# BROWN BEAR ANNUAL SURVEY AND INVENTORY PERFORMANCE REPORT

**STATE:** Alaska

**GRANT AND SEGMENT NR:** W-33-2

**PROJECT NR:** 4.0

**WORK LOCATION:** Statewide

**PERIOD:** 1 July 2003–30 June 2004

**PROJECT LOCATION:** Game Management Regions 1, 2, 3, and 5

**PROJECT TITLE:** The Status of Alaska Brown Bears and Factors Influencing Their Populations

**REPORT DESCRIPTION:** This statewide performance report includes the four regions involved in brown bear survey and inventory activities. Regional activities are listed before specific activities by game management unit.



#### **Regionwide Activities**

Activity : Finalize brown bear management reports.

Brown bear management reports were not due this reporting cycle. Management staff continued to collect information for preparing the next report that is due in 2005.

Activity : Provide information to the Board of Game on brown bear management The Board of Game meets on a two year cycle for the SE Alaska region and did not meet during this reporting period. However, in preparation for the November 2004 meeting, regional staffs have met and discussed ideas may need to be addressed at the next meeting.

Activity : Monitor the harvest by using and analyzing data from sealing records, registration permits, and interviews with hunters.

Brown bear skulls were measured and the sex determined as bears were sealed, and except in cases where the hunter damaged the skull or external sex identifiers were removed, this data was collected on nearly every bear presented for sealing. All hunters region-wide were required to register for brown bear hunting and submit reports by the

end of the season detailing their hunting efforts. Preliminary figures indicate that about 229 bears were killed during the report period, of which 31 were DLP.

Activity : Collect data, determine sex, and extract a tooth for aging from bears presented for sealing by hunters.

ADF&G Wildlife Conservation staff and FWP Troopers sealed brown bears harvested in the region. A tooth was extracted from each bear presented for sealing.

Activity : Obtain estimates of ages of all harvested bears by tooth sectioning. Teeth from harvested bears are being processed.

Activity : Collect data on bears killed in defense of life and property.

Area biologists worked with FWP troopers, municipal police officers, and private citizens to collect information on DLP kills. In Unit 3, one bear was killed following a nonfatal mauling incident. In Unit 4, 16 bears were killed DLP, 1 was found dead, and 2 were killed illegally. In Unit 1D, no bears were reported killed as DLP, although 2 spring cubs were hit by one vehicle and killed. In Unit 5, 6 bears were killed under DLP, and another 3 died in non-hunting situations.

Activity : Coordinate with community decision makers to reduce bear/garbage problems that may be detrimental to bears.

Area biologists worked with a community committee and US Forest Service personnel in Sitka to address the garbage issue. At the end of the regulatory year, the committee has compiled bear incident and DLP records to identify target areas within the community that require action and move toward recommendations to the borough assembly. Area biologists also worked with the community of Hyder, Alaska and the Bear Safe group in Stewart, BC to address the garbage issue. Staff also worked with other state personnel and the city of Haines, Alaska to continue to improve garbage containment practices. In Yakutat efforts were continued towards eliminating food access by bears at the city landfill. ADF&G biologists also worked with the city officials to begin efforts in educating the community about bears and refuse management in light of food conditioned landfill bears searching for meals in residential areas.

Activity : Coordinate with land managers and guides regarding guided hunter effort. We helped guides and hunters cope with a regulatory change by the Board of Game, that requires drawing permits for non-resident brown bear hunters in Unit 1D for the fall and spring hunts.

# Unit 4

Activity : Radio-tag and aerial track a sub-population of bears.

Area biologists and researchers continued work on northeast Chichagof Island bears during the report period. Thirteen radio collars were recovered at or near den sites following the spring emergence. Data collected from these collars is currently being analyzed.

Activity : Monitor public use of the Pack Creek viewing area on the Stan Price State Wildlife Sanctuary.

Along with Forest Service personnel, ADF&G staff monitored public use at the Pack Creek area throughout the summer months.

# Other activities funded by Federal Aid on this project: None

Stewardship Investment items purchased: None

### **Total Regional Segment Period Project Costs (in thousands):** \$37.2

Submitted by: Dale L. Rabe – Region I Management Coordinator

### The Status of Alaska Brown Bears and Factors Influencing Their Populations in Region II

#### **Regionwide Activities**

Activity: Draft a brown bear management report.

