Alaska Department of Fish and Game
Division of Wildlife Conservation

Federal Aid in Wildlife Restoration
Annual Performance Report of
Survey-Inventory Activities
1 July 1992 - 30 June 1993

BROWN BEAR

Susan M. Abbott, Editor

Vol. XXIV, Part V
Project W-24-1, Study 4.0
October 1993

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Project Title: Southeast Brown Bear Population Management

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

Project Location: Unit 1 (18,300 mi^2) - 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 fourth consecutive season we collected harvest data through mandatory registration permits. We measured skulls from harvested bears, extracted a premolar tooth to determine age, and determined sex from evidence on hides. We collected additional harvest-related data and anecdotal information at the time of sealing.

Progress Towards Meeting Project Objectives: Thirty-seven brown bears were legally killed in Unit 1 during this report period. The harvest of 24 males and 13 females met our 3:2 ratio objective. Harvest by subunit included 5 males and 2 females from Subunit 1A; 3 males and 4 females from Subunit 1B; 4 males and 1 female from Subunit 1C; and 12 males and 6 females from Subunit 1D. Two bears were found dead in the field and apparently died of natural causes. One of these was a male found at Point Bridget State Park in Subunit 1C in May 1993, and the other was a bear of unreported sex found at the head of Mink Bay in Subunit 1A in June 1993. One female brown bear was shot and left along Fish Creek near Hyder (Subunit 1A) during October 1992, and another female was illegally killed 32 miles north of Haines in Subunit 1D. Two male brown bears and two of undetermined sex were shot in human conflict situations around Haines in early summer 1993. Of these, 2 were judged to be legal defense of life or property (DLP) kills, one was a legal DLP that was disposed of illegally, and in one the shooter was cited for an illegal kill.

The average size of legally-harvested male skulls was 22.0 inches (n=24); female skulls averaged 20.1 inches (n=13). One hundred eighteen permittees were unsuccessful, 123 did

not hunt, and two have not yet returned their permits. Nonresident hunters took 16 bears and residents took 21 bears. Age data were not available at the time of report preparation.

Project Location: Unit 4 (5,800 mi^2) - 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.
- Conduct aerial survey of sows and cubs on portions of alpine habitat on Admiralty, Baranof, and Chichagof islands.
- Monitor use of the Pack Creek viewing area on the Stan Price Wildlife Sanctuary.

Work Accomplished During the Project Segment Period: We issued 724 registration permits to bear hunters. We measured the length and width of the skull, extracted a premolar, examined the hide for evidence of sex, and noted other pertinent data. Teeth were aged by counting cementum annuli. Reduction of brown bear loss in DLP incidents was attempted 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 in DLP incidents, promote public safety, and provide bear life history information.

Progress Towards Meeting Project Objectives: Age data from harvested bears were not available by report time. One hundred twenty bears were taken in the sport harvest in 1992-93, 85 males and 35 females (a 4.9:2 male to female ratio). Twenty-six percent of the year's harvest was taken in the fall season. Five bears were reported killed in DLP incidents, one was found dead, and one was taken illegally. Over 1,200 people visited the Stan Price Wildlife Sanctuary to view brown bears.

Project Location: Unit 5 (6,200 $miles^2$) - 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 harvest data.

Work Accomplished During the Project Segment Period: Bears were sealed in Yakutat and Anchorage. Harvest was analyzed from sealing certificates.

Progress Towards Meeting Project Objectives: Although age data was not available at the time of report preparation, the project objective of male to female kill ratio (3:2) was exceeded. The sport harvest of 39 bears was one less than last year and marks the second year in which harvests are well above recent averages. From 1985-1989 the average number of brown bears taken in this unit was 29. The 5-year average for the period before the 1992 regulatory year climbed to 34 bears per year; the 1988-1992 harvest average is 35. A total of 211 days were expended by successful hunters, an average of 4.7 days per hunter. Eight of the 39 kills came from Subunit 5B, the balance from Subunit 5A.

One female bear was found dead during fall 1992, having been shot and left. No bear kills were claimed in DLP incidents during the regulatory year, although several bears were documented feeding on garbage in Yakutat during summer. Food-conditioned bears became an issue on the lower Situk River, where bears were feeding on fish entrails and garbage near the lower landing. These animals harassed fishermen for food and/or fish. Although Fish and Wildlife Protection Division staff drove these bears off repeatedly, this problem remains unresolved. It is possible that guided hunting near the Situk River may have removed some of these animals.

Segment Period Project Costs:

	Personnel	Operating	Total
Planned	$19.6	$8.2	$27.8
Actual	$19.6	$8.2	$27.8
Difference	0	0	0

Submitted by:

Bruce Dinneford
Management Coordinator

Project Title: **Southcentral Brown Bear Population Management**

Project Location: Unit 6 (10,150 mi^2)
Prince William Sound and north Gulf of Alaska 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: Twenty-seven bears (15 males, 11 females and 1 unknown) were harvested during fall 1992. The mean skull size for males taken during fall was 21.8 inches, and males comprised 56% of the harvest. Preliminary harvest data for spring 1993 indicated an additional 17 bears (14 males and 3 females) were taken. Males comprised 82% of the take, and mean skull size for males was 23.1 inches. Final harvest numbers for spring will be available during fall 1993.

Progress Towards Meeting Project Objectives: Unitwide objectives were achieved. However, harvest in Subunit 6D has exceeded the range of estimated sustainable yield for the past 6 regulatory years. Delaying the season opening from 1 September to 1 October during this regulatory year did not correct the problem. Additional regulation changes should be considered.

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

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

Work Accomplished During The Project Segment Period: Preliminary harvest reports indicate annual harvest levels increased above management objectives. Thirteen bears (7 males and 6 females) were harvested in the fall including 1 male and 2 female bears in Unit 7. An additional 13 bears were reported in spring 1993 (9 males and 4 females). Preliminary data show 61% were male bears. Final harvest numbers and statistics will be available in November 1993.

Three brown bears reported in the harvest were aged as yearlings. One of these was killed in a DLP incident, the other two were reported as sport killed. The hides and skulls were seized and citations issued for those two bears. One other bear was killed in a DLP incident in fall 1992.

