility control within 15 pack territories (objective 3).
2. Monitored movements, kill rates, and productivity of relocated and resident wolves (objectives 1 and 3).
3. Conducted aerial surveys in the eastern portion of the unit during February through April (all objectives).
4. Monitored wolf numbers in the western portion of the unit using track surveys (October–April) and radiotelemetry (all objectives).
5. Monitored harvest using sealing documents, trapper questionnaires, and contact with trappers in the field (objectives 1 and 2).
6. Reviewed management objectives using advisory committees' participation. No changes were necessary to meet biological or public needs or to comply with the intensive management law (all objectives).
7. Completed the Unit 20E wolf management report covering 1 July 1996–30 June 1999 (all objectives).
8. Assisted the local advisory committee and Fish and Wildlife Protection in developing a proposal to mark wolf snare sites in Unit 20E and presented the proposal to the Alaska Board of Game in March 2000 (objective 2).

**Project Location:** Units 21B, 21C, 21D (20,655 mi<sup>2</sup>)  
Yukon River drainage above Paimiut to Tozitna River, including Koyukuk River up to Dulbi Slough

**Objectives:** Objectives were formulated during this reporting period.

**Activities Planned**

1. Write management report and review and revise management objectives.
2. Monitor the harvest of wolves, interview trappers, and seal all pelts brought in for sealing.
3. Conduct aerial survey in conjunction with FWS.

**Activities Accomplished**

1. Completed the management report for 1 July 1996–30 June 1999.
2. Revised population management goals and objectives.
3. Sealed wolf hides and monitored harvest through statewide sealing requirements.
4. Conducted trapper education clinic in Galena and conducted informal interviews with local trappers regarding wolf populations.
5. In conjunction with FWS, conducted a wolf population estimation survey in northern portion of Unit 21D and neighboring Unit 24.

**Project Location:** Unit 24 (26,055 mi<sup>2</sup>)  
Koyukuk River drainage above Dulbi River

**Objectives:** Objectives were formulated during this reporting period.

**Activities Planned**

1. Write management report and review and revise management objectives.
2. Monitor the harvest of wolves, interview trappers, and seal all pelts brought in for sealing.
3. Conduct aerial surveys in conjunction with the FWS.

**Activities Accomplished**

1. Completed management report for 1 July 1996–30 June 1999.
2. Revised population management goals and objectives.

3. Sealed wolf hides in Huslia and monitored harvest through statewide sealing requirements.
4. Conducted trapper education clinic in Huslia and Allakaket.
5. In conjunction with FWS, conducted wolf population estimation survey in southern portion of Unit 24 and neighboring Unit 21D.

**Project Location:** Units 25A, 25B, 25D, 26B, and 26C (73,756 mi<sup>2</sup>)  
 Eastern Interior, Eastern Brooks Range, and  
 Central and Eastern Arctic Slope

**Objectives**

1. Conduct a wolf census in Units 25A, 25D East, and 25D West by 1999.
2. Using computer modeling, evaluate effects of wolf predation on moose in Unit 25D.

**Activities Planned**

1. Write management report and review and revise management objectives (all objectives).
2. Monitor the harvest of wolves, interview trappers, and seal all pelts brought in for sealing (objective 2).
3. Conduct aerial surveys during winter in selected areas to estimate the wolf population (all objectives).

**Activities Accomplished**

1. Completed a wolf population survey in Units 25D and 25B during 30 March–2 April 2000 (objective 1).
2. Compiled harvest data, interviewed trappers, and sealed pelts (objectives 1 and 2).
3. Conducted population-modeling exercises to evaluate wolf/moose relationships on the Yukon Flats (objective 2).

**Segment Period Costs:**

	<u>Personnel</u>	<u>Operating</u>	<u>Total</u>
Planned	64.2	28.0	92.2
Actual	67.3	20.8	88.1
Difference	-3.1	7.2	4.1

*Explanation of costs:* The underexpenditure of operating funds resulted from cancellation of aerial surveys in Units 12, 19, and 20D because of poor snow conditions. The overexpenditure of

personnel funds resulted from additional analyses of wolf population data and production of wolf management reports.

