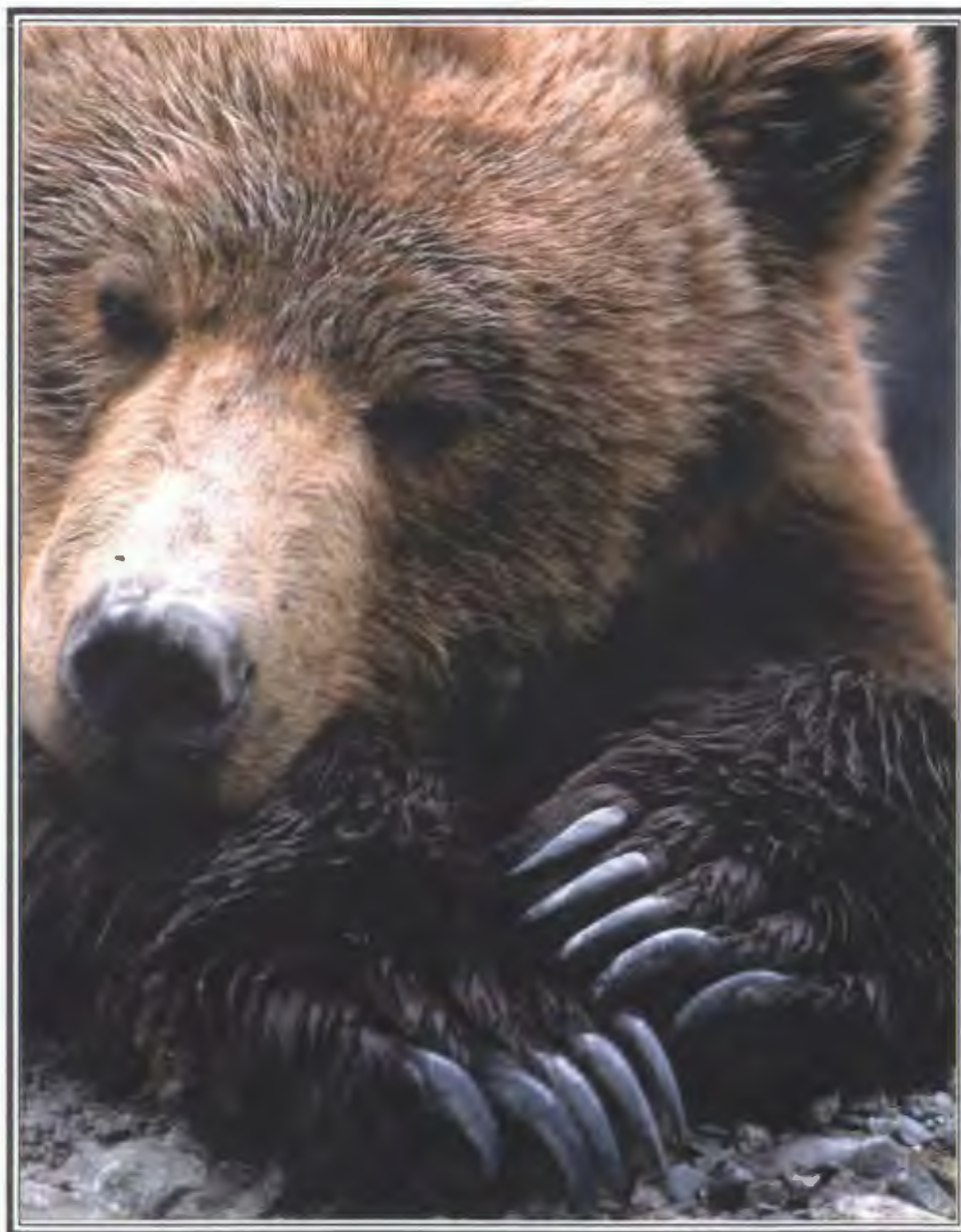


Alaska Department of Fish and Game
Division of Wildlife Conservation

Federal Aid in Wildlife Restoration
Annual Performance Report
Survey-Inventory Activities
1 July 1996- 30 June 1997

BROWN BEAR

Mary U Hicks, Editor



Ken Whitten

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1996-97

Grant W-24-5
Study 4.0
November 1997

STATE OF ALASKA
Tony Knowles, Governor

DEPARTMENT OF FISH AND GAME
Frank Rue, Commissioner

DIVISION OF WILDLIFE CONSERVATION
Wayne L. Regelin, Director

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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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1995-96

Project Title: Southeast Brown Bear Population Management

Project Location: Unit 1 (18,300 mi²)
Southeast Alaska mainland from Dixon Entrance to Cape Fairweather and those islands lying east of Clarence Strait from Dixon Entrance to Caaman Point and all islands in Stephens Passage and Lynn Canal north of Taku Inlet

Project Objectives and Activities:

- Maintain an average age of harvested males of at least 6.5 years and a male to female harvest ratio of at least 3:2.
- Reduce the number of bears killed because of garbage habituation.

Work Accomplished During the Project Segment Period: For the eighth consecutive season, we collected harvest data through mandatory registration permits. We required all permittees to report whether they hunted. Additionally, all successful hunters were required to present hides and skulls for sealing within 30 days of the date of kill. We measured skulls from harvested bears and extracted a premolar tooth to determine age. We also collected additional harvest-related data and anecdotal information at the time of sealing.

Progress Meeting Project Objectives: Hunters killed 32 brown bears in Unit 1 during this report period. The harvest of 22 males (69%) and 10 females (31%) was well within our 3 male:2 female harvest objective. Harvests by subunit included 4 males from Unit 1A, 1 male and 3 females from Unit 1B, 7 males and 1 female from Unit 1C, and 10 males and 6 females from Unit 1D.

The average size of male skulls was 22.0 inches ($n = 22$), 0.4 inches higher than those of the previous season. The average size of female skulls was 20.0 inches ($n = 10$), 0.9 inches lower than female skulls of the previous season.

We issued 291 registration permits during this report period. There were 121 unsuccessful permittees, 138 did not hunt, 1 did not report, and 1 successful hunter failed to obtain a permit. Nonresident hunters harvested 17 bears, and residents took 15 bears. Age data for 1996-97 are not yet available; however, averages for males and females taken during the 1995-96 season were 6.6 years ($n = 12$) and 11.0 years ($n = 5$), respectively. This met our objective for maintaining an average of harvested males at 6.5 years.

Project Location: Unit 4 (5,800 mi²)
Admiralty, Baranof, Chichagof, and adjacent islands

Project Objectives and Activities:

- Maintain an average age of harvested males of at least 6.5 years with a male to female harvest ratio of at least 3:2.

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- Reduce the number of bears killed because of garbage habituation.
- Monitor the harvest, seal harvested bears, and analyze harvest data.
- Monitor use of the Pack Creek viewing area on the Stan Price Wildlife Sanctuary.

Work Accomplished During the Project Segment Period: We issued 461 registration permits to bear hunters. We measured skull length and width, extracted premolar teeth, examined hides to determine sex, and noted other pertinent data. Teeth were aged by counting cementum annuli. We attempted to reduce brown bear loss to defense of life or property (DLP) incidents through public education and contact with other agencies. Biologists and technicians contacted visitors at Pack Creek throughout July and August to explain regulations of the Stan Price Wildlife Sanctuary, prevent loss of bears to DLP, promote public safety, and provide bear life history information.

