

SPECIES
MANAGEMENT REPORT

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CHAPTER 7: BLACK BEAR MANAGEMENT REPORT

From: 1 July 2010
To: 30 June 2013

LOCATION

GAME MANAGEMENT UNIT: 5 (5,800 mi²)

GEOGRAPHICAL DESCRIPTION: Cape Fairweather to Icy Bay, Eastern Gulf Coast.

BACKGROUND

Within Game Management Unit 5, black bears are found almost exclusively in Unit 5A. Unit 5B, dominated by the Malaspina Glacier, has accounted for only a few harvested black bears since sealing records have been kept; all have been reported from the head of Disenchantment Bay, at the junction of the subunits 5A and B. “Glacier” (gray pelage color variant) bears occur more frequently in Unit 5 than in other management units, and usually several are harvested each year. The opportunity to harvest one of these unusual bears attracts hunters not only from other parts of Alaska, but also from throughout the world.

HABITAT DESCRIPTION

The entire Yakutat Forelands between the coast and the ice fields is potentially good black bear habitat. The forelands contain a variety of habitats, including open sedge meadows, willow flats, mixed stands of spruce and cottonwood, thick stands of spruce and hemlock, riparian stream corridors, beach fringes, and mountainous regions. These habitats contain vegetative forage such as grasses, sedges, devil’s club, skunk cabbage, cow parsnip, blueberries, salmonberries, strawberries, and cranberries, to name a few. In addition, the forelands are rich in salmon, including sockeye, chum, pink, chinook, and coho. Streams containing salmon are distributed throughout the forelands, and bears have widespread access to fish. There are also eulachon (*Thaleichthys pacificus*) present in some streams during the early spring. Calf moose might provide additional feeding opportunities in the spring; the forelands harbor an estimated 600–800 moose (Barten 2008a). In spite of this apparently productive habitat for black bears, they are common only near the mountainous regions due to the presence of numerous brown bears in the remainder of the area. Managers estimate there are 522 brown bears in Unit 5A (ADFG 1993, unpublished data), and they likely displace black bears from lower elevations.

Habitat alterations and concerns are mostly in the form of successional changes of logged areas. There are 9 townships of land near the town of Yakutat that have been largely logged by clearcutting. Although some of these areas produce abundant berries that black bears can feed on, much of the clearcut habitat seems to be growing up into thick stands of small conifers that prohibit other types of forage from growing. These areas provide little in the way of food for black bears.

HUMAN USE HISTORY

Black bears have long been hunted in Unit 5, but reliable harvest data is only available from 1973 when sealing became a requirement. Prior to 2009, hunters only needed a hunting license to take black bears in Southeast, Alaska. Beginning in 2009 however, hunters were required to obtain a harvest ticket prior to hunting black bears in Units 1-5. Data from harvest ticket reports will allow us to quantify both successful and unsuccessful hunting effort.

Regulatory history

Since statehood, black bear hunting season has been from 1 September through 30 June, and the bag limit for residents has been 2 bears annually, only 1 of which can be a blue or glacier bear. Nonresident bag limits were the same as residents until 1990, when the nonresident limit was reduced to 1 bear per year. Using dogs to hunt black bears has been allowed since 1966, although this requires a permit issued by ADF&G. To date no one has ever applied for one of these permits in Unit 5. Since 1996, hunters have had to salvage the edible meat of any black bears they kill in Southeast Alaska during the period 1 January–31 May.

Historical harvest patterns

Black bear harvest averaged 14 bears per year during the 1970s. During the 1980s, the average annual harvest increased to 24 bears, then decreased to 19 bears annually in the 1990's. The highest harvest occurred in 1985, when hunters took 39 bears. That year was the first that subsistence moose hunting regulations were in place, and nonresidents and many nonlocal Alaska residents were prohibited from hunting moose. It may be that many nonlocal hunters chose to hunt black bears rather than abandon their Yakutat area hunting trip entirely. Moose regulations in subsequent years reinstated a nonresident general season.

More glacier bears are taken in the Unit 5 harvest, an average of 2–3 a year, than from other areas of Southeast Alaska. The percentage of glacier bears in the harvest averaged 11% of the black bears taken in Unit 5 between 2000 and 2009. During this report period 32% of the black bear harvest was glacier color phase bears (Table 1). Unit 5A is one of the few areas where hunters target glacier bears.