Brown bear management reports were not due this reporting cycle. Management staff continued to collect information for preparing the next report that is due in 2005.

Activity: Monitor the brown bear harvest through field observations, brown bear sealing reports, and interviews with successful hunters.

See below

Activity: Collect harvest data, determine the sex, and extract a tooth for aging from brown bears presented for sealing by hunters.

See below

Activity: Obtain estimates of ages of harvested bears by tooth sectioning.

Teeth were collected from all bears sealed and the teeth were sent to an out-of-state laboratory for sectioning and aging. Ages are entered into the brown bear database as results are received.

Activity: Conduct line-transect/double count censuses of brown bear populations and refine technique.

During the spring of 2004, aerial line-transect surveys for brown bears were flown in GMU 13A and B. From May 21–30, a total of 637 transects were surveyed by small twoperson aircraft. The transects averaged about 30 kilometers in length. During the course of the survey, 48 brown bear groups, consisting of 87 bears, were observed.

#### Unit 6

Activity: Monitor the brown bear harvest through field observations, brown bear sealing reports, registration permit reports from Montague Island, and interviews with hunters.

The preliminary 2003–04 harvest was: Males 34 Females 16 (32%) Total 50

#### Units 7 and 15

Activity: Monitor the brown bear harvest through field observations, brown bear sealing reports, and interviews with successful hunters.

The preliminary mortality for 2003/04:Males 4Females 10 (59%)Unknown 3Total 17

This mortality does not include any harvest from hunting. There was not an open hunting season during 2003–04.

#### Unit 8

Activity: Begin implementing recommendations of Unit 8 brown bear management plan.

We completed a comprehensive bear conservation and management plan for the Kodiak archipelago in February 2002. Implementation of plan recommendations continued in 2003–04 with the Kodiak Unified Bear Subcommittee developing and publishing a brochure on bear viewing etiquette ("So you want to see a Kodiak bear…"). We continued working with area villages to reduce the availability of human food and garbage to bears, including a cooperative project with the Kodiak Island Borough, the Village of Larsen Bay, and the Exxon Valdez Oil Spill Trustees to eliminate the use of the Larsen Bay dump by a plethora of bears. We also initiated a cooperative effort with the Kodiak Brown Bear Trust, the University of Idaho, and the Kodiak National Wildlife Refuge to consolidate and analyze brown bear research and harvest data collected over the past two decades.

Activity: Monitor the brown bear harvest through field observations, brown bear sealing reports, and interviews with successful hunters.

During the fall season, 194 hunters went afield and killed 54 bears. In the spring season 252 hunters went afield and killed 111 bears. The annual sport harvest was 165 bears, 124 males (75%) and 41 females (25%). Four bears (2 males and 2 females) were killed in the federal brown bear subsistence hunt. An additional 24 non-sport mortalities were documented as follows: defense of life or property (DLP) - 2 (1 male and 1 female); natural/unknown - 12 (3 males and 11 unknown sex); illegal - 9 (2 males, 2 females, 5 unknown sex); and, mercy killing – 1 (1 male).

The 2003–04 sport harvest of 165 bears was higher than the annual harvest objective of 150 bears. Males composed 75% of the harvest, well above the minimum objective of 60% males. Intensive aerial survey data suggest that the unit-wide bear population continues to be stable to slightly increasing.

#### Units 9 and 10

Activity: Encourage unit residents to reduce attractive nuisances that lead to DLP kills.

Brown bears and humans continue to come into conflict in virtually every village in Unit 9. The availability of a new bear safety video may improve educational efforts with local residents and recreational visitors. There is some increased used of electrified fencing in a few locations.

Activity: Conduct population trend counts adjacent to heavily used salmon streams. Surveys were not conducted in 2003 due to staff turnover.

Activity: Monitor the brown bear harvest through field observations, brown bear sealing reports, and interviews with successful hunters.

The preliminary 2003/04 harvest was:

Unit 9	Males 236	Females 80 (25%)	Total	315
Unit 10	Males 4	Females 1 (20%)	Total	5

#### Units 11 and 13

Activity: Monitor the brown bear harvest through field observations, brown bear sealing reports, and interviews with successful hunters.

