
CHAPTER 15: BLACK BEAR MANAGEMENT REPORT

From: 1 July 2010
To: 30 June 2013

LOCATION

GAME MANAGEMENT UNIT: 16 (12,445 mi²)

GEOGRAPHIC DESCRIPTION: West Side of Cook Inlet

BACKGROUND

Harvest levels in unit 16B were flat and averaged less than 100 bears between 1974 and 2004. Harvest in Unit 16A was 40 bears annually during the same 30 year period; however, there was a steady increase in the harvest, from 13 bears in 1974 to 74 bears in 2004. This was likely the result of improved access and increased use of all-terrain vehicles (ATVs). Black bear harvests fluctuate with fall berry crops (Faro 1990), the length of moose season, and travel conditions (i.e., snow cover and consistency) during late spring (Harkness 1993). Since the 1990s the chronology of the black bear harvest has shifted from a predominantly fall harvest to a spring harvest due to new baiting opportunity and increased interest in hunting black bears.

Black bear population estimation is problematic due to the large expanse of the unit and the heavy vegetation that makes sighting bears during surveys difficult. Preliminary information from line-transect surveys (Quang and Becker 1999) conducted during the spring of 2000 and 2001 in the northern section of Unit 16 produced an estimate of 29.3 black bears/100mi². Applying that density unit wide resulted in an estimate of about 2700 bears (McDonough 2002). Previous estimates based on 25-50 black bears/100mi² (Griese 1996), produced a similar mid-point estimate as the line transect survey results of 2700 bears for Unit 16. The previous range estimate of 1825-3650 black bears (Griese 1996, Griese 1999) covers the potential variation in the habitat quality throughout the unit. However, previous reports (Griese 1996, Griese 1999) failed to include the Unit 16A contribution, thereby underestimating the Unit 16 black bear population at 2100.

Poor moose calf recruitment during the 2000s had prevented Unit 16B from reaching management objectives for the moose population. The black bear population is a major predator on spring moose calves. The moose population experienced a substantial decline in the 1990s after several deep snow winters (i.e., 1999–2000 and 2000–2001). A study initiated in 2005 confirmed that poor calf recruitment was preventing the recovery of the moose population and that survival of calves to 5 months of age (November 1) was low, despite high levels of calf production and relatively good calf body weights (Lou Bender, Alaska Department of Fish and Game [ADF&G] wildlife biologist Palmer, unpublished data). Predation on moose calves was found to be the primary cause of low calf survival, and black bear predation was thought to account for a significant portion of the calf mortality. A predator control program has been

initiated on non-federal land in the unit to reduce the number of predators in Unit 16, including black bears, and thereby increase moose calf survival. Black bear seasons, bag limits, and restrictions on bear baiting were liberalized in 2007 to increase bear harvests. By 2009 black bears could also be taken through snaring.

MANAGEMENT DIRECTION

MANAGEMENT GOALS

The management goal for Unit 16 is to provide the greatest opportunity to participate in hunting black bears and to reduce the overall population of black bears in the unit in order to increase moose calf survival.

MANAGEMENT OBJECTIVES

The population objective for the Unit 16 Predator Control Area (Unit 16 PCA), which consists of all non-federally owned land in Unit 16B and the western half of Unit 16A, is to use liberalized harvest strategies and control methods to reduce the population to 600–800 black bears and to maintain that level through sustainable harvests. The management objective for the remainder of Unit 16 is to maintain a black bear population at a population size that is largely unaffected by human harvests.

METHODS

Department staff monitored the black bear harvest by sealing skulls and hides of bears taken by hunters. Data were recorded on each bear sealed, including sex and skull size, the date and location of kill, and the number of days the hunter spent in the field. Hair, tissue, and a premolar were collected for future analyses. Hunters also reported if the harvest was incidental, if the bear was taken over bait, and if any meat was salvaged. Harvest data were analyzed by regulatory year (RY). A regulatory year begins 1 July and ends 30 June (e.g., RY10 = 1 July 2010–30 June 2011).

Hunters using bait were required to get a permit and register bait sites with the department (a maximum of 2 bait stations were allowed per bait permit). In the Unit 16 PCA, predator control permits were issued that allowed participants to register a total of 4 bait stations. Beginning in RY09 predator control snaring permits were issued authorizing permit holders to use snares to take black bears.