Progress Towards Meeting Project Objectives: Following the reduction in the 1989 season, brown bear harvest declined slightly then increased above objective levels. Sample

sizes are small and detection of a significant change in harvest levels remains difficult. An additional season length reduction will be proposed to reduce the incidental take of brown bears.

Project Location: Unit 8 (5,100 mi^2)
Kodiak and adjacent islands

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

Work Accomplished During The Project Segment Period: Working cooperatively with the U.S. Fish and Wildlife Service (USFWS), we conducted a brown bear population density estimate in a 135 mi^2 area on the Aliulik Peninsula during May 1993. We captured 19 bears and completed 5 replicate aerial surveys, recording 53% sightability of marked bears. Estimated mean density was 0.77 bears/mi^2. We also completed 2 replicate aerial surveys in 2 areas of approximately 100 mi^2 each on southwestern Kodiak Island during May 1993, in an effort to develop an inexpensive population trend survey technique. Data analysis has not been completed.

Staff of the USFWS did aerial composition surveys along selected streams on the Kodiak National Wildlife Refuge during July and August 1992. Composition of the 513 bears observed in 5 replicate surveys was: 44% single; 18% maternal females; 18% cubs less than 1 year old and 20% cubs greater than 1 year old.

A study of survival and productivity of female brown bears, funded by the Kodiak Brown Bear Research and Habitat Maintenance Trust, was being done cooperatively with the USFWS. Forty-one radio-collared bears were being monitored through fall 1992. The mean interval between weaning for 26 reproductive cycles observed was 3.9 years. For 108 litters totaling 255 newborn cubs the weaning rate was 45%. The leading sources of mortality in adult females were natural causes (49%) and hunting (26%).

We issued hunting permits to 542 people and 467 hunters reported going afield. During the 1992 fall, we issued 230 permits, 193 hunters went afield, and 63 bears were killed. During spring 1993 we issued 312 permits, 274 hunters went afield and 114 bears were killed. Total annual harvest was 177 bears and was comprised of 113 males (65%), 62 females (35%) and 2 unknown sex (1%). Alaska residents killed 76 bears (43%) and nonresidents killed 101 bears (57%). For the limited registration permit hunts nonresidents obtained 149 of 153 available permits (97%). Alaska residents obtained 192 of 319 available drawing permits (60%).

Nonsport mortalities included 10 bears killed in DLP incidents and 8 bears found dead of unknown causes. One incident was reported in which a bear was wounded by a deer

hunter but not recovered. An anonymous source reported that a bear was killed in April 1993 near the village of Old Harbor.

Progress Towards Meeting Project Objectives: The 1992-93 harvest of 177 exceeded both the previous 5-year mean annual harvest of 158.6 bears and the 150 bear harvest objective. The 62 females killed nearly equaled the 61.2 mean annual kill for the previous 5 years. The 65% males killed exceeded the objective of 60%.

The above average harvest in 1992-93 reflects an increasing trend in permit use by nonresidents, a direct result of increased competition among hunting guides since the Alaska Supreme Court ruled against exclusive guiding areas in 1988. During the 1987-88 hunting season, nonresidents used only 84% of the available permits compared to 97% during the 1992-93 season. If this trend continues, a reduction in permit numbers may be required to keep the harvest within project objectives.

Aerial surveys and harvest data indicate the brown bear population is stable, but the increasing trend in harvest should be monitored closely. We will continue efforts to improve techniques for population trend assessment. We previously estimated the population at 2,730 bears. We will incorporate the data from the 1993 aerial surveys and density estimates in a revised estimate. Research and management activities should be directed at minimizing bear-human conflicts, identifying and protecting important habitat, assessing population trend, and quantifying nonhunting mortality.

Project Location: Units 9 and 10 (36,250 mi^2)
Alaska Peninsula and Unimak Island

Project Objectives: Maintain a high brown bear density with a sex and age structure that will sustain a harvest composed of 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: During 3 replicate aerial surveys flown 7-11 August 1992, staff classified 640 bears at the Black Lake study area; 36% were single, independent bears. We saw an average of 213 bears per survey.

The interagency Black Lake study continued during this report period with routine monitoring of radio-collared bears.

The Exxon Valdez Oil Spill study of impacts of 1989 oil spill continued and evolved into a cooperative study between the ADF&G and the National Park Service to evaluate the population dynamics of a high density unhunted bear population. In June 1993, 30 bears were captured in the study area. Radio-telemetry monitoring was on-going.

The only brown bear hunting seasons during this report period were the Unimak Island drawing permit hunt and the Naknek registration permit hunt. On Unimak, 1 bear was taken during the fall 1992 season, and 4 bears were killed during the 1993 sport hunt. In the Naknek drainage, 6 bears were killed during the fall season. On 19 September 1992 the Big Creek drainage portion of the hunt area was closed by emergency order. During the spring 1993 season, 7 bears were taken.

Progress Towards Meeting Project Objectives: Harvest statistics from the 1991-92 general season were within the desired range. A total of 540 bears were taken, of which 67% were males and 132 males were ≥ 8 years old. The extrapolated bear population for areas open to hunting in Unit 9 was 5,680. Recent annual harvests have averaged 275 bears and represent a harvest rate of 4.8%. Permit hunts are meeting management objectives, but increased participation in the Naknek registration hunt by nonresidents and military affiliated sportsmen combined with improved means of transportation have lead to concern that more non-problem bears are being taken in remote portions of the hunt area. This lead to the emergency closure of the Big Creek drainage in September 1992. Some adjustment to this hunt may be necessary in the near future.

Project Location: Unit 11 (12,800 mi^2)
Wrangell Mountains

Project Objectives: Maintain a brown bear population that will sustain an annual harvest of 25 bears composed of at least 50% males.

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 1992-93 season show 6 brown bears reported taken in Unit 11, well below the 10-year average of 8 bears per year. This harvest total could increase as spring 1993 certificates were still being processed. Local Alaskan residents took 2 (33%) brown bears and a nonlocal resident 2 (33%) and nonresidents 2 (33%). All bears sealed were males. The mean skull size for male bears harvested was 21.0 inches. Two successful bear hunters reported using aircraft for transportation, and 2 reported using a highway vehicle, and 2 reported using boat. Successful hunters reported spending an average of 4 days hunting afield.