Progress Meeting Project Objectives: Age data from harvested bears were not available by report time. Preliminary registration permit data indicate that sport hunters reported harvesting 129 bears during 1996-97, and 19 additional bears were killed illegally or in DLP situations. The male to female sex ratio for the 148 dead bears (115 males, 30 females, and 3 of unreported sex) was 8:2. Thirty-two percent of the hunter harvest occurred during the fall season. Forty-two percent of the season's hunter harvest came from Chichagof Island, 39% came from Admiralty Island, and 19% came from Baranof Island.

Public interest in bear viewing continues to be popular at the Stan Price Wildlife Sanctuary. During summer of 1996, 1241 people visited the sanctuary. Guides accompanied 587 of these brown bear viewers; 654 visitors were unguided. In 1997 the number of visitors was 1235.

Project Location: Unit 5 (5,800 mi²)
Cape Fairweather to Icy Bay, eastern Gulf of Alaska coast.

Project Objectives and Activities:

- Maintain an average age of harvested males of at least 6.5 years with a male to female harvest ratio of at least 3:2.
- Reduce the number of bears killed because of garbage habituation.
- Monitor the harvest, seal harvested bears, and analyze data.

Progress Meeting Project Objectives: Bears were sealed in Yakutat and Anchorage. We analyzed harvest from sealing certificates. Age data for bears taken during the 1996-97 season were not available at the time of this report. The project objective of a 3:2 male to female kill ratio was not met. The harvest of 38 bears (23 males, 14 females, and 1 of unreported sex) was 10 more than the number taken last year, and the ratio of females in the harvest continued to increase. Twenty-eight of the harvested bears (17 males and 11 females) were taken from Unit 5A, and the remaining 10 bears came from Unit 5B. Male skull sizes averaged 23.0 and 24.0 inches for the year and spring season, respectively.

Segment Period Project Costs:

	<u>Personnel</u>	<u>Operating</u>	<u>Total</u>
Planned	53.7	10.0	63.7
Actual	59.8	13.0	72.8
Difference	-6.1	-3.0	-9.1

Explanation: Sitka and regional staff attended meetings in Unit 4 communities to discuss regulatory changes effective fall 1997. Personnel and operating costs increased as Region I staff developed background information for the Black Bear Management Plan.

Submitted by:

Doug Larsen
Acting Management Coordinator

Project Title: Southcentral Brown Bear Population Management

Project Location: Unit 6 (10,150 mi²)
Prince William Sound and north Gulf Coast

Project Objectives: Maintain a brown bear population that will sustain an annual harvest of 35 bears composed of at least 60% males with a minimum average male skull size of 23 inches.

Work Accomplished During the Project Segment Period: Eleven bears (6 males, 5 females) were harvested during fall 1996. Preliminary harvest data for spring 1997 indicated an additional 19 bears (15 males and 4 females) were taken. Males composed 70% of the take and mean skull size for males was 24.2 inches. Final harvest numbers for spring will be available during fall 1997.

Progress Meeting Project Objectives: We achieved all objectives

Project Location: Units 7 and 15 (8,400 mi²)
Kenai Peninsula

Project Objectives: Maintain an estimated population of 250 brown bears with a sex and age structure that will sustain a harvest comprising at least 60% males.

Work Accomplished During the Project Segment Period: Preliminary harvest reports indicated annual harvest levels have remained above management objectives. The fall brown bear season was closed by emergency order. Five bears were reported taken in the spring season (May 10-25) of 1997 (1 male and 4 females). Final harvest numbers and statistics will be available in November 1997.

Nuisance bears continued to be a problem on the Kenai. Five bears (all young males) were taken in defense of life or property (DLP) during the reporting period. There were 3 bear-human encounters that resulted in nonlife-threatening injuries. A Fish and Wildlife Service volunteer working on forestry related research was pulled from a tree near the north shore of Tustumena Lake. A moose hunter in Unit 15A was knocked down after he surprised a bear in tall grass, and a sport fisherman was charged and knocked down on a trail near the north shore of the Kenai river approximately 3.5 river miles from the outlet of Skilak lake.

Progress Meeting Project Objectives: The Board of Game shortened and moved the fall hunting season to 1-25 October in 1994. We closed the fall seasons in 1995 and 1996 by emergency order because of the high proportion of females taken and the increasing trend in DLP mortality. During the March Board of Game meeting, the BOG shortened and moved the fall season to 15-31 October to provide more protection to female bears. From research results we learned that single adult female bears were at or in dens by 15 October. A late October season should direct harvest effort to males and subadults that have not started to den.

Logging associated with the spruce bark beetle epidemic will continue to be the major factor affecting brown bear habitat on the Kenai Peninsula. Over 33,000 acres of new timber sales will be offered during regulatory year 1997-98. Additional federal, state, borough and private forested lands are being planned for salvage logging in the future.

Project Location: Unit 8 (5,100 mi²)
Kodiak and adjacent islands

Project Objectives: Maintain a brown bear population that will sustain an annual harvest of 150 bears comprising at least 60% males.

Work Accomplished During the Project Segment Period: Working cooperatively with the US Fish and Wildlife Service (FWS), we conducted an aerial survey in a 355 km² area in the Terror Bay, Viokoda Bay and Kizhuyak Bay drainages of northwestern Kodiak Island during 23-26 May 1997. A capture-mark-recapture (CMR) survey was previously done in 1987 in the identical study area. We tried to duplicate the aerial survey method used in 1987 to find a trend in the bear population after 10 years. We did 4 replicate surveys in 1997, 1 more than was done in 1987. Using the 33% sightability factor developed from the previous CMR survey, we estimated the population density in 1997 at 281 independent bears/1,000 km², compared with 231 independent bears/1,000 km² in 1987.

We issued hunting permits to 590 people; we issued 204 fall permits and 386 spring permits. During the fall season, 160 hunters went afield and killed 48 bears. In the spring season 263 hunters went afield and killed 117 bears. The annual sport harvest was 165 bears, 128 males (78%) and 37 females (22%). Two bears, 1 male and 1 bear with sex unknown, were killed in the new federal brown bear subsistence hunt. An additional 14 nonsport mortalities were documented as follows: defense of life or property- 9 (3 male, 5 female, 1 unknown sex); illegal- 1 (1 male); natural/unknown- 7 (1 male, 6 unknown sex).

Progress Meeting Project Objectives: The 1996-97 sport harvest of 165 bears was above the annual harvest objective of 150 bears. Males composed 78% of the harvest, well above the minimum objective of 60% males. The female sport harvest was the lowest in several years.

Project Location: Units 9 and 10 (37,500 mi²)
Alaska Peninsula and Unimak Island

Project Objectives: Maintain a high brown bear density with a sex and age structure that will sustain a harvest comprising 60% males with at least 50 males 8 or more years old taken during the combined fall and spring season.

Work Accomplished During the Project Segment Period: Fieldwork on the interagency Black Lake study was completed in October 1996 with the final radiotracking flight. All relocation data was computerized during this report period. We conducted 4 replicate stream surveys at Black

Lake in 1996. An average of 164 bears (range 139-184) was seen per survey. Single bears composed 42% of 657 bears classified.

The EVOS study of impacts of the 1989 oil spill continued and evolved into a cooperative study between the department and the National Park Service to evaluate the population dynamics of a high density, unhunted bear population. The final telemetry flight was in October 1996, and report writing is underway.

In the Naknek drainage, registration permittees killed 7 bears during the fall 1996 season (RB 361) and 9 during the spring 1997 (RB371).