RESULTS AND DISCUSSION

POPULATION STATUS AND TREND

Population Size

In 2007 Becker conducted line transects surveys of 16B. Reevaluation of the assumptions regarding the independence of bear observations led to a new density estimate of 187.3 black bears per 1,000 km² within the available habitat below 3,500 feet in the Subunit 16B-North and Subunit 16B-Middle study areas. Extrapolating that density to the entire unit produced an estimate of 3,200 to 3,800 black bears in all of Unit 16B at the time of the survey, and this is the most current estimate of the population size.

MORTALITY

Harvest

Season and Bag Limit. During this report period there was no closed season for black bear hunting in Unit 16. The bag limit was 3 bears, excluding cubs, and sows accompanied by cubs. Baiting black bears was allowed by registration permit between 15 April and 15 June outside of Denali State Park in Unit 16A. The baiting season in Subunit 16B was 15 April through 30 June. People who possessed a predator control program permit were allowed to take an unlimited number of bears, including cubs, and sows with cubs, and to bait bears from 15 April to 15 October. Beginning in RY09 black bear snaring permits were issued to people who completed a department training course.

Board of Game Actions and Emergency Orders. During its March 2011 meeting the Board of Game decided to allow guides, combined with assistant guides, to establish up to 10 bait stations in total. It also decided to allow hunters to take black bears from bait stations the same day they have been airborne provided they were at least 300 feet from the airplane at the time of the taking. Both of these regulations went into effect during the spring of 2012.

Hunter Harvest. There was a slight decrease in the average annual harvest during this reporting period (431 for the RY10–RY12 period) compared with 482 for RY07–RY09; Table 1). Within the reporting period, the harvest dropped from a high of 673 black bears in RY10 to 241 bears in RY12. Harvest in RY12 was less than 1/3 the harvest in RY10 in both Units 16A & 16B (Tables 2 and 3). Initial efforts by sportsmen's groups to increase the harvest of black bears in the predator control area have been reduced, and, in general, interest and motivation to participate in the predator control program has waned. Interest in snaring black bears has waned as well, reflected in decreasing take using this method, from 72 in RY10, 24 in RY 11, to 8 in RY12. The percent of females in the harvest increased from 34% in RY07 – RY09 to 37% in this reporting period.

Baiting Participation. The number of people using bait decreased during this report period compared to RY07–RY09 (Table 4). The total number of bait stations, however, increased during the RY10–RY12 period. This may be due in part to the regulation change that allows guides to have up to 10 bait stations.

Hunter Residency and Success. Success rates and the proportion of resident and nonresident hunters during RY10–RY12 were similar to the previous report period (Table 5).

Harvest Chronology. Typically, most black bears harvested are taken in the last 2 weeks of May and the month of June (Table 6); although in recent years there has been an increase in the number of black bears taken in the fall. This harvest coincides with the increase in moose hunting opportunities in Subunit 16B that has been building over the past few years.

Transport Methods. The majority of bear hunters used aircraft and boats to reach hunt areas in Unit 16, although all-terrain vehicle (ATV) use is common where there is access (Table 7). There has been little change in this pattern during the past 10 years.

Other Mortality

Nonhunting kills represented a minor portion of the total reported mortality. However, we suspect that a few nuisance black bears are killed each year and are not reported due to the inconveniences associated with reporting. In addition, some of the bears involved in bear–human conflicts are probably taken by licensed hunters and reported in the general season harvest due to the liberal seasons and bag limits. There were minimal reports of problem bears during this reporting period.

CONCLUSIONS AND RECOMMENDATIONS

Black bears in Unit 16 continue to be managed on a sustainable basis, but with also with a goal of reducing black bear predation on moose calves to increase the moose population. Under general harvest regulations black bear hunters continue to have ample harvest opportunities throughout Unit 16, and will retain those opportunities after the black bear population is reduced to the management goal of 600 to 800 bears.

The black bear population should be monitored into the future through periodic surveys and harvest data in order to determine if management goals have been met for this species, to evaluate the effectiveness of black bear reduction techniques, and to evaluate how manipulating the black bear population size and predation affects moose population recovery.

Black bear demographic studies should be initiated in Unit 16 to determine the reproductive parameters of the black bear population. Ultimately this will lead to a greater understanding of the resiliency of the black bear populations to the impacts of predator control, and the amount of effort required on the part of the public and the department to effectively manipulate the black bear and moose populations in the unit.

