

**FEDERAL AID  
ANNUAL PERFORMANCE REPORT**

ALASKA DEPARTMENT OF FISH AND GAME  
DIVISION OF WILDLIFE CONSERVATION  
PO Box 115526  
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**Alaska Department of Fish and Game  
Wildlife Restoration Grant**

**GRANT NUMBER:** AKW-10 Wildlife Restoration FY2016

**PROJECT NUMBER:** 4.0

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

**REPORT PERIOD:** July 1, 2015 – June 30, 2016

**PROJECT LOCATION:** Statewide

**REPORT DESCRIPTION:** This performance report describes brown bear survey and inventory activities. Activities are listed by game management unit.



**The Status of Alaska Brown Bears and Factors Influencing Their Populations in  
Region I**

**Region-wide Activities:**

**Activity 1:** Prepare a biennial brown bear management report.

**Accomplishments:** No biennial brown bear management report was published this year. DWC is changing to a five-year reporting schedule with brief annual reports.

**Activity 2:** Provide information to state and federal regulatory processes on brown bear management.

**Accomplishments:** Information on brown bear harvest and management was provided to state and federal regulatory bodies as requested.

**Activity 3:** Monitor the harvest by using and analyzing data from sealing reports, registration and drawing permits, and interviews with hunters.

**Accomplishments:** All brown bear hunts in Region I require hunters to obtain a registration permit, and beginning in regulatory year 2015 a small number of drawing permits were offered to nonresident hunters guided by resident relatives within the second degree of kindred. We monitored hunter interest through issuing permits and documented hunter effort and harvest through the required sealing process. Often conversations with hunters and guides during sealing provide additional insight for managers.

**Activity 4:** Collect data, determine sex, and extract a tooth for aging from bears presented for sealing by hunters.

**Accomplishments:** Alaska regulations require all harvested brown bears to be sealed and for evidence of sex to remain attached to the hide until hides have been sealed. DWC staff throughout Region I and designated sealers provided sealing services to hunters. Among other information collected during the sealing process, we recorded sex and extracted a tooth from each skull.

**Activity 5:** Obtain estimates of ages of all harvested bears by tooth sectioning.

**Accomplishments:** DWC contracts with a private lab to section and age teeth extracted from all harvested bears. Teeth were sent to the lab following the spring and fall seasons and the lab provided bear ages to DWC.

**Activity 6:** Collect data on bears killed in defense of life or property.

**Accomplishments:** Region I staff ensured that anyone taking a bear in defense of life and property completed and submitted a Defense of Life and Property Kill Report Form. Data from those forms are archived in a state-wide database.

**Activity 7:** Coordinate with community decision makers to reduce bear/garbage problems that may be detrimental to bears.

**Accomplishments:** Area management biologists continued to work with municipalities, agencies, businesses, and individuals throughout the region to educate them on ways to avoid attracting bears by properly storing and disposing of garbage and other attractants.

**Activity 8:** Coordinate with land managers and guides regarding guided hunter effort.

**Accomplishments:** Region I managers attended meetings, participated in regulatory processes, and corresponded with brown bear guides and the primary land managers (US Forest Service and Alaska Native Corporations) to provide guided hunting opportunity, high quality hunting experiences, and sustainable harvest.

**Activity 9:** Participate in planning efforts related to brown bear monitoring in mainland and other areas of the region.

**Accomplishments: During this report period** Region I managers collaborated with DWC bear researchers to monitor the population in the Yakutat area.

#### **Activities by Unit:**

##### **Unit 1C**

**Activity 1:** Assess the use of the Sweetheart Creek area by brown bears, by affixing 3-5 bears with radio collars as part of a study related to a proposed hydroelectric project.

**Accomplishments:** No activity during this report period.

**Activity 2:** Collect brown bear hair for DNA analysis to determine minimum number of bears and distribution of brown bears in the Sweetheart Creek drainage of Gilbert Bay.

**Accomplishments:** DNA results from lab were received during this report period and are being analyzed.

#### **Unit 1D**

**Activity 1:** Monitor brown bears with GPS radiocollars to assess habitat use and movements in the Chilkoot River corridor in Haines.

**Accomplishments:** We monitored one collared bear and attempted to recover a collar from a bear when the release mechanism failed.