On Unimak Island, drawing hunt permittees killed 5 bears during the fall 1996 season. Reporting from the spring 1997 hunt is not yet complete.

Progress Meeting Project Objectives: Harvest statistics from the 1995-96 seasons were well within the desired range. The extrapolated bear population for areas open to hunting in Unit 9 was 5680, and harvests over the past 4 years represented a harvest rate of about 5%. Permit hunts were meeting their management objective.

Project Location: Unit 11 (12,800 mi²)
Wrangell Mountains

Project Objectives: Maintain a brown bear population largely unaffected by human harvest, with annual harvest averaging less than 30 bears. Human-use objectives are to allow limited human harvests when they do not conflict with management goals for the unit or objectives for the population.

Work Accomplished During the Project Segment Period: We monitored the brown bear harvest in Unit 11 by sealing the hides and skulls of all bears killed. We interviewed hunters at the time of sealing to determine hunting method, means, and effort.

Preliminary harvest data for the 1996-97 season indicated 2 brown bears were killed in Unit 11, well below the previous 10-year average of 8 bears per year. The proportion of males (50%) in the harvest met the 50% minimum in the management guidelines for brown bear harvest, but with a harvest so low, the sex ratio becomes meaningless. All bears were taken during the fall; the harvest total could increase after spring sealing certificates are processed. Nonresidents killed both bears and used airplanes as transportation. These hunters reported spending an average of 5 days in the field.

Progress Meeting Project Objectives: Bear harvests in Unit 11 were much lower than the estimated sustainable harvest and did not have a negative effect on unitwide bear population. The proportion of males in the harvest met the 50% minimum in the management guidelines for brown bear harvest in this unit. With only 2 bears taken, however, the sex composition has no measurable effect on the Unit 11 bear population. Although population data for brown bears in

Unit 11 were not available, staff and public field observations of bears suggested a relatively abundant and well-distributed population of brown bears. The low harvests of the past 15 years were attributed to increased restrictions on sport hunting and access for subsistence hunting by the National Park Service since 1979, when all of the unit was included in Wrangell St. Elias National Park and Preserve. Recent federal regulations closed subsistence brown bear hunting in Unit 11.

There was a reported brown bear attack in Unit 11 during May 1997. At the time of this report, we had not received a written report of the incident. Apparently a Park Service employee was conducting a song bird survey near Billy Lake off of the McCarthy road. Her partner reported seeing a bear and tried to warn her by beeping the horn of their vehicle. The person attacked tried to deter the bear with pepper spray, but was unsuccessful. She received several bites to the neck area, was treated at the Crossroads Medical Clinic in Glennallen, held over night then released. The cause of the attack is unknown.

Project Location: Unit 13 (23,400 mi²)
Nelchina Basin

Project Objectives: Reduce current brown bear numbers to increase moose calf survival to fall but maintain a minimum estimated brown bear population of 350 bears.

Work Accomplished During the Project Segment Period: We monitored the brown bear harvest by sealing the hides and skulls of all bears killed. Hunters were interviewed at the time of sealing to determine hunting methods, means, success, and effort.

Preliminary harvest data for the 1996-97 hunting season indicated 123 brown bears were taken by hunters. This preliminary figure was 14 bears (13%) more than taken in 1995-96 and above the 1991-95 5-year average of 91. There were 97 bears (51% males) taken during the fall of 1996 and 26 (54% males) in the spring of 1997. This spring harvest figure could increase as sealing certificates were still being processed at the time of this report. Males composed 51% of the overall harvest. Unit residents killed 9 bears (7%), other Alaska residents took 83 (76%) animals, and nonresidents harvested 31 (25%) bears. During fall 3- and 4-wheelers were the most popular method of transport (38%), with aircraft next (20%), and highway vehicles (15%). Airplanes were the most prominent (54%) transportation method during the spring hunt, followed by snowmachines (27%). Skull size and age data of the harvested bears were not available for this report.

Progress Meeting Project Objectives: Preliminary harvest figures for the 1996-97 season indicate the number of brown bears taken in Unit 13 increased 13% from the previous year's kill. The 1996-97 harvest is approaching the record high harvests of the mid to late 1980s. The yearly harvest of males ($n = 63$) was slightly higher than females ($n = 60$). Historically, females have composed a higher proportion of the bears taken in early September by hunters primarily seeking moose and caribou.

Determining a population trend and sustainable harvest rate for brown bears in Unit 13 has been difficult. Brown bear density estimates from 2 study areas in Unit 13E varied. In accessible portions of Unit 13E, bear density estimates declined. However, in more remote portions of Unit 13E, density estimates showed no change. Recent brown bear harvests in Unit 13E have exceeded calculated sustainable rates. Because of high harvests, we expected the recent density estimate to decline instead of indicating little or no change in bear numbers.

The brown bear season was lengthened by opening the season on 10 August, the bag limit increased to 1 bear a year, and the resident brown bear tag fee was eliminated. These liberalizations were to increase the brown bear harvest in Unit 13. As a result the fall 1996 harvest was the highest on record. The sex distribution of the harvest was essentially equal (49 males and 48 females during fall and 14 males and 12 females during spring) fall and spring seasons. Yearly harvests are again approaching those reported during the mid 1980s when liberal hunting regulations were also in effect.

Project Location: Unit 14 (6,600 mi²)
Upper Cook Inlet

Project Objectives: Maintain a population of at least 150 brown bears. The human-use objective is to provide an opportunity for low level hunter harvest, not to exceed 8 bears when combined with defense-of-life-or-property (DLP) kills, with at least 60% males in the harvest.

Work Accomplished During the Project Segment Period: During this reporting period, we sealed 16 brown bears for all of Unit 14. Hunters killed 10 bears, 5 in Unit 14A, 4 in Unit 14B and 1 in Unit 14C. The hunter harvest was 30% female bears, all taken during fall. Five bears (2 males and 1 female in Unit 14A and 2 males in Unit 14C) were killed DLP, and 1 male in Unit 14A was killed illegally. Males composed 75% of the total reported kill.

Progress Meeting Project Objectives: Human-use objectives were not attained; the total harvest far exceeded the objective, and the female harvest slightly exceeded the maximum objective. We believe the Unit 14 brown bear population is near objective levels. Female harvest should be monitored closely; if high harvests continue, season changes should be considered to focus harvest on male bears. Bears killed illegally or DLP composed 37% of reported mortality. Educating the public on bear behavior and increasing public awareness that garbage, livestock, salmon streams, bee hives and dog food attract bears should be included in overall division objectives.

Project Location: Unit 16 (12,300 mi²)
West Cook Inlet

Project Objectives: Maintain a brown bear population which is stable or declining slightly. The human-use objective is to allow optimum opportunity to hunt brown bears while allowing a 3-year

average harvest of 50-60 bears with an average maximum of 18 females greater than 2 years of age.

Work Accomplished During the Project Segment Period: During this period we sealed 66 brown bears for Unit 16. Hunters took 62 of these, including 4 bears in Unit 16A and 58 in Unit 16B. Females composed 31% of the hunter harvest. This included 1 female from Unit 16A and 18 females from Unit 16B. Ages of females were not available. Four male bears were killed in defense of life or property (DLP).

The 1994-96 average harvest (including DLP harvest) was 56.0 bears. If all females sealed this year were older than 2 years, the 3-year average would be 18.0 females greater than 2 years old.