The preliminary 2003/04 harvest was: GMU 13 Males 57 Females 56 (50%) Unknown 2

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GMU 11	Males 11	Females 3 (21%)	Total 14

#### Unit 14

Activity: Monitor the brown bear harvest through field observations, brown bear sealing reports, and interviews with successful hunters.

Total 115

The pre	eliminary 200	3/04 harvest was:		
14A	Males 12	Females 2 (14%)	Total	14
14B	Males 6	Females 3 (33%)	Total	9
14C	Males 1	Females 2 (67%)	Total	3
Unit 14 Total	Males 19	Females 7 (27%)	Total	26

# Unit 16

Activity: Monitor the brown bear harvest through field observations, brown bear sealing reports, and interviews with successful hunters.

The preliminary 2003/04 harvest was:

16A	Males 7	Females 4 (36%)	Total	11
16B	Males 61	Females 19 (24%)	Total	80
Unit 16 Total	Males 68	Females 23 (25%)	Total	91

# Unit 17

Activity: Monitor the brown bear harvest through field observations, brown bear sealing reports, and interviews with successful hunters.

The preliminary 2003/04 reported harvest was:Males 53Females 49 (48%)Unknown 1Total 103

Activity: Work with local home and recreational cabin owners to try and reduce bear damage and defense of life and property kills.

Installed electric fences at fish drying racks, animal pens, and food storage areas to deter damage by bears. Reported DLP kill was 6 brown bears; Known illegal kill was 2.

# Other activities funded by Federal Aid on this project:

Surveyed brown bear population in Unit 9C in cooperation with the National Park Service 24–30 May 2004.

Unit 6 conducted track and den surveys during May, 2004 resulted in 81 and 133 observations on Montague and Hinchinbrook, respectively.

#### Stewardship Investment items purchased: None

# **Total Regional Segment Period Project Costs (in thousands):** \$138.14

#### Submitted by: Bruce Bartley, Acting Assistant Management Coordinator

### The Status of Brown Bear and Factors Influencing Their Populations in Region III

#### **Regionwide Activities**

Activity: Provide information to the Board of Game and advisory committees. Provided information on brown bear management issues and population status to the Board of Game and advisory committees.

Activity: Monitor the brown bear harvest through field observations, brown bear sealing reports, interviews with successful hunters and analyze data.

Monitored brown bear harvest through field observations, hunter interviews, and analysis of sealing records. Preliminary data indicate:

Unit 12: 8 brown bears harvested (61% male).
Units 19, 21A, 21E: 80 bears (56% males).
Units 20A, 20B, 20C, 20F, and 25C: 31 brown bears harvested (55% male).
Unit 20D: 4 brown bears harvested.
Unit 20E: 18 brown bears harvested (61% male).
Units 21B, 21C, and 21D: 2 brown bears harvested.
Unit 24: 2 brown bears harvested.
Units 25A, 25B, 25D, 26B, and 26C: 39 brown bears harvested, including 18 males, 20 females and one of unknown sex.

Activity: Collect data, determine sex, and extract a tooth for aging from brown bears presented for sealing by hunters.

Collected data from bears presented for sealing to determine sex of harvested bears, extracted teeth for aging.

Activity: Obtain estimates of ages of harvested bears by tooth sectioning. Submitted teeth extracted from harvested bears for sectioning and aging.

# Unit 12

Activity: Monitor blueberry abundance on permanent study plots to evaluate relationships between berry abundance and brown bear harvest.

This activity has been discontinued under this project. Information from similar monitoring done under the black bear project will be analyzed with respect to brown bears

# Unit 20E

Activity: Monitor blueberry abundance on permanent study plots to evaluate relationships between berry abundance and brown bear harvest.

This activity has been discontinued under this project. Information from similar monitoring done under the black bear project will be analyzed with respect to brown bears.

# Other activities funded by Federal Aid on this project:

None

# **Stewardship Investment items purchased:**

\$9,758 boat purchased for brown bear management programs in conjunction with moose, bison, and black bear management in the McGrath Area.

