

SPECIES
MANAGEMENT REPORT

Alaska Department of Fish and Game
Division of Wildlife Conservation

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CHAPTER 4: BLACK BEAR MANAGEMENT REPORT

From: 1 July 2010

To: 30 June 2013

LOCATION

GAME MANAGEMENT UNIT: 1D (2,854 mi²)

GEOGRAPHICAL DESCRIPTION: That portion of the Southeast Alaska lying north of the latitude of Eldred Rock, excluding Sullivan Island and the drainages of Berners Bay.

BACKGROUND

HABITAT DESCRIPTION

The majority of Unit 1D is held in public ownership and lands accessible to hunting include 447 mi² owned by the state (Alaska Department of Natural Resources 2002), with a majority of the remaining lands owned by the federal government and administered by the Bureau of Land Management, the Tongass National Forest, and the National Park Service. The Alaska Chilkat Bald Eagle Preserve contains 75 mi² along the Chilkat, Chilkoot, and Klehini Rivers. Unit 1D contains an estimated 1041 mi² of forested habitat (Homer et al. 2004) and several large river systems that provide excellent habitat for black bears. Anadromous salmon streams within the unit include the Chilkat River and its major tributaries, the Klehini, Tsirku, Little Salmon, Kelsall, and Takhin Rivers. The Chilkoot and Ferebee Rivers also have important anadromous fish runs, as does the Katzehin River on the east side of Lynn Canal. In the Skagway area, the Taiya and Skagway Rivers also support anadromous fish populations.

Openings in the forest canopy, wetlands, subalpine meadows, and disturbed areas such as avalanche chutes and clearcuts, are important foraging areas for black bears. Black bear diets range from primarily vegetarian during the spring of the year to mostly carnivorous during the salmon runs. Major herbaceous foods include grasses, sedges and horsetail (*Equisetum* spp.) in estuarine areas, cow parsnip (*Heracleum lanatum*), skunk cabbage (*Lysichiton americanum*), and berries (*Vaccinium* spp. and *Viburnum edule*) that have persisted through the winter. Later in spring, Unit 1D black bears may also prey on moose calves and mountain goat kids. During summer and fall, bears consume large quantities of fish to accumulate fat reserves for winter hibernation. Berries are also important during summer and fall. Poor fish runs or berry crops are thought to result in low cub production and survival the following spring. Unit 1D black bears share habitat with brown bears and, in some areas, such as the Chilkoot River valley, may be displaced by them.

Large areas of the Klehini, Kelsall, and Chilkat River valleys are encompassed by the Haines State Forest, and portions of the forest have been subjected to timber harvest in the past. The

current Haines State Forest timber base consists of 65 mi² of forested habitat and the annual allowable cut is approximately 5.88 million board feet (Alaska Department of Natural Resources 2002). Similar to elsewhere in Southeast Alaska, habitat changes continue to occur as a result of timber harvest. Although early succession stages (3–20 years) provide black bears with an abundance of plant foods, later stages result in the disappearance of understory plants as conifer canopies close and light cannot penetrate to the forest floor. Second-growth stands lack the forage base of earlier successional stages, and they lack large hollow trees and root masses important for denning. An increase in the number of logging roads in Unit 1D has brought more human access to areas that formerly experienced lighter use. We believe that although logging may create food for bears in the short term, the long-term result will be a decline in bear numbers (Suring et al. 1988), at least partly due to increased human access and decreased forage.

HUMAN USE HISTORY

Hunting of black bears has a long history in Unit 1D. Sealing of black bears was first required in 1973. Because hunters were not required to have hunting permits, information about unsuccessful hunter effort is not available. We have information only for successful hunts, gathered during sealing of black bear hides and skulls.

Regulatory history

Since statehood, the black bear hunting season has extended from 1 September through 30 June, and the annual bag limit for residents has been 2 bears, only 1 of which can be a blue or glacier bear. Nonresident bag limits were the same as those for 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; hunting with dogs requires a permit issued by ADF&G. No permits to hunt with dogs have been issued in Unit 1D, nor has there been any interest expressed in this pursuit. As a result of a regulatory change in 1996, hunters must salvage the edible meat and the hide and skull of all black bears killed in Southeast Alaska during the period 1 January–31 May. In 1982 using bait to hunt black bears became legal year-round. However, in 1988 the Alaska Board of Game (BOG) limited baiting in Southeast Alaska to the spring period 15 April–15 June. In 2002, the BOG fielded a proposal to prohibit black bear baiting in Unit 1D. As a result the BOG closed a portion of the unit within 1 mile of the major Haines roads. The issues discussed by the BOG included the attraction of brown bears to the bait stations, and the close proximity of bait stations to human development contributing to the conditioning of bears to human garbage. A 5-mile closure was considered but the board determined 1 mile to be more appropriate.