Progress Towards Meeting Project Objectives: Current known bear harvests in Unit 11 are much lower than the estimated sustainable harvest and are considered to have no negative impact on the unitwide bear population. The proportion of males in the harvest exceeds the 50% minimum stated in the management guidelines for brown bear harvest in this unit. Although population data for brown bears in Unit 11 is not available, field observations of bears by ADF&G staff and the general public suggest a relatively

abundant and well-distributed population of brown bears. We attribute the low harvests of the past 10 years to increased restrictions on both 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. No changes in season dates and bag limits will be proposed, as current guidelines are being met.

Project Location: Unit 13 (23,400 mi^2)
Nelchina Basin

Project Objectives: Maintain a population of 1,200 brown bears with a sex and age structure that will sustain a harvest composed of at least 60% males.

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

Preliminary harvest data for the 1991-92 hunting season indicated 108 brown bears were taken by hunters and 1 was killed in a DLP incident. This preliminary figure is 39 higher than taken in 1991-92 and higher than the prior 5-year average kill of 82. Sixty-four bears (58% male) were taken during fall 1992 and 45 (79% males) in spring 1993. This spring harvest figure could increase as sealing certificates were still being processed. Males comprised 64% of the overall harvest. During the fall season, unit residents took 11 (17%) bears, other Alaskan residents killed 40 (63%), and nonresidents killed 13 (20%) bears. During fall, aircraft were the most popular method of transport (29%) followed by highway vehicles (18%) and 3-/4-wheelers (13%). Aircraft were also the most prominent (49%) transportation method during the spring hunt followed by snowmachines (33%). Skull size and age data of the harvested bears were not available for this report.

Progress Towards Meeting Project Objectives: Preliminary harvest figures for the 1992-93 season suggested the number of brown bears taken in Unit 13 increased from the previous year's kill. The current brown bear harvest is well below the record high harvests of the mid to late 1980s. The percent males in the harvest increased this year and is above the 60% management guideline for brown bear harvests in Unit 13. Historically, females have comprised a higher proportion of the bears taken in early September by hunters primarily seeking moose and caribou. To reduce the number of females in the harvest, the 1990 fall brown bear season was shortened by 10 days by delaying the opening to 10 September. This change appeared successful as the percent of males in the fall harvest exceeds that of females.

Brown bear harvest information from Unit 13 appears to exceed the harvestable surplus available from present population estimates. However, the annual harvest has been increasing without an apparent decrease in the percentage of adult males, which would be expected if the population has been overharvested. One explanation for this may be

that the actual brown bear population has been higher than ADF&G estimates. Another explanation is increased emigration from parks on both sides of the unit or from lightly hunted portions within Unit 13. A recent radio-collaring effort in the upper-middle Susitna River area found more bears than expected. Further evidence supporting this speculation includes increased reports of bear observations by local residents, and the relatively low hunter effort averages of 3 days of hunting for successful bear hunters.

Project Location: Unit 14 (6,600 mi^2)
Upper Cook Inlet

Project Objectives: Maintain a population of at least 160 brown bears and a sex and age structure that will sustain a harvest composed of at least 60% males.

Work Accomplished During The Project Segment Period: A minimum of 14 bears, killed in Unit 14, were presented to be sealed. Seven were legally killed in Subunit 14A, and 5 were killed in Subunit 14B. Two additional males were killed, 1 in a DLP incident and 1 taken illegally. In addition 1 male was relocated from Subunit 14C to Subunit 16B. The hunter harvest was composed of 58% (n = 12) males. Eight bears killed by hunters were taken during the fall season and 4 in the spring season.

Progress Towards Meeting Project Objectives: The 1992-93 harvest exceeded the total allowable harvest for the current population estimate. The female bear harvest also exceeded conservative levels of harvest. Short spring brown bear hunting seasons and reduced fall open seasons were deemed appropriate for maintaining a stable population. These season changes were adopted by the Board of Game, yet the hunter harvest remained identical to the number taken in 1991-92.

The Unit 14 population objective is to maintain a population of at least 160 brown bears in the face of increasing human population and development. The human-use objective is to provide an opportunity to allow low levels of human harvest in Subunits 14A and 14B by hunting as long as it does not conflict with maintaining the population objective. Average annual harvests (including DLP kills) should not exceed 8 bears with at least 60% males.

Project Location: Unit 16 (12,300 mi^2)
West side of Cook Inlet

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

Work Accomplished During The Project Segment Period: We estimated the total brown bear population by extrapolating densities from adjacent study areas to bear habitat

in Unit 16. We believe the population ranges between 580 and 1,150 bears, including 50-100 in Subunit 16A and 530-1,000 in Subunit 16B.

Eighty-two brown bears were sealed from Unit 16. Sixteen were reported taken from Subunit 16A and 66 In Subunit 16B. Forty-six (56%) were males, 31 (38%) were females and 5 (6%) were of unknown sex. Overall, 33 bears (23 males) were taken by hunters during the spring season and 45 (23 males) during the fall. Three bears (2 females and 1 unknown sex) were killed illegally.

Progress Towards Meeting Project Objectives: Reported harvest data suggest management objectives were met. Since the initiation of the 1 September to 25 May season in 1984-85, however, the number of bears harvested exhibited a declining trend in Subunit 16B. Fall harvest in Subunit 16B previously peaked in 1985 at 58 bears and declined to 29 bears during 1989 and 1990. A more restrictive fall season may be necessary to establish population stability.

Project Location: Unit 17 (18,800 mi^2)
Northern Bristol Bay

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

Work Accomplished During The Project Segment Period: Preliminary data indicate a reported harvest of 49 brown bears, including 35 males (71%) and 14 females (29%) during the 1992-93 season. Average skull size was 22.8 inches for males and 20.9 inches for females. Nonresident hunters reported killing 37 bears (76%), nonlocal residents killed 4 bears (8%), and unit residents killed 8 bears (16%). Most successful hunters used aircraft for access (84%).

Thirty-two bears (24 males, 8 females) were killed during the fall 1992 season and 17 bears (11 males, 6 females) were killed during spring 1993. Four bears (1 male, 3 females) were killed in Subunit 17A, 28 (21 males, 7 females) in Subunit 17B, and 17 (13 males, 4 females) in Subunit 17C.

