SPECIES
MANAGEMENT REPORT

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CHAPTER 12: BLACK BEAR MANAGEMENT REPORT

From: 1 July 2010
To: 30 June 2013

LOCATION

GAME MANAGEMENT UNIT: 13 (23,367 mi^2)

GEOGRAPHIC DESCRIPTION: Nelchina Basin

BACKGROUND

Black bears are numerous in portions of Unit 13 with suitable forest habitat. Harvest data have been available since 1973, when the sealing of black bears became mandatory. Black bear harvests averaged 67 per year during the 1970s, 81 in the 1980s, and 93 in the 1990s. During the 2000s the average yearly black bear harvest in Unit 13 increased to 132. The increasing harvest trend shows black bears are gaining in status as a desirable big game animal, and black bear hunting is much more popular than in the past.

MANAGEMENT DIRECTION

MANAGEMENT GOAL

- Provide the greatest sustained opportunity to participate in hunting black bears.

METHODS

Department staff members monitor the black bear harvest by interviewing successful hunters when black bears are presented for sealing. Data obtained at sealing include skull measurements, sex, hunting methods, transportation used, and effort.

RESULTS AND DISCUSSION

POPULATION STATUS AND TREND

Population Size

A black bear population estimate was conducted in 1985 along a portion of the upper Susitna River in conjunction with the Susitna Hydroelectric Project (Miller 1987). Results indicated a density estimate of 90 black bears/1,000 km^2. Females had an observed mean litter size of 2.1 (range = 1–4) cubs of the year, or 1.9 (range = 1–3) yearlings. However, Miller considered the study area to be marginal black bear habitat and not indicative of bear densities in more favorable forested habitat within the unit. Field observations and harvest data indicate black bears are abundant in large portions of Subunits 13D and 13E, and to a lesser extent in Subunit 13C. A population estimate for Unit 13 has not been attempted because density estimates for bears in more favorable or typical forested habitat within the unit are not available.

Black bear densities in the favorable habitats within Unit 13 are thought to be similar to densities in other portions of Southcentral Alaska. Trends in bear abundance have not been documented.

Distribution and Movements

Black bears usually inhabit forested habitats except during the fall and occasionally in spring when they move into shrub zones to feed on berries and succulent vegetation (Miller 1987).

MORTALITY

Harvest

Season and Bag Limit. There is no closed season on black bears in Unit 13, and the bag limit is 3 bears per year.

Alaska Board of Game Actions and Emergency Orders. In March 2011 the Board of Game passed regulations allowing guides to establish up to 10 bait stations in total combined with assistant guides, and allowing hunters that have been airborne to take black bears at a bait station the same day, as long as they are at least 300 feet from the airplane at the time of taking in Units 11 and 13. These regulations went into effect in spring 2012. Also in March 2011, the board passed regulations eliminating the black bear sealing requirement in Units 11 and 13, becoming effective 1 July 2011.

Harvest by Hunters. The reported harvest of black bears during the 2012–2013 season was 118 bears, a decrease from the 145 black bears harvested during the 2011–2012 season, and the record harvest of 196 bears during the 2010–2011 season (Table 1). This decline follows the reduced harvest observed in Unit 11. The decline in harvest during the 2011–2012 season can likely be attributed to a late spring. A late spring can cause a delay in emergence of new vegetation, which can impact the distribution of bears, and hunter success. Also, remaining snow likely made the installation of bait stations more difficult. The average harvest of 153 per year for this reporting period was slightly less than the average of 165 bears per year reported taken during the previous 3 years. Males composed 77% (n = 108) of the 2011–2012 harvest and 68% (n = 80) of the 2012–2013 harvest. Overall, males composed 69% of the harvest during this reporting period.

