

Alaska Department of Fish and Game
Division of Wildlife Conservation



Federal Aid in Wildlife Restoration
Annual Performance Report of
Survey-Inventory Activities
1 July 1995- 30 June 1996

BROWN BEAR

Mary U Hicks, Editor



PHOTO BY CLIFFORD

SK
367.2
.B3
1995-96

Grant W-24-4
Study 4.0
December 1996

STATE OF ALASKA
Tony Knowles, Governor

DEPARTMENT OF FISH AND GAME
Frank Rue, Commissioner

DIVISION OF WILDLIFE CONSERVATION
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Project Title: Southeast Brown Bear Population Management

Overview: Brown bears are distributed throughout the Southeast Alaska region in Units 1, 4, and 5 and are occasionally found on islands in Unit 3. Population densities are the highest in Unit 4. Population and density estimates have been made on northeast Chichagof and Admiralty islands. Brown bears are near black bears in mainland locations, notably the Yakutat Forelands.

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 Caamano 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 seventh consecutive season, we collected harvest data through mandatory registration permits. We required all permittees to report whether or not they hunted. 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: Twenty-six brown bears were killed in Unit 1 during this report period. Twenty-one were taken legally, 3 were taken in Unit 1C by hunters who failed to obtain registration permits, and 2, both females, were killed in defense of life and property (DLP), 1 in Unit 1C and 1 in Unit 1D. The harvest of 19 males (73%) and 7 females (27%) was well within our 3:2 male to female harvest objective. Harvests by subunit included 3 males from Unit 1A, 6 males and 2 females from Unit 1B, 5 males from Unit 1C, and 6 males and 4 females from Unit 1D.

The average size of male skulls was 21.6 inches ($n = 19$), 0.2 inches lower than that of the previous season. The average size of female skulls was 20.9 inches ($n = 6$), 0.3 inches higher than the previous season average.

We issued 303 registration permits during this report period. There were 130 unsuccessful permittees, 148 who did not hunt, and 5 who did not respond. Nonresident hunters harvested 11 bears and residents took 15 bears (including 2 DLPs and 3 illegal kills). Age data for 1995-96 are not yet available; however, averages for males and females taken during the 1994-95 season were 7.6 years ($n = 15$) and 7.5 years ($n = 5$), respectively. This met our objective of maintaining an average of 6.5 years for harvested males.

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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.
- 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 450 registration permits to bear hunters. Skulls were measured for length and width, a premolar was extracted, the hide was examined for evidence of sex, and other pertinent data were noted. Teeth were aged by counting cementum annuli. We attempted to reduce brown bear loss to defense of life and 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. We surveyed Pack Creek visitors regarding their willingness to pay for viewing permits and Unit 4 bear hunters for their satisfaction with bear hunting in the unit.

Progress Meeting Project Objectives: Age data from harvested bears were not available by report time. Preliminary registration permit data documents 124 bears taken by sport hunters in 1995-96 and 12 additional bears killed illegally or in DLP incidents. The recorded mortality (136 bears) was 93 males, 41 females, and 2 of unknown sex, a male to female sex ratio of 4.5:2. Twenty-seven percent of the year's hunter harvest occurred in the fall season. The distribution of the hunter harvest was 49 percent from Chichagof Island, 37 percent from Admiralty Island, and 24 percent from Baranof Island. Over 1400 people visited the Stan Price Wildlife Sanctuary to view brown bears.

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. Harvest was analyzed from sealing certificates. Age data for bears taken during the 1995-96 season were not available at the time of report preparation. The project objective of a 3:2 male to female kill

ratio was exceeded (5:2). The harvest of 28 bears (20 males, 8 females) was 1 less than the number taken last year, but the ratio of females in the harvest grew. The harvest is somewhat smaller than the 1986-1992 average of 33. Successful hunters spent 103 days afield, an average of 4.3 days per hunter. Six of the 28 kills (4 males, 2 females) came from Unit 5B and the remainder from Unit 5A. Male total skull sizes averaged 23.3 inches for the year and 24.3 inches spring season.

Segment Period Project Costs:

	<u>Personnel</u>	<u>Operating</u>	<u>Total</u>
Planned	40.1	14.1	54.2
Actual	40.1	14.1	54.2
Difference	0.0	0.0	0.0

Submitted by:

Bruce Dinneford
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 comprised of at least 60% males with a minimum average male skull size of 23 inches.