Two brown bears were killed in DLP incidents during this report period. A yearling female bear was shot at a residence along the Aleknagik Lake Road after it and a sibling were raiding a smoke-house full of fish in late June 1993. The other, an adult male, was shot by a local village resident along the Mulchatna River in September 1992. The bear was reported acting aggressively and after it was shot it was found with a beaver snare imbedded around its neck.

Progress Towards Meeting Project Objectives: No objective data were available on the population density of brown bears in the unit. There is also a paucity of information

on bears shot in DLP and illegal kills. Without adequate population data or harvest data it is difficult to manage this population.

A joint ADF&G/USFWS research project began during spring 1992. 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 (Subunit 17A and Unit 18). The project is funded by the USFWS and was initiated in response to liberalized bear hunting and reporting regulations in the area. We captured 39 bears in June 1993, 27 of which were radio-collared. The collaring project was temporarily delayed because of court actions promulgated by the Association of Village Council Presidents (ACVP) because of concerns over conflicts between capture/marking procedures and traditional Yup'ik customs.

In an effort to reduce nuisance bear complaints and illegal kills, we initiated a public education effort in the unit. We are using radio announcements, public meetings, and a weekly newspaper article to teach rural residents about bear behavior and to disseminate advice on how to deal with bear problems. The ADF&G 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:

	Personnel	Operating	Total
Planned	82.7	40.8	123.5
Actual	82.7	40.8	123.5
Difference	0	0	0

Submitted by:

Jeff Hughes
Wildlife Biologist

Project Title: Region III Brown Bear Population and Habitat Management

Project Location: Units 12, 19, 20, 21, 24, 25, 26B, and 26C

Unit 12

Project Objectives and Activities:

1. Manage harvests so that the 3-year mean harvest does not exceed 24 bears and has at least, 55% males in the harvest.

   1a. Seal bears, analyze harvest data.

Work Accomplished During the Project Segment Period:

1a. During FY93, hunters reported taking 24 grizzly bears (15 males and 9 females) in Unit 12. The harvest exceeded the 5-year average of 14. Males represented 62.5% of the harvest which is comparable to the 5-year average of 61%. Eighteen bears (75%) were taken during fall and 6 in spring (25%). No bears were taken in DLP incidents.

Progress Toward Meeting Project Objectives: In Unit 12, the 3-year mean harvest average was 17 bears and the percent males in the harvest has been 60.8% which meets the management objectives. Future grizzly bear harvest in Unit 12 is expected to remain comparable to the FY93 harvest because of the present regulation allowing one bear/year regulatory year.

Unit 19

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.

   1a. Monitor harvest, seal bears, and analyze harvest data.

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.

Work Accomplished During the Project Segment Period:

1a. Data available as of late June 1993 for the 1992-93 grizzly bear harvest in Unit 19 indicate a harvest of 46 bears. This is consistent with the predictions given the increased season length.

Progress Toward Meeting Project Objectives: Monitoring the Unit 19 harvest by sealing harvested bears has continued. Efforts have continued in area villages and fish camps to educate residents in an attempt to alleviate the chronic DLP problems.

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

Project Objectives and Activities:

1. In the Subunit 20A Mountains, to:

   1a. decrease harvest rates until at least 1995 by managing for a 3-year mean annual 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.

   1b. cooperate with a new research project (W-24-1, Study 4.25) whose objectives are:

   • to determine the length of time necessary for recovery or stabilization of a reduced grizzly bear population following reductions in human-caused mortality rates; and

   • to measure the recovery responses in the dynamics of the population, especially female population size, total population size, and production and survival of offspring.

2. In Subunit 20B East (east of a line drawn north from Fairbanks through Haystack Mountain), manage total human-caused grizzly mortality to provide a stable population with a 3-year mean annual harvest of up to 6 bears ≥2 years old, with an average of at least 55% males in the hunter harvest.

3. In the Subunit 20A Flats, 20B West, 20C, 20F, and 25C combined:

   3a. Manage harvest to provide stable grizzly bear populations with a 3-year mean annual human-caused mortality of up to 26 grizzly bears ≥2 years old, with an average of at least 55% males in the hunter harvest.

3b. Manage the 3-year mean annual 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.

Work Accomplished During the Project Segment Period: The ADF&G staff examined recent sealing certificates and database files of sealing certificate information for this report. The following data may include some DLP and research mortalities as well as hunter harvest.

1. During the last 3 years, 34 grizzly bears were killed in the Subunit 20A mountains. Nineteen bears were killed in 1989-90 (17 hunter harvest, 2 DLP yearlings), 5 in 1990-91, and 10 in 1991-92. Of these 34 bears, 2 were <2 years old, 25 were ≥2 years old, and 7 were of unknown age. If all the unknown age bears were ≥2 years old, then the 3-year mean annual harvest would include 10.7 bears ≥2 years old. This is approximately 10% of the estimated population of 111 grizzly bears ≥2 years old (13.9 bears/1,000 km^2 for 7,981 km^2 of bear habitat). If none of the bears of unknown age were ≥2 years old, then the 3-year mean annual harvest would include 8.3 bears, or approximately 7% of the estimated population of bears ≥2 years old.

   We recalculated the size of the Subunit 20A mountains based on digitized areas listed by the Statistics Section for Uniform Coding Units. Based on this recalculation, we now consider that the Subunit 20A mountains include 7,981 km^2 of bear habitat (9,181 km^2 minus a 1,200 km^2 block of glaciers and land above 6,000 ft). The Subunit 20A mountains have previously been reported to include 9,315 km^2.

   Fourteen of the 34 grizzly bears harvested were females, including 4 <6 years old, 5 ≥6 years old, and 5 of unknown age. If all unknown age females were ≥6 years old, then the 3-year mean harvest would include 3.3 females ≥6 years old. If all unknown age females were <6 years old, then the 3-year mean harvest would include 1.7 females ≥6 years old. If 21% of the bear population were females ≥6 years old (Reynolds, pers. commun.), then this area would include approximately 28 female bears ≥6 years old. The mean harvest of 1.7 to 3.3 adult females/year would be 6 to 12% of the adult female population.