Historical harvest patterns

The Unit 1D average annual harvest has increased over the last 4 decades. Although there continues to be variation in the harvest between years, mean black bear harvest has stabilized during the past 2 decades. During the 1970s, average annual harvest was around 18 bears, in the 1980s it increased to 26 bears, in the 1990s it continued to increase to an average of 33 bears per year, and over the past decade has remained near this level with the annual harvest averaging 32 bears. Within each decade, no other clear trends have been apparent, as harvest varies greatly from year to year. For the periods 2001–2003, 2004–2006 and 2007–2009 the average numbers of bears harvested annually were 27, 35, and 31 bears, respectively (Crupi 2011). The mean annual harvest for this report period (2010–2012) was 36 black bears.

Local residents have typically accounted for about three-quarters of the annual harvest and this reporting period was no exception. Nonresidents typically take about 20% of the black bears harvested, however that declined to 15% during this reporting period, with no bears taken by nonresidents during 2012. The drastic decrease between years is most likely a direct result of a decision made during the 2010 Alaska Board of Game (BOG) to require non-resident black bear hunters in Units 1-3 to have a registered guide or a draw permit starting in 2012. Many hunters use highway vehicles for transport, probably because of the abundance of logging roads in the most heavily hunted Wildlife Analysis Areas (WAAs) in the unit. During the last decade 37% of successful black bear hunters used highway vehicles and the same percentage used boats.

Male bears constituted an average of 79% of the harvest during the 10-year period 2000–2009; the 2010–2012 male harvest was 71%. During this report period local resident hunters harvested 29% female bears, substantially more than the nonresident female bear harvest of 4%, and nonlocal residents at 3%. Unit 1D residents are limited to harvesting black bears, mountain goats, and Tier II moose as subsistence food sources in the immediate area. Local residents are less selective of male versus female black bears and mountain goats when harvesting animals for food.

A relatively high percentage of bears harvested in Unit 1D have been killed over bait in recent years. During 1995–1997, 39% of the harvest was killed over bait (Barten 1999). During this report period, the percentage of black bears taken over bait was 33%, indicating that bear baiting remains a popular and successful method of taking Unit 1D black bears. During the late 1980s and early 1990s, an average of 64% of the harvest occurred in the spring. However, during the mid-1990s, spring harvest averaged 86% of the annual hunter kill. In the last report period, spring harvest remained high at 80% (Crupi 2011). During this report period the spring harvest increased to 87% of the overall black bear harvest. As reported here previously, a regulatory change restricting bait stations from within a 1-mile corridor of the main roads in the Haines area took effect beginning in spring 2003, but it does not appear to have affected the long-term seasonal black bear harvest.

Historical harvest locations

The majority of the Unit 1D black bear harvest has been taken in 2 WAAs, 4302 (along the Haines Highway and Chilkat and Klehini Rivers) and 4303 (the Kelsall River and Upper Chilkat River). To a lesser extent, WAA 4405 and 4407, which includes Lutak Inlet, Taiya Inlet, and lands surrounding Skagway are also used. Because 4302 and 4303 are relatively accessible by highway vehicles and boats, many hunters use these areas for bear hunting, as well as to establish bait stations there in the spring.

MANAGEMENT DIRECTION

MANAGEMENT OBJECTIVES

- Maintain a mean annual male skull size of at least 17.0 inches
- Maintain a 3:1 male to female ratio in the harvest

Because population information is costly and difficult to obtain, we collect data on other biological parameters, such as skull size and sex of harvested bears, as a means of monitoring the

status of the population over time. Theoretically, a change in the sex ratio or in skull size over time might reflect a change in population structure that would need to be addressed through some regulatory change. In reality, changes in skull size or sex ratio are likely subtle and would need to be extreme in nature or show a consistent long term trend in order for us to recognize the need for a regulatory change. However, we will continue to collect the information and to pursue other ways of examining these data that will be more perceptive to change over time, and thus more useful for managers.

