ALASKA DEPARTMENT OF FISH AND GAME
DIVISION OF WILDLIFE CONSERVATION
PO Box 115526
Juneau, AK 99811-5526

BROWN BEAR
ANNUAL SURVEY AND INVENTORY

STATE: Alaska

GRANT AND SEGMENT NO. W-33-8

PROJECT NO. 4.0

PERIOD: July 1, 2009 – June 30, 2010

PROJECT LOCATION: Statewide

PROJECT TITLE: Brown Bear S&I

The Status of Brown Bear and Factors Influencing Their Populations

Region 1:

Regionwide Activities:

ACTIVITY 1: 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. Region-wide, all hunters are 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 226 bears were harvested by hunters during the report period.

ACTIVITY 2: Collect data on sex, age, body condition, and harvest from bears presented for sealing by hunters.

As part of the sealing process information on harvest location, along with biological information on the bear was collected. A tooth was extracted from each bear for later aging of the animal. As part of ongoing mainland brown bear research efforts, staff across the region collected tissue samples from brown bears harvested anywhere on the mainland to be used for DNA analysis.

ACTIVITY 3: 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 defense of life or property (DLP) kills.

Unit 1C: 2 DLP killed brown bears.

Unit 4: 4 DLP killed brown bears.

Unit 5: 1 DLP killed brown bears.

ACTIVITY 4: Coordinate with community decision makers to reduce bear/garbage problems that may be detrimental to bears.

Unit 1D: Biologists continue to work with local governments in Haines and Skagway to decrease the number of complaints associated with bears and refuse. Since the closure of the Haines Landfill, problem bear reports continue to decline and are currently at very low levels. Skagway is fortunate to have an incinerator and very few bear complaints; department biologist assisted local police in researching additional refuse control measures such as bear-proof garbage cans.

Unit 4: Biologists continue to work with communities to provide bear education programs to reduce habituating bears to garbage. Efforts continue in Sitka to provide educational material and regular public service reminders via various media formats to supplement to efforts of Sitka's Bear Awareness work group of federal, state and community organizations.

Unit 5: Biologists met with members of the Yakutat city assembly, the Fish and Game Advisory Committee, the Solid Waste committee, the Police Department, and the city manager to address concerns with refuse management in Yakutat. Efforts focused on reconfiguring the landfill to deter bears from accessing garbage.

ACTIVITY 5: Coordinate with land managers and guides regarding guided hunter effort.

Biologists continue to work with guides and land managers to identify high use guiding areas and to monitor guided-hunter brown bear harvest.

Activities by Unit:
Unit 1D:
ACTIVITY: Monitor brown bears deployed with GPS radiocollars to assess habitat use and movements in the Chilkoot River corridor in Haines.

Area staff radio tracked the two brown bears along the Chilkoot River every few months, and collected one collar that released during spring of 2010.

Unit 4
ACTIVITY 1: Capture one or two urban brown bears opportunistically and monitor their movements using GPS radio collars to identify problem areas and to assist educational efforts towards better refuse management.

Two bears were captured and fitted with radio collars during this report period.

ACTIVITY 2: Capture one or two brown bears at Pack Creek and monitor their movements using GPS radio collars.

One bear was captured and fitted with a radio collar during this report period.

Unit 5:
Activity 1: Affix 2-3 brown bears at the Yakutat landfill with GPS radio collars to understand their movement patterns in and around the community, and the public safety concerns this presents.

Eight bears were captured and fitted with radio collars at the Yakutat landfill during this report period.

Submitted by: Neil L. Barten, Region I Management Coordinator

Region II:

Regionwide Activities:
Activity: Draft a biennial brown bear management report.

Continued to compile information for biennial brown bear management report.

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

Unit 6: Sealed 24 female and 51 male bears for a total harvest of 75 bears.

Units 7 & 15: Thirty bears have been taken during the reporting period. This mortality includes 5 males taken by legal hunting. Causes of mortality include defense-of-life-or-property kills, vehicle collisions, and illegal take.

Unit 8: Issued 593 hunting permits during this reporting period, 312 for the fall season and 272 in the spring. During the fall season, 250 hunters went afield and killed 84 bears. In the spring season 214 hunters went afield and killed 117 bears. The annual sport harvest was 201 bears, 149 males (74%) and 52 females (26%). One additional bear (female) was killed in the federal brown bear subsistence hunt. There were 30 non-sport mortalities were documented as follows: defense of life or property - 11 (5 male, 6 female); natural/unknown - 16 (1 male, 1 female, and 14 unknown sex); 2 illegal (1 male, 1 female); and, 1 vehicle collision (male).