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While this unit report was actually published in 2016, it is part of the set of 2014 unit species management reports, so we suggest citing the report as a 2014 report to maintain its relationship to the other 2014 unit reports.

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Table 1. Unit 16 black bear harvest composition, regulatory years^a 2003 through 2012.

Regulatory year	Reported harvest ^b					
	Male	(%) ^c	Female	(%) ^c	Unk	Total
2003	166	(73)	60	(27)	1	227
2004	152	(72)	59	(28)	1	212
2005	156	(72)	62	(28)	4	222
2006	298	(71)	119	(29)	2	419
2007	333	(66)	165	(33)	1	499
2008	315	(62)	194	(38)	4	513
2009	296	(67)	138	(32)	1	435
2010	397	(59)	276	(41)	0	673
2011	255	(67)	123	(33)	0	378
2012	156	(65)	85	(35)	0	241

^a Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 2012 = 1 July 2012–30 June 2013.

^b Includes bears taken under predator control.

^c Includes bears of known sex only.

Table 2. Subunit 16A black bear harvest, regulatory years^a 2008 through 2012.

Regulatory year	Reported						Estimated unreported kill ^e	Total estimated kill								
	Hunter kill ^b			Nonhunting kill ^d				M	(%)	F	(%)	Unk	Total			
	M	F	(%)	Unk	Total	Baited ^c	M	F	Unk		M	(%)	F	(%)	Unk	Total
2008																
Fall 08	15	9	(38)	0	24	0	0	1	0	2	15	(60)	10	(40)	2	27
Spring 09	53	39	(42)	0	92	52	1	0	0	9	54	(57)	39	(43)	9	102
Total	68	48	(41)	0	116	52	1	1	0	11	69	(59)	49	(41)	11	129
2009																
Fall 09	13	7	(35)	0	20	0	0	0	0	2	13	(65)	7	(35)	2	22
Spring 10	46	34	(43)	0	80	43	0	0	0	8	46	(58)	34	(42)	8	88
Total	59	41	(41)	0	100	43	0	0	0	10	59	(59)	41	(41)	10	110
2010																
Fall 10	38	34	(47)	0	72	2	0	0	0	7	38	(53)	34	(47)	5	77
Spring 11	33	17	(34)	0	50	30	0	0	0	5	33	(66)	17	(34)	7	57
Total	71	51	(42)	0	122	32	0	0	0	12	71	(58)	51	(42)	12	134
2011																
Fall 11	13	5	(28)	0	18	3	0	0	0	2	13	(72)	5	(28)	2	20
Spring 12	33	18	(35)	0	51	26	0	0	0	5	33	(65)	18	(35)	5	56
Total	46	23	(33)	0	69	29	0	0	0	7	46	(67)	23	(33)	7	76
2012																
Fall 11	9	5	(36)	0	14	2	0	0	0	1	9	(64)	5	(36)	1	15
Spring 12	17	10	(37)	0	27	18	0	0	0	3	17	(63)	10	(37)	3	30
Total	26	15	(37)	0	41	20	0	0	0	4	26	(63)	15	(37)	4	45

^a Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 2012 = 1 July 2012–30 June 2013.

^b Includes bears taken by hunters and predator control permittees.

^c Bears reported taken over legally established bait stations.

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

^e Assumes approximately 10% of reported harvest.

Table 3. Unit 16B black bear harvest, regulatory years^a 2008 through 2012.