#### **Unit 4**

**Activity 1:** Radiocollar and aerial track a subpopulation of bears. (All animal capture activities will follow the protocols established in the ADF&G Division of Wildlife Conservation "Wildlife Capture and Chemical Restraint Manual.")

**Accomplishments:** No activity during this report period.

**Activity 2:** Capture one or two urban brown bears opportunistically in Sitka/Angoon/Hoonah and monitor their movements using GPS radio collars to identify problem areas and to assist educational efforts towards better refuse management.

**Accomplishments:** Over a three-week period during fall 2015 targeted attempts were made to capture and collar specific urban bears in Sitka, but those attempts were unsuccessful. We did not attempt to capture any bears in Angoon or Hoonah during this report period.

**Activity 3:** Monitor public use of the Pack Creek viewing area in the Stan Price State Wildlife Sanctuary.

**Accomplishments:** In cooperation with the US Forest Service DWC staffed and operated the Pack Creek-Stan Price bear viewing area. Visitor numbers were monitored by staff at the viewing area and through a visitor permitting program during the peak viewing period.

**Activity 4:** Deploy two GPS radio collars on brown bears within the Blue Lake Dam project area as part of the FERC wildlife monitoring plan.

**Accomplishments:** No activity during this report period.

**Activity 5:** Deploy 1-2 GPS radio collars on brown bears at Port Armstrong in conjunction with the taser/brown bear monitoring project.

**Accomplishments:** During fall 2015 we captured and collared one adult female bear and one adult male bear at the Port Armstrong Hatchery on Baranof Island. The male was illegally killed near Port Armstrong in late fall 2015. The female's collar is scheduled to release in late August 2016 and we will attempt to recover it during September 2016. We may continue to collar additional bears to help learn the effects of Tasers on bear behavior, movements, and survival.

#### **Unit 5:**

**Activity 1:** Assist in the collection of bear collars from field settings and in data analysis.

**Accomplishments:** The field portion of the bear research project in the Yakutat area ended in June 2016. Region I managers assisted as requested by the primary investigator.

**Activity 2:** Coordinate with community groups, Alaska Wildlife Troopers, and City of Yakutat to provide bear safety education, and to reduce human caused bear attractants in and near Yakutat.

**Accomplishments:** Area management biologists continued working with the City of Yakutat and Alaska Wildlife Troopers to educate the public about bears and to evaluate and implement appropriate ways of minimizing bear attractants in the community with the goal of improving public safety.

**Submitted by:** Tom Schumacher

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

### **Regionwide:**

ACTIVITY : Draft a biennial brown bear management report.

Brown Bear management report was due during this period. Staff collected information, prepared report, and submitted for publication. The department is transitioning to a 5-year report and plan. The next report will be published in 2020.

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

These are standard activities accomplished in each office. See Area specific activities.

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

All bears taken in Region II were presented to staff or appointed sealers for specimen collection and sealing. See area specific activities for additional information.

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

For most bears taken in Region II a premolar was extracted and placed in a marked envelope. Teeth were bulk shipped to a contractor for aging and when available ages were provided to the Department to be entered into the bear harvest database.

ACTIVITY : Provide information to state and federal regulatory processes on brown bear management.

Staff routinely interact with federal staff and discuss management of brown bear relative to the respective regulatory systems. Staff collected and prepared information for the March 2015 state Board of Game meeting.

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

No Surveys were completed during this reporting period due to early green-up.

### **Activities by Unit:**

#### **Unit 6**

ACTIVITY 1: Sealed 13 female and 34 male bears for a total harvest of 47 bears.

ACTIVITY 2: Collected teeth from at least 36 bears for aging.

ACTIVITY 3: Track and den surveys in Unit 6D were not conducted this year due to a very early spring and minimal winter snowpack which would have resulted in poor survey quality.

#### **Units 7 & 15**

ACTIVITY 1: The Kenai brown bear management strategy was revised in 2013. Additional harvest opportunity was provided due to a documented increase in bear numbers and a population that has reached social carrying capacity.

We will continue to monitor the bear population through population demographic data from captured animals and harvest through sealing requirements. Harvest strategies will be adjusted to maintain sustainable harvest within population levels that meet an acceptable social carrying capacity for brown bears. Continued public education and enforcement of bear conservation strategies to minimize negative human bear interactions will be increased.