Progress Meeting Project Objectives: Status of the brown bear population in Unit 16 was uncertain. Many local residents believe the brown bear population is increasing. The human-use objectives were reached this period. Three-year average total harvests, for both bears and females, have been increasing, and this year the 3-year average female harvest reached the maximum desired level. Most (89%) female harvest occurred during the fall season. The spring harvest, typically comprised of male bears, has fluctuated greatly in recent years relative to snow and travel conditions. The number of DLP kills continues to remain high, an indicator of increasing conflicts with local residents or other recreationists (primarily sport fishers) or of increased reporting of these kills.

Project Location: Unit 17 (18,800 mi²)
Northern Bristol Bay

Project Objectives: Maintain a brown bear population that will sustain an annual harvest of 50 bears, comprising at least 50% males.

Work Accomplished During the Project Segment Period: Preliminary data indicate a reported harvest of 44 brown bears, including 27 males (61%) and 15 females (34%) during FY96. Average skull size was 23.1" for males and 20.1" for females. Nonresident hunters reported killing 36 bears (82%), and both nonlocal residents and unit residents killed 4 bears (9% each). Most successful hunters used aircraft for access (80%). The average hunt length for successful hunters was 5.62 days.

Thirty bears (18 males, 10 females, 2 unknown sex) were killed during the fall 1996 season, and 14 bears (9 males, 5 females) were killed during spring 1997. Three bears (all males) were killed in Unit 17A, 27 (17 males, 9 females, 1 unknown sex) in Unit 17B, and 14 (7 males, 6 females, 1 unknown sex) in Unit 17C.

Six brown bears (3 males, 3 unknown sex) were killed in defense of life or property and/or illegally during this reporting period. Two were killed within villages, 2 were illegally killed and found by sport fishers, and moose hunters killed 2. Four were killed in Unit 17B and 2 were in Unit 17C.

Progress Meeting Project Objectives No objective data are available on the population density of brown bears in the unit. There is also little information on bears shot in defense of life or property and illegal kills. Subjective evidence suggests the unitwide population of brown bears is stable.

We continued a joint ADF&G/U.S. Fish and Wildlife Service research project begun in 1992 during this reporting period. The objectives of this project are to estimate bear densities, collect baseline population data, and to delineate habitat-use patterns for brown bears in portions of the Togiak and Yukon Delta National Wildlife Refuges (Units 17A and 18). Bears radiocollared in 1993 and 1994 were tracked at least twice per month. Twenty-five bears were recollared in June 1997. Observers from the Association of Village Council Presidents accompanied us during the recollaring operation.

In May 1997 Kellie Nolan, a graduate student for Humboldt University, initiated an investigation of the bears using the Dillingham dump. She will spend the summer documenting bear usage, and drafting a bear management plan for closing the existing dump and developing a new landfill facility.

A failure of the berry crops in 1996 and a resultant increase in nuisance bear complaints prompted us to extend our public education efforts. In September 1996, a bear safety brochure was developed in cooperation with the City of Dillingham and distributed to all school children and boxholders. No bears were shot and no human injuries were incurred in the Dillingham area during this reporting period.

Segment Period Project Costs:

	<u>Personnel</u>	<u>Operating</u>	<u>Total</u>
Planned	133.3	9.9	143.2
Actual	133.3	10.9	144.2
Difference	0	-1.0	-1.0

Submitted by:

Michael G. McDonald
Assistant Management Coordinator

Project Title: Interior Grizzly Bear Population and Habitat Management

Project Location: Unit 12 (9978 mi²)
Upper Tanana and White River drainages, including the northern Alaska Range east of the Robertson River, and the Mentasta, Nutzotin, and northern Wrangell Mountains

Project Objectives and Activities:

1. Manage for an average annual harvest (3-year mean) of ≤ 24 bears consisting of \geq at least 55% males in the harvest.
 - Seal bears and analyze harvest data.

Work Accomplished During the Project Segment Period: During 1996-97, the preliminary reported harvest was 19 grizzly bears (10 males and 9 females). The average annual harvest during the past 5 years was 16. Males composed 53% of the harvest. Seventeen (89%) were taken during the fall and 2 during spring (11%). Most harvest occurred in the Mentasta Mt. (32%) or the Chisana River drainage (26%). No bears were taken in defense of life or property.

Progress Meeting Project Objectives: In Unit 12 the 3-year mean harvest rate was 14 bears and percent male was 57%, meeting both management objectives. Harvest density was excessive in several of the most popular hunting areas during the mid to late 1980s and caused localized population declines. Because most of the area is difficult to access and seldom used for grizzly bear hunting, the unit grizzly bear population is remaining stable. Future grizzly bear harvest in Unit 12 is expected to remain between 10 and 20 bears as long as access into the unit remains the same.

Project Location: Unit 19 (36,486 mi²)
Drainages of the Kuskokwim River upstream of the village of Kalskag

Project Objectives and Activities:

1. Manage grizzly bear populations to provide a mean annual harvest of 30 bears with a minimum of 50% males in the harvest.
2. Increase legal harvests of grizzly bears in and around villages, fish camps, and other human habitations during open seasons to reduce human-bear conflicts during closed seasons.
3. Monitor harvest, seal bears, and analyze harvest data.

Work Accomplished During the Project Segment Period: Preliminary data indicate a harvest of 39 grizzly bears during the 1995-96 season in Unit 19. Most of the harvest was from Units 19B and 19C (87%). This is consistent with predictions, given the increased season length. Area Fish and Wildlife Protection Officers have noted an increase in defense of life or property (DLP) problems, causing more DLP kills. Even in the lowland subunits (19A and 19D) where grizzly

densities have traditionally been very low, local residents continue to comment on the increasing grizzly encounters.

Progress Meeting Project Objectives: We continued monitoring Unit 19 harvest by sealing harvested bears. Efforts continued in area villages and fish camps to educate residents to alleviate chronic DLP problems. Minimum harvest and sex ratios in the harvest were higher than our objectives.

Project Location: Units 20A, 20B, 20C, 20F, and 25C (39,228 mi²)
Central and lower Tanana Valley and Middle Yukon River drainages

Project Objectives and Activities:

Subunit 20A Mountains

1. Decrease harvest rates until at least 1997 by managing for a 3-year mean annual (calendar year) harvest of no more than 3% of the adult females (≥ 6 years old), and no more than 6% of the grizzly bears ≥ 2 years old.
2. Cooperate with a research project (Study 4.25) having these objectives:
 - a. To determine the recovery or stabilization time for a reduced grizzly bear population following reductions in human-caused mortality rates.
 - b. To measure the recovery responses in the dynamics of the population, especially female population size, total population size, and production and survival of offspring.

Subunit 20B East (east of a line drawn north from Fairbanks through Haystack Mountain)

1. Manage total human-caused grizzly mortality to provide a stable population with a 3-year mean annual (calendar year) harvest of up to 6 bears ≥ 2 years old, with an average of at least 55% males in the harvest by hunters.

Subunits 20A Flats, 20B West, 20C, 20F, and 25C combined

1. Manage harvest to provide stable grizzly bear populations with a 3-year mean annual (calendar year) human-caused mortality of up to 26 grizzly bears ≥ 2 years old, with an average of at least 55% males in the harvest by hunters.
2. Manage the 3-year mean annual (calendar year) grizzly bear harvests from individual areas with the following quotas: 3 from Subunit 20A Flats, 3 from Subunit 20B West, 7 from Subunit 20C, 7 from Subunit 20F, and 6 from Subunit 25C.