# **Total Regional Segment Period Project Costs (in thousands):** \$61.0

Submitted by: Doreen Parker McNeill, Assistant Management Coordinator

### The Status of Alaska Brown Bears and Factors Influencing Their Populations in Region V

#### **Regionwide Activities**

Activity 1: Provide information to the Board of Game on brown bear management. During the November 2003 Board of Game (BOG) meeting the Department provided information regarding population status of brown bears in Units 18, 23, 22, and 26A. We commented on and provided additional information at the board's request on 2 proposals for Unit 18, 2 proposals for Unit 23, and 1 proposal for Unit 26A. There were no brown bear proposals to comment on for Unit 22.

Activity 2: Review and revise population objectives.

In Units 18, 22, 23, and 26A we reviewed brown bear populations objectives and identified the need for population trend information and current population census estimates. Mark-recapture census estimates are very expensive and area management biologists are investigating using 'mock mark-recapture' methods to develop population estimates. Since this work is not completed, population objectives have not been revised.

Activity 3: Monitor the brown bear harvest through field observations, analyses of brown bear sealing data, and interviews with hunters.

<u>Unit 18.</u> We reviewed harvest data from 19 sealed bears to determine the following harvest summary. The total reported harvest of 19 bears included 4 bears taken in Defense of Life and Property (DLP). Sex composition of the harvest was 7 females, 8 males and 4 of unknown sex. All bears were taken in the Kilbuck Mountains except 2 DLP bears and 1 male bear from the Yukon River drainage. All bears, except 1 bear in the Yukon River drainage, were killed during the fall hunt and all of the DLP bears were taken during July.

<u>Unit 22</u>. We reviewed harvest data from 89 sealed bears to determine the following harvest summary. The total reported harvest of 89 bears included 4 DLP bears. Sex composition of the harvest was 54 males, 34 females, and 1 of unknown sex.. Sixty-seven bears were harvested during the fall portion of the season, and 22 bears were harvested during the spring portion. The fall season harvest (67 bears) was the highest documented fall harvest since the Department began recording Unit 22 brown bear harvest in 1961. An early spring break up and poor traveling conditions were significant factors in the low spring bear harvest (22 bears). The reported annual harvest of 89 bears was higher than the 10-year annual average of 77 bears.

<u>Unit 23.</u> We reviewed harvest data from 42 sealed bears to determine the following harvest summary. Sex composition of the harvest was 30 males, 11 females, and 1 of unknown sex. Forty bears were harvested during the fall portion of the season, and 2 bears were harvested during the spring portion. Poor hunting conditions after 1 January 2004 were responsible for the low spring season harvest. Nine residents of Unit 23, 20 residents of Alaska outside Unit 23, and 14 nonresidents reported hunting brown bears.

<u>Unit 26A.</u> We reviewed sealing data from 15 sealed bears to determine the following harvest summary. There were no DLP bears taken during the reporting period. Sex composition of the harvest was 4 females and 11 males. Nine bears were killed by non-

residents, 5 by non-local residents, and 1 by a local resident. Access to the hunt area was by airplane for 13 of the bears taken, boat for 1, and a 4-wheeler was used by 1 hunter. Eight hunters used a registered guide, 4 used commercial transporters, and 3 used no commercial services. Eleven bears were harvested in the eastern portion of Unit 26A, and 4 were harvested in the western portion. Eight bears were harvested in August, 5 in September, and 2 in May. The mean skull size for males was 21.21 inches and 19.25 inches for females The average annual harvest for the last 10-years is 23 bears per year.

Activity 4: Analyze registration permit harvest data collected in the Northwest Alaska Brown Bear Management Area and the Western Alaska Brown Bear Management Area.

Northwest Alaska Brown Bear Management Area. No brown bears were reported taken under the Northwest Alaska Brown Bear Management hunt.

Western Alaska Brown Bear Management Area. Of 59 registered hunters, 26 have reported their hunting activity in the WABBMA. To date, 3 bears have been taken including 2 male bears from Unit 18. Reports are still being received and these data are preliminary.

Activity 5: Use public education programs and/or increased communication with the public to improve understanding of hunting regulations and the value of conserving brown bear populations, and to obtain better harvest data through increased harvest reporting.

<u>Unit 18.</u> We used educational efforts, newspaper articles, and informal discussions with village residents, particularly along the Yukon River to achieve better conservation of brown bears and compliance with DLP regulations. Residents are more willing to contact ADF&G when they have a problem with bears because of these efforts.