Work Accomplished During the Project Segment Period: Twelve bears (7 males, 5 females) were harvested during fall 1995. Preliminary harvest data for spring 1996 indicated an additional 13 bears (11 males and 2 females) were taken. Males composed 72% of the take and mean skull size for males was 23.2 inches. Final harvest numbers for spring will be available during fall 1996.

Progress Meeting Project Objectives: We achieved all objectives. The population can sustain the current harvest plus an additional 10 bears.

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 of at least 60% males.

Work Accomplished During the Project Segment Period: Preliminary harvest reports indicated annual harvest levels increased above management objectives. The fall brown bear season was closed by emergency order. In the spring of 1996, 8 bears were reported taken (6 males and 2 females). Final harvest numbers and statistics will be available in November 1995.

Nuisance bears remained a substantial problem on the Kenai. Nine bears (3 males, 5 females and 1 cub) were reported taken in defense of life and property (DLP) from 1 July through 31 December. One additional male was taken DLP in the spring of 1996. This is the highest yearly reported number of DLP brown bears on the Kenai Peninsula.

Progress Meeting Project Objectives: Following the reduction in the 1989 season, brown bear harvests declined slightly then increased above objective levels. In 1994 the Board of Game shortened and moved the fall hunting season to 1-25 October. We closed the fall 1995 season and recommended to close the fall 1996 season by emergency order because of the high proportion of females taken and the increasing trend in DLP mortality.

Logging associated with the bark beetle epidemic will be the major factor affecting brown bear habitat on the Kenai Peninsula. Over 40,000 acres were scheduled to be logged during 1996. Additional 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 comprised of at least 60% males.

Work Accomplished During the Project Segment Period: Working cooperatively with the US Fish and Wildlife Service (FWS), we conducted aerial surveys in 2 areas of eastern Kodiak Island in May 1996. We did 3 replicate surveys in a 269 km² area north of Kiliuda Bay; we observed an average of 9.4 bears/100 km² and estimated the population density at 25 independent bears/100 km². We did 4 replicate surveys in a 158 km² area south of Kiliuda Bay; we observed an average of 10.2 bears/100 km² and estimated the density at 27 independent bears/100 km². We also did a line transect aerial survey in the same study area in May but results have not been analyzed.

We issued hunting permits to 497 people, 184 fall permits and 313 spring permits. During the fall season, 148 hunters went afield and killed 49 bears. In the spring season 265 hunters went afield and killed 103 bears. The annual sport harvest was 152 bears, 97 males (64%) and 55 females (42%). An additional 5 nonsport mortalities were documented as follows: defense of life and property- 2 (2 males); illegal- 1 (1 male); research -1 (1 female); natural/unknown- 1 (undetermined sex).

Progress Meeting Project Objectives: The 1995-96 harvest of 152 bears was close to the annual harvest objective of 150 bears. Males composed 64% of the harvest, meeting the objective of 60% males.

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: The interagency Black Lake study continued during this reporting period with routine monitoring of radiocollared bears. Four replicate stream surveys were conducted at Black Lake in 1995. An average of 242 bears (range 215-270) was seen per survey. Single bears composed 38% of 968 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. Radiotelemetry monitoring was ongoing.

Final harvest statistics from the 1995-96 general brown bear hunting season in Unit 9 are not yet available. Preliminary tallies are 227 (56% males) in October 1995 and 282 (80% males) in May 1996. One bear was taken at Chenik Lake under hunt DB341 and none was taken in this area in

hunt DB351. In the Naknek drainage, registration permittees killed 6 bears during the fall season and 3 during the spring; in the Cold Bay area, permittees killed 3 bears in the fall and 2 during the spring.

On Unimak Island, drawing hunt permittees killed 6 bears during the fall 1995 season and 3 bears during the spring 1996 hunt.

Progress Meeting Project Objectives: Harvest statistics from the 1993-94 and 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 1995-96 season indicated 3 brown bears were killed in Unit 11, well below the previous 10-year average of 8 bears per year. The proportion of males (67%) in the harvest met the 50% minimum in the management guidelines for brown bear harvest in this unit. All bears were taken during the fall; the harvest total could increase after spring sealing certificates are processed. Nonlocal Alaska residents killed 2 bears, the third was killed in defense of life and property by a local resident. Successful hunters used 3- and 4-wheelers and highway vehicles. These hunters reported spending an average of only 2 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 3 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.