Mean skull size for males was 17.0 inches in 2012–2013, slightly larger than the previous reporting period average of 16.7 inches. Mean skull size for females was 15.7 inches in the 2012–2013 harvest, unchanged from the previous reporting period average of 15.7 inches. The average yearly skull size for males has been stable over the last 15 years (range = 16.5–17.0). This suggests larger males are being maintained in the population, and the increase in harvest is not just attributed to large cub cohorts.

During this reporting period, bears harvested in Subunit 13D accounted for 43% of the total Unit 13 harvest, followed by Subunit 13E with 38%, Subunit 13A with 9%, Subunit 13C with 6%, and Subunit 13B with only 3%, and 1% in unknown subunits.

The defense of life or property (DLP) kill averaged 2 bears per year during this reporting period. Despite increased human settlement, reported DLP kills remain low because many DLP bears are likely sealed under general season take or remain unreported. With a 3-bear bag limit and no closed season, there is little incentive to report the take of black bears as DLP, which would require surrendering the hide and skull to ADF&G.

Hunting of black bears over bait is allowed during the spring. Registration of bait stations is required, and hunters must follow special baiting regulations. During this reporting period an average of 141 (range 118–153) black bear bait stations were registered in Unit 13, compared to an average of 122 (range 110–145) the previous reporting period. Starting the 2011 season, guides were allowed to register up to 10 baiting stations per guide use area. The number of registered baiting stations did increase from 118 in 2010 to 153 in 2011. However, the reported number of black bears harvested over bait decreased from 72 in 2010 to 34 during the 2011 season. This decline in reported harvest over bait can likely be explained by a regulation change that eliminated the black bear sealing requirement during the 2011 season. This regulation change resulted in a loss of bear baiting data. While hunters were still required to possess a black bear harvest ticket, and submit a harvest report, bear baiting data were not captured on the harvest report.

<u>Hunter Residency and Success</u>. Nonresidents took 22 (19%) black bears during 2012–2013 (Table 2). During this reporting period, the black bear take by nonresidents averaged 34 bears per year. This figure is slightly higher than the previous 10-year average of 27. Local residents of Unit 13 harvested 17 (14%) black bears during 2012–2013. The average local resident harvest was 26 during this reporting period, identical to the previous 10-year average. The remaining 79 bears (67%) harvested during 2012–2013 were taken by nonlocal Alaskan residents, who have historically accounted for the largest portion of the Unit 13 black bear harvest. During this reporting period the average nonlocal resident harvest was 93, an increase from the previous 10-year average of 81.

Successful black bear hunters spent an average of 6.0 days in the field in 2012–2013 and 4.3 days during this reporting period. Over the past 5 years, hunters averaged 3.8 days to take a black bear in the spring versus 4.1 in the fall. The increased popularity of hunting over a bait station may account for the higher effort.

<u>Harvest Chronology</u>. During the 2012–2013 season, the spring harvest was 59 bears (50%), compared to 58 (50%) in the fall. The 2012–2013 harvest chronology was a departure from the previous 5 years when 66% of the Unit 13 black bear harvest occurred during spring. The spring harvest has exceeded the fall harvest every year since 2000–2001. Most years June had the highest spring harvest. September is the most important month during the fall season (Table 3). Harvests in July and August have also contributed quite a few bears to the harvest (Table 3). The bears killed during the summer usually have lesser quality hides, suggesting summer kills were either for meat or the bears were nuisance bears.

<u>Transport Methods</u>. Successful 2012–2013 bear hunters reported highway vehicles (23%) and 4-wheelers (22%) as the most popular methods of transportation (Table 4). Aircraft use has declined since 1995, but was the fourth most used transportation method during this reporting period, behind the use of boats. The combined importance of highway vehicles, 4-wheelers, and walking indicates roadside black bear populations received the greatest hunting pressure.

Other Mortality

Miller (1987) observed 35% mortality among cubs of the year accompanying radiocollared females in the upper Susitna River study area. In this study, additional natural mortality also occurred among radiocollared adult black bears. Miller believed predation by brown bears was an important source of natural mortality for black bears of all age classes in Unit 13. DLP reports and other human sources of mortality remain low with no trends evident (Table 1). Other than hunting, human influence on bear survival appears minimal.