<u>Unit 22</u>. Increased communication with the village public safety officers (VPSOs) and tribal councils seems to have resulted in better reporting of bears taken in DLP near villages enabling us to better monitor the population. Educational efforts, especially loaning electric fences to the public, have reduced DLP harvests at camps where bears have been a chronic problem.

<u>Unit 23.</u> We spoke to the public about the importance of reporting all bears killed while hunting or in defense of life and property.

<u>Unit 26A.</u> At public meetings and during individual contacts with local residents we discussed bear hunting regulations, the importance of harvest reporting, and methods to minimize human-bear conflicts. We do not know how commonly bears are taken in DLP circumstances without being reported.

Activity 6: Collect data, determine sex, and extract a tooth for aging from brown bears presented for sealing.

During the sealing of brown bears data was collected, sex was determined, and teeth were extracted for age determinations. In Unit 18, data and teeth were collected during sealing in the field, Anchorage, Bethel, and Homer; there were 8 males and 7 females in the harvest. In Unit 22 data was collected from 62 bears sealed at Nome, 10 bears at White Mountain, 5 bears at Shishmaref, and 12 bears at Unalakleet; there were 54 males, 34 females and 1 bear of unknown sex.in the harvest. Teeth were extracted from 85 bears harvested in Unit 22. In Unit 23 data and teeth were collected during the sealing in

Kotzebue and there were 30 males, 11 females and 1 bear of unknown sex. in the harvest. In Unit 26A, all bears were sealed outside the unit where other staff collected data and teeth; there were 11 males and 4 females in the harvest.

Activity 7: Obtain estimates of ages of sealed bears by tooth sectioning.

<u>Unit 18.</u> Premolars from 15 bears harvested in 2003-2004 were extracted and sent to Matson's Lab for sectioning and aging and results for these samples are not available. Results from teeth of 12 bears harvested in 2002-2003 show an average age was 8.75 years and range in age from 2 to 26 years.

<u>Unit 22</u>. Premolars from 85 bears harvested in 2003-2004 were extracted and sent to Matson's Lab for sectioning and aging but results for these samples are not available. Results from teeth of 80 bears harvested in 2002-2003 show an average age was 6.4 years and range in age from 1 to 27 years. Since record-keeping began in 1967, the average age of bears harvested in Unit 22 has been 6.5 years.

<u>Unit 23.</u> Premolars from 42 bears harvested in 2003-2004 were extracted and sent to Matson's Lab for sectioning and aging but results for these samples are not available. Results from teeth of 25 bears harvested in 2002-2003 show a median age of 7.5 years and range from 2 to 28 years. The median age of all male bears taken and aged in Unit 23 since 1961 has been 7 years.

<u>Unit 26A.</u> Premolars from at least 14 bears harvested in 2003-2004 were extracted and sent to Matson's Lab for sectioning and aging but results for these samples are not available. In 2002-2003 14 bears were harvested and 13 were aged, showing an average age of 7.8 years, with ages ranging from 2 to 21 years

Activity 8: Communicate and coordinate with local residents to reduce bear/human problems, improve understanding of defense of life or property (DLP) situations, and reduce need for DLP kills.

<u>Unit 18.</u> We installed an electric fence at a fish camp near St. Marys along the Andreafsky River as a demonstration project to reduce human-bear conflicts. This project yielded ample evidence for the efficacy of this tool and the village participant in the demonstration project has been a strong, and vocal, proponent of using electric fences to reduce bear problems.

<u>Unit 22.</u> During the reporting period we acquired a solar-operated electric fence to loan to the public experiencing problems with brown bears. The fence was set up at a seasonal fish camp on a river approximately 70 miles east of Nome, and it proved to be a very effective bear deterrent. We used public service announcements on the radio and in newspapers to emphasize awareness of bears in the area, the importance of clean camps and not leaving food, dog food, garbage or other attractants unattended or accessible to bears. Copies of the bear safety video, "Staying Safe in Bear Country," are available on loan from the Nome Fish and Game office to interested groups or individuals. The pamphlet "Bear Facts - The Essentials for Traveling in Bear Country" has been distributed throughout Unit 22, and is also available at the Nome Fish and Game office.

<u>Unit 23.</u> We spoke to numerous hunters, especially hunters who reside outside of Unit 23, who call for information about bear safety. We also spoke with local residents about avoiding defense of life and property situations and the need to report bears taken under such circumstance.