All Subunits

1. Minimize human-bear conflicts by providing information and assistance to the public and agencies.

Work Accomplished During the Project Segment Period: To analyze our objectives, we examined harvest by calendar year, rather than regulatory year, to avoid combining age data from several cohorts. Teeth were sent to a lab for age determination. Preliminary counts of sealing certificates indicate in spring and fall 1996 we sealed 34 grizzly bears, including 10 from Unit 20A Mountains (4 males and 6 females); 2 females from Unit 20A Flats; 8 from Unit 20B East (4

males and 4 females); 3 (2 males and 1 female) from Unit 25C; 0 from Unit 20B West; 8 from Unit 20C (5 males, 2 females, 1 unknown) and 3 from 20F (2 males, 1 female). Twenty-eight bears were taken in the fall and 4 in the spring hunting seasons. One bear in the Unit 20A Mountains and another on 3rd Street in Anderson were taken in defense of life or property.

Progress Meeting Objectives:

Subunit 20A Mountains

Age data is not yet available; however, with a harvest of 6 females and 10 bears overall, we probably did not meet our objective to reduce harvest rates this year. Nonetheless, population estimates from the associated research project indicate the population has responded to the reduced season length (Reynolds 1997).

Subunit 20B East

The 1996 harvest of 4 males and 4 females was higher than our 3-year mean harvest objectives for female harvest. However, depending on the results of tooth age analyses, we may continue to meet our objectives.

Subunits 20A Flats, 20B West, 20C, 20F, and 25C

The harvest of 16 bears (60% males with 1 unknown) from these units indicates we continue to easily meet objectives for this area.

We recommend the objective for harvest rates in Unit 20A Mountains be discussed during the upcoming Board of Game cycle to establish objectives for the near future. A return to a longer season, although sustainable, may result in reduced bear numbers in the area.

Project Location: Unit 20D (5637 mi²)
Central Tanana Valley near Delta

Project Objectives and Activities:

1. Harvest 5 - 15 bears per year.
2. A minimum of 60% of harvested bears should be males.
3. Seal bears killed in the unit and record pertinent data.

Work Accomplished During the Project Segment Period: Grizzly bears killed in Unit 20D were sealed and data collected. Preliminary reported harvest is 6 bears taken legally by hunters, 1 bear taken illegally, and 1 bear killed in defense of life or property during the 1996-97 regulatory year. Hunters took 4 bears (3 males and 1 female) legally south of the Tanana River and 2 bears (1 male and 1 female) north of the Tanana River. Also, 1 female bear was taken illegally, and 1 female bear was taken in defense of life or property.

Progress Meeting Project Objectives: Bears killed by hunters were sealed and the data analyzed. Our goals for legal harvest and percent male in the harvest were met.

Project Location: Unit 20E (10,681 mi²)
Fortymile, Charley, and Ladue river drainages, including the Tanana Uplands and all drainages into the south bank of the Yukon River upstream from the Charley River drainage

Project Objectives and Activities:

1. Manage to effect temporary reductions in the grizzly bear population or extent of bear predation where bear predation is limiting moose population growth (e.g., fall calf:cow ratios <30:100).
2. After moose populations increase to desired levels, reduce bear harvests to stop or reverse bear population declines.

Work Accomplished During the Project Segment Period: During 1996-97, the preliminary reported harvest was 20 grizzly bears (9 males and 11 females), exceeding the 5-year average of 17 bears. Males represented 45% of the harvest. Nineteen bears (95%) were taken in the fall and 1 (5%) during the spring. No bears were taken in defense of life or property.

Progress Meeting Project Objectives: Historically, most of the grizzly bear harvest has occurred in the central portion of the subunit but was below sustainable until 1981. In 1981 bear harvest regulations were liberalized, and an intensive hunter awareness campaign was enacted with the objective of reducing the unit's grizzly bear population by increasing grizzly bear harvest to improve moose calf survival. Harvest density in this area has ranged between 1.92 and 4.35 bears/1,000 mi² since 1981 and averaged 3.34 between 1982 and 1994. The bear population is estimated to have declined by 38% during that period. In the remainder of the unit, the harvest density averaged 0.17/1,000 mi² and probably had little effect on population trend. Hunting pressure has increased in the northern portion of the subunit since FY96 as more outfitters use the area.

The percentage of males in the bear harvest for the past 3 years averaged 52. Within the central portion of the unit, harvest composition indicates a heavily harvested population. In the remainder of the subunit, males composed a higher percentage of the harvest. Hunter success has declined in the central portion of the subunit. Hunters who have pioneered new and difficult to access areas in Subunit 20E are still having good success. Through public contact, we are trying to distribute hunters more evenly throughout the season and to shift some of the fall pressure to spring.

We evaluated the effects of the grizzly bear population reduction in the central portion of the unit on moose calf survival. To date, the reduction did not result in an increase in moose calf survival. We are now evaluating the possible effects of a low-density moose population, few alternate prey, and the effects of wolves on the amount of bear population reduction necessary to benefit moose calf survival. I recommend we continue the liberal season and bag limits for 2 more years to investigate further the effects of a harvest-caused bear reduction on calf survival. If by 1999 we find this method does not work adequately under the environmental conditions prevailing in Subunit 20E, we will recommend more restrictive grizzly bear harvest regulations, perhaps based on a maximum allowable harvest of females.

Project Location: Unit 21 (43,925 mi²)
Middle Yukon River, including the lower Koyukuk, Innoko, Nowitna, and
Melozitna rivers

Project Objectives and Activities:

1. Manage a grizzly population which will sustain a minimum annual harvest of 10 bears.
2. Monitor harvest, seal bears, and analyze harvest data.
3. Reduce nuisance bear interactions and the unreported harvest of those bears at fish camps during summer by increasing the legal harvest during the open season.
4. Visit schools and fish camps to educate people on bear conservation.

Work Accomplished During the Project Segment Period: During this report period 6 male and 2 female bears were taken in the fall. Reporting of bears taken in defense of life or property is usually poor in the unit, and an additional 3-5 bears may have been taken but not reported.

We made progress on the unreported harvest through conservation education during school visits. We issued permits for hunting within the Northwest Alaska Brown Bear Management Area (which includes Unit 21D); participation and harvest information is reported under Unit 23.

Progress Meeting Project Objectives: Management is based on harvest data. Minimal progress was made on changing the objectives and activities for the unit.

Project Location: Unit 24 (26,055 mi²)
Koyukuk River drainage upstream from Dulbi River

Project Objectives and Activities:

1. Manage the grizzly population to sustain a maximum annual harvest of 18 bears in the northern portion of the unit and a maximum harvest of 13 bears in the remainder of the unit.
2. Monitor harvest, seal bears, and analyze harvest data.
3. Reduce nuisance bear complaints, increase sealing compliance, and reduce the unreported harvest of bears in the unit.
4. Visit schools and fish camps to educate people on bear conservation.
5. Determine bear density throughout the unit.
6. Work with U.S. National Park Service and U.S. Fish and Wildlife Service to initiate a survey plan if funding is available.

Work Accomplished During the Project Segment Period: During the report period hunters killed 7 male and 4 female bears. All but 1 male bear were taken in the northern portion of the unit. All bears were taken during the fall.

Progress on unreported harvest was made through conservation education during school visits and visits to fish camps. We issued permits for hunting within the Northwest Alaska Brown Bear Management Area; participation and harvest information is reported under Unit 23.