HABITAT

Assessment

Black bears in Unit 13 use extensive tracts of spruce forest and, to a lesser degree, forested land bordering rivers, and upland shrub zones. Subunits 13D and 13E have more black bears than other subunits and also have the most extensive areas of heavily timbered mature spruce forests. Current fire management objectives specify a reduction in fire suppression activities in remote portions of Unit 13, supporting a return to a natural fire regime. This may eventually result in an interspersion of forest stands in different successional stages that could impact prime black bear habitat (Schwartz and Franzmann 1991). Seasonal availability of salmon can also influence numbers of black bears in Subunits 13D and 13E; salmon provide an alternative source of nutrition unavailable in more interior subunits.

CONCLUSIONS AND RECOMMENDATIONS

Interest in bear hunting and bear harvests increased in the late 1990s, primarily due to the growing popularity of spring bear baiting. Black bears have become a very important and primary game species, rather than being just an animal taken incidentally while hunting other more important game animals. This conclusion is supported by chronology data showing high harvests during periods when other big game hunting opportunities are limited.

Harvest levels currently reported on black bears in Unit 13 are considered sustainable. Unit 13 has extensive areas of forest habitat ideal for black bears, especially Subunits 13D and 13E. Access is extremely limited, and harvests are low over much of the best black bear habitat. Both plotting black bear bait station locations and transportation data indicate most harvest occurs near the road system. Increased harvests along the road system have not resulted in a decline in the percent males or the average skull size of all bears in the harvest. These data suggest we are not overharvesting populations. If bears were being overharvested along the road system, immigration by subadults from unharvested or lightly harvested areas would be expected. Also, the fact that taking cubs and sows with cubs is prohibited ensures that productive females are afforded protection and assures annual productivity and recruitment to offset hunting loss. Females would have to predominate in the harvest for a number of years before a population decline would be a concern.

Black bear hunting has become more popular and this trend is expected to continue as hunters seek alternative big game hunting opportunities. There has been a trend of increasing competition, shorter hunting seasons, and increased hunting interest on the more popular big game species. Data used to evaluate changes in hunting pressure and success rates are important in monitoring hunt conditions and, to some extent, bear abundance. Prior to the use of harvest tickets, this information was collected only from successful hunters. In the future, effort data may help further our understanding of harvest as it relates to hunting effort. No changes to season length or bag limits are recommended at this time. We do recommend establishing a management objective of no more than 40% females in the Unit 13 combined harvest over a 3-year period.

REFERENCES CITED

Miller, S. D. 1987. Susitna Hydroelectric Project: Final report: Big game studies, Volume VI: Black bear and brown bear. Submitted to Alaska Power Authority by Alaska Department of Fish and Game, Division of Game, Susitna Document No. 3497, Anchorage.

Schwartz, C. C., and A. W. Franzmann. 1991. Interrelationship of black bears to moose and forest succession in the northern coniferous forest. Wildlife Monographs 113.

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Table 1. Unit 13 black bear harvest, Southcentral Alaska, regulatory years[a] 2008–2012.