The spring season often accounts for 100% of the annual harvest, and although baiting is legal in Unit 5, few bears are taken over bait. Nonresidents generally take 50% or more of the bears, with the goal of finding a glacier bear being the impetus for hunting black bears in Unit 5. Aircraft and boats are the two predominant means of transport for Unit 5 black bear hunters, regularly accounting for more than 90% of reported hunts.

MANAGEMENT DIRECTION

MANAGEMENT OBJECTIVES

Maintain a 3:1 male to female ratio in the harvest.

Maintain a mean annual male skull size (length plus width) of at least 17.0 inches.

METHODS

The Department of Fish and Game (Department) and Alaska Wildlife Troopers (AWT) sealed black bear hides and skulls. Biological and hunt information collected at the time of sealing included pelage color, sex, skull size (length plus width), date and location of kill, transportation method, and the type of any commercial services used. A premolar was collected from most bears and sent to Matson's Laboratory in Montana for age determination. Anecdotal information about conditions in the field was gathered at the same time.

RESULTS AND DISCUSSION

POPULATION STATUS AND TREND

Population information is not available for Unit 5 black bears. The harvest during this report period was substantially lower (28 bears) than previous periods (Table 1). Eight bears were taken in 2010, 13 bears were taken in 2011, and 7 bears in 2012. Mean total skull size for male bears was slightly lower than the previous report period (17.0 vs. 17.6), but did meet the management goal. A 3:1 male to female harvest ratio continued to be maintained, with 75% males in the harvest during the report period. Although the percentage of males in the harvest decreased from the previous report, 75% equals the management goal, which is intended to ensure a reproductively sound population by maintaining female bears in the population. The mean age of male and female bears was 7.2 and 7.8 years, respectively. The mean age for male bears in the report period is approximately 1 year younger than the previous report period (8.5 years). The female mean age also decreased, substantially, from approximately 11 years of age during the previous report period (2007–2009) to 7.8 years during the current period. The female age calculation is based on a small sample size (7) of harvested female bears; female bear ages ranged from 4 to 23 years during the report period. Because of the small number of bears aged a single, older animal can skew the age structure of the harvest towards older bears; so caution should be used interpreting the mean age structure of a single year's harvest when so few bears are sampled.

Population size

No population studies have been conducted on black bear in Unit 5. Population size or density estimates are difficult to obtain, and have never been attempted in Unit 5. The species generally inhabits forested areas, where aerial surveys are impractical, and vast remote areas also make studies difficult and expensive. Barten (2008b) provided an estimate of 600 black bears in Unit 5. This estimate is based loosely on black bear densities of 1.4 mi² bears in western Washington State (Poelker and Hartwell 1973). We believe minimum densities in mainland Southeast Alaska are slightly higher than the numbers found in the Washington study area. Although the 1.5 mi² density is used in Unit 1C, it probably is too high for the number of Unit 5 black bears due to their displacement from some habitats by brown bears. Additional black bear population research is needed to better estimate black bear densities and the overall population in Unit 5.

Population composition

Our management objective of a 3:1 male to female harvest ratio is aimed at keeping harvest of female bears to a minimum. We lack reliable information on the composition of the bear population, but use the harvest sex ratio as an indirect index of the availability of male bears in

the population. We interpret an increase in the female harvest as an indication of fewer large male bears available to hunters. The current high percentage of male bears in the harvest suggests there are plenty of male bears in the population.

Glacier bears occur more frequently in Unit 5 than in other management unit and are regularly harvested in small numbers. No cinnamon or Kermode (white) pelage black bears have been reported in Unit 5.

Distribution and movements

Our most reliable information on Unit 5 black bear distribution comes from hunter harvest. Unit 5B has few black bears and Unit 5A has black bears distributed throughout the unit. Brown bears are also abundant throughout the unit and they displace black bears from many non-mountainous locales. Because of this displacement, most black bear harvest and sightings are along the coast or in foothills and mountainous areas within the subunit. Managers are increasingly interested in the distribution of black bears in Unit 5 because of a growing interest in black bear hunting across Southeast Alaska. For many years the number of black bear hunters and the bear harvest in Unit 5 has been consistent but with harvest decreasing, and hunters reporting seeing fewer bears in other areas of Southeast, Alaska, Unit 5 may be an area that sees an increase in black bear hunter effort and likely an increased harvest. Harvest location information is collected when the department seals hides and skulls. Collecting location information helps us to better understand the distribution of black bears in Unit 5 and to identify areas where access may make bears more vulnerable to harvest.

One human-caused factor that may affect the Unit 5 black bear distribution is the presence of an open landfill at the city of Yakutat. Black bears have occasionally been seen foraging at the landfill and some harvest occurs nearby.