ACTIVITY 2: Forty-five bears have been taken during the reporting period including 19 adult males, 11 subadult males, 7 adult females, and 8 subadult females. This mortality includes 39 bears taken by legal hunting. Causes of non-hunting mortality include defense-of-life-or-property kills and illegal take.

ACTIVITY 3: Management staff assisted in brown bear captures for the region II Kenai Peninsula brown bear demographic research project. Five adult female brown bears were captured in spring 2016 and four adult female brown bears were captured in fall 2015. As of late August 2016 there are 40 collared adult female brown bears on the Kenai. Bears were captured as part of a research project reported under a different job.

## Unit 8

ACTIVITY 1: Implementation of the Kodiak Bear Conservation Management Plan continued in 2015–16 with support from the Kodiak Unified Bear Subcommittee (KUBS) and other local supporters. We continued to make progress with the Kodiak Island Borough Assembly and area villages to reduce the availability of human food and garbage to bears. Working closely with Alaska Waste Management, the Alaska Wildlife Troopers and other local law enforcement agencies (Coast Guard Military Police, Kodiak Island Borough, Kodiak Police Department) we have encouraged responsible waste management within the villages and the city of Kodiak. We have developed public service announcements and handouts providing guidelines for living responsibly in bear country and presented numerous bear safety presentations to groups and organizations throughout the island.

ACTIVITY 2: We issued 564 hunting permits during this reporting period, 279 for the fall season and 285 in the spring. During the fall season, 224 hunters went afield and killed 62 bears. In the spring season, 253 hunters went afield and killed 127 bears. The annual sport harvest was 189 bears, 147 males (78%), 42 females (22%). Three bears were harvested during the federal subsistence hunt (2 males and 1 female) and there were 25 non-sport hunting bear mortalities documented as follows: defense of life or property – 7 (1 male and 6 females); agency kill – 1 (1 male); vehicle kill – 2 (1 male and 1 female); and natural/unknown – 15 (1 male and 14 unknown sex).

The 2015–16 sport harvest of 189 bears was well above the minimum annual harvest objective of 150 bears. Males composed 78% of the harvest, well above the minimum objective of 60%. No intensive aerial survey was conducted during this report period. Harvest data suggests that the unit-wide bear population continues to be stable.

ACTIVITY 3: We have continued to assess survival and productivity of female brown bears and cubs on Sitkalidak Island, Alaska. Continuing a project initially implemented in 2008 to monitor survival and productivity of female brown bears on Sitkalidak we conducted 10 aerial surveys this reporting period to assess survival and productivity of 17 bears radio-collared between 2008 and 2015. Three collars have either malfunctioned or stopped working and have been unable to be located. The mean number of young per litter was 2.60 cubs/litter (n=13) and the mean reproductive cycle was 1 litter every 3.5 years (n=3). Annual survival for cubs of the year, 1 year olds, and 2 year olds was 0.75 (n=4), 0.87 (n=8), and 1.00 (n=4), respectively. Interestingly, 3

breeding age (7-10 year old) females were observed for a total of 7 years (2 bears for 2 years, 1 bear for 3 years) during which time no cubs were observed.

### **Unit 14C**

ACTIVITY 1: Two brown bear were reported harvested in Unit 14C (1 male and 1 female). One male brown bear and one bear of unknown sex (the carcass was never recovered, however, the DLP report indicated this particular bear was with 2 distinctly smaller bears at the time so presumably it was female) brown bears were killed in defense of life and property. One female was killed by Chugach State Park at the request of ADF&G. One male and one brown bear of unknown sex were killed by vehicles. One brown bear of unknown sex was taken as an illegal hunting harvest.

**Submitted by:** Cynthia M. Wardlow

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

### **Region wide Activities:**

1. Prepare biennial brown/grizzly bear management reports.

Compiled information and data for 7 five-year Brown Bear Management Reports and Operational Plans for Units 12, 19, 20, 21, 24, 25, 26B, and 26C.

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

Monitored the harvest of grizzly bears in Units 12, 19, 20, 21, 24, 25, 26B and 26C in FY16 through sealing reports, field observations, interviews with successful hunters and analyses of harvest data.