Regulatory year	Reported						Estimated unreported kill ^e	Total estimated kill								
	Hunter kill ^b			Nonhunting kill ^d				M	(%)	F	(%)	Unk	Total			
	M	F	(%)	Unk	Total	Baited ^c	M	F	Unk		M	(%)	F	(%)	Unk	Total
2008																
Fall 08	60	39	(39)	2	101	18	0	0	0		60	(61)	39	(39)	2	101
Spring 09	187	107	(36)	2	296	127	0	0	1		187	(64)	107	(36)	3	297
Total	247	146	(37)	4	397	145	0	0	1	40	247	(63)	146	(37)	45	438
2009																
Fall 09	81	39	(33)	0	120	20	0	0	0		81	(67)	39	(33)	0	120
Spring 10	216	99	(31)	0	315	136	0	0	0		216	(69)	99	(31)	0	315
Total	297	138	(32)	0	435	156	0	0	0	44	297	(68)	138	(32)	44	479
2010																
Fall 10	160	129	(45)	0	289	5	3	0	0		163	(56)	129	(44)	0	292
Spring 11	166	96	(37)	0	262	112	0	0	0		166	(63)	96	(37)	0	262
Total	326	225	(41)	0	551	117	3	0	0	55	329	(59)	225	(41)	55	609
2011																
Fall 11	58	27	(32)	0	85	11	0	0	0		58	(68)	27	(32)	0	85
Spring 12	151	73	(33)	0	224	80	0	0	0		151	(67)	73	(33)	0	224
Total	209	100	(32)	0	309	91	0	0	0	31	209	(68)	100	(32)	31	340
2012																
Fall 12	49	14	(22)	0	63	5	1	0	0		50	(78)	14	(22)	0	64
Spring 13	81	56	(41)	0	137	55	0	0	0		81	(59)	56	(41)	0	137
Total	130	70	(35)	0	200	60	0	0	0	20	130	(65)	70	(35)	20	220

^a Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 2012 = 1 July 2012–30 June 2013.

^b Includes bears taken by hunters and predator control permittees.

^c Bears reported taken over legally established bait stations.

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

^e Assumes approximately 10% of reported harvest.

Table 4. Unit 16 black bear hunter baiting participation, regulatory years^a 2003 through 2012.

Regulatory year	Number of permittees	Number of stations registered	
		Unit 16A	Unit 16B
2003	124	99	90
2004	130	107	96
2005	141	89	117
2006	235	146	222
2007	255	135	120
2008	287	144	143
2009	317	201	360
2010	243	163	256
2011	189	186	170
2012	195	174	196

^a Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 2012 = 1 July 2012–30 June 2013.

Table 5. Unit 16 black bear successful hunter residency, regulatory years^a 2003 through 2012.

Regulatory year	Local ^b resident	(%)	Nonlocal resident	(%)	Nonresident	(%)	Successful hunters
2003	6	(3)	143	(63)	78	(34)	227
2004	4	(2)	155	(73)	53	(25)	212
2005	7	(3)	156	(70)	59	(27)	222
2006	11	(3)	282	(68)	122	(29)	415
2007	7	(1)	365	(73)	127	(26)	499
2008	14	(3)	403	(79)	94	(18)	511
2009	21	(5)	313	(71)	103	(24)	437
2010	13	(2)	431	(78)	108	(20)	552
2011	7	(2)	231	(75)	73	(23)	311
2012	4	(2)	150	(74)	49	(24)	203

^a Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 2012 = 1 July 2012–30 June 2013.

^b Unit 16 residents.

Table 6. Unit 16 black bear hunter harvest chronology percent by month, regulatory years^a 2003 through 2012.

Regulatory year	Percent of harvest									<i>n</i>
	Jul–Aug	Sep 1–15	Sep 16–30	Oct	Nov–Mar	Apr	May 1–15	May 16–31	Jun	
2003	6	8	5	<1	0	2	4	32	42	225
2004	7	8	7	<1	0	3	3	35	37	211
2005	6	14	9	2	<1	2	8	26	32	222
2006	10	7	5	1	0	1	9	32	34	413
2007	9	3	3	3	<1	3	3	28	48	499
2008	14	4	5	1	<1	1	4	24	47	512
2009	17	6	3	1	0	1	3	29	39	437
2010	26	13	9	5	<1	1	1	12	33	552
2011	19	4	3	2	0	4	2	11	55	311
2012	24	4	2	1	0	3	4	13	48	203

^a Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 2012 = 1 July 2012–30 June 2013.

Table 7. Unit 16 black bear harvest percent by transport method, regulatory years^a 2003 through 2012.

Regulatory year	Percent of harvest							<i>n</i>
	Airplane	Horse	Boat	Snow machine	ORV/ATV	Highway Vehicle	Other / Unknown	
2003	34	0	32	1	20	5	6	221
2004	37	1	32	3	15	8	3	211
2005	41	1	28	2	15	11	2	221
2006	50	1	19	<1	14	11	4	415
2007	51	1	21	1	12	7	7	498
2008	55	1	17	2	13	7	5	511
2009	35	1	23	1	13	16	11	437
2010	48	1	15	1	19	9	7	552
2011	52	1	17	2	17	6	5	311
2012	58	1	12	1	14	9	5	203

^a Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 2012 = 1 July 2012–30 June 2013.