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

Project Objectives: Reduce current brown bear numbers in an attempt 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 1995-96 hunting season indicated 109 brown bears were taken by hunters. This preliminary figure was 12 bears (12%) more than taken in 1994-95 and above the 1990-94, 5-year average of 87. There were 91 bears (41% males) taken during the fall of 1995 and 18 (56% males) in the spring of 1996. This spring harvest figure could increase as sealing certificates were still being processed at the time of this report. Males composed 43% of the overall harvest. Unit residents killed 4 bears (4%), other Alaska residents took 78 (71%) animals, and nonresidents harvested 27 (25%) bears. During fall 3 - and 4-wheelers were the most popular method of transport (38%), with aircraft next (19%), and highway vehicles (17%). Snowmachines were the most prominent (39%) transportation method during the spring hunt, followed by aircraft (22%). Skull size and age data of the harvested bears were not available for this report.

Progress Meeting Project Objectives: Preliminary harvest figures for the 1995-96 season indicate the number of brown bears taken in Unit 13 increased 12% from the previous year's kill. Although the harvest increased, it was below the record high harvests of the mid-to-late 1980s. The percentage of females exceeded that of males in the yearly harvest because of the high take of females in the 1995 fall harvest. 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 Subunit 13E varied. In accessible portions of 13E, bear density estimates declined. However, in more remote portions of 13E, density estimates showed no change. Recent brown bear harvests in Subunit 13E have exceeded calculated sustainable rates. Based on calculated population reductions in Unit 13 due to 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 made to increase the brown bear harvest in Unit 13. As a result the fall 1995 harvest was the highest on record. Most of the bears taken were female, vulnerable to incidental harvest during the fall. The increase in harvest, however, did not carry over to the spring season; consequently, the 1995-96 brown bear harvest was lower than harvests 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 12 brown bears for all of Unit 14. Hunters killed 9 bears, 1 in Unit 14A and 8 in Unit 14B. The hunter harvest was 62% female bears, with 4 of the 5 females being taken during fall. Three bears (2 males in 14A and 1 female in 14C) were killed DLP. Males composed 50% of the total reported kill.

Progress Meeting Project Objectives: Human-use objectives were not attained, as both the total and female harvests exceeded objective levels. 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 DLP composed 25% 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 side of Cook Inlet

Project Objectives: Maintain a brown bear population which appears 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 53 brown bears for Unit 16. Hunters took 46 of these, including 5 bears in Unit 16A and 41 in Unit 16B. Females made up 39% of the hunter harvest. This included 3 females in Unit 16A and 15 females from Unit 16B. Ages of females were not available. Five brown bears were shot illegally, and 2 were killed in defense of life or property (DLP). This included 2 males, 3 females and 2 of unknown sex.

The 1993-95 average harvest was 47.3 bears. If all females sealed this year were older than 2 years, the 3-year average would be 15.7 females greater than 2 years old.

Progress Meeting Project Objectives: Status of the brown bear population in Unit 16 was uncertain, yet harvest trends indicate the proportion of male bears available to hunters may be declining. The spring harvest, primarily males, declined significantly due to poor travel and hunting conditions. The number of illegal and DLP kills has increased, an indicator of increasing conflicts with local residents or other recreationists (primarily fishermen), or of increased

reporting of these kills. Many local residents believe the brown bear population is increasing. The human-use objectives appeared to be reached this period.

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 40 brown bears, including 23 males (58%) and 17 females (43%) during 1995-96. Average skull size was 23.1" for males and 20.3" for females. Nonresident hunters reported killing 30 bears (75%), nonlocal residents 9 bears (23%), and unit residents 1 bear (3%). Most successful hunters used aircraft for access (93%).

Twenty-nine bears (13 males, 16 females) were killed during the fall 1995 season and 11 bears (10 males, 1 female) were killed during spring 1996. Four bears (1 male, 3 females) were killed in Unit 17A, 26 (15 males, 11 females) in Unit 17B, and 10 (7 males, 3 females) in Unit 17C.

Seven brown bears (2 males, 5 females) were killed in defense of life or property and/or illegally during this reporting period. Six were killed within villages, and 1 was killed by a moose hunter. One was killed in Unit 17B and 6 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 a paucity of information on bears shot in defense of life or property and illegal kills. Subjective evidence suggests the unitwide population of brown bears is stable.