Regulatory	Reported hunter kill							Nonhunting kill[b]			Total kill			
year	M	(%)	F	(%)	Unk	Total	Over bait[c]	M	F	Unk	M	F	Unk	Total
2008														
Fall 2008	59	(69)	26	(31)	0	85		0	1	0	59	27	0	86
Spring 2009	65	(63)	38	(37)	0	103		0	0	0	65	38	0	103
Total	124	(66)	64	(34)	0	188	70	0	1	0	124	65	0	189
2009														
Fall 2009	23	(48)	25	(52)	1	49		2	1	0	25	26	1	52
Spring 2010	79	(69)	35	(31)	0	114		1	0	0	80	35	0	115
Total	102	(63)	60	(37)	1	163	73	3	1	0	105	61	1	167
2010														
Fall 2010	36	(54)	31	(46)	0	67		2	1	0	38	32	0	70
Spring 2011	91	(71)	38	(29)	0	129		1	0	0	92	38	0	130
Total	127	(65)	69	(35)	0	196	72	3	1	0	130	70	0	200
2011														
Fall 2011	30	(68)	14	(32)	2	46		0	0	0	30	14	2	46
Spring 2012	78	(81)	18	(19)	3	99		0	0	0	78	18	3	99
Total	108	(77)	32	(23)	5	145	34	0	0	0	108	32	5	145
2012														
Fall 2012	38	(66)	20	(34)	0	58		1	0	0	39	20	0	59
Spring 2013	41	(69)	18	(31)	0	59		1	0	0	42	18	0	60
Total	80	(68)	38	(32)	0	118		2	0	0	82	38	0	120

[a] Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 2008 = 1 July 2008–30 June 2009.

[b] Includes defense of life or property kills, research mortalities, and other known human-caused accidental mortality.

[c] No sealing requirement for black bears after 2011, no harvest over bait data available for bears not sealed.

Table 2. Unit 13 black bear successful hunter residency, Southcentral Alaska, regulatory years[a] 2008–2012.

Regulatory year	Local resident	(%)	Other resident	(%)	Nonresident	(%)	Successful hunters[b]
2008	41	(22)	109	(58)	38	(20)	188
2009	29	(18)	116	(71)	18	(11)	163
2010	32	(16)	106	(54)	58	(29)	196
2011	29	(20)	93	(64)	23	(16)	145
2012	17	(14)	79	(67)	22	(19)	118

[a] Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 2008 = 1 July 2008–30 June 2009.

[b] Includes hunters with unknown residency.

Table 3. Unit 13 black bear harvest chronology (percent) by month, Southcentral Alaska, regulatory years[a] 2008–2012.

Regulatory	Harvest chronology by month (%)							
year	Jul	Aug	Sep	Oct	Apr	May	Jun	*n*[b]
2008	6 (3)	30 (16)	44 (23)	5 (3)	0 (0)	43 (23)	60 (32)	188
2009	7 (4)	14 (9)	23 (14)	5 (3)	0 (0)	55 (34)	59 (36)	163
2010	5 (3)	20 (10)	34 (17)	8 (4)	0 (0)	49 (25)	80 (41)	196
2011	3 (2)	13 (9)	27 (19)	3 (2)	1 (1)	39 (27)	59 (41)	145
2012	6 (5)	16 (14)	32 (27)	4 (3)	0 (0)	9 (8)	50 (43)	117

[a] Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 2008 = 1 July 2008–30 June 2009.

[b] May include bears with unknown harvest date.

Table 4. Unit 13 black bear harvest (percent) by transport method, Southcentral Alaska, regulatory years[a] 2008–2012.

Regulatory year	Harvest by transport method (%)									n
	Airplane	Horse	Boat	3- or 4-wheeler	Snowmachine	ORV[b]	Highway vehicle	Walk	Unknown	
2008	24 (13)	0 (0)	28 (15)	38 (20)	0 (0)	4 (2)	58 (31)	31 (17)	4 (2)	187
2009	8 (5)	1 (1)	38 (23)	43 (26)	0 (0)	7 (4)	43 (26)	13 (8)	10 (6)	163
2010	26 (13)	1 (1)	39 (20)	52 (27)	0 (0)	1 (1)	46 (23)	17 (9)	14 (7)	196
2011	12 (8)	0 (0)	24 (17)	35 (24)	2 (1)	6 (4)	47 (32)	15 (10)	4 (3)	145
2012	21 (18)	2 (2)	20 (17)	26 (22)	0 (0)	7 (6)	27 (23)	7 (6)	8 (7)	118

[a] Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 2008 = 1 July 2008–30 June 2009.

[b] ORV = off-road vehicle.