MORTALITY

Harvest

Season

1 Sep–30 Jun

1 Sep–30 Jun

Bag Limits

Resident hunters: 2 bears, not more than 1 of which may be a blue or glacier bear.

Nonresident hunters: 1 bear.

Board of Game Actions and Emergency Orders. The Alaska Board of Game took no actions concerning Unit 5 black bears during the report period. We issued no Emergency Orders for the Unit 5 black bear season during the report period.

Hunter Effort and Harvest. Black bear harvests ranged from 7 to 13 during 2010–2012, averaging 9 per regulatory year (Table 1), a decrease of 7 bears annually over the previous report period. Seven female bears were harvested compared to 21 males during the report period, yielding 75% males. This is a high male:female harvest sex ratio, and is the same as our management goal of 3:1. Nine bears, or approximately 32% of the harvest during this reporting period, were glacier bears (Table 1).

Effort expended by successful hunters per bear killed was 3.6 days compared to the previous 10-year mean of 3.3 days. Hunter effort for all groups (local resident, Alaska resident and nonresident) decreased by a day or more per successful hunter (Table 2). Based on the return of harvest ticket information, 71 ticket holders hunted in Unit 5 during report period. Twenty-three (32%) hunters reported success. Successful hunters took approximately 4.5 days to harvest a black bear, and unsuccessful hunters spent 5.7 days hunting. One frustrating aspect of the new harvest ticket report is that only 6 of 33 ticket holders recorded hunt location information beyond a GMU level. Unlike registration permits, there is no penalty for failing to report black bear hunting activity if unsuccessful, although it is required (successful hunters must still have bears sealed by the department).

Hunter Residency and Success. Unlike previous reports where resident hunters harvested the majority of black bears in Unit 5, nonresident hunters took 50% of the harvest during this report period. Unit residents took 36% of the bears, and nonlocal Alaska residents harvested 14% of the bears (Table 2).

Harvest Chronology. Historically, most Unit 5 black bears have been harvested during the spring. The trend continued through this report period, with 27 of 28 bears taken in spring (Table 1). The reason for the concentrated spring harvest has to do with black bear accessibility and perceived palatability. In spring black bears forage along beaches or hillsides that are visible from beaches and accessible by boat, allowing hunters to hunt large areas fairly easily. In the fall however, bears are much harder to find and access because they are foraging on fish streams bordered by dense vegetation, or they are in mountainous terrain that is difficult to access. Many black bear hunters in Southeast avoid taking fall bears because of concern about the palatability of bears that may have been feeding on salmon. This may be a valid concern about bears found in areas with salmon streams, but many black bears feed in high elevation meadows in the fall and provide excellent table fare.

Harvest in Particular Areas (WAAs). No changes stand out in analysis of the harvest distribution, although different WAAs were the big producers in different years (Table 3). The area near Yakutat Bay (WAA's 4506 and 4508) always accounts for a large portion of the harvest and did again during this report period, with 71% of the harvest coming from that area. Hunters can easily access this area from small skiffs, and are never far from protected waters. They can scan miles of shoreline or hillside from a moving boat, increasing their chances of finding a bear. Another area in which hunters consistently harvest black bears is the foothills of the Brabazon Mountains (WAA 4503). During the report period, 11% of the harvest came from this area. Although the access in this area isn't nearly as easy as WAA 4506 and 4508, hunters still manage to get to bears using boats and in some cases small airplanes. Several hunting guides offer fly in hunting opportunities in this area. The Russell Fjord and Nunatak Fjord areas (WAA 4505) represented 7% of the harvest for the reporting period. Those areas also provide hunting opportunity for boat-based black bear hunts.

Bait Stations. Although baiting is legal during the Unit 5 spring season, very few hunters use bait. No black bear baiting permits were issued for Unit 5 during the report period.

Guided Hunter Harvest. Guided hunters accounted for 9 of 28 bears harvested, or 32% of the total during the report period (Table 4). During the previous report period guided hunters took

24% of the harvest. Often, the hunters who hire a guide are searching for a glacier bear, and take a black colored bear only because they fail to find a blue colored animal. The decrease in hunters using registered guides or other commercial services may be linked to an overall downturn in the national economy. Anecdotal information from guides suggests bookings are generally down across Southeast Alaska.

Transport Methods and Commercial Services Used. Boats were the predominant transport means for successful Unit 5 black bear hunters (Table 2), with 64% of the hunters using this mode of transport. Twenty five percent of hunters used airplanes to access hunting areas, and 11% of hunters used a highway vehicle (Table 2). Commercial services were used by 10 (36%) of the 28 successful hunters; 9 of these used a commercial guide and none used commercial services for transportation to the field (Table 4).