A joint ADF&G/US Fish and Wildlife Service (FWS) research project started in 1992 was continued 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. The 1996 collaring project was canceled because of ethical concerns raised by the Association of Village Council Presidents (AVCP). The future of this project is uncertain. The department, FWS, and AVCP have formed a brown bear management team to explore ways to achieve brown bear research and management objectives while being sensitive to traditional Yupik customs.

I attended the International Bear Association meeting in Fairbanks in July 1995. During the conference I coauthored a poster paper (*An objective aging model for brown/grizzly bear teeth*) with Gary Matson. The paper is in peer review for publication in the proceedings of the meeting.

I continued monitoring bears using the Dillingham dump this reporting period. The dump is scheduled to be closed within the next couple years. I have been working with the City of

Dillingham to devise ways to reduce bear use of the dump and minimize adverse effects to both bears and people.

In an effort to reduce nuisance bear complaints and illegal kills, a public education effort was continued in the unit. Radio announcements, public meetings, and a weekly newspaper article have been used to teach rural residents about bear behavior and to disseminate advice on how to deal with bear problems. The department is working with local city and village government representatives and the Dillingham city police to enforce existing regulations when bear problems are caused by improper food or garbage storage.

Segment Period Project Costs:

	<u>Personnel</u>	<u>Operating</u>	<u>Total</u>
Planned	119.6	28.8	148.4
Actual	119.6	29.4	149.0
Difference	0.0	-0.6	-0.6

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 FY96, the preliminary reported harvest was 8 grizzly bears (6 males and 2 females) below the 5-year annual average of 15. Males composed 75% of the harvest. Six (75%) were taken during the fall and 2 during spring (25%). Six of the bears were taken within the Chisana River drainage, one along the White River, and one in the Mentasta Mountains.

Progress Meeting Project Objectives: In Unit 12 the 3-year mean harvest average was 13 bears, and the percentage of males in the harvest was 60% which did not meet the management objective. Harvest density has been excessive in several of the most popular hunting areas and has caused a population decline. Because most of the unit is difficult to access and seldom used for grizzly bear hunting, the grizzly bear population is 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 (3,6486 mi²)
Drainages of the Kuskokwim River upstream of the village of Kalskag

Project Objectives and Activities:

- Manage grizzly bear populations to provide a mean annual harvest of 30 bears with a minimum of 50% males in the harvest.
- 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.
- Monitor harvest, seal bears, and analyze harvest data.

Work Accomplished During the Project Segment Period: Preliminary data indicate a harvest of 47 grizzly bears during the 1994-95 season in Unit 19. Most of the harvest was from Units 19B and 19C (81%). This is consistent with the predictions, given the increased season length. Area Fish and Wildlife Protection Officers have noted an increase in defense-of-life-or-property (DLP) problems resulting in an increased number of bears being killed. During summer 1995 two 2-year old grizzlies were shot in McGrath. During summer 1995 an additional sow with a yearling was

sighted several times in the village. This is the first time in over 40 years that long-term residents have seen grizzlies in McGrath, perhaps indicating an increase in bear populations in the vicinity.

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.

Project Location: Units 20A, 20B, 20C, 20F, and 25C (39228 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 (W-24-1, Study 4.25), having these objectives:
 - To determine the recovery or stabilization time for a reduced grizzly bear population following reductions in human-caused mortality rates.
 - 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 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.

Subunit 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: Preliminary counts of sealing certificates indicate in Spring and Fall 1995 we sealed 22 grizzly bears, including 9 from Unit 20A Mountains (7 males and 2 females); 2 males from Unit 20A Flats; 8 from Unit 20B East (3 males and 5 females); 2 males from Unit 25C; 1 male from Unit 20B West; and none from Units 20C or 20F. Thirteen bears were taken in the fall and 9 in the spring. One bear was taken in the Unit 20A

Mountains in defense of life or property. To analyze our objectives, we examined harvest by calendar year, rather than regulatory year, to avoid combining age data from several cohorts in one regulatory year. Teeth were sent to a lab for age determination.

Progress Meeting Objectives: *Subunit 20A Mountains:* Our spring 1992 estimate of the grizzly bear population in Subunit 20A Mountains included 33 adult females (6 years or older) and 111 bears 2 years or older. Therefore, our objectives were to limit the 3-year mean (calendar year) harvest to no more than 1 adult female (3%) and 7 bears 2 years or older (6%). Although we do not yet have ages for bears, we probably met our objective to limit the mean harvest to 1 adult female.