The 2009/10 sport harvest of 201 bears was well above the minimum annual harvest objective of 150 bears. Males composed 74% 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 increasing.

Unit 9: A total 617 bears were sealed: 426 males (69%), 186 females (30%), and 5(1%) unknown), 601 were taken by hunting with the remainder being defense of life or property and “unknown or natural mortality”.

Unit 11: The annual harvest was 26 bears, 19 males (73%) and 7 females (27%).

Unit 13: The annual harvest was 141 bears, 83 males (59%) and 58 females (41%).

Unit 14: The annual harvest was 25 bears, 13 males (52%) and 12 females (48%).

Unit 16: The annual harvest was 85 bears, 51 males (60%) and 32 females (38%) and 2 unknown (2%).

Unit 17: Hunters presented 125 brown bears for sealing, at which time a tooth was extracted from each bear skull for aging. There were 78 males, 47 females and one of unknown gender.

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

Unit 6: Collected teeth from 75 bears for aging.

Unit 11: Collected teeth from 72 bears for aging.

Unit 13: Collected teeth from 141 bears for aging.

Unit 17: Collected teeth from 125 bears for aging.

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

Unit 11: Preliminary fall average age = 9.7.

Unit 13: Preliminary fall average age = 6.9.

Unit 17: Preliminary fall average age was estimated at 7.5 years.

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

Unit 11 & 13: No brown bear census data was collected in 2009/10; past data is being analyzed.

Unit 17: No brown bear census data was scheduled to be collected during 2009/2010.

Activities by Unit:
Unit 6:
Activity: Conduct Spring track and den surveys in Unit 6D.

Conducted spring track and den surveys in Unit 6D on Montague Island (210 linear mi.). Total flight time was 5.6 hours. Population index was stable on Montague.

Units 7 and 15:
Activity: Continue implementation of the Kenai brown bear conservation strategy.

Continued to implement the conservation strategy with sustainable hunting opportunities and continued public education on bear conservation measures.

Activity: Capture up to 20 brown bear to collar or to replace existing collars.

Twelve bears were captured and radio collared during the report period.

Unit 8:
Activity: In cooperation with Kodiak National Wildlife Refuge, annually survey a portion of the island to establish baseline bear density estimates and to detect changes in the population.

Successfully completed an intensive aerial survey of the brown bear population in the Karluk Lake drainage from 22-25 May 2010 (summary data attached). Survey data indicate that the bear density of that area has decreased since the last survey which was conducted in 2003 (483 independent bears/1000 km^2 in 2003 versus 252 independent bears/1000 km^2 in 2010). Statistical analyses suggest that this decrease is statistically significant ($p = 0.0004$). The methods used and conditions encountered during this year's intensive aerial survey were comparable to those in 2003, however, we do not think there has been an actual decline in the bear population in the Karluk vicinity. Supplemental information from guides, hunters, and hunt records corroborate the conclusion that the bear population in the Karluk Lake drainage is healthy and productive and probably has not declined significantly in the past 7 years. Long-time hunting guides throughout the Archipelago commented on the exceptionally late emergence of bears and lack of normal movement patterns during the Spring 2010 hunting season. When we returned to the survey area on 02 June 2010 to initiate our capture and collaring program, we noted a noticeable increase in the number of bears seen and the number of dens opened. We plan to replicate the survey in 2011.

From 03 through 07 June 2010, we used a Hughes 500D helicopter and rifle-fired darts to capture 28 brown bears (25 females and 3 males) in the Karluk Basin of Kodiak. We deployed GPS/VHF transmitters on 22 adult female bears and VHF collars on 1 adult female and 2 adult male bears. This project is primarily funded by the Kodiak NWR and it is designed to gain a more comprehensive understanding of bear movements and habitat use in the vicinity of Karluk Lake. While ADF&G is assisting in study design and capture operations, our financial investment is limited to minimal helicopter and spotter plane charters.

Activity: Implement the Kodiak Archipelago Bear Conservation and Management Plan.
Implementation of plan recommendations continued in 2009/10 with the Kodiak Unified Bear Subcommittee as the group also successfully conducted a 3-day seminar (I credit) on responsible bear viewing at Kodiak College. The course was filled to capacity (24 students) and was well received.