<u>Unit 26A.</u> Problematic human/bear interactions appear to be rare in this unit. Efforts to improve knowledge of DLP regulations and using registration permits for subsistence hunting of bears in the Northwest Alaska Brown Bear Management Area has reduced the wasteful taking of bears and has improved attitudes about dealing with problematic bears.

### Unit 22

Activity 1: Assess population trends through field observations and analyses of sealing data. The population trend in Unit 22 appears to be stable based on sex and age data from the harvest. During this reporting period males comprised 61% of the harvest and this was similar to the previous 6-year average of 64% males in the harvest annually. Age structure of harvested brown bears has changed little since 1967, averaging 6.5 years.

Activity 2: Analyze harvest data collected from selected communities in Unit 22. (Note: Data collected using Community-based Harvest Assessments in coordination with the ADF&G Division of Subsistence, Alaska Native organizations and other resource agencies and is not funded by Federal Aid; Analysis of harvest data is funded by Federal Aid).

Community-based harvest assessment surveys were conducted in Shaktoolik and St. Michael where no bears were harvested, thus no data to analyze.

#### Unit 18, 23 and 26A

Activity 1: Monitor population trends through field observations, censuses, registration permit hunt reports, and analysis of sealing data.

<u>Unit 18</u>: Brown bear populations were monitored through opportunistic observations while surveying and radiotracking other wildlife species. Brown bear abundance was also discussed with advisory committee members, local residents, and other agencies. Brown bear populations north of the Yukon River and in the Kilbuck Mountains are stable and currently at or near carrying capacity.

<u>Unit 23</u>. Harvest data indicates there has been little change in the sex or age structure of bear populations in Unit 23 since the early 1960s; however, modeling exercises have shown that harvest data is relatively insensitive to biological changes in bear populations so these results showed be viewed with caution. Our opportunistic observations and reports from the public suggest that bear numbers are higher than in past years and may still be slowly increasing.

<u>Unit 26A</u>. Opportunistic observation of brown bears during surveys for other species and the observations of hunters and pilots indicate that brown bears are relatively plentiful, and most users indicate the current population level of brown bears is satisfactory. The analysis of sealing data indicate that the proportion of males and the age structure of harvest in Unit 26A is healthy and suitable for maintaining the current population level of brown bears in Unit 26A.

Activity 2: Remove radiocollars at the end of their useful battery life from bears in Unit 18.

This activity was completed during the previous reporting period.

Activity 3: Analyze harvest data collected from selected communities in Unit 23. (Note: Data collection using Community-based Harvest Assessments is a cooperative effort with the ADF&G Division of Subsistence, Alaska Native organizations and other resource agencies and is not funded by Federal Aid. Analysis of harvest data is funded by Federal Aid).

Community-based harvest assessments suggest the harvest of brown bears by residents of Unit 23 is low.

Activity 4: Analyze harvest data collected from selected communities in Unit 26A. (Note: Data collection is a cooperative effort with ADF&G Subsistence Division and the North Slope Borough and is not funded by Federal Aid. Analysis of harvest data is funded by Federal Aid).

We estimated local harvest by using data from the North Slope Borough and other community-based harvest assessment studies. We determined that the mean number of bears harvested in Unit 26A villages per year ranges from 6–12 bears annually.

Activity 5: Improve communication with the public regarding radiocollared bears so that ADF&G can conduct a population census in Unit 18.

We are no longer directly working towards achieving a population estimate in Unit 18 using radiocollars and mark-recapture methods. We participated in an effort with the Togiak National Wildlife Refuge to develop a density estimate applicable to Unit 18.

Activity 6: Develop updated population objectives in cooperation with the public and the USFWS in Unit 18.

We discussed bear population parameters with the public and local residents, particularly those parameters revealed during the bear project that terminated during the previous reporting period. We await census results from the Togiak National Wildlife Refuge.

# Other activities funded by Federal Aid on this project:

None.

Stewardship Investment items purchased: None.

**Total Regional Segment Period Project Costs (in thousands):** \$23.1

Submitted by: Peter Bente, Management Coordinator

**Statewide Project Costs (in thousands):** 

State Share = \$64.86 Federal Share = \$194.58 Total Costs = \$259.44