The 1995 harvest of 9 bears is again higher than our objective of 7 bears 2 years old or older; however, some of these bears will be juveniles and harvest is lower than the mean of the previous 3 years (12.2 bears). Another year of similar harvests may achieve our objectives as 8 bears 2 years old or older were taken in 1994.

To reduce the harvest beginning in fall 1994, the hunting season opened September 10 instead of September 1. In addition, we solicited the public's help in reducing the harvest of adult females. We printed and distributed small decals reminding hunters to "take a closer look" to determine the sex of bears they want to harvest. The decals describe physical and behavioral characteristics of adult males. These characteristics are explained in detail in a video we recommend called *Take a Closer Look*. We also distributed wallet-sized cards illustrating the differences between grizzly bears and black bears, including profiles, tracks, etc.

Subunit 20B East: The 1995 harvest of 3 males and 5 females was higher than our 3-year mean harvest objectives for both total harvest and female harvest. 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 5 males from these units indicates we easily met objectives for this area.

We recommend the objective for decreasing harvest rates in the Subunit 20A Mountains be revised to continue until at least 1997. By then, we should have updated population estimates to use in reevaluating the population dynamics.

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

Project Objectives and Activities:

1. In Unit 20D south of the Tanana River, manage a stable bear population to provide a mean annual harvest not to exceed 5% of the estimated population >2 years old, with a minimum of 60% males in the kill.
 - Monitor harvest, seal bears, and analyze harvest data.

2. In Unit 20D north of the Tanana River, increase the mean annual harvest of grizzly bears to 8-10% of the estimated population >2 years old until moose calf survival increases in the area to at least 30 calves:100 cows for 3 consecutive years.
 - Monitor harvest, seal bears, and analyze harvest data.

Work Accomplished During the Project Segment Period: In October 1995 the Alaska Board of Game adopted revised harvest goals for grizzly bears as part of a wolf predation control implementation plan for Unit 20D. The revised harvest goal is to harvest 5-15 bears per year in Unit 20D.

Preliminary reported harvest is 15 grizzly bears taken legally and 1 bear taken illegally in Unit 20D during the 1995-96 regulatory year. Nine bears (7 males and 2 females) were taken south of the Tanana River (including the illegal bear). Seven bears (4 males and 3 females) were taken north of the Tanana River.

Progress Meeting Project Objectives: Bears killed by hunters were sealed and the data analyzed. Harvest increased but did not exceed the harvest goal.

Project Location: Subunit 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 and including 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. Manage the grizzly bear population in this subunit at a level capable of sustaining a harvest of 25 bears annually.
3. 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 FY96 the preliminary reported harvest was 19 grizzly bears (9 males and 10 females), exceeding the 5-year average of 15 bears. Males represented 47% of the harvest. Thirteen bears (68%) were taken in the fall and six (32%) during the spring. No bears were taken in defense of life or property.

Progress Meeting Project Objectives: Historically, most grizzly bear harvest has occurred in the central portion of the subunit. Harvest density in this area ranged between 1.92 and 4.35 bears/1,000 mi² and averaged 3.34 between 1982 and 1994. The bear population is estimated to have declined by 38% since the enactment of liberal bear hunting regulations in 1981. In the remainder of the unit, the harvest density averaged 0.17/1,000 mi² and probably had little effect on population trend. More hunting pressure occurred in the northern portion of the subunit during FY96 as more outfitters are beginning to use the area.

The percentage of males in the bear harvest for the past 3 years averaged 40, indicating a decline in the bear population. Most of the harvest came from the central portion of the subunit. If the harvest objective of sustaining a harvest of 25 grizzly bears is to be met, hunters will have to continue to use new, difficult to access areas in Subunit 20E. Through public contact, we are trying to distribute hunters more evenly throughout the season and to shift some of the fall pressure to the spring season.

We evaluated the effects of 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 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 1 male and 1 female bear were taken in the spring. 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. We visited schools to emphasize conservation education regarding unreported harvest.

Progress Meeting Project Objectives: Management is based on harvest data. Minimal progress was made on changing the objectives and activities for the unit. During 1996 a new objective will be added to determine unreported harvest and its effects on the conservation of bears in the unit.

Project Location: Unit 24 (26,055 mi²)
Koyukuk River drainage upstream from the 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 US National Park Service and US Fish and Wildlife Service to initiate a survey plan if funding is available.