**Submitted by**

Roy Nowlin

Regional Management Assistant

David James

Management Coordinator

**Project Title:** Western Alaska Wolf Management

**Project Location:** Unit 18 (42,000 mi<sup>2</sup>)  
Yukon-Kuskokwim Delta

### **Project Objectives and Activities**

1. Maintain viable wolf populations in Unit 18.
  - a. Monitor harvests through the sealing program, contacts with the public, and the annual trapper questionnaire.
  - b. Explain and promote compliance with the sealing requirement among local hunters and trappers.
  - c. Monitor the size and population status of wolves and wolf packs in Unit 18.
2. Minimize adverse interactions between wolves and the public.
3. Develop updated population management objectives consistent with increasing prey populations.

**Work Accomplished During the Project Segment Period:** Sealing certificates to date show 60 wolves were harvested in Unit 18 during the 1999–2000 season. Wolves are taken by trappers targeting wolves specifically and by hunters, particularly caribou hunters, who take wolves opportunistically.

A trapper questionnaire was sent out in spring 2000 and 23 trappers from Unit 18 responded. Trappers and hunters report seeing more wolves in the Kilbuck and Kuskokwim Mountains and along the entire river corridor from Paimiut all the way to the mouth of the Yukon River.

**Progress Meeting Project Objectives:** Observations by department staff, other agencies, and the public indicate that several wolf packs occupied the entire length of the Yukon River in Unit 18, portions of the Kilbuck Mountains, and the Kuskokwim River near the Unit 19A boundary. The Unit 18 population is estimated to range from 150–200 wolves in 15–20 packs. This is higher than the previous estimate of 100–125 wolves in 8–12 packs.

The increasing wolf population is primarily the result of increasing prey populations in Unit 18. The moose population along the Yukon River has grown and occupies the entire Yukon River riparian corridor. Mulchatna Herd caribou have wintered in eastern Unit 18 in large numbers. Both developments have allowed wolves to extend their range and increase their population.

Wolf harvest had been very low in Unit 18 until recently. Reported harvests are now ten times higher than they were a decade ago. Even with these higher reported harvests, it is clear that not all wolves taken are sealed. Low fur prices and high local demand for wolf ruffs result in little incentive to seal wolves.

**Project Location:** Unit 22 (25,230 mi<sup>2</sup>)  
Seward Peninsula and eastern Norton Sound.

### **Project Objectives**

1. Maintain a viable wolf population in Unit 22.
2. Monitor wolf harvest.
  - a. Seal pelts and maintain license vendors and fur sealers in all Unit 22 villages.
  - b. Obtain harvest data from big game harvest surveys in Unit 22 villages.
  - c. Participate in the statewide trapper survey program.
  - d. Improve compliance with current sealing requirements through public communication and education.
3. Cooperate with reindeer herders to develop methods to reduce adverse interactions between wolves and reindeer.

**Work Accomplished During the Project Segment Period:** The furbearer sealing records indicate that 35 hunter/trappers harvested 62 wolves (36 males, 19 females, 7 unknown) in Unit 22. This is the largest harvest and number of hunter/trappers ever reported in the unit. Nineteen wolves were harvested in Unit 22A, 31 in Unit 22B, 3 in 22D, and 8 in 22E. Forty-three were taken by ground shooting, 12 were trapped, and 7 were snared. Snowmachines were used to take all but 2 of the wolves, and four-wheelers were used take those. Big game harvest surveys in 3 Norton Sound villages showed an additional 12 wolves were taken by Shaktoolik residents, an additional 11 were harvested by Elim residents, and White Mountain residents took 2 more wolves than were sealed.

Wolf densities are highest in Units 22A and eastern 22B, but harvest data and observations by staff and local residents indicate wolves are becoming more numerous in all parts of the unit. The increase is a response to the large number of Western Arctic Herd caribou that have wintered on the Seward Peninsula during the last 4 years. Previously, wolves were present primarily during the winter months, and there were few resident wolf packs. Wolves are now present year-round in much of the unit. A radiocollared wolf collared in Denali Park in March 1999 was caught on the East Fork of the Koyuk River in February 2000. Other collared wolves from other locations in Alaska have been observed or harvested in Unit 22 in past years, indicating that immigration of wolves from other areas occurs in Unit 22.