   We assisted in capturing and marking grizzly bears in spring 1993 to cooperate with the research project. We also calculated grizzly bear population estimates throughout Unit 20 and Subunit 25C as part of a Region II project. Subunit estimates for number of bears (all ages) included: 124-165 in Subunit 20A, 47-112 in Subunit 20B, 195-326 in Subunit 20C, 36-83 in Subunit 20F, and 48-101 in Subunit 25C.

2. In Subunit 20B East, 21 grizzly bears were killed from 1989-90 through 1991-92, including 5 DLP kills and 16 hunter harvest. Of these 21 bears, 3 were <2 years old, and 14 were ≥2 years old, and 4 were of unknown age. If all unknown age bears were ≥2 years old, then the 3-year mean annual harvest would include 6.0 bears ≥2 years old. If all unknown age bears were <2 years old, then the 3-year mean annual harvest would include 4.7 bears ≥2 years old. Although 52% (11/21) of the bears killed during this 3-year period were males, only 44% (7/16) of the non-DLP bears were males.

3. The following information applies to the combined harvests in Subunits 20A Flats, 20B West, 20C, 20F, and 25C:

   3a. From 1989-90 through 1991-92, 44 grizzly bears were harvested from these subunits, including 41 hunter harvests and 3 DLPs. This mortality included 1 <2 years old, 37 bears ≥2 years old, and 6 of unknown age. If all unknown bears were ≥2 years old, then the 3-year mean annual harvest would include 14.3 bears ≥2 years old. If all of the bears of unknown age were <2 years old, then the 3-year mean annual harvest would include 12.3 bears ≥2 years old. Sixty-seven percent (28/42) of the bears of known sex were males. Sixty percent (25/42) of the hunter harvests were males.

   3b. The 3-year (1989-90 through 1991-92) mean annual subunit grizzly bear harvests were as follows: 2.3 in Subunit 20A Flats, 3.3 in Subunit 20B West (2.7 if DLPs excluded), 5.3 in Subunit 20C (5.0 if DLPs excluded), 2.0 in Subunit 20F, and 1.7 in Subunit 25C.

Progress Toward Meeting Project Objectives:

1. The objectives designed to reverse the decline in the Subunit 20A mountains grizzly bear population have not been met. The 3-year mean annual harvest (1989-90 through 1991-92) exceeded the objectives for no more than 3% of the adult females (6-12%), and for no more than 6% of the grizzly bears ≥2 years old (7%) to be taken.

   The preliminary data from the 1992-93 season indicate that harvest increased even further and included 24 grizzly bears (10 males, 14 females). During the next report period, we will evaluate the need to further restrict the grizzly bear harvest in this area.

2. We are meeting one of two objectives to manage grizzly bear mortality in Subunit 20B East to provide for a stable population. The 3-year mean annual harvest of 4.7-6 bears ≥2 years old is within the objectives for up to 6 bears.

The total mortality and hunter harvest consisted of fewer males (52% and 44%, respectively) than the objective for at least 55% males in the hunter harvest.

3. We are meeting all of the objectives for the grizzly bear mortality in Subunits 20A Flats, 20B West, 20C, 20F, and 25C combined.

   3a. The 3-year (1989-90 to 1991-92) mean annual human-caused mortality in this area included 12.3 - 14.3 bears ≥2 years old, which easily meets our objective of up to 26 bears. In addition, 60% of the hunter harvest were males, which also meets the objective for at least 55% males.

   3b. The 3-year mean annual bear harvest for each portion stayed within our quotas for: 3 from Subunit 20A Flats (2.3), 3 from Subunit 20B West (3.3, or 2.7 if DLPs excluded), 7 from Subunit 20C (5.3, or 5.0 if DLPs excluded), 7 from Subunit 20F (2.0), and 6 from Subunit 25C (1.7).

Subunit 20D

Project Objectives and Activities:

1. In Subunit 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.

   1a. Monitor harvest, seal bears, and analyze harvest data.

2. In Subunit 20D north of the Tanana River, liberalize the season and bag limit to 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.

   2a. Monitor harvest, seal bears, and analyze harvest data.

Work Accomplished During the Project Segment Period: Preliminary reported harvest is 12 grizzly bears in Subunit 20D during the 1992-93 regulatory year. Nine bears were taken south of the Tanana River and consisted of 5 males, 3 females, and 1 unknown. Three bears were taken north of the Tanana River and all 3 were males.

Progress Toward Meeting Project Objectives: Bears were sealed and harvest data were analyzed. The harvest objective was met for number of bears in southern Subunit 20D, but female harvest slightly exceeded the objective. Harvest continues to be below the objective for northern Subunit 20D, however, bag limits have been liberalized in this area to increase harvest.

Subunit 20E

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 FY93, hunters reported taking 14 grizzly bears (9 males and 4 females) in Subunit 20E which is comparable to the 5-year average of 14.6 bears. Males represented 64% of the harvest exceeding the 5-year average of 55%. Eleven bears (78.6%) were taken in the fall and three (21.4%) during spring. No bears were taken in DLP incidents.

Progress Toward Meeting Project Objectives: Most of the grizzly bear harvest occurs in the central subunit. The grizzly bear population in that area has declined substantially because of high harvests. As an apparent result, moose calf survival to 5 months has increased. The percent males in the bear harvest for the past 5 years has averaged 55% and the harvest rate is less than 4% of the estimated population indicating that the grizzly bear population in Subunit 20E is capable of sustaining a harvest of 25 bears annually.

Unit 21

Project Objectives and Activities:

1. Manage a grizzly population which will sustain a minimum annual harvest of 10 bears.

   1a. Monitor harvest, seal bears, and analyze harvest data.

2. Reduce nuisance bears and the unreported harvest of those bears at fish camps during summer by increasing the legal harvest during the open season.

Work Accomplished During the Project Segment Period:

1. During the report period 6 male bears and one female were taken in spring. Reporting of bears taken in DLP incidents is usually poor and an additional 3-5 bears may have been taken.

Progress Toward Meeting Project Objectives: Management is based on harvest data. We made minimal progress on changing the goals and objectives for the unit. Progress on unreported harvest was made through conservation education during school visits.

Unit 24

Project Objectives and Activities:

1. Manage a grizzly population which will 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.

   1a. Monitor harvest, seal bears, and analyze harvest data.

2. Reduce nuisance bear complaints, increase sealing compliance, and to reduce the unreported harvest of bears in the unit.