Work Accomplished During the Project Segment Period: During the report period 4 male and 6 female bears were harvested. All, except one, were taken in the northern portion of the unit. Nine bears were taken during fall, and 1 was taken in spring. Two female bears were taken under DLP. We visited schools to emphasize conservation education on unreported harvest. We issued permits for hunting within the Northwest Arctic 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. We made progress preventing unreported harvest 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: 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 during the past 5 years. We revised population estimates, but no large-scale count 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.
 - b. 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 harvest was occasionally above the maximum by a small amount. 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 26B is far too conservative. Snow conditions deteriorated too rapidly to complete the survey. 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 1995 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 consistently met during the past 5 years. Population estimates have been revised, but no large-scale counts 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.
 - 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	39.6	0.5	40.1
Actual	44.7	3.0	47.7
Difference	-5.1	-2.5	-7.6

Explanation: Personnel expenditures were more than planned because of additional grizzly bear S&I activities in Unit 20A. Operating expenditures were more than planned because an aerial survey was conducted in Unit 26B.

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 and Activities:

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: Local residents were contacted by telephone, mail, radio and television announcements, and newspaper articles to explain hunting season dates and bag limits, bear tag fees and sealing requirements, and other regulations for brown bears in Unit 18. Brown bear management and improved harvest reporting by local residents was discussed at public meetings. Community leaders, hunters, and law enforcement personnel were contacted in an effort to minimize bear-human conflicts at camps and landfills. We posted public notices explaining ways to reduce adverse encounters between bears and people.

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 ongoing cooperative brown bear research project.

The department, FWS, and BLM continued the cooperative brown bear radiocollaring project. Animals have been tracked for a period of 7 years to determine seasonal movements, preliminary productivity estimates, and to 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 these areas. One bear was reported taken in defense of life or property during this regulatory year, even though more bears were apparently frequenting several landfills.

Illegal harvest of bears seems to have increased this reporting period, especially bears taken by hunters without licenses or tags. We also discovered bears taken illegally for gallbladders and paws with claws.

Public announcements, village meetings, and instructions to license vendors emphasizing the need to purchase resident bear tags or obtain Western Alaska Brown Bear 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, and 99 permits were issued throughout the Yukon-Kuskokwim delta villages during 1992-93. A harvest of 7 male bears was reported. 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. During the 1995-96 season, 63 Western Alaska Brown Bear Management Area permits were issued, and 3 male bears were reported harvested (1 in the fall and 2 in the spring).

Final harvest records from the 1995-96 regulatory year indicate that 3 bears were reported taken in the WABBMA and 4 bears were sealed under the general hunting regulations. Two of the subsistence bears were taken in the spring near Marshall, and 1 bear was taken on the Holoġuk drainage in the fall. All 3 of the subsistence brown bears were male bears. The general hunt harvest consisted of 2 male bear and 2 female bears. There was also 1 DLP male bear taken on the Goodnews River. Three male bears, 1 female, 2 cubs, and 1 unknown sex bear were taken illegally. Harvest data for the 1995-96 season will not be finalized until receipt of harvest survey postcards from each hunter.

Community harvest surveys by FWS, AVCP, and a contract anthropologist indicate that subsistence brown bear harvest for the WABBMA was a few more bears than the number reported through the registration and sealing program. However, this preliminary report is one year behind our reporting period and includes additional harvest data from Units 17 and 19.

Sixty-six brown bears were captured and marked 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, 27 collars are still active on female bears. A pre-molar tooth was extracted, blood samples were collected, and measurements and weights were taken from most of the captured bears. Continued monitoring of 1993-year collars is planned for 1996. This 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 any 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 have begun cooperative management planning meetings to cooperate and share information about brown bear management and improve our ability to work with the public, specifically subsistence bear hunters, to gather better harvest data

and biological information applicable to management. The Federal Subsistence Regional Council of the Yukon-Kuskokwim Delta and the department have endorsed this cooperative effort.

Comments provided to Habitat Division and to the FWS Refuge Management Planning Team are protecting sensitive and important 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 and Activities:

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 54 bears. Hunters killed 15 bears (6 males, 9 females) during fall 1995, and 34 bears (26 males, 8 females) during spring 1996. Five bears were taken in defense of life or property during the reporting period.