Using a 3:1 harvest ratio of males to females as a management objective is one way of managing relatively conservatively. Assuming a 1:1 male to female ratio at birth, half the animals in the population are females. Theoretically, the breeding interval is typically 2 years, so half the adult females are accompanied by young in a given year. It is illegal to shoot a female accompanied by young; thus, half the females are protected annually. However, breeding intervals may be longer than 2 years (Garshelis 1994), and we have no data on age at first reproduction, which might also result in a higher number of females in unprotected status each year.

The 17.0-inch skull size objective is based on long-term data from this unit. A significant change could reflect a change in age composition of this population, possibly signifying overharvest. However, population changes resulting in such a change would likely need to be extreme for such a change to be evident and not simply an artifact of small sample size, or from the variability in harvest any given year.

METHODS

Staff of the Alaska Departments of Fish and Game (ADF&G) and Public Safety sealed black bear hides and skulls taken by successful hunters. Biological and hunt information collected at the time of sealing included pelage color, sex, skull size (length and width), date and location of kill, number of days hunted, transportation method, and hunter use of commercial services. We collected a premolar from most bears and sent it to Matson's Laboratory for age determination. All black bear hunters using bait stations were required to register with ADF&G. Bait station registration has recently been changed to a statewide, computer-based system. Hunters desiring a bait station permit are registered in the statewide database at the time of permit issuance.

RESULTS AND DISCUSSION

POPULATION STATUS AND TREND

No black bear population studies have been conducted in Unit 1D. Estimates of population size or density are difficult to obtain. The species generally inhabits forested areas, where aerial surveys are impractical. Vast, remote areas in the unit also make studies difficult and expensive to undertake.

Population size

Black bear densities are probably lower in Unit 1D than other Southeast Alaska mainland areas, possibly due to inter-specific competition with brown bears. ADF&G estimated 275 black bears in Unit 1D in 1990, an average of 1.3 bears per forested mi², however this density was based on an estimate of 210 mi² of forest habitat which is only 20% of that currently identified using Landsat imagery (Homer et al. 2004). Nevertheless this estimate of the total population seems

realistic suggesting the density of black bears in 1D is less than 1.3 bears per forested mi². Peacock et al. (2011) estimated an average density of 3.9 black bears per mi² elsewhere in Southeast Alaska, which applied to Unit 1D would yield a population of more than 4,000 black bears. Because black bear habitat in the unit overlaps with brown bear habitat such a high population is unlikely because of resource partitioning between these 2 species. Without studies designed to derive direct estimates of black bear numbers, it is extremely difficult to estimate the population in this unit.

Population composition

The majority of black bears sealed in Unit 1D during 2010–2012 exhibited the most common pelage color, black (66%). Over the past 2 decades, 31% of the black bears harvested in Unit 1D exhibited cinnamon pelage, although this designation is somewhat subjective and may depend on the experience of the sealing agent. No glacier-colored bears were reported in the harvest during this report period.

During this report period (2010–2012), 29% of the bears harvested were females, slightly above our management objective of a 3:1 (75% to 25%) male to female bear harvest ratio.

Distribution and movement

We have little information about black bear distribution in this unit. Human population growth is resulting in increasing interactions between bears and rural dwellers.

MORTALITY

Harvest

Season

Bag Limit

1 Sep–30 Jun

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

1 Sep–30 Jun

Nonresident hunters: 1 bear

Board of Game Action and Emergency Orders. In January 2013, a proposal to shorten the black bear baiting season in Unit 1D was brought to the BOG in response to concerns of brown bears being taken over bait. The proposal failed and the black bear baiting season in Unit 1D remained the same (April 15– June 15). We issued no Emergency Orders for Unit 1D black bear seasons.

Hunter Harvest. Hunters reported killing 37, 51, and 17 black bears in regulatory years 2010, 2011 and 2012, respectively. This equated to an average annual hunter harvest of 35 bears, which was slightly higher than the previous report period harvest (Crupi 2011) of 30 bears per year. Regulatory year (RY) 2012 represented the lowest black bear harvest in a decade (Table 1). The ratio of males to females (2.5:1) for the entire report period was lower than ideal management objectives (Table 1). We do not know the reason for the high female harvest in 2011 (n=18).