No funding was available to survey bears in the unit.

Progress Meeting Project Objectives: Management is based on harvest data, and harvests are below unit objectives. We made no progress in determining bear density. Progress on unreported harvest was made through conservation education during school visits and regulation changes allowing for subsistence use of bears under the Northwest Arctic Bear Management system.

Project Location: Units 25A, 25B, and 25D (47,968 mi²)
Eastern North Slope of the Brooks Range

Project Objectives and Activities:

1. Evaluate the effect of liberalized nonresident seasons on the brown bear harvest in Unit 25A.
 - a. Communicate with guides to assist them in voluntarily maintaining a harvest in Unit 25A that does not exceed the sustainable harvest of 29 bears while maintaining a minimum of 60% males in the harvest.
 - b. Monitor harvest, seal bears, and analyze harvest data.

Work Accomplished During the Project Segment Period: Final harvest figures are unavailable for Units 25A, 25B, and 25D, but harvest levels will probably continue to be well below the maximum. The Board of Game earlier approved a proposal to eliminate the permit requirement for nonresidents, effective in regulatory year 1994-95. The permit requirement was replaced with increased communication with guides so we do not exceed a conservative sustainable harvest. This approach is working, and the 1994-95 and 1995-96 harvests have been well within sustainable limits. We sent a letter detailing the status of harvest relative to limits to all guides following the fall 1995 season. Brown bears continue to be abundant and are lightly harvested throughout the area.

Progress Meeting Project Objectives: The population harvest objective has been consistently met the past 5 years. We revised population estimates, but no large-scale enumeration efforts were possible. We made substantial progress in simplifying hunting regulations, maintaining open lines of communication with guides, and building a more appropriate management program commensurate with bear population status. The existing project objectives and activities are suitable for the next fiscal year.

Project Location: Units 26B and 26C (25,788 mi²)
Upper Yukon River drainage

Project Objectives and Activities:

1. Monitor harvest, seal bears, and analyze harvest data for Unit 26B.
2. Evaluate the effect of liberalized nonresident seasons on the brown bear harvest in Unit 26C.

- a. Communicate with guides to assist them in voluntarily maintaining a harvest in Unit 26C that does not exceed the sustainable harvest of 19 bears, while maintaining a minimum of 60% males in the harvest.

3. Monitor harvest, seal bears, and analyze harvest data.

Work Accomplished During the Project Segment Period: Final harvest figures are unavailable for Units 26B and 26C, although fall harvest was well within harvest goals. In recent years harvest was generally less than the maximum desired, except in Unit 26B where the harvest goal was occasionally not met, being slightly above our objective. We attempted an aerial reconnaissance in May, after a fresh snowfall, to assess relative distribution and abundance as a preliminary step in evaluating public comments that the current harvest quota for Unit 26B is far too conservative. Snow conditions deteriorated too rapidly to complete the survey, however. We reevaluated the drawing permit system for nonresidents in Unit 26B because of an anticipated decline in hunting pressure due to a dramatic decline in the north slope moose population. As a result the Board of Game passed a regulation eliminating the permit requirement for nonresidents in Unit 26B. This regulation will take effect in FY97.

Major activities during this period included monitoring the fall 1996 harvest and advising guides on the status of harvest relative to sustainable levels so future hunts can be planned.

Progress Meeting Project Objectives: The population harvest objective has been met during the past 5 years. Population estimates have been revised, but no large-scale enumeration efforts were possible. We made substantial progress in opening lines of communication with guides and building a management program more appropriate to the bear population status. Suggested revised management objectives are as follows:

1. Evaluate the effect of liberalized nonresident seasons on the brown bear harvest in Units 26B and 26C.
 - a. Communicate with guides to assist them in voluntarily maintaining a harvest of 13 bears or less in 26B and 19 bears or less in 26C, while maintaining a minimum of 60% males in the harvest.
2. Monitor harvest, seal bears, and analyze harvest data.

Segment Period Project Costs:

	<u>Personnel</u>	<u>Operating</u>	<u>Total</u>
Planned	62.3	9.5	71.8
Actual	35.3	0.2	35.5
Difference	27.0	9.3	36.3

Explanation: The personnel costs were lower than expected because technician time was charged to non-federal aid projects, and because of a position vacancy. Operating expenditures were charged to the federal aid research account instead of the S&I project.

Submitted by:
David James, Management Coordinator

Project Title: Western Alaska Brown Bear Population Management

Project Location: Unit 18 (42,000 mi²)
Yukon-Kuskokwim Delta

Project Objectives:

1. Maintain brown bear populations at existing densities in Unit 18.
 - a. Monitor harvests through the sealing program, the western Alaska brown bear registration system, and contacts with the public.
 - b. Improve compliance with bear harvest reporting requirements.
 - c. Improve information about brown bear populations and densities in Unit 18 through a cooperative capture-recapture research project with the U.S. Fish and Wildlife Service (FWS) and the Bureau of Land Management (BLM) in the Kuskokwim Mountains.
2. Minimize adverse interactions between bears and the public.
3. Develop updated population management objectives through cooperative planning with the public and other agencies.

Work Accomplished During the Project Segment Period: We contacted local residents to explain hunting season dates and bag limits, bear tag fees and sealing requirements, and other regulations for brown bears in Unit 18. We discussed brown bear management and improvements in harvest reporting by local residents at public meetings. Community leaders, hunters, and law enforcement personnel were contacted in an effort to minimize bear-human conflicts at camps and landfills.

Formal and informal meetings occurred among representatives of the Association of Village Council Presidents (AVCP), FWS, Subsistence Division, local Advisory Committees, and local IRA councils to discuss the Western Alaska Brown Bear Management Area (WABBMA) subsistence brown bear registration permit system, improving our harvest information, liberalization of seasons and bag limits, and the continuation of the cooperative brown bear research project.

The department, FWS, and BLM continued the cooperative brown bear radiocollaring project. Animals have been tracked since 1993 to determine seasonal movements, estimate productivity, and develop density estimates for the area south of the Kuskokwim River.

Sealing of harvested bears and reporting by subsistence hunters occurred at villages, at the department office in Bethel, and at hunters' residences. Department and AVCP staff completed their fourth year of interviews with subsistence hunters.

Progress Meeting Project Objectives: Public notices about bear/landfill problems have improved public awareness of the need to clean up areas.

Public announcements, village meetings, and instructions to license vendors emphasizing the need to purchase resident bear tags or obtain Western Alaska Brown Bear registration permits have improved compliance with hunting regulations. Allowing subsistence hunters to register for

permits in lieu of the \$25 tag and sealing requirements was initially very successful. It is hoped that use of these permits, along with elimination of the tag fee and sealing requirements in the WABBMA, will make regulations less intrusive to subsistence hunters and improve our ability to gather harvest information.

Harvest records from the 1996-1997 regulatory year indicate that 6 bears were reported taken in the WABBMA and 5 bears were sealed under the general hunting regulations. Harvest data for the 1996-1997 season will not be finalized until receipt of harvest survey postcards from each hunter.

We captured and marked 66 brown bears during the June 1993 and June 1994 brown bear capture-recapture study in the Kilbuck Mountains. Of these 66 bears, 30 were instrumented with conventional VHF radiocollars. Currently, 25 collars were replaced in June 1997 and are still active. A premolar tooth was extracted, blood samples were collected, and measurements and weights were taken from most of the captured bears. Continued monitoring will allow the department to evaluate the productivity, distribution, and home range of instrumented bears. The density estimate objective of the cooperative project was officially discontinued by the FWS after objections were raised by several native tribes about the handling of captured bears. The department has also discontinued additional bear captures until the situation is resolved by the FWS and the native tribes. The department will continue to cooperatively monitor the collared bears with the FWS.