Other mortality

We do not have records of any Defense of Life or Property (DLP) kills, road kills, or illegal kills for black bears during the report period.

HABITAT

Assessment

Concerns about habitat alterations center on successional changes of logged areas. Future logging on U.S. Forest Service lands is likely to be confined to the area at the southern end of Russell Fjord. Most private land in the Yakutat area has already been logged.

NONREGULATORY MANAGEMENT PROBLEMS

In small communities, fish camps, and remote areas it is unusual to receive nuisance bear complaints because such issues are often dealt with locally without alerting ADF&G. We do not believe that we have a significant issue with illegal harvest in Unit 5.

CONCLUSIONS AND RECOMMENDATIONS

The management objective of maintaining a 3:1 male to female harvest ratio was achieved in all 3 years of this report period. Our objective for male skull size was met in 2011 but not in 2010 and 2012. Although the number of black bears harvested from this unit is not large, continued monitoring is necessary to determine appropriate management strategies for black bears in Unit 5. Managers are concerned with black bear populations in multiple locations in Southeast Alaska because of decreasing harvest and anecdotal information from big game hunting guides and recreational hunters who are seeing fewer bears. The cause of the decrease in harvest is unknown. Unit 5, however, is an area where managers do not have concerns about the black bear population. Nevertheless, trends in harvest parameters should be examined regularly for indications of possible conservation concerns.

This is the first full report period that black bear harvest tickets are required to hunt black bears in Unit 5. Over time unsuccessful hunter data can be used to monitor trends in hunter effort, location, and access. The information will provide greater insight into the status of black bear populations and help us select appropriate strategies for future management. A comparison of the sealing data to the harvest ticket associated data demonstrates a lack of correspondance between

sealing and harvest ticket information; sealing records show 28 bears harvested during the report period and harvest ticket reporting indicates only 23 harvested bears. This suggests information recorded on harvest ticket reports should be carefully scrutinized for errors. Staff should ensure the information is accurate when hunters are present if possible and remind those hunters sealing bears that they also need to return their harvest ticket report.

Staff is collecting DNA samples from black bears harvested in Unit 5. These samples will be used to analyze the genetics of bears with different pelage coloration. Samples are also being collected in other areas of the region in hopes of identifying genetic distribution and diversity of black bears in Southeast Alaska.

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Table 1. Unit 5 black bear harvest, 2003 through 2012.

Regulatory year	Harvest	Males	Females	Unk.	Male		Mean age (n)	Mean age (n)	Female		Color variant				
					Mean skull	(n)			Mean skull (n)	Mean age (n)	black	blue			
2003	Total	19	17	2	0	17.7	17	10.0	12	16.0	2	7.5	2	15	4
	Fall	2	2	0	0	16.1	2								
	Spring	17	15	2	0	17.9	15								
2004	Total	8	7	1	0	17.3	5	8.3	4	---	0	10.0	1	7	1
	Fall	0	0	0	0	--	0			---	0				
	Spring	8	7	1	0	17.3	5			---	0				
2005	Total	20	20	0	0	18.2	18	9.9	14	---	0	--	0	19	1
	Fall	0	0	0	0	--	0			--	0				
	Spring	20	20	0	0	18.2	18			---	0				
2006	Total	21	19	2	0	17.7	18	10.3	16	16.2	1	8.5	2	20	1
	Fall	0	0	0	0	--	0			--	0				
	Spring	21	19	2	0	17.7	18			16.2	1				
2007	Total	22	18	4	0	17.5	16	8.9	17	15.9	4	11.0	4	21	1
	Fall	3	2	1	0	--	0			--	0				
	Spring	19	16	3	0	17.7	16			15.9	4				
2008	Total	14	13	1	0	17.6	12	7.8	13	14.8	1	0	4	12	2
	Fall	-	-	-	0	--	0			--	0				
	Spring	14	13	1	0	17.6	12			14.8	1				
2009	Total	13	11	2	0	17.6	11	8.5	10	15.8	2	12.0	2	11	2
	Fall	0	0	0	0	--	0			--	0				
	Spring	13	11	2	0	17.6	11			15.8	2				
2010	Total	8	7	1	0	16.9	8	6.3	8	15.4	1	5	1	6	2
	Fall	0	0	0	0	0	0	0	0	0	0	0	0		
	Spring	8	7	1	0	16.9	8	6.3	8	15.4	1	5	1		