Hunter Residency and Success. Local resident hunters take the majority of black bears in Unit 1D (range 67%–88%), and primarily use the bears for meat. The percentage of bears taken by nonresidents during this report period was 15%, less than the percentage of bears taken by nonresidents since 2003 (22%; Table 2). RY10 represented the highest harvest of bears by nonresidents (9) in this report period, though less than the harvest of 15 bears in RY05 which

was the highest nonresident harvest in the previous 7 years. Non-resident harvest was zero in RY12 and is most likely a reflection of the unguided non-resident regulation implemented by the BOG requiring a draw permit or registered guide to hunt black bear.

Harvest Chronology. Spring months account for most Unit 1D harvest with 84–97% of the harvest reported during this season. Fall months (September and October) accounted for 10% of the harvest during this report period (Table 3). As noted above, most local bear hunters, who took 75% of the annual harvest, hunt for meat, and spring bears, are preferred over fall bears because they are believed to be more palatable.

Transport Methods. Most successful black bear hunters used boats (36%) or highway vehicles (44%) during the report period (Table 4). Unit 1D's river valleys and logging roads provide ready access to suitable black bear habitat making these 2 modes of transportation the most popular for bear hunters. The use of off-road vehicles by successful hunters decreased slightly from 13% (2007–2009) to 11% in this report period. Only 9% of hunters reported "by foot" as their means of transportation, similar to the last reporting period.

Hunter Effort. Since 2003, hunter effort in mean days per hunter has varied annually (range 2.4–4.9) and days of effort reported during this report period were about average (Table 5). Data indicate that 3.6 days were required per hunter to harvest a black bear during this report period (Table 6). Although not a significant relationship, the general trend between bear harvest and hunter effort indicates that in years when more effort is invested to harvest a bear, more bears are harvested.

Harvest in Particular Areas (WAAs). Approximately 35% of the black bear mortality came from along the Haines Highway and the lower Chilkat River, WAA 4302 (Table 7). Another 37% came from the upper Chilkat River (WAA 4303), and about 16% originated from the Chilkoot and Ferebee watersheds (WAA 4405). This report period's harvest locations are consistent with long-term trends. Both the Haines Highway and Kelsall River Road provide extensive access to hunting locations and both have hunters with histories of hunting the same areas over the years.

Bait Stations. Black bear baiting in Unit 1D provides hunters an opportunity to harvest, improves the hunter's ability to be selective with shot placement, and possibly reduces the taking of females and/or sows with cubs. Information related to bear baiting had previously been unavailable; therefore we will briefly discuss bear baiting trends over the past decade.

Over the past 10 years, an average of 7 hunters registered 26 bait stations annually in Unit 1D. During this same period, 113 black bears have been reportedly harvested over bait, an average of 11 bears per year. That is approximately 1/3 of the 327 total black bears killed in Unit 1D over this time. The average age of black bears killed over bait was 8.3 years compared to 8.0 years of age for all black bears killed. Male bears account for 84% (95) of those killed over bait. Total black bear harvest in Unit 1D (RY00–RY09) does not appear to be significantly different with respect to sex selection with male harvest at 79% (257). Nonresidents accounted for 25% (28) of the black bears harvested over bait and this group harvested 93% (26) males. Residents harvested 75% (85) of the black bears harvested over bait with male bears accounting for 81% (69) of the harvest. During this report period (RY10–RY12), 35 bears (33%, n=105) were harvested at bait stations, near the long-term average of 11 bears per year.

Local Alaska Wildlife Troopers (AWT) and other unit residents have expressed concern that hunters may be harvesting brown bears at or near black bear bait stations. Furthermore, some residents are very concerned that black and particularly brown bears may become food conditioned at bait stations, and thus, have a higher likelihood of becoming nuisance bears.

Hunting with Dogs. During the report period, no one requested a permit to hunt bears with dogs in the unit.

Guided Hunter Harvest. Nonresident hunters took 16 (15%) of the black bears during the report period (Table 2), similar to the last report period when nonresidents took 17 (19%) of the bears harvested. Of the successful nonresident hunters, 12 (75%) hired a guide to assist in their hunt, compared to 7 (41%) during the last report period. Over the past decade an average of 4.3 black bears were taken annually by guided nonresident hunters. Nonresident hunters prior to RY12 were not required to have a registered guide while hunting black bears in Alaska but many chose to pursue black bears in combined species hunts (i.e., brown bear, mountain goats) where a guide is required, and therefore were accompanied by a guide on their black bear hunt as well. No non-residents hunted black bear in RY12, which is possibly a reflection of the BOG proposal passed requiring unguided nonresidents to have a draw permit or registered guide starting 1 July 2012.

