

SPECIES
MANAGEMENT REPORT

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CHAPTER 14: BLACK BEAR MANAGEMENT REPORT

From: 1 July 2010
To: 30 June 2013

LOCATION

GAME MANAGEMENT UNIT: 14C (1,961 mi²)

GEOGRAPHIC DESCRIPTION: Municipality of Anchorage

BACKGROUND

Unit 14C, which consists of the Municipality of Anchorage (MOA), is a mosaic of wildlife habitat and human development. Most of the MOA is characterized by large tracts of natural lands, including Chugach State Park, Chugach National Forest, the Anchorage Coastal Wildlife Refuge, and Joint Base Elmendorf-Richardson (an 84,000 acre military base). Even the highly developed portions of the MOA support wildlife habitat in vegetated greenbelts, stream corridors and large municipal parks. As a result, bears occupy most areas of Unit 14C; however, the Unit 14C black bear population is affected by habitat fragmentation, urbanization, and associated human activities. These factors have contributed to human-black bear conflicts and other interactions with humans. Most of these conflicts are caused by negligent storage of garbage, birdseed, and pet/livestock food. Management of black bears in Unit 14C involves a combination of population management through regulated hunting, public education on bear safety and responsible living and recreating in bear country, participation in land management decisions affecting bear habitat, and responses to human-bear conflicts.

MANAGEMENT DIRECTION

MANAGEMENT GOALS

Since 1976 the management goals in Unit 14C have been to provide an opportunity to hunt black bears under aesthetically pleasing conditions and to provide an opportunity to enjoy black bears through viewing and photography.

MANAGEMENT OBJECTIVES

The management objective has been to maintain a population largely unaffected by human harvest. The human-use objective has been to provide liberal opportunities to hunt black bears with annual total harvests of less than 42 bears, with the annual sow harvest not exceeding 8 sows in Unit 14C.

METHODS

Department staff monitored black bear mortality by collecting harvest information through the sealing of skulls and hides of bears taken by hunters or killed for other reasons. During sealing,

skull measurements, sex identification, hunting effort, location, and date of kill were recorded. Incidental harvest and amount of meat salvage were noted on the sealing reports. Hunting over bait for black bears is not allowed in Unit 14C.

Harvest data were summarized by regulatory year (RY). A regulatory year runs 1 July through 30 June (e.g., RY12 = 1 July 2012–30 June 2013).

RESULTS AND DISCUSSION

POPULATION STATUS AND TREND

Population Size

The population estimate for black bears in Unit 14 has ranged from 530–1,080 (Griese 1996) to 750–1,050 (Grauvogel 1990, Harkness 1990). Currently, we estimate the black bear population in Unit 14C at 250 to 350 bears. This estimate is based on black bear density calculated for an area with habitat similar to that in Unit 14C (Miller 1987). High levels of harvest over the last several years suggest that our current population estimate is most likely a minimum population number, and black bears may be slightly more numerous than 350 individuals in Unit 14C. However, there has been no direct measure of population size for this subunit.

MORTALITY

Harvest

Season and Bag Limit. Black bear harvest was permitted year-round in the Remainder of Unit 14C, the day after Labor Day through June 15 in upper Eagle River valley, and from the day after Labor Day through May 31 in the Eklutna Lake and Chugach State Park Management Areas and in the lower Eagle River valley. The bag limit was 1 bear per year. Harvesting black bears over bait is prohibited in Unit 14C.

Board of Game Actions. There were no Board of Game actions during the reporting period concerning black bears in Unit 14C.

Hunter Harvest. Annual black bear harvest in Unit 14C decreased slightly during the RY10–RY12 period, compared to the previous reporting period (Table 1). During RY10–RY12, hunters harvested an average of 45 bears each year, including an average of 18 (42%) sows each year (considered a high percentage of females in a harvest). This was less than the previous reporting period (52 bears per year); however, there was little change in the percent females taken. During the reporting period, hunter kills accounted for 70% of the annual black bear mortality in Unit 14C (Table 2).

Hunter Residency and Success. Resident hunters comprised on average 81% of the annual harvest while nonresident hunters made up 19% of the harvest during this reporting period (Table 3). Additionally, local residents averaged 67% of the annual resident harvest compared to nonlocal residents (33%) from RY10–RY12 (Table 3).

Harvest Chronology. During previous reporting periods, most black bears in Unit 14C were harvested during the spring season (month of May), with peak harvest occurring in the latter half of May. However, during RY10–RY12, harvest was similar in both the spring and fall (September and October) seasons (31% and 27% of total harvest, respectively, Table 4). Few

black bears are harvested during July and August, when only the Remainder of Unit 14C is open to black bear hunting.