Table 1. continued

Regulatory year	Harvest	Males	Females	Unk.	Mean skull	<u>Male</u>		Mean age	(n)	Mean skull	<u>Female</u>		<u>Color variant</u>		
						(n)	age				(n)	age	(n)	Black	Blue
2011	Total	13	10	3	0	17.8	9	9.7	9	15.7	3	11	3	9	4
	Fall	1	1	0	0	17.3	1	9.7	1	0	0	0	0		
	Spring	12	9	3	0	17.8	8	10.3	8	15.7	3	11	3		
2012	Total	7	4	3	0	16.2	4	5.5	4	15.1	3	7.3	3	4	3
	Fall	0	0	0	0	0	0	0	0	0	0	0	0		
	Spring	7	4	3	0	16.2	4	5.5	4	15.1	3	7.3	3		
2003–2009		117	105	12	0	17.6	97	9.1	86	15.7	10	11.6	15	105	12
2010–2012		28	21	7	0	17.0	21	7.2	21	15.4	7	7.8	7	19	9

Table 2. Unit 5 residency, mean days hunted, and transportation used by successful black bear hunters, 2003 through 2012.

Regulatory Year	Unit resident hunters days		Other AK resident hunters days		Nonresident hunters days		Total effort hunters days		Plane	Boat	ORV	Hwy vehicle	Foot	Unk
2003	8	1.9	1	1.0	10	5.9	19	3.9	3	12	2	2	0	0
2004	3	4.3	2	4.5	3	7.0	8	5.4	0	5	1	2	0	0
2005	10	3.1	3	7.7	7	3.6	20	4.0	2	10	2	6	0	0
2006	5	2.4	3	4.3	13	3.8	21	3.6	2	16	2	1	0	0
2007	10	2.5	5	3.4	7	3.7	22	3.1	2	15	1	3	1	0
2008	8	2.1	1	2.0	5	4.2	14	2.9	1	13	0	0	0	0
2009	6	2.2	2	1.5	5	3.4	13	2.5	2	8	1	2	0	0
2010	2	1.0	1	2.0	5	4.4	8	3.3	4	4	0	1	0	0
2011	6	1.3	1	6.0	6	6.0	13	3.7	3	9	0	1	0	0
2012	2	3.5	2	5.5	3	2.7	7	3.7	0	5	0	1	0	0
2003–2009 Mean	7.1	2.6	2.5	2.9	7.1	4.5	16.7	3.6	1.7	11.3	1.6	2.0	.3	0
2010–2012 Mean	3.3	1.9	1.3	2.9	4.3	4.4	9.3	3.6	2.3	6.0	0	1.0	.3	0

Table 3. Unit 5A black bear harvest from all Wildlife Analysis Areas (WAA), regulatory years 2003 through 2012.

WAA	Regulatory year										Total
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
2101	2	0	1	0	1	1	1	1	0	0	7
2102	3	0	0	2	0	1	0	0	0	1	7
4503	5	3	8	1	5	1	1	0	3	0	27
4504	0	1	0	0	0	0	0	0	0	0	1
4505	5	0	2	3	2	0	2	1	1	0	16
4506	4	3	4	11	10	9	5	1	4	2	53
4508	0	1	5	4	4	2	4	4	5	4	33
4607	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	1	0	1
TOTAL	19	8	20	21	22	14	13	7	14	7	145

Table 4. Unit 5 commercial services used by successful black bear hunters, 2003 through 2012.

Regulatory year	<u>Unit residents</u>		<u>Other AK residents</u>		<u>Nonresidents</u>		<u>Total use</u>		Transport	Registered guide
	No	Yes	No	Yes	No	Yes	No	Yes		
2003	8	0	1	0	0	10	9	10	6	4
2004	3	0	2	0	2	1	7	1	0	1
2005	10	0	3	0	0	7	13	7	0	7
2006	5	0	2	1	5	8	12	9	1	8
2007	10	0	1	4	3	4	14	8	2	6
2008	8	0	1	0	2	3	11	3	0	3
2009	3	3	1	1	2	3	6	7	1	3
2010	2	0	1	0	1	4	4	4	0	4
2011	5	1	0	1	3	2	8	4	0	3
2012	2	0	2	0	1	2	5	2	0	2
2003–2009 Mean	6.7	.4	1.5	1.2	2.0	3.6	9.0	7.8	1.4	4.4
2010–2012 Mean	3	.3	1.0	.3	1.6	2.7	5.7	3.3	0	3.0