Continued to make progress in our work with area villages to reduce the availability of human food and garbage to bears. The dump at Larsen Bay continues to be a success and is well maintained by local villagers. Port Lions completed fencing of their landfill, including electric fence that was retrofitted to an 8' chain-link fence. Port Lions also installed bear resistant dumpsters outside of the fence and lighted the area. The village of Old Harbor is slated for similar landfill improvements next year.

Unit 9:
Activity: Encourage residents to reduce bear attractants that lead to defense of life or property kills (DLP).

Continued to encourage residents to properly dispose of attractants and the use of deterrents such as electric fences were applicable.

Activity: Conduct population trend counts adjacent to heavily used salmon streams.

No attempts were made to conduct population trend counts during this fiscal year due to a lack of staff availability and funding.

Unit 13:
Activity: Capture up to 10 brown bear to collar or to replace existing collars.

Unit 13: Brown bears were collared this regulatory year, but will be reported in Nelchina Brown Bear AWP 4.41.

Unit 17:
Activity: Work with local home and recreational cabin owners to reduce bear attractants and defense of life or property kills.

Provided information to install electric fences at fish drying racks, animal pens, and food storage areas to deter damage by bears and reduce DLP kills.

Submitted by: Mark Burch

Date: September 8, 2010

Region II: GMU 17

Regionwide Activities:
ACTIVITY 1 &2: Monitor the brown bear harvest through field observations, brown bear sealing reports, and interviews with successful hunters. Collect harvest data, determine the sex, and extract a tooth for aging from brown bears presented for sealing by hunters.

Unit 17: Hunters presented 125 brown bears for sealing, at which time a tooth was extracted from each bear skull for aging. There were 78 males, 47 females and one of unknown gender.

ACTIVITY 3: Obtain estimates of ages of harvested bears by tooth sectioning.

Unit 17: The preliminary fall average age was estimated at 7.5 years.

ACTIVITY 4: Conduct line-transect/double count censuses of brown bear populations and refine technique.

Unit 17: No brown bear census data was scheduled to be collected during 2009/2010.

Unit 17:
ACTIVITY 1: Work with local home and recreational cabin owners to reduce bear attractants and defense of life or property kills.

Provided information to install electric fences at fish drying racks, animal pens, and food storage areas to deter damage by bears and reduce DLP kills.

Submitted by: Gino DelFrate, Region II Management Coordinator

Region III:

Regionwide Activities:
ACTIVITY 1: Monitor brown bear harvest through field observations, sealing reports, interviews with successful hunters and analyze data.

Monitored preliminary harvest of 240 brown bears through field observations, sealing reports and interviews with successful hunters, and analyzed harvest data.

ACTIVITY 2: Collect harvest information and extract a tooth for aging from brown bears presented for sealing by hunters.

Collected data, determined sex, and extracted a tooth for aging from 240 brown bears presented for sealing.

ACTIVITY 3: Obtain estimates of ages of harvested bears by tooth sectioning.

Submitted teeth collected from 240 bears during the sealing process to a laboratory for aging.

ACTIVITY 4: Monitor and analyze brown bear bait station permit distribution.

Did not monitored and analyzed distribution of permitted brown bear bait stations because few permits issued.

ACTIVITY 5: Provide brown bear management information to State and Federal regulatory processes.

Provided information to 15 State fish and game advisory committees and 2 Federal regional advisory councils.

Activities by Unit:
Unit 12
ACTIVITY 1: Monitor blueberry abundance on permanent study plots to evaluate relationships between berry abundance and brown bear harvest.

Monitored blueberry abundance within the Tanana River valley using 4 permanent transects (5 1-meter^2 plots/transect).

Unit 20A:
ACTIVITY 1: Determine the size and distribution of the brown bear population in the Tanana Flats Training Area in north-central GMU 20A.

Cooperated with a research funded black bear project to obtain incidental information about brown bear population size and distribution, data currently being analyzed.

Unit 20E
ACTIVITY 1: Monitor blueberry abundance on permanent study plots to evaluate relationships between berry abundance and brown bear harvest

Monitored blueberry abundance along the southern 40 miles of the Taylor Highway using 4 permanent transects (5 1-meter^2 plots/transect).

Submitted by: Roy A. Nowlin, Management Coordinator

Region V:

Regionwide Activities:
ACTIVITY 1: Provide information to State and Federal regulatory processes on brown bear management.

Area management staff reviewed State and Federal regulatory proposals, attended regulatory process meetings, and presented brown bear information to the State Board of Game, State Fish and Game Advisory Committees, Federal Subsistence Board, and Federal Subsistence Regional Advisory Councils.