3. Work with U.S. National Park Service and U.S. Fish and Wildlife Service to determine bear density throughout the unit.

Work Accomplished During the Project Segment Period:

1. During the report period 18 bears were harvested. Nine were males, 8 were females, and one unknown sex. All but one was taken in the northern portion of the unit. Ten bears were taken during fall, 4 during spring, one DLP during summer, and one was killed on the road during winter.

3. We issued permits for hunting within the Northwest Arctic Bear Management area, information about participation and harvests are reported under Unit 23.

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

Subunits 25A, 25B, and 25D

Project Objectives and Activities:

1. Maintain a mean annual harvest of less than 35 bears, while maintaining a minimum of 60% males in the harvest.

2. Determine population size and composition in Subunit 25A by 1992.

Work Accomplished During the Project Segment Period: Final harvest figures are unavailable for Subunits 25A, 25B, and 25D, but it appears that harvest levels will be well below the maximum. An effort is being made to reevaluate the need for and status of the drawing permit hunt in Subunit 25A, and initial discussions with USFWS and affected guides were carried out. We revised bear population estimates for these areas as part of an effort to update the statewide population estimate.

Progress Toward Meeting Project Objectives: The population harvest objective has been consistently met during the past 5 years. Population estimates were revised but no large-scale counting efforts were possible.

Revised project objectives include:

1. Establish new harvest goals in view of revised population estimates.

2. Evaluate the possibility of a cautious liberalization of harvest by nonresident hunters in Subunit 25A through revised permit quotas, establishing a registration permit system, or discontinuing the use of a permit system.

Subunits 26B and 26C

Project Objectives and Activities:

1. Maintain a mean annual harvest of less than 25 bears, while maintaining a minimum of 60% males in the harvest.

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

Work Accomplished During the Project Segment Period: Current harvest figures are unavailable for Subunits 26B and 26C. In recent years harvest has generally been less than the maximum desired, except in Subunit 26B where the harvest goal was exceeded by a small amount. The existing drawing permit system for nonresidents is being reevaluated in view of changes in federal guide area assignments, revised bear population estimates, and the increase in bear numbers since the permit system was initiated. Major

activities during this period included administering the permit system, conducting a systematic revision of bear population estimates, and initiating a reevaluation of the existing permit system.

Progress Toward Meeting Project Objectives: The population harvest objectives continue to be met. Reported annual harvests have met both numerical and sex ratio goals.

Revised project objectives include:

1. Establish new harvest goals in light of revised population estimates.

2. Evaluate the possibility of a cautious liberalization of harvest by nonresident hunters through revised permit quotas, establishing a registration permit system, or discontinuing the use of any permit system.

Segment Period Project Costs:

	Personnel	Operating	Total
Planned	36.9	0.5	37.4
Actual	36.4	0.2	36.6
Difference	0.5	0.3	0.8

Submitted by:

Kenton P. Taylor
Regional Management Coordinator

Project Title: **Western and Arctic Alaska Brown Bear Survey and Inventory**

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

Project Objectives:

1. Maintain brown bear populations at existing densities in Unit 18.

   1a. Monitor harvests through the sealing and harvest reporting system and contacts with the public.

   1b. Improve compliance with bear harvest reporting requirements.

   1c. Obtain information about brown bear populations and densities in the Kilbuck Mountains through a cooperative capture-recapture brown bear research project with the FWS and BLM.

2. Minimize adverse interactions between bears and the public.

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

Work Accomplished During the Project Segment Period: We contacted local residents by telephone, mail, radio, and television announcements, and by newspaper articles about hunting season dates and bag limits, bear tag fee and sealing requirements, and other regulations pertaining to brown bear management. We also discussed brown bear management at public meetings especially emphasizing the need for better harvest reporting. 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 at communities concerning different ways to reduce adverse encounters between bears and the public.

Formal and informal meetings occurred among representatives of the Association of Village Council Presidents (AVCP), USFWS Subsistence Division, local Advisory Committees, and local IRA councils to discuss the Western Alaska Brown Bear Management Area. Other topics of discussion included the subsistence registration permit system, obtaining improved harvest information, liberalization of season and bag limits, and the inter-agency cooperative brown bear research project.

Cooperative efforts by the ADF&G, USFWS, and BLM was begun to capture brown bears and to periodically radiolocate these bears over a period of 6 years. The goal is to develop a brown bear density and productivity estimate for bear populations south of the

Kuskokwim River. Sealing of harvested bears and reporting by subsistence hunters occurred at villages, at the ADF&G office in Bethel, and at hunters' residences. Hunter interviews by the ADF&G and AVCP of subsistence hunters was begun.

Progress Towards Meeting Project Objectives: Public notices about bear/landfill problems has improved public awareness of the need to clean up these areas. No bears were reportedly taken in DLP incidents this regulatory year, even though some bears apparently frequented several landfills.

Public announcements, village meetings, and license vendor contacts about the need to purchase resident bear tags or obtain Western Alaska Brown Bear permits has improved regulatory compliance throughout the Yukon-Kuskokwim Delta. Obtaining a registration permit by subsistence hunters in lieu of complying with the $25 tag and sealing requirements was initially very successful because 90 of these permits were issued throughout the Delta villages. We hope that use of these permits, longer seasons, more liberal bag limits, and elimination of the sealing requirement will improve acceptance of the regulations by subsistence hunters and improve our ability to gather harvest information.

Habitat protection of important areas used by bears is being achieved through comments provided to Habitat Division, and the USFWS Refuge Management Planning Team.

We are obtaining improved bear harvest and demographic data through the bear research project and the Western Alaska Brown Bear harvest reporting system. Subsistence hunters have begun to report their harvests through interviews conducted by the Department, AVCP, and USFWS. Combining harvest reporting through the sealing program for recreational hunters and subsistence hunter interviews has improved our ability to gather accurate bear harvest. Preliminary harvest records from the 1992-93 regulatory year indicate that 6 bears have been reported taken so far under the subsistence regulations, and 5 bears under the general hunting regulations.

Forty-one brown bears were captured and marked during the June 1993 brown bear research study in the Kilbuck Mountains. A pre-molar was extracted, blood samples were collected, and measurements and weights were taken. Of these 41 bears, 26 were instrumented with conventional VHF radio collars for further monitoring. Continued monitoring and a second capture proposed for 1994 will allow the Department to conduct a census during June 1995.