Transport Methods. Most hunters in Unit 14C used highway vehicles to access hunting areas. Airplanes were the second most frequently used transportation type (Table 5).

Other Mortality

Nonhunting kills for Unit 14C totaled 45 bears for this reporting period, which was 19% of total reported mortality. The highest reported number of nonhunting kills was 19 bears in 2010. While the majority of nonhunting mortality is attributed to defense of life and property, the number of vehicle-bear collisions in the urban environment of Anchorage is also high (1-6 bears per year during the reporting period). In addition, we estimate approximately 4 black bears are killed and not reported annually; however, this number may be higher.

CONCLUSIONS AND RECOMMENDATIONS

Human-use objectives were exceeded during this report period. The average annual harvest of 45 bears was higher than the management objective of 42 bears and the average sow harvest of 18 females was greater than the estimated allowable harvest of 8 females. During RY10–RY12, the proportion of females harvested in Unit 14C was 41%. Recent studies suggest that black bears can be sustainably harvested at higher rates than previously recommended, and that black bear populations can recover from short periods of overharvest (Mace and Chilton-Radandt 2011); however, the recent high rates of harvest coupled with a high percentage of females in the harvest suggest that we are most likely harvesting at a rate that cannot be sustained for an extended duration. These high rates of harvest may ultimately lead to a decrease in the black bear population and therefore need to be followed closely. Unfortunately, we have no data concerning black bear population numbers, vital rates or population dynamics for Unit 14C. Furthermore, we do not fully understand the movements of bears between the urban/wilderness interface. It is difficult to evaluate population level effects through harvest numbers alone. We recommend initiating the collection of age data on harvested individuals to begin to better evaluate the type of harvest occurring in Unit 14C and as an additional metric to potentially evaluate impacts of harvest on the black bear population.

As previously mentioned, the majority of bear-human conflicts in Unit 14C are related to improper storage of garbage and pet/livestock food, as well as unsecured livestock (i.e. chickens). Food conditioning of individual bears often results in defense of life or property kills. In addition, social reactions to mauling events can increase the number of bears killed in a given year. For example, in 2008, three brown bear maulings occurred in the municipality, which coincided with a record high mortality rate for black bears.

In an effort to better understand factors contributing to conflicts in Unit 14C, Alaska Department of Fish and Game (ADF&G) staff from research, education, and management began a collaborative project in 2012 using new technology (video cameras mounted on GPS collars) to study urban bears. Four collars were deployed on black bears in 2012, two were deployed in 2013, and more may be deployed in the future. Goals for this research include: determining fine scale diet and resource use; determining the factors impacting bear calls to the department in late summer and early fall; investigating the effect of natural and anthropogenic food on urban bear

movements; engaging teachers and students in bear research; and using GPS and video data to educate the public about bears. Analysis of the data is still underway.

In 2002, ADF&G staff created the Anchorage Bear Committee, which brings together representatives from local, state, and federal agencies to help address urban bear issues. ADF&G has also conducted two detailed public opinion surveys to learn more about Anchorage residents' attitudes toward wildlife (Responsive Management 2010), and engaged other agencies and the public in an urban bear management plan. In 2008, ADF&G organized the Anchorage Bear Education Group to coordinate educational and outreach efforts among agencies. The Education Group has developed web pages, brochures, bear safety presentations and videos, bear awareness seminars, bear-resistant trash container demonstrations, bear-themed coloring books, and other educational activities and products to promote safe activities, minimize food conditioning of bears, and encourage land management practices compatible with bear conservation and public safety. During the 2011-2012 school year, education staff conducted approximately 240 wildlife safety presentations to a total of 11,000 students in Anchorage. During the 2012-2013 school year, education staff conducted approximately 200 wildlife safety presentations to a total of 9,000 students in Anchorage.

Education about and enforcement of state wildlife regulations are critical to reducing bear-human conflicts in Unit 14C. We recommend that ADF&G continue to educate the public about bear safety and how to avoid human-bear conflicts in our neighborhoods.

Due to the lack of population specific data on black bears in Unit 14C, we recommend the following changes to the management objectives for the unit:

- Mitigate human-black bear conflicts in urban areas through education, research, and management activities to promote public safety.
- Provide liberal opportunities to hunt black bears with an annual harvest comprised of no more than 40% females.

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Table 1. Unit 14C black bear harvest composition, regulatory years 2003–2012.

Regulatory Year	Reported Harvest					
	Male	(%) ^a	Female	(%) ^a	Unk	Total
2003	27	77%	8	23%	0	35
2004	25	69%	11	31%	0	36
2005	25	66%	13	34%	0	38
2006	16	53%	14	47%	0	30
2007	30	61%	19	39%	0	49
2008	40	62%	25	38%	0	65
2009	30	73%	11	27%	0	41
2010	29	64%	16	36%	0	45
2011	30	61%	19	39%	0	49
2012	20	50%	20	50%	1	41

^aIncludes bears of known sex only.