ACTIVITY 2: Review and revise population objectives.

Brown bear population objectives were reviewed with no revisions in Units 18, 22, 23, and 26A.

ACTIVITY 4: Monitor the brown bear harvest through field observations, analyses of brown bear sealing data, and interviews with hunters.

Unit 18: We made numerous field observations of brown bears while conducting surveys for other species in Unit 18; interviewed brown bear and other hunters regarding bears; and analyzed brown bear sealing data. To date, 20 brown bears have been reported harvested in the general hunt in Unit 18 for the fall of 2009 and 5 for the spring of 2010. One bear was harvested for Defense of Life and Property (DLP).

Unit 22: Harvest was 77 bears by hunting and 5 by Defense of Life and Property (DLP) for a total take of 82 bears. Sex composition of the harvest was 53 males, 26 females, and 3 bears of unknown sex. During the fall 2009 portion of the season 48 bears were taken and 29 bears were harvested during the spring 2010 portion. The reported annual hunter harvest (n= 77) decreased 21.4% from the previous year (n= 98); likely from low harvest numbers in Unit 22A due to shore fast ice remaining late into the season. Average annual harvest for the preceding 10-year period is 93 bears per year. DLP bears (n=5) decreased by 44% over the past 3 years; and staff continue to work with rural residents and Village Public Safety Officers to minimize the take of nuisance bears.

Unit 23: This year, 40 bears were harvested through the general hunt for residents, 6 in the registration hunt for residents, and 8 were harvested in the drawing hunt for non-residents. Therefore, 54 bears were harvested. The average annual harvest for the last 10-years is 50 bears per year (range 32-72 bears per year).

Unit 26A: We recorded brown bear harvest through field observations, interviewed hunters, and analyzed brown bear sealing data and subsistence harvest. Nineteen brown bears (13 males, 6 females) were reported taken in Unit 26A during the reporting period. Seven were reported taken by nonresidents, 8 by nonlocal Alaskan residents, and 4 by residents of Unit 26A. Eleven bears were taken during August, 6 were taken in September, 1 in April, and 1 in May. The average annual harvest for the last 10 years is 15 bears per year.

ACTIVITY 5: Analyze registration permit harvest data collected for subsistence hunts.

Unit 18: No brown bears were reported taken under the subsistence brown bear registration hunt (RB698) in Unit 18 during this period. Three hunters obtained registration permits and reported their hunts.

Unit 22: The Department administered 5 subsistence brown bear registration permits in Hunt RB699 during the reporting period. Three hunters reported as did not hunt.

Unit 23: Six brown bears were reported taken under the subsistence brown bear registration hunt (RB700) in Unit 23 during this period. One was taken in the Spring and 5 were taken in the Fall. All six bears were males.

Unit 26A: Three brown bears were reported taken under the subsistence brown bear registration hunt (RB697) in Unit 26A during this period. One was taken in April and 2 were taken in August. Two bears were males and one was female.

ACTIVITY 6: 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.

Unit 18: We addressed bear conservation education in Unit 18 through opportunistic interviews with hunters, village police officers, berry pickers, and other interested members of the public.

Unit 22: The Department discussed brown bear hunting regulations, the importance of harvest reporting, DLP bears, and methods to minimize human-bear conflicts during Advisory Committee meetings, Regional Advisory Council meetings, local newspaper, and with individual local residents. Also, staff participated in brown bear awareness and education with local youth groups.

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

Unit 26A: At public meetings and during individual contacts with local residents, we discussed bear hunting regulations, the importance of reporting harvest and DLP bears, and methods to minimize human-bear conflicts.

ACTIVITY 7: Collect data, determine sex, and extract a tooth for aging from brown bears presented for sealing.

Unit 18: Data were collected from 26 sealed bears (19 males and 6 females and one unrecorded). Teeth were extracted for aging when these bears were presented for sealing.

Unit 22: Data were collected from 79 sealed bears (53 males and 26 females). Upper premolar teeth were extracted for aging when these bears were presented for sealing.

Unit 23: Data were collected from 47 sealed bears. Teeth were extracted for aging when these bears were presented for sealing.

Unit 26A: Data were collected from 16 sealed bears (11 males and 5 females). Teeth were extracted for aging when these bears were presented for sealing.

ACTIVITY 8: Obtain estimates of ages of sealed bears by tooth sectioning.

Unit 18: Premolars were extracted and sent to Matson's Lab for sectioning and aging but results for these samples are not available.