Project Location: Unit 22 (25,230 mi^2)
Seward Peninsula and that portion of the Nulato Hills draining west into Norton Sound

Project Objectives and Activities:

1. To maintain grizzly bear numbers at existing densities.

   1a. Assess harvest through the sealing program.

   1b. Collect specimens as needed from hunter-killed bears.

   1c. Improve compliance with bear harvest reporting.

2. To minimize adverse interaction between bears and the public.

3. To begin development of a grizzly bear management plan in consultation with the public, interested local organizations, and other agencies.

Work Accomplished During the Project Segment Period: Radio-collared bears from the Unit 22 bear study initiated in spring 1989 continued to provide us with valuable movement, home range, and demographic information. Throughout the year, ADF&G staff conducted 10 survey flights and located 31 marked bears on 91 occasions. These data on locations, associations, and mortality are annually added the existing data base.

Known mortality during this report period was 67 bears (60 legal hunter-killed and 7 other). Hunters harvested 25 bears (14 males and 11 females) during fall 1992, and 35 bears (21 males and 14 females) during spring 1993.

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

	Fall 1992		Spring 1993	
Subunit	Males	Females	Males	Females
22A	2	6	6	1
22B	3	1	7	3
22C	4	2	2	2
22D	5	2	5	7
22E	0	0	1	1

Unit 22 residents accounted for 53% of the legal harvest, and other Alaskan residents and nonresidents accounted respectively for 15% and 32% of the harvest.

During the report period, we participated in numerous meetings and impromptu discussions with unit residents and reindeer herders discussing possible ways of reducing adverse bear/human interactions and predation by bears upon reindeer.

Department and Fish and Wildlife Protection staff traveled to villages on several occasions to explain the need for regulations and harvest reporting as well as assisting

license vendors. As in past years, we also spent a substantial amount of time answering and making phone calls, writing newspaper articles, sending out mailings of regulation materials, and assisting the unit's license vendors.

Staff expends additional effort each year sealing bears during evenings, on weekends, and, depending on the circumstances, in surrounding villages. A village sealer is also available in Unalakleet to seal harvested bears taken in the southeast portion of the unit.

Progress Towards Meeting Project Objectives: Limited progress has been made in reducing confrontations between bears and the public. Some individuals who previously had problems with bears in camps have made an effort to keep cleaner camps. Discussions with the unit's reindeer herders resulted in some herders making attempts to reduce bear/reindeer interactions by spending more time with the reindeer, and herding reindeer to areas where bear densities are lower.

Many unit residents dislike grizzly bears, and openly express their desire to have them eliminated completely. Efforts to inform the public of the importance of wildlife conservation, and the need for regulations have been effective in some communities as the number of individuals purchasing licenses and bear tags has increased. Additional contact with local residents, particularly village residents, needs to occur if compliance with current bear regulations is to become a reality.

Actual development of a grizzly bear management plan has not occurred. We took initial steps by communicating our intent with unit residents and representatives of several government agencies. Data from the recently completed bear study coupled with information reported by the general public and others will be used in producing an effective Unit 22 bear management plan.

Project Location: Unit 23 (46,00 mi2)
Kotzebue Sound and the western Brooks Range

Project Objectives:

1. Maintain brown bear population densities between 1 bear/40 mi^2 and 1 bear/20 mi^2.

   1a. Improve compliance with bear harvest reporting requirements by local residents.

   1b. Monitor harvests through the sealing program and the harvest reporting system.

2. Minimize adverse interactions between bears and the public.

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

Work Accomplished During the Project Segment Period:

1. Implemented an alternative set of brown bear hunting regulations for subsistence hunters. Village meetings were held to explain the requirements for the hunt and to make available registration permits.

2. Sealed bears harvested by hunters.

3. Collected information on the relative abundance of brown bears in Unit 23 through a public survey. Individuals with extensive wildlife field experience in the unit were contacted to participate in the survey.

4. Harvest data for Unit 23 is as follows:

	Fall 1992			Spring 1993		
	Male	Female	Unk.	Male	Female	Unk.
Local Resident	5	1	1	1	0	0
Nonlocal Resident	13	10	0	3	0	0
Nonresident	6	1	0	2	0	0
DLP/Accidental	3	1	0	0	0	0
Total	27	13	1	6	0	0

5. We issued 96 registration permits for harvesting brown bears in the Northwest Alaska Brown Bear Management Area. Harvest data is still being collected for this season.

Progress Toward Meeting Project Objectives:

1. The results of the public survey were inconclusive. No consensus could be reached regarding unitwide density because of lack of information (or low confidence) in many areas of the unit. The density of bears adjacent to the Red Dog mine was determined in 1987 by a mark-recapture census. This census should be replicated by 1997.

2. Local residents were the major participants in the new subsistence brown bear registration hunt. This may be a sign that regulations may be meeting the needs of local residents. A study assessing unreported harvest is needed to evaluate compliance with reporting requirements.

3. A technique to estimate brown bear population trends that does not depend on harvest data and is feasible for managers to apply on a regular basis is needed in Unit 23.

Project Location: Subunit 26A (53,000 mi^2)
Western North Slope

Project Objectives and Activities:

1. Maintain brown bear populations at current levels.

   1a. Monitor the harvest through the statewide sealing program.

2. Minimize adverse interactions between bears and the public.

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

Work Accomplished During the Project Segment Period: A mark-capture census was conducted in a study area in the Utukok and Kokolik drainages in Subunit 26A West (west of 159 degrees longitude) during June of 1992 using radio-collared bears as the "marked" animals. Department researchers found a density of 7.7 bears/100 mi^2. The 95% confidence interval was 7.3 to 8.2 bears/100 mi^2 (Reynolds, pers. com.).

The current population estimate for bears in Subunit 26A is 900 to 1,120 bears; 400 bears are estimated in Subunit 26A West and 500-720 are estimated in Subunit 26A East (Reynolds 1989). This represents an increase from the pre-1987 population estimate of 645 to 780 bears.