In Unit 26B, harvest was also monitored via permit reports for 2 registration hunts and 1 drawing hunt.

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

Harvest information was collected and a tooth extracted from approximately 270 grizzly bears harvested in Units 12, 19, 20, 21, 24, 25, 26B and 26C.

4. Obtain estimates of ages of harvested bears by tooth sectioning.

Regionwide: Premolars from approximately 245 grizzly bears harvested in FY16 were submitted to laboratory for age analysis. Age was quantified for 247 bears harvested in FY15.

5. Monitor and analyze brown bear bait station permit distribution.

*Monitored harvest of brown bears over bait in Units 20A, 20B, 20C, 20E, 21D, 24C, 24D, and 25D, where a total of 842 bear bait stations were registered.*

6. Provide brown bear management information to State and Federal regulatory processes.

*Regionwide:* Communicated and coordinated with and attended meetings of 15 local Fish and Game Advisory Committee, the Alaska Board of Game, 2 Federal Regional Advisory Councils, the Federal Subsistence Board, numerous local village councils, Native corporations, and the Wrangell-St. Elias Subsistence Resource Commission about brown bear management and to review and analyze regulation proposals for the Alaska Board of Game and the Federal Subsistence Board.

7. Conduct a bear density assessment.

Unit 20A: Attempted to estimate brown bear abundance in early May (line-transect technique) and late June (capture-mark-recapture pilot study) to determine sustainable harvest rates of brown bears in Interior Alaska.

8. Monitor blueberry abundance on permanent study plots to evaluate relationships between berry abundance and grizzly bear harvest.

Monitored blueberry abundance on 8 sites along on the Taylor, Alaska, and Tok Cutoff Highways in Units 12 and 20E.

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

### **Regionwide Activities:**

ACTIVITY 1: Prepare biennial brown bear management reports.

The biennial brown bear management reports were not due during this reporting period.

ACTIVITY 2: Monitor the brown bear harvest through field observations, brown bear sealing reports, and interviews with successful hunters.

All brown bears harvested in Region IV were sealed, and successful hunters were interviewed by Department staff.

ACTIVITY 3: Collect harvest data, determine the sex, and extract a tooth for aging<sup>1</sup> from brown bears presented for sealing by hunters.

	Males	Females	Unknown	Total
<i>Unit 9:</i>	315	109	1	425
<i>Unit 10:</i>	7	1	0	8
<i>Unit 11:</i>	14	7	0	21
<i>Unit 13:</i>	91	61	1	152



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<i>Unit 14A:</i>	4	5	0	9
<i>Unit 14B:</i>	11	9	0	20
<i>Unit 16:</i>	62	43	0	105
<i>Unit 17:</i>	35	29	0	64

*Unit 9:* Preliminary fall average age = Not Available.

*Unit 10:* Preliminary fall average age = Not Available.

*Unit 11:* Preliminary fall average age = Not Available.

*Unit 13:* Preliminary fall average age = Not Available.

*Unit 14A:* Preliminary fall average age = Not Available.

*Unit 14B:* Preliminary fall average age = Not Available.

*Unit 16:* Preliminary fall average age = Not Available.

*Unit 17:* Preliminary fall average age = Not Available.

<sup>1</sup> Determination of age through the cementum layer aging technique is dependent on outside contractors and not always available at the time of these reports.

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

No brown bear census data was collected in FY15. Data previously collected is currently being analyzed.

**Activities by Unit:**

**Unit 9:**

ACTIVITY 1: Encourage residents to reduce bear attractants that lead to defense of life or property kills (DLP).

Residents calling in with bear issues were advised on the importance of proper stowage of attractants and on the use of electric fences.

**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. Worked with the landfill by providing comments and guidance on the erection of an electric fence around the active landfill to deter bears from accessing household trash.

ACTIVITY 2: Work with landfill to decrease attractants to bears.

Provided recommendations on electric fence construction around active face of the landfill. Also made recommendations for emptying the fish waste dumpster on a daily basis to lessen the attractiveness of this station to bears.

**Submitted by:** Todd A. Rinaldi

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

### **Region wide Activities:**

Prepare a regional biennial brown bear management report.

A brown bear management report was prepared during this reporting period.

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.

Review and revise population objectives.