Location and chronology of the Unit 22 harvest by sex is as follows:

<u>Unit</u>	<u>Fall 1995</u>		<u>Spring 1996</u>		<u>Harvest Total</u>
	<u>Males</u>	<u>Females</u>	<u>Males</u>	<u>Females</u>	
22A	2	2	4	3	11
22B	3	4	14	3	24
22C	1	1	2	0	4
22D	0	2	3	1	6
22E	0	0	3	1	4
Total	6	9	26	8	49

Unit 22 residents harvested 37% of the legal harvest; other Alaskan residents and nonresidents were responsible for 10% and 53% of the harvest, respectively.

During the reporting period, we participated in numerous meetings and impromptu discussions with unit residents and 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, and assisting license vendors.

We also sealed bears at the office in Nome, often after normal business hours, and when we traveled to surrounding villages. An appointed bear sealing agent is also available in Unalakleet to seal bears taken in the southeast portion of the unit.

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 recently 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 brown bear population densities between 1 bear/40 mi² and 1 bear/20 mi².
2. Improve compliance with bear harvest reporting requirements by local residents.

Work Accomplished During the Project Segment Period: We continued to provide information on the new subsistence brown bear season to local hunters and actively collected harvest data. We contacted hunters by letter and phone to obtain harvest data. For the 1994-95 subsistence hunt, we issued 45 registration permits for subsistence brown bears in the Northwest Alaska Brown Bear Management Area. Thirty-three hunters reported taking 2 bears. Both bears were harvested in Unit 23 and were sealed for tanning purposes. Staff and vendors issued 73 permits for the 1995-96 season. Collection of harvest data for the 1995-96 subsistence hunt will continue into the next reporting period.

Nonresidents received all available drawing permits (18 fall, 7 spring). We monitored hunter success in the general and drawing permit hunts through sealing requirements. The fall 1995 brown bear harvest summary follows:

	Fall 1995		
	Male	Female	Unknown
Local Resident	0	0	0
Nonlocal Resident	10	5	0
Nonresident	7	2	0
DLP/accidental	0	0	0
Total	17	7	0

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. It is unlikely we will detect any increases in bear density using current survey methodologies.

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.
 - Monitor the harvest through the statewide sealing program, the Northwest Alaska Brown Bear Management Area (NWABBMA) registration system, and contacts with the public.
2. Minimize adverse interactions between bears and the public.
3. Develop updated population management objectives in consultation with the public and other agencies.
4. Evaluate the possibility of liberalizing harvest by nonresident hunters and simplifying 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: We conducted a mark-recapture census in the Utukok and Kokolik drainages in Unit 26A West (west of 159° W longitude) during June 1992 using radiocollared bears as the "marked" animals. We estimated a density of 7.7 bears/100 mi², and a 95% confidence interval of 7.3 to 8.2 bears/100 mi².

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).

We have not received all of the harvest data for the 1995-96 season. Currently, hunters have reported harvesting 23 bears (6 bears in Unit 26A West and 17 bears in Unit 26A East). Thirteen bears were males, 9 were females, and 1 was of unknown sex. North Slope residents harvested 6 bears, nonlocal residents harvested 4 bears, and nonresidents harvested 13 bears. Eleven bears were harvested during September, 2 during October, 2 during April, and 8 during May. For transportation, 12 hunters used aircraft, 7 used snowmachines, 2 used boats, and 2 walked. The mean number of days per hunt was 4.8.

We consulted with hunting guides and other department staff to develop an alternative to the current drawing permit system.

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: If we assume that safe harvest limits should not exceed 4% of the population, the allowable sustained yield for Unit 26A is approximately 36 to 47 bears. The reported brown bear harvest for 1995-96 of 23 bears is well below this allowable limit. Even if unreported harvest is as high as 50% of the reported harvest, the total estimated harvest of 30 bears would still be within safe harvest limits. The reported harvests in Unit 26A East (17 bears) and Unit 26A West (6 bears) are well below the allowable limits of 20-28 and 16, respectively.

Since nonresident permit hunting has been undersubscribed and the harvest of bears in Unit 26A has 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.