Trapper surveys were sent at the end of the season to hunter/trappers who sealed furs harvested in Unit 22 to better assess harvest and abundance of wolves and other furbearers. Respondents from Units 22A and 22B reported that wolves were common. In 22A numbers were generally thought to be stable, but in Unit 22B the unanimous opinion was that numbers are increasing. Respondents from the remainder of the unit reported that wolves were scarce, but most respondents thought numbers were increasing.



We devoted considerable time to answering questions from the public and supporting local license vendors and fur sealers.

**Progress Meeting Project Objectives:** The magnitude of unreported wolf harvest each year in Unit 22 is thought to be substantial and fur-sealing records only provide a minimum estimate of harvest. Although fur-sealing agents are available in all Unit 22 villages, generally only hides that are commercially tanned or sold outside the region are sealed. In an effort to get better harvest data for furbearers, wolves and wolverine were included in the big game harvest surveys that were conducted in several Unit 22 villages.

Wolf predation on reindeer continues to be a concern for reindeer herders. However, reports of problems are fewer, primarily because the herds most seriously affected by wolves have lost all or most of their reindeer over the last few years due to caribou migration that has swept through their ranges. As wolf numbers increase, they may increasingly affect moose densities in parts of the unit. However, at this time bears, not wolves, are believed to be the primary predators responsible for limiting moose populations in some parts of Unit 22.

Efforts to inform the public of the importance of wildlife conservation and the need for regulations have in some communities resulted in a gradual increase in the number of individuals purchasing licenses. Additional contact with local village residents is needed if more complete compliance with current regulations is to become a reality.

**Project Location:** Unit 23 (43,000 mi<sup>2</sup>)  
Kotzebue Sound and Western Brooks Range

### **Project Objectives**

1. Maintain a healthy population of wolves in Unit 23.
2. Monitor temporal trends in abundance and harvest through trapper questionnaires and public reports.

**Work Accomplished During the Project Segment Period:** We supported license vendors and furbearer sealers in Unit 23. Local residents using snowmachines for transportation shot most wolves taken in Unit 23. Nonlocal hunters took few wolves and accessed hunting areas by airplane. Compliance with sealing requirements by local residents was low, and, as a result, harvest levels are unknown. A community-based harvest assessment program conducted in 6 villages in Units 22 and 23 (excluding Nome and Kotzebue) during this reporting period indicated villages typically took 13–17 wolves. This indicates that subsistence hunters took approximately 150 wolves in Unit 23 during the 1999–2000 regulatory year. Our understanding of wolf abundance and distribution is based on opportunistic observations by agency staff, trapper questionnaires, and reports from local hunters and commercial operators.

**Progress Meeting Project Objectives:** Wolves are reportedly more abundant on the Seward Peninsula than they have been since the early 1980s. This may be a result of the recent presence of caribou in the area. Wolf density was probably highest in the eastern portion of Unit 23.

**Project Location:** Unit 26A (53,000 mi<sup>2</sup>)  
Western North Slope

### **Project Objectives and Activities**

1. Maintain viable wolf populations in Unit 26A.
  - a. Monitor the population density of wolves in the most heavily hunted area in Unit 26A.
  - b. Monitor harvest through the statewide sealing program and by interviewing knowledgeable people in the villages. Develop a better monitoring system.
  - c. Interview hunters, guides, and pilots to collect harvest and population information.
2. Determine the impact of wolves on Unit 26A moose populations.
  - a. Monitor the wolf population by conducting surveys in the primary moose habitat area once every 3 years.
  - b. Record biologists' sightings of wolves and of moose carcasses during moose counts.

**Work Accomplished During the Segment Project Period:** During the 1999–2000 reporting period, 8 wolves were sealed. Four (50%) were males, 1 (12%) was a female, and 3 (38%) were of unknown sex. All 8 were ground shot. Snowmachines were used most often (7 wolves were taken) as transportation to the field; an airplane was used for transportation to harvest 1 wolf. The chronology of the harvest was as follows: September – 1, November – 2, February – 3, and unknown – 2. One harvested wolf was white, 3 were gray, and 4 were black. Local residents harvested 7 wolves and nonresidents harvested 1 wolf.