Other Mortality

During 2010–2012, 2 black bears were killed as agency kills (i.e. ADFG or AWT) most likely for public safety reasons, and 1 bear was killed via vehicle collision. No black bears were killed in Defense of Life and Property (DLP) during this report period and only 1 black bear was killed by DLP in the previous report period.

HABITAT

Assessment

Residential and commercial development is the single most important habitat consideration for Unit 1D black bears. Even in small communities, people move into traditional black bear habitat. This displaces bears and increases the number of bear/human conflicts. Logging and subsequent forest succession continues to have an effect on black bear habitat in Unit 1D. It appears that in some areas isostatic rebound is raising riparian habitat and possibly decreasing available moose browse, which could result in smaller moose populations and a decreased prey base for black and brown bears. The extent to which these factors affect Unit 1D black bears is unknown.

Enhancement

We performed no habitat enhancement work during this report period.

NONREGULATORY MANAGEMENT PROBLEMS/NEEDS

Nuisance Bear Problems/Urban Bear Management Activities. The Haines dump was closed in 1999 and collected garbage is now sorted for recycling, compost, burial and export. Garbage disposal in Unit 1D has historically been problematic. Rather than pay the fees for refuse collection, some residents accumulate garbage on their property in sheds or garages, until they haul it to a disposal facility. These stockpiles attract bears. Also, several landowners in Haines grow fruit trees, particularly apples and cherries, and raise livestock. These attractants, as well as garbage, increase bear/human conflicts and often result in unnecessary DLP kills.

The amount of information about black (and brown) bears that we dispense to the public has increased and has elicited positive responses. Wildlife staff has suggested bear deterrent techniques and deterrent devices (Critter Gitter© and electric fences) that have been deployed in Haines. We will continue to work with Unit 1D residents to alleviate bear/human conflicts.

CONCLUSIONS AND RECOMMENDATIONS

During the report period, regulatory years 2010–2012, the black bear harvest was composed of 71% male and 29% female bears, slightly higher in relation to the management objective of a 3:1 male to female harvest ratio. The 3-year mean male skull size of 17.0 inches met the management objective of 17.0 inches. We will continue to monitor this parameter to ensure we are meeting management goals. The number of bears taken over bait in this report period appears to be consistent with the last report period and continues to be a good tool for ensuring subsistence needs are met. We continue to collect teeth for aging bears, and we will assess reproductive history of females using tooth analysis by Matson's Laboratory (Milltown, MT). High brown bear numbers and habitat changes may cause a decline in black bear numbers and harvest in the future.

Black bear hunting is becoming more popular in Southeast Alaska making us concerned about possible overharvest in a limited number of locations. Implementation of a regulation, at the direction of the Alaska BOG, requiring unguided nonresident hunters in Units 1-3 to possess a draw permit began in 1 July 2012. Surprisingly, no nonresidents hunted black bears in RY12, which could be because unguided nonresident hunters were caught unaware of this change or there was in fact no desire by nonresidents to hunt black bears in Unit 1D. A limited number of undersubscribed draw permits were available on a first come first serve basis for nonresidents that chose not to acquire a guide. We anticipate an increase in the total number of hunters in Unit 1D and will monitor the overall harvest, considering management objectives and hunter demographics, to evaluate the need for regulatory action.

To more accurately gauge the availability of black bears we need to obtain effort data from both successful and unsuccessful hunters. Beginning in RY09 all hunters are now required to obtain harvest tickets that include a harvest report designed to capture this information. With the change to a harvest ticket and new reporting requirements it has taken the public time to adapt. During this reporting period we continued to see discrepancies with harvest ticket data and data collected from bear sealing data. In bear sealing, which is required in a majority of the state, ADF&G staff or sealing officers personally obtain information from successful hunters about the harvest. During this reporting period 105 black bears were harvested and sealed in Unit 1D. However, harvest ticket data from the same timeframe suggests only 84 black bears were harvested, a 20% difference. Additional public education about the necessity of submitting harvest ticket reports in addition to sealing bears will ensure ADF&G get the best data possible for species we are unable to survey.

Several research projects are ongoing in Southeast Alaska using hair snare techniques to collect bear DNA. DNA can be used to estimate bear populations and densities in the project areas. We should consider using these techniques to estimate black bear populations and densities in specific locations within Unit 1D.

We will use continued public education and outreach to reduce the number of black bears taken in DLP and to provide Unit 1D residents with nonlethal options to address conflicts with black bears.