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

Literature Cited

Trent, J. N. 1989. Unit 26A brown/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	24.9	4.0	28.9
Actual	31.6	0.7	32.3
Difference	-6.7	3.3	3.4

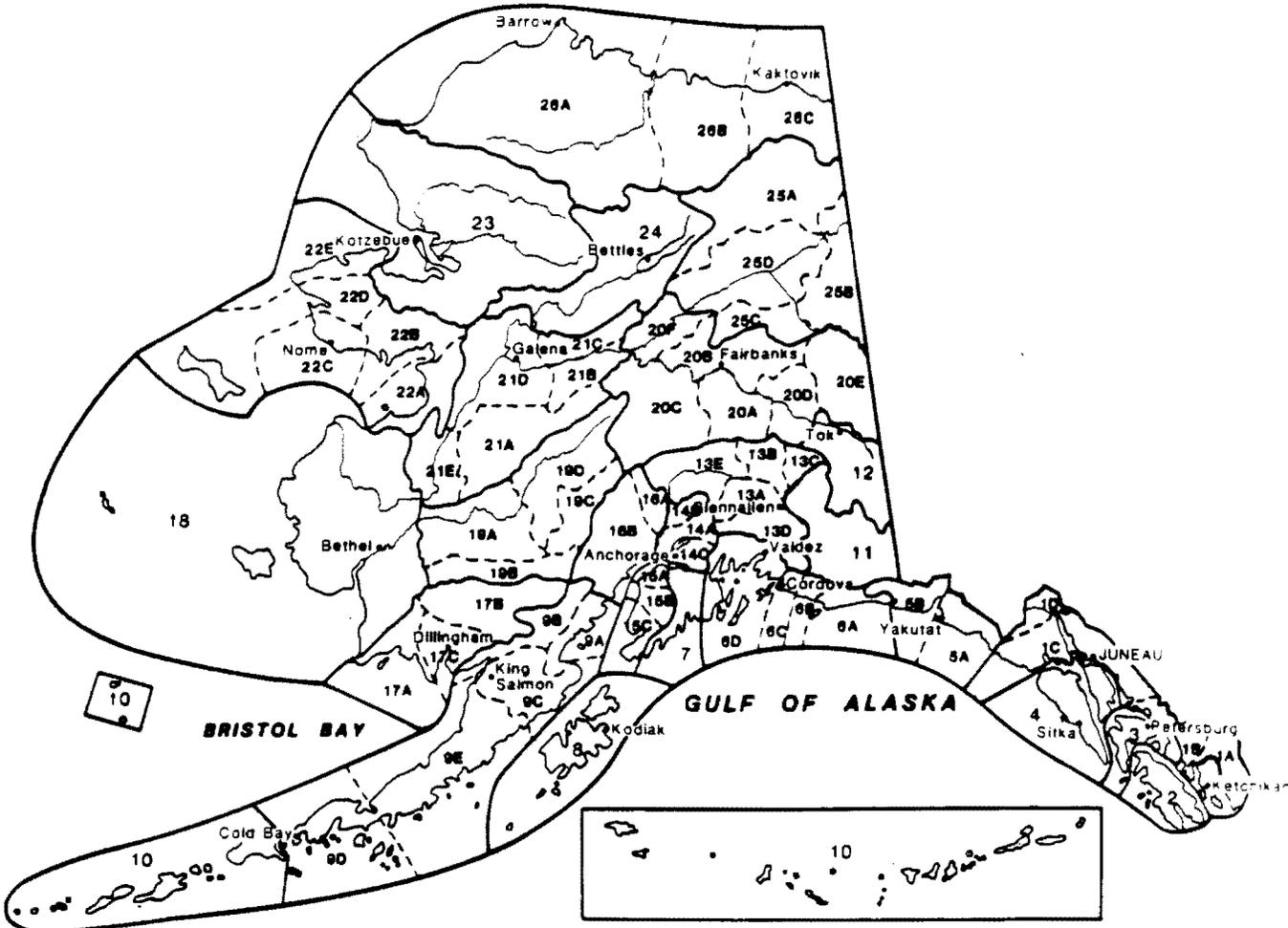
Explanation: Bear management issues required spending more staff time on the species than anticipated.

Submitted by:

Peter Bente

Survey-Inventory Coordinator

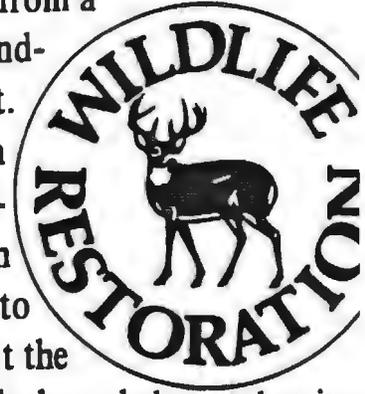
Alaska's Game Management Units



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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.



LEN CLIFFORD

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