A Sample Unit Probability Estimator (SUPE) sample design was used to census wolves in a 10,343 km<sup>2</sup> area bordered by the Colville, Killik, and Itkillik Rivers and Gunsight Mountain in April 1998. Lack of fresh snow and wind blown snow conditions resulted in poor tracking conditions in the southern half of the study area. We concentrated our efforts on the northern 5000 km<sup>2</sup>. Only 7 wolves were seen in 2 packs, resulting in an estimate of 8 wolves, with a confidence range of 7–11 at the 90% level. A density estimate was calculated at 1.6 wolves/1000 km<sup>2</sup>. This compares to a density estimate of 4.2 wolves/1000 km<sup>2</sup> in 1992 and 4.1 wolves/1000 km<sup>2</sup> in 1994.

We normally log wolf sightings during moose counts. In 1995, 16 wolves were observed during 35 hours of surveying, and in 1991 we recorded 29 wolves in 39 hours of flight. One wolf was sighted during 24 hours of moose surveys in 2000.

**Progress Meeting Project Objectives:** We have monitored the wolf population periodically, and surveys indicate the density of wolves increased from approximately 2.6 wolves/1000 km<sup>2</sup> in

1987 to 4.1 wolves/1000 km<sup>2</sup> in 1994. The survey we conducted in 1998 indicated a substantial decline to 1.6 wolves/1000 km<sup>2</sup>. Fewer wolves per hour were seen during moose surveys in 1995, 1996, and 1997 than during the period 1991–1994, and this year we saw only 1 wolf during the moose count.

The numbers of wolves sealed in Unit 26A has declined in recent years. We sealed 47 in 1994–1995, 19 in both 1995–1996 and 1996–1997, 3 in 1997–1998, 13 in 1998–1999, and 8 in 1999–2000.

The department’s sealing program does not always effectively measure harvests in villages. The goal of helping to develop a more effective harvest-monitoring program was at least partially accomplished. We have worked with the North Slope Borough to develop a harvest-monitoring program involving local monitors in each village. The North Slope Borough study reported the following harvest during 1994–1995: 59 wolves by Anaktuvuk Pass hunters, 18 in Nuiqsut, and 2 in Atqasuk (Brower and Opie 1996 and 1997). During 1994–1995, 18 wolves were sealed in Anaktuvuk Pass, and none was sealed in Nuiqsut or Atqasuk. This represents that 25% of harvested wolves were sealed.

The number of moose counted during surveys along the Colville, Anaktuvuk, and Chandler Rivers declined by 75% between 1991 and 1996, during a time of high wolf density. The moose population has begun to increase since 1997, while the density of wolves has been low. It is difficult to determine if the wolf density is driving the moose population fluctuation or if the wolves immigrated to the area in response to high moose and caribou numbers and left when the numbers of prey animals declined. We will continue to conduct wolf and moose surveys to monitor the impact of hunters on wolves and the combined impact of hunters, bears, and wolves on moose.

In order to assist with the recovery of the Fortymile Caribou Herd, North Slope residents agreed to have 15 wolves relocated from the Tok area to the North Slope in 1999. At the request of local residents, the wolves were not collared, so it will be difficult to monitor the survival of the wolves.