We have not yet received all data on harvested bears for 1992-93. Based on the information currently available, 29 bears were reported harvested during 1992-93. In Subunit 26A West, 16 bears were killed, and in Subunit 26A East (east of 159° W. longitude), 13 bears were killed. Twenty-three bears were males, 2 were females, and 4 were unknown. The mean skull size for harvested males was 21.7 inches, and 19.6 inches for females. Seventeen bears were harvested during September, 2 during October, 4 during April, and 2 during May. Aircraft were used for transportation by 21 hunters, snowmachines by 3 hunters, and a boat by 1 hunter. The mean number of days per hunt was 4.7. Twenty of the successful hunters were nonresidents and 9 were residents, including 1 who was a local resident of Subunit 26A.

Information was distributed through the media describing safe camping practices on food and garbage, and the correct handling of problem bears. Posters and pamphlets on bear safety were placed at public locations.

Progress Toward Meeting Project Objectives: If we assume safe harvest limits should not exceed 4% of the population, the allowable sustained yield for Subunit 26A is 36 to 47 bears. The reported grizzly bear harvest for 1992-93 of 29 bears was within this allowable limit. If Trent's (1989) estimate that the unreported harvest may approximate 38-54% of the reported harvest is accurate, the actual harvest would be 40-45 bears.

No serious adverse encounters reportedly occurred between brown bears and the public in Subunit 26A during 1991-92. The information distributed to the public on bear safety seemed to be well received.

Literature Cited:

Reynolds, H. V. 1989. Unit 24-26 brown/grizzly 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.

Trent, J. N. 1989. Subunit 26A brown/grizzly 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:

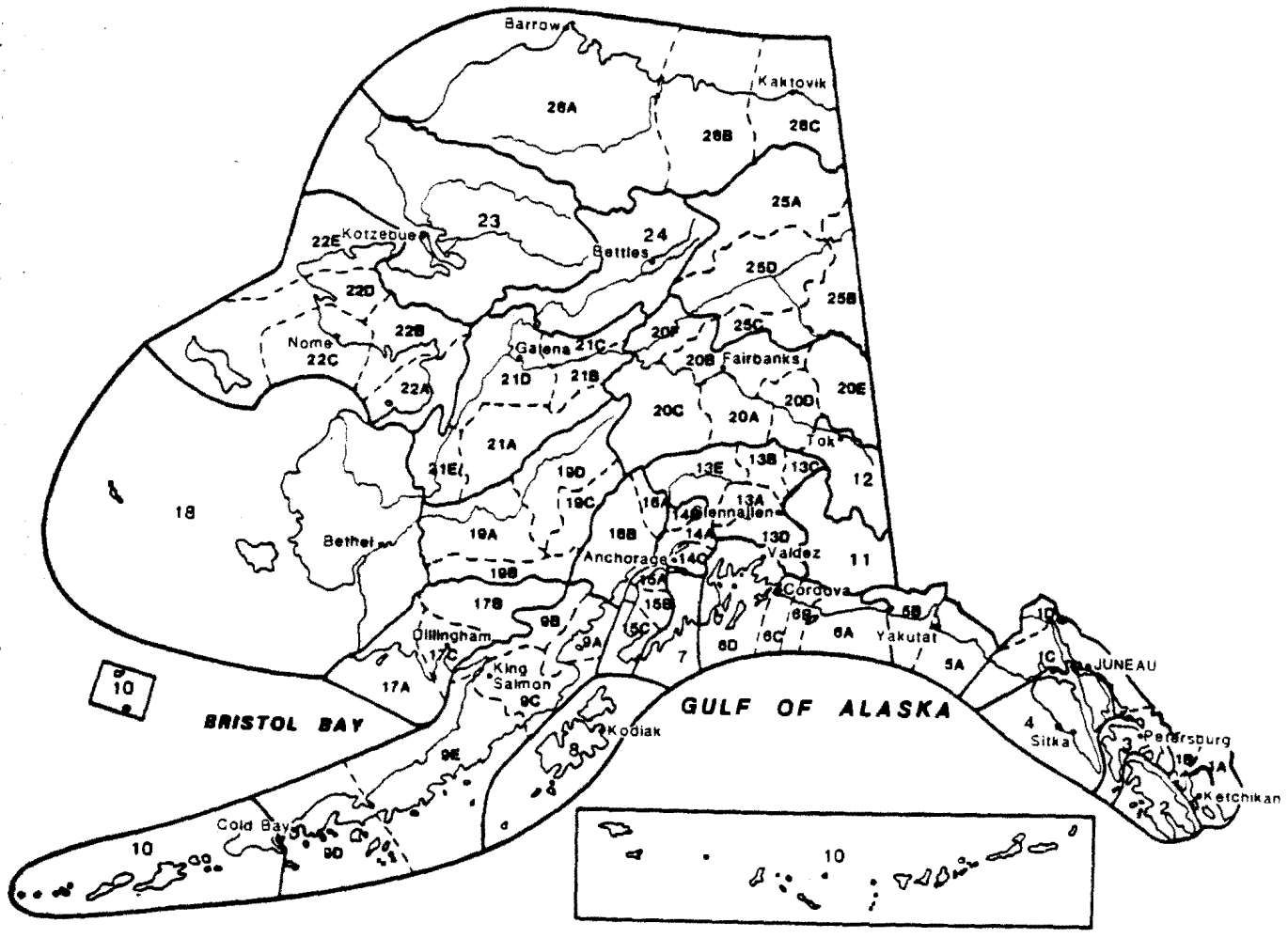
	Personnel	Operating	Total
Planned	28.1	6.8	34.9
Actual	28.1	7.0	35.1
Difference	0	0.2	0.2

Explanation: Costs attributable to establishment of the 2 subsistence bear management areas were higher than expected.

Submitted by:

Steve Machida
Survey-Inventory Coordinator

Alaska's Game Management Units



Federal Aid in Wildlife Restoration

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 then allots the funds back to states through a formula based on each state's geographic area and the number of paid hunting licenseholders in the state. Alaska receives 5% of the revenues collected each year, the maximum allowed. The Alaska Department of Fish and Game uses the funds to help restore, conserve, manage, and enhance wild birds and mammals for the public benefit. These funds are also used to educate hunters to develop the skills, knowledge, and attitudes necessary to be reponsible hunters. Seventy-five percent of the funds for this project are from Federal Aid.