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

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 all in the fall of 2015 and 0 for the spring of 2016. Of these bears, 10 were male bears and 10 were female. Fifteen bears were harvested by nonresidents and 5 were taken by residents.

*Unit 22:* Reported harvest during the RY15-16 reporting period was 114 brown bears. Sex composition of the total reported harvest was 73 boars, 39 sows, and 2 unknown. The fall and spring season reported a harvest of 63 bears 51 bears, respectively. The average annual reported harvest for the last 10 years (RY06 to RY15) is 98 bears per year (range 86-114 bears per year). Non-residents harvested 40% (n=46) of the bears during RY15 in the following areas: 25 bears in 22A, 14 bears in 22B, 1 bear in 22C, 2 bear in 22D, and 4 bears in 22E.

*Unit 23:* Reported harvest during RY15-16 was 47 bears through the general hunt for residents, 0 in the registration hunt for residents, and 14

were harvested in the drawing hunt for non-residents. Therefore, 61 bears were harvested. The average annual harvest for the last 10-years is 56 bears per year (range 33-71 bears per year).

*Unit 26A:* We recorded brown bear harvest through field observations, interviewed hunters, and analyzed brown bear sealing data and subsistence harvest. Twenty one brown bears (15 males, 6 females) were reported taken in Unit 26A during the reporting period. One was reported taken by an alien, 16 by nonresidents, 3 by nonlocal Alaskan residents, and 1 by a resident of Unit 26A. Sixteen bears were taken during August, 4 in September, and 1 was in May. The average annual harvest for the last 10 years is 18 bears per year.

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

*Unit 18:* Data were collected from 20 sealed bears (10 males and 10 females). Teeth were extracted for aging when these bears were presented for sealing.

*Unit 22:* Data were collected from 110 sealed bears. Premolar teeth were extracted for aging when these bears were presented for sealing.

*Unit 23:* Data were collected from 61 sealed bears. Teeth were extracted for aging when these bears were presented for sealing.

*Unit 26A:* Data were collected from 21 sealed bears (15 males and 6 females). Teeth were extracted for aging when these bears were presented for sealing.

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. The average age of bears from RY14 is 9.1 for females and 8.4 for males.

*Unit 22:* Premolars were extracted and sent to Matson's Lab for sectioning and aging; results for the RY15 period are not available. Ages returned for the RY14 reporting period show the average age for boars was 8 years old (n=44, range= 2 yrs-24 yrs), and sows was 8 years old (n=36, range=2 yrs-20 yrs). The average age of boars and sows harvested in Unit 22 the last 10 years (from RY05 to RY14) was 6 years old and 7 years old, respectively.

*Unit 23:* Premolars were extracted and sent to Matson's Lab for sectioning and aging; results for the RY14 period are not available. The average age of all bears taken in Unit 23 from RY02 through RY11 was 8 yrs for males and females combined, as well as considered for each sex separately.

*Unit 26A:* Of the 21 bears that were sampled in RY15 data are incomplete to compute an annual average age. The average age from RY00 through RY10 was 11 years for males and 8 years for females).

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. One hunter obtained a registration permit and reported that they did not hunt.

*Unit 22:* The department administered 0 subsistence brown bear registration permits (RB699) during the reporting period.

*Unit 23:* No brown bears were reported taken under the subsistence brown bear registration hunt (RB700) in Unit 23 during this period. Since general season bear regulations have been liberalized and no tag is required, most subsistence hunters are using general season requirements.

*Unit 26A:* No brown bears were reported taken in RY14 under the subsistence brown bear registration hunt (RB697) in Unit 26A. Since general season bear regulations have been liberalized and no tag is required, most subsistence hunters are using general season requirements.

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 reporting a bear taken during harvest or in a Defense of Life & Property situation, and methods to minimize human-bear conflicts during Advisory Committee meetings, Regional Advisory Council meetings, and with local residents.

*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.

Educate the public on bear awareness and safety, and provide demonstrations of how to use electric bear fences to reduce bear/human problems.

*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.

*Unit 22:* Unit 22 promotes the use of electric fences around camps and clean camps. Bear Aware posters were given out to local organizations and the public on how to keep bears away from camp or homes. Staff participated in brown bear safety and bear education programs with local youth and private organizations.