Unit 22: Premolars were extracted and sent to Matson's Lab for sectioning and aging but results for the 2009-2010 period are not available. The average age of bears harvested in Unit 22 during 1990-1991 to 2008-2009 was 6.1 years.

Unit 23: Twenty-three percent of the sealed bears have not been aged yet. However, the average age of bears taken in the 2009-2010 regulatory year that have been analyzed was 6. The average age of all bears taken in Unit 23 during 1999-2000 through 2007-2008 was 7 yrs (7 yrs for males and 6 yrs for females).

Unit 26A: The average age of bears taken in the 2009-2010 regulatory year was 6.7 years (6.9 yrs for males and 6.4 yrs for females). The average age from 2000-2001 through 2008-2009 was 11 yrs for males and 8 yrs for females).

ACTIVITY 9: 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.

Unit 18: We continued to promote the use of electric fences around fish camps, hunting camps, and other applications as a way to reduce bear problems. Few bear problems were reported and one DLP bear was reported taken in 2009–2010.

Unit 22: Reports of problem bears and DLPs continue to be high throughout the unit. We continue to promote the use of electric fences around camps. The department has loaned-out an electric fence to residents for use at fish camps and this has proven effective at preventing bear problems. Copies of the bear safety video, "Staying Safe in Bear Country" and the pamphlet "Bear Facts – The Essentials for Traveling in Bear Country" are available from the Nome Fish & Game office.

Unit 23: 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 preventing DLP situations and the need to report bears taken under such circumstance.

Unit 26A: The number of brown bears breaking into cabins and entering villages has greatly increased in recent years. Efforts are being made to improve knowledge of DLP regulations and expand the use of registration permits for subsistence hunting of bears. We are promoting the use of electric fences for people with remote cabins and bought and installed a fence to use as a demonstration.

Unit 22:

ACTIVITY 1: Assess population trends through field observations and analyses of sealing data.

The decrease in harvested brown bears (n=82) in 2009-2010 is slightly below the general range (84-105) of bears harvested during a regulatory year for Unit 22. This is likely the result of low spring harvest in Unit 22A (n=4) compared to the areas average spring harvest of 14 bears. Local 22A residents reported shore fast ice late into the spring making it difficult for hunters to gain access to spring bears. The high proportion of males harvested (68%), low harvest of females, and little change in mean age of

harvested bears suggests little change in sex or age structure of the population. However, observations of bears in easily accessible areas along the Nome road system indicate they are becoming less numerous in contrast to anecdotal evidence from the public that indicates the population is highly productive. Reports of sows with twins are normal, sows with three cubs are common and sows with 4 cubs are occasionally reported.

ACTIVITY 2: Analyze harvest data collected from selected communities in Unit 22.

Community-based harvest assessment surveys were not conducted in Unit 22 during the reporting period. Sampling effort by Subsistence Division staff was directed to Unit 23 communities.

Units 18, 23 and 26A:

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

Unit 18: Brown bears are observed opportunistically while surveying moose and caribou in the unit. General season hunter harvests are higher compared to the previous decade, especially in the Kilbuck Mountains, but subsistence harvests are much lower. The Yukon River drainage in Unit 18 has seen very little harvest for many years and no bears were reported harvested from this area during the reporting period. From hunt reports and our observations we do not think that bears are being over-harvested.

Unit 23: Harvest data indicates there has been little change in the sex or age structure of bear populations in Unit 23 since the early 1960s despite increasing harvest levels. This is consistent with our opportunistic observations of bears. However, modeling exercises indicate harvest data is insensitive to biological changes in bear populations so these results should be viewed with caution.

Unit 26A: 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. We saw 3 bears during moose surveys in April 2009.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: Analyze harvest data collected from selected communities in Unit 23.

Community harvest assessments were conducted in Unit 23 during the reporting period; however, the results of these surveys are not available. Previous community harvest assessments suggest the harvest of brown bears by residents of Unit 23 is low.

ACTIVITY 3: Analyze harvest data collected from selected communities in Unit 26A.

We estimated local harvest by using data from ADF&G Subsistence Division, 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 4: Continue cooperative efforts with NPS to develop non-MKR (mark-recapture) census techniques in selected portions of Unit 23 during late May/early June survey periods.

No new surveys or census efforts were attempted or completed during the reporting period. Final results of the May/June 2008 census in the Noatak River drainage near Red Dog Mine (surveys by National Park Service in conjunction with ADF&G) were not available; analysis is on-going.

Submitted by: Peter Bente, Survey and Inventory Coordinator, Region V