The department, FWS, and village governments began cooperative management planning meetings to share information, improve our ability to work with subsistence bear hunters and other members of the public, and gather better harvest data and biological information applicable to management objectives. The Federal Subsistence Regional Council of the Yukon-Kuskokwim Delta and the department have endorsed this cooperative effort.

We provided comments to Habitat Division and to the FWS Refuge Management Planning Team to identify and help protect important and sensitive bear habitats.

Project Location: Unit 22 (25,230 mi²)
Seward Peninsula and that portion of the Nulato Hills draining west into Norton Sound

Project Objectives:

1. Maintain brown bear numbers at existing densities.
 - a. Assess harvest through the sealing program.
 - b. Collect specimens as needed from hunter-killed bears.
 - c. Improve compliance with bear harvest reporting.
2. Minimize adverse interaction between bears and the public.
3. Develop updated management objectives in consultation with the public, interested local organizations, and other agencies.

Work Accomplished During the Project Segment Period: Known human-induced mortality during the reporting period was 61 bears. Hunters killed 33 bears (16 males, 17 females) during fall 1996 and 25 bears (20 males, 5 females) during spring 1997. Three bears (1 male, 2 females) were taken in defense of life or property (DLP) during the reporting period, all in Unit 22B.

Location and chronology of Reported Harvest in Unit 22

<u>Unit</u>	<u>Fall 1996</u>		<u>Spring 1997</u>		<u>Total harvest</u>
	<u>Males</u>	<u>Females</u>	<u>Males</u>	<u>Females</u>	
22A	6	3	5	1	15
22B	6	8	6	2	22
22C	4	2	4	1	11
22D	0	4	2	0	6
22E	0	0	3	1	4
DLP	0	2	1	0	3
Total	16	19	21	5	61

Local residents from Unit 22 took 48% of the reported harvest; nonlocal residents and nonresidents were responsible for 12% and 40% of the harvest, respectively.

During the reporting period, we participated in numerous meetings and informal discussions with unit residents, including reindeer herders, to discuss methods of reducing adverse bear-human interactions and predation by bears on reindeer.

Department staff traveled to villages to explain the need for regulations and harvest reports and to assist license vendors with their duties. As in past years, we devoted considerable time answering questions from the public, writing newspaper articles, mailing information and regulatory materials.

We also sealed bears at the office in Nome, often after normal business hours, and when we traveled to surrounding villages. A bear sealing agent in Unalakleet seals bears taken in the southeastern portion of Unit 22.

Progress Meeting Project Objectives: Limited progress has been made in reducing bear-human interactions. Some individuals who experienced bear problems in camps have made efforts to keep cleaner camps to discourage bears.

Efforts to inform the public of the importance of wildlife conservation and the need for regulations have been effective in some communities; the number of individuals purchasing licenses and bear tags has increased. Additional contact with local residents, particularly village residents, is necessary to increase compliance with current bear hunting regulations.

Development of a brown bear management plan with updated population objectives has not been completed. We communicated our intent to develop updated population objectives with unit residents and representatives of several governmental agencies. We will use comments from the public and other agencies and data from our previously completed bear study to develop updated objectives for Unit 22.

Project Location: Unit 23 (44,000 mi²)
Kotzebue Sound and Western Brooks Range

Project Objectives:

1. Maintain a minimum brown bear density of 1 adult bear per 25.7 mi² in the Noatak drainage.
2. Improve the accuracy of harvest information.

Work Accomplished During the Project Segment Period: We continued to provide information on the subsistence brown bear season open to local hunters and collected harvest data from participants. For the 1995-1996 subsistence hunt, we issued 81 registration permits to local hunters interested in hunting brown bear for meat in the Northwest Alaska Brown Bear Management Area. The number of hunters interested in this hunt doubled from the previous year. Seventy subsistence bear hunters reported taking 7 bears. Hunters harvested 6 bears in Unit 23 and 1 bear in Unit 26A. We are currently collecting harvest data for the 1996-1997 subsistence hunt. We will report the results in our 1997-1998 report.

Twenty-four nonresidents applied for 18 fall 1996 drawing permits. Six people applied for 7 spring 1997 drawing permits. We monitored hunter success in the general and drawing permit hunts through sealing requirements. The fall and spring 1996-1997 brown bear general season and permit hunt harvest summary follows:

	Fall 1996				Spring 1997			
	<u>Male</u>	<u>Female</u>	<u>Unk</u>	<u>Total</u>	<u>Male</u>	<u>Female</u>	<u>Unk</u>	<u>Total</u>
Local resident	1	0	0	1	4	1	0	5
Nonlocal resident	6	3	0	9	0	0	0	0
Nonresident	4	3	1	8	3	0	0	3
DLP/accidental	0	1	1	2	0	0	0	0
Total	11	7	2	20	7	1	0	8

Progress Meeting Project Objectives: Incidental observations by department staff and reports from local residents and hunters indicate brown bear numbers in Unit 23 may have stabilized at relatively high levels.

Project Location: Unit 26A (53,000 mi²)
Western North Slope

Project Objectives and Activities:

1. Maintain brown bear population level at existing levels in Unit 26A.
2. Monitor harvest through the statewide sealing program, the Northwest Alaska Brown Bear Management Area (NWABBMA) registration system, and contacts with the public.
3. Minimize adverse interactions between bears and the public.
4. Develop updated population management objectives in consultation with the public and other agencies.
5. Liberalize harvest by nonresident hunters and simplify paperwork by replacing the permit system with a quota system which will be dependent on cooperation with guides.

Work Accomplished During the Project Segment Period: In 1992 we completed a mark-recapture census in the Utukok and Kokolik drainages in Unit 26A West (west of 159° W longitude) using radiocollared bears as the "marked" animals. From this census we estimated a density of 7.7 bears/100 mi² and a 95% confidence interval of 7.3 to 8.2 bears/100 mi².

Using the 1992 density estimate, the current population estimate for bears in Unit 26A is 900 to 1120 bears; 400 bears are estimated to be in Unit 26A West and 500-720 in Unit 26A East. This represents an increase from the pre-1987 population estimate of 645 to 780 bears (Trent 1989).

During their spring 1996 meeting, the Board of Game considered and approved a proposal eliminating the drawing permit requirements for nonresident brown bear hunters in Unit 26A and lengthened the season to August 20 - May 20. The new regulation allows greater flexibility and predictability for guides and requires regular communication among guides, agencies and the department. To avoid overharvest, guides need to voluntarily limit the harvest.

During the 1996-1997 season hunters reported harvesting 19 bears, 16 in the fall and 3 during spring. Eleven bears were harvested in Unit 26A East (East of 159°) and 8 in Unit 26B West. Thirteen males (68%) and 6 females (32%) were harvested. North Slope residents harvested 2 bears, nonlocal residents harvested no bears, and nonresidents harvested 17 bears. Four bears were harvested during August, 11 during September, 1 during October, 1 during April, and 2 during May. For transportation, 15 hunters used aircraft, 1 used a snowmachine, 1 used a 4-wheeler, and 2 walked. The mean number of days per hunt was 4.8.