Table 2. Unit 14C black bear harvest, regulatory years 2008–2012.

Regulatory year	Reported									Estimated unreported kill ^c	Total estimated kill					
	Hunter kill					Nonhunting kill ^b					M	(%)	F	(%)	Unk.	Total
	M	F	(%)	Unk.	Total	M	F	Unk.								
2008																
Fall 08	14	13	(48)	0	27	5	1	7		19	(58)	14	(42)	7	40	
Spring 09	26	12	(32)	0	38	1	1	1		27	(66)	13	(32)	1	41	
Total	40	25	(38)	0	65	6	2	8	6	46	(53)	27	(31)	14	87	
2009																
Fall 09	5	3	(38)	0	8	4	4	1		9	(53)	7	(42)	1	17	
Spring 10	25	8	(24)	0	33	4	1	0		29	(76)	9	(24)	0	38	
Total	30	11	(27)	0	41	8	5	1	4	38	(64)	16	(27)	5	59	
2010																
Fall 10	11	5	(31)	0	16	4	2	8		15	(68)	7	(32)	8	30	
Spring 11	18	11	(38)	0	29	2	3	1		20	(59)	14	(41)	1	35	
Total	29	16	(36)	0	45	6	5	9	4	35	(63)	21	(37)	13	69	
2011																
Fall 11	9	8	(47)	0	17	5	1	4		14	(61)	9	(39)	4	27	
Spring 12	21	11	(34)	0	32	1	1	0		22	(65)	12	(35)	0	34	
Total	30	19	(39)	0	49	6	2	4	4	36	(63)	21	(37)	8	65	
2012																
Fall 12	12	12	(50)	0	24	7	2	1		19	(58)	14	(42)	1	34	
Spring 13	8	8	(50)	1	17	2	1	0		10	(53)	9	(47)	0	19	
Total	20	20	(50)	1	41	9	3	1	4	29	(51)	23	(40)	5	57	

^a Bears reported taken over legally established bait stations.

^b Includes defense of life or property kills, illegal kills, and other known human-caused accidental mortality.

^c Assumes approximately 10% of reported harvest.

Table 3. Unit 14C black bear successful hunter residency, regulatory years 2003–2012.

Regulatory year	Local ^a resident	(%)	Nonlocal resident	(%)	Nonresident	(%)	Successful hunters
2003	14	(40)	14	(40)	7	(20)	35
2004	22	(61)	5	(14)	9	(25)	36
2005	20	(53)	6	(16)	12	(32)	38
2006	13	(43)	12	(40)	5	(17)	30
2007	24	(49)	14	(29)	11	(22)	49
2008	36	(55)	20	(31)	9	(14)	65
2009	26	(63)	11	(27)	4	(10)	41
2010	29	(64)	9	(20)	7	(16)	45
2011	27	(55)	17	(35)	5	(10)	49
2012	18	(44)	10	(24)	13	(32)	41

^a Unit 14C residents.

Table 4. Unit 14C black bear hunter harvest chronology percent by month, regulatory years 2003–2012.

Regulatory year	Percent of harvest									<i>n</i>
	July - Aug	Sep 1-15	Sep 16-30	Oct	Nov - Mar	Apr	May 1-15	May 16-31	June	
2003	3	14	9	17	0	3	26	20	9	35
2004	3	14	17	6	0	3	31	19	8	36
2005	5	13	8	5	0	0	21	34	13	38
2006	0	3	10	10	0	3	23	37	13	30
2007	2	8	6	4	0	2	16	49	12	49
2008	18	5	17	2	0	0	17	26	15	65
2009	5	5	7	2	0	2	12	44	20	41
2010	13	13	2	9	0	0	18	31	18	45
2011	10	10	8	6	0	0	4	35	24	49
2012	22	0	29	5	2	0	2	27	7	41

Table 5. Unit 14C black bear harvest percent by transport method, regulatory years 2003–2012.

Regulatory year	Percent of harvest							<i>n</i>
	Airplane	Horse	Boat	Snow Machine	ORV/ATV	Highway Vehicle	Other / Unknown	
2003	31	0	11	0	3	29	26	35
2004	36	0	3	0	3	33	25	36
2005	29	0	18	0	0	26	26	38
2006	30	0	20	0	3	27	20	30
2007	35	0	8	0	8	35	14	49
2008	29	0	9	0	6	20	35	65
2009	34	0	7	0	2	32	24	41
2010	18	0	2	0	7	36	36	45
2011	33	0	12	0	4	39	12	49
2012	34	0	0	0	7	44	15	41