**Segment Period Project Costs:**

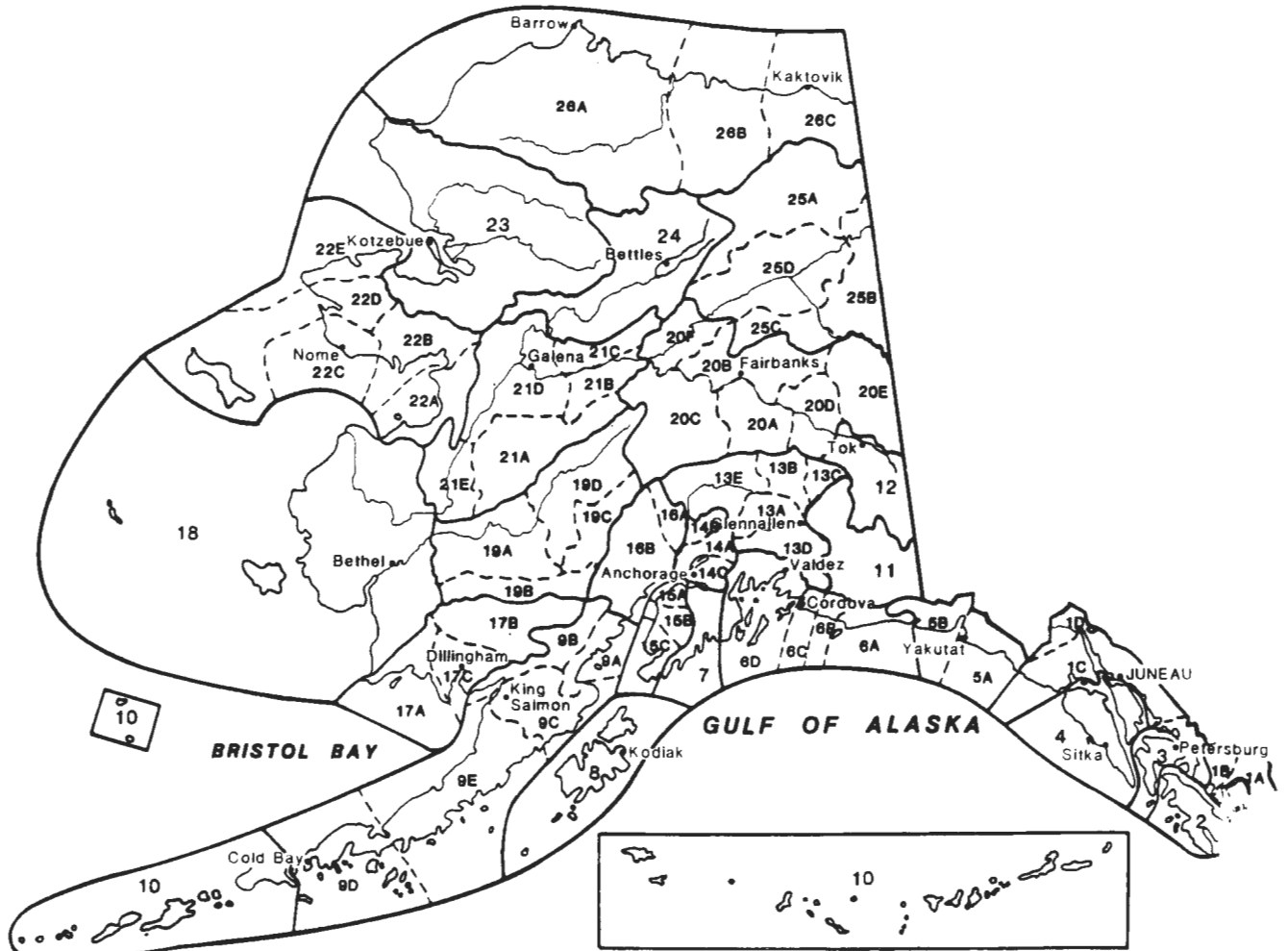
	<u>Personnel</u>	<u>Operating</u>	<u>Total</u>
Planned	1.0	1.0	2.0
Actual	0.8	0.2	1.0
Difference	0.2	0.8	1.0

*Explanation of costs:* Operating costs were lower than planned because fewer wolf surveys were conducted in Region V than in other areas of the state.

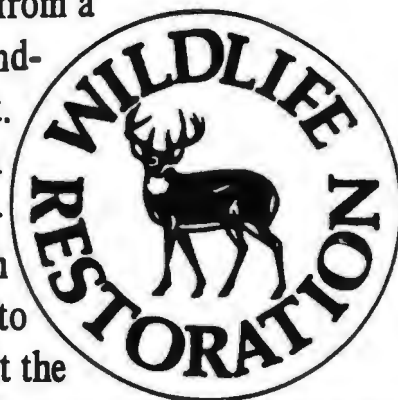
**Submitted by**

Peter Bente  
Survey-Inventory Coordinator

# Alaska's Game Management Units



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



Ken Whitten