We distributed information through the media describing safe camping practices, handling food and garbage, and the correct procedures for handling problem bears. Posters and pamphlets on bear safety were placed in public locations.

Progress Meeting Project Objectives: Since nonresident permit hunting had been undersubscribed and the harvest of bears in Unit 26A had been well below maximum sustained yield harvest, the Board of Game discontinued the nonresident drawing permit hunts in Unit 26A by replacing them with a 2-year quota hunting system. In this system, if hunters exceed the maximum allowable harvest during the first year, the allowable harvest for the second year will be reduced by the quota excess during the first year. Allowable harvests will be based on current bear population estimates. The 2-year quota system will depend upon good communication and cooperation between the department and guides.

If we assume that safe harvest limits should not exceed 5% of the population, the allowable sustained yield for Unit 26A is approximately 51 bears. The reported brown bear harvest for 1996-1997 of 19 bears is well within this allowable limit. Even if unreported harvest is as high as 50% of the reported harvest, the total estimated harvest of 38 bears would still be within safe harvest limits. The reported harvests in Unit 26A East (11 bears) and Unit 26A West (6 bears) are well below the allowable limits of 31 and 20, respectively. Sealing certificates indicate the bear harvest in Unit 26A (19 bears) was well below the average number of bears harvested since 1990 (\bar{x} = 26.6 bears).

It is surprising that the 1996-1997 bear harvest was less than average, even though the regulations were liberalized. This might be explained by a lack of a concurrent moose season; hunters primarily hunting moose would have harvested bear as a second hunt. However, the moose season was closed during the reporting period. Eliminating the drawing permit system has reduced paper work and time spent administering the hunt and has not led to overharvest. We will continue communicating with the guides and urging them to limit their harvests and to be selective toward males.

There were no serious adverse encounters between brown bears and the public reported for Unit 26A during the reporting period. The information distributed to the public on bear safety seemed to be well received.

Literature Cited

Trent, J. N. 1989. Unit 26A brown bear survey-inventory progress report. Pages 174-184 in S. O. Morgan, ed. Annual report of survey-inventory activities, 1987. Vol. XIX, Part V. Alaska Dep. Fish and Game. Fed. Aid in Wildl. Rest. Prog. Rep. Proj. W-23-1, Study 4.0. Juneau. 189pp.

Segment Period Project Costs:

	<u>Personnel</u>	<u>Operating</u>	<u>Total</u>
Planned	28.0	6.8	34.8
Actual	22.4	1.1	23.5
Difference	5.6	5.7	11.3

Explanation: Cost summary is approximate. Region V did not have administrative support for a fiscal summary at the close of the reporting period. Unit 18 activities were

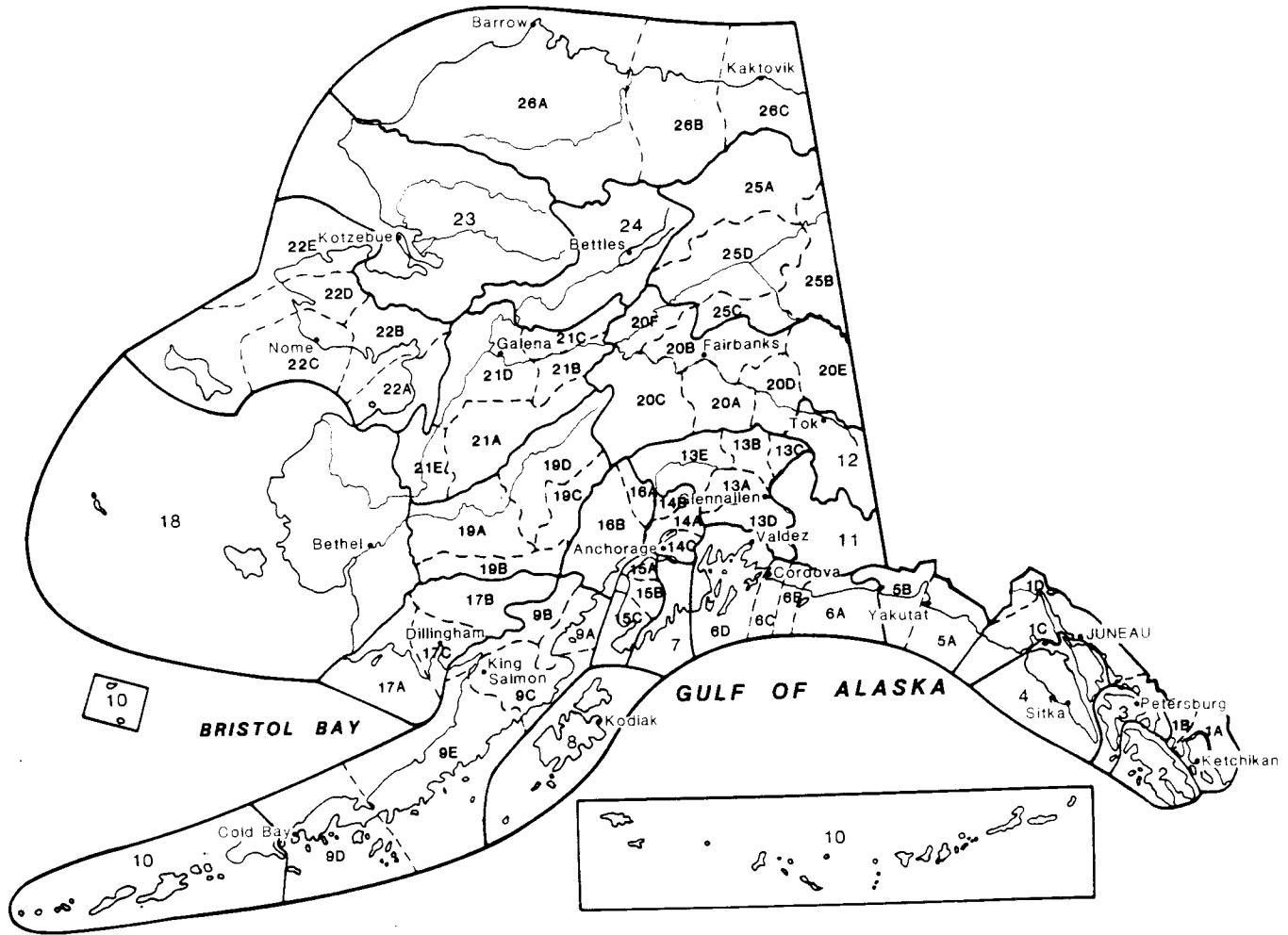
not completed after the accidental death and subsequent vacancy of the Unit 18 Area Biologist. This resulted in surplus personnel and operating monies at the close of the reporting period.

Submitted by:

Peter Bente

Survey-Inventory Coordinator

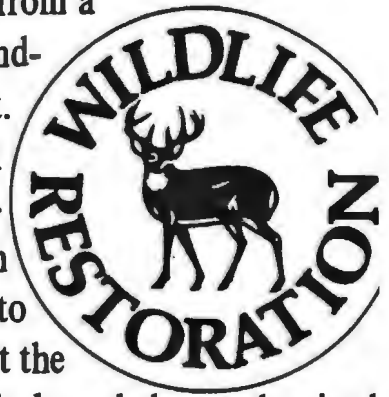
Alaska's Game Management Units



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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 attitude for responsible hunting. Seventy-five percent of the funds for this report are from Federal Aid.



Ken Whitten .

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