*Unit 23:* We spoke to numerous hunters, especially hunters who reside outside of Unit 23 who call for information, about bear safety.

*Unit 26A:* A demonstration project with an electric fence installed at a cabin with frequent bear/human problems has successfully stopped conflicts for several years. Additional use of electric fencing is anticipated in the future.

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:* Each year we work with residents and provide educational information to reduce bear/human conflicts at camps and residences. Few bear problems were reported.

*Unit 22:* Reports of problem bears and DLPs continue throughout the unit. Staff worked with Norton Sound villages and village public safety officers to have nuisance bears reported to the Department and, if taken, salvaged properly.

*Unit 23:* We also spoke with local residents about preventing DLP situations and the need to report bears taken under such circumstances.

*Unit 26A:* Each year there are reports of brown bears breaking into cabins and entering villages. Efforts are being made to improve knowledge of DLP regulations and expand the use of registration permits for subsistence hunting of bears. Tag fees were eliminated for the general season hunt, which will make it easier for residents to protect their property. Electric fences are an alternative to protect remote cabins.

## **Activities by Unit:**

### **Unit 22**

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

Annual reported harvest of boars between RY90 and RY15 has consistently exceeded the sow harvest. Historical reported harvest of Unit 22 data suggest no deviation in sex or age structure of the Unit 22 bear population. Anecdotal evidence from the public indicates the population is highly productive. Reports of sows with twin & triplet cubs are common.

Analyze drawing permit harvest data collected for nonresident drawing hunts.

The department administers two nonresident drawing permit hunts (DB685 in Units 22B/22C and DB690 in Units 22D/22E) each year. Twenty-seven (27) and 12 permits, respectively, are awarded to nonresident hunters. This reporting period resulted in 100% of DB685 and DB690 permits being awarded to hunters. The RY15 success rates for nonresident hunters in the field for permit hunt DB685 and DB690 was 68% and 45%, respectively.

Complete surveys and data analysis on a brown bear census project with National Park Service in Unit 22.

Unit 22 completed a brown bear survey with the National Park Service in May 2015. The 2015 survey results estimated the bear density at 36.5 bears/1000 km<sup>2</sup>, which is similar to the density found in the 1991 survey by Miller and Nelson (1993). However, the two survey methods are not directly comparable. The 1991 area was 1/10 of the 2015 survey and represented densities in a relatively small area. The 2015 survey covered 20,000 km<sup>2</sup> and is more representative of the center portion of GMU 22. It is difficult to understand population change over the last 25 years, although reported harvest has approximately doubled. Based on the 2015 survey, current harvest levels (~100 bears/year) represent approximately 4-5% harvest rate for total bears (all ages) and approximately 6.5-8% of independent bears (non-cubs). Additional surveys are planned in the future with the goal of providing information on population trends.

Complete surveys and data analysis on a brown bear census project with National Park Service in Unit 22.

Unit 22 completed a brown bear survey with the National Park Service in May 2015. Data analysis is currently ongoing and results will be summarized in the next years report.

### **Units 23 and 26A:**

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

*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.

In 2015 a non-invasive mark-resight (with a sightability correction factor) brown bear survey was completed in the Noatak Drainage, results pending.

*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. Analysis of sealing data indicates 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.

Analyze harvest data collected from selected communities in Unit 23 through household subsistence surveys.

Community-based Harvest Assessments were completed by Division of Subsistence in Kotzebue in Unit 23, and in Point Hope in nearby

neighboring Unit 26A. Data analysis is currently ongoing and results are not available. Previous Community-based Harvest Assessments suggest the harvest of brown bears by residents of Unit 23 is low but accounts for more than sealing records indicate.

Investigate techniques (census or survey program) to assess population status in Unit 23 and, if appropriate, complete a census/survey in a selected portion of the unit in late May/early June.

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.

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

Community-based Harvest Survey were completed by Division of Subsistence in Barrow, Nuiqsut, and Point Hope in Unit 26A; also completed in Anaktuvuk Pass in close neighboring Unit 24. Data analysis is currently ongoing and results are not available.

Previously, we estimated local harvest by using data from ADF&G Subsistence Division, 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.

**Submitted by:** Tony Gorn, Region V Management Coordinator