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Table 1. Unit 1D black bear mortality, regulatory years 2003 through 2012.

Regulatory year	Hunter kill					Nonhunting kill ^a				Illegal kill	Total reported kill						
	M	F	Unk	Total	Baited	M	F	Unk	Total		M	(%)	F	(%)	Unk	(%)	Total
2003																	
Fall 2003	2	2	0	4	0	0	0	0	0	0	2	(50)	2	(50)	0	(0)	4
Spring 2004	14	2	0	16	6	0	0	0	0	0	14	(88)	2	(12)	0	(0)	16
Total	16	4	0	20	6	0	0	0	0	0	16	(80)	4	(20)	0	(0)	20
2004																	
Fall 2004	1	0	0	1	0	0	0	0	0	0	1	(100)	0	(0)	0	(0)	1
Spring 2005	20	3	0	23	11	1	0	0	1	0	21	(88)	3	(12)	0	(0)	24
Total	21	3	0	24	11	1	0	0	1	0	22	(88)	3	(12)	0	(0)	25
2005																	
Fall 2005	5	1	0	6	0	1	0	0	1	0	6	(86)	1	(14)	0	(0)	7
Spring 2006	30	7	0	37	17	0	0	0	0	0	30	(81)	7	(19)	0	(0)	37
Total	35	8	0	43	17	1	0	0	1	0	36	(82)	8	(18)	0	(0)	44
2006																	
Fall 2006	4	1	0	5	0	0	0	0	0	0	4	(80)	1	(20)	0	(0)	5
Spring 2007	22	8	0	30	11	0	0	0	0	0	22	(73)	8	(27)	0	(0)	30
Total	26	9	0	35	11	0	0	0	0	0	26	(74)	9	(26)	0	(0)	35
2007																	
Fall 2007	5	0	0	5	0	0	0	0	0	0	5	(100)	0	(100)	0	(0)	5
Spring 2008	23	5	0	28	16	1	0	0	1	0	24	(83)	5	(17)	0	(0)	29
Total	28	5	0	33	16	1	0	0	0	0	29	(85)	5	(15)	0	(0)	34

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Table 1. continued.

Regulatory year	Hunter kill					Nonhunting kill ^a				Illegal kill	Total reported kill						
	M	F	Unk	Total	Baited	M	F	Unk	Total		M	(%)	F	(%)	Unk	(%)	Total
2008																	
Fall 2008	8	3	0	11	0	0	0	0	0	0	8	(73)	3	(27)	0	(0)	11
Spring 2009	22	5	0	27	13	0	0	0	0	0	22	(82)	5	(19)	0	(0)	27
Total	30	8	0	38	13	0	0	0	0	0	30	(79)	8	(21)	0	(0)	38
2009																	
Fall 2009	1	1	0	2	0	0	1	0	1	0	1	(33)	2	(67)	0	(0)	3
Spring 2010	16	2	0	18	5	0	0	0	0	0	16	(89)	2	(11)	0	(0)	18
Total	17	3	0	20	5	0	1	0	1	0	17	(81)	4	(19)	0	(0)	21
2010																	
Fall 2010	0	1	0	1	0	1	0	0	1	0	1	(50)	1	(50)	0	(0)	2
Spring 2011	30	6	0	36	20	0	0	0	0	0	30	(83)	6	(17)	0	(0)	36
Total	30	7	0	37	20	1	0	0	1	0	31	(82)	7	(18)	0	(0)	38
2011																	
Fall 2011	2	6	0	8	0	0	1	1	2	0	2	(20)	7	(70)	1	(10)	10
Spring 2012	31	12	0	43	6	0	0	0	0	0	31	(72)	12	(28)	0	(0)	43
Total	33	18	0	51	6	0	1	1	2	0	33	(62)	19	(36)	1	(2)	53
2012																	
Fall 2012	2	0	0	2	0	0	0	0	0	0	2	(100)	0	(0)	0	(0)	2
Spring 2013	10	5	0	15	9	0	0	0	0	0	10	(67)	5	(33)	0	(0)	15
Total	12	5	0	17	9	0	0	0	0	0	12	(71)	5	(29)	0	(0)	17

^a Includes DLP kills, research mortalities, and other known human-caused mortality.

Table 2. Unit 1D black bear successful hunter residency, regulatory years 2003 through 2012.

Regulatory year	Local ^a		Nonlocal		Nonresident				Unknown ^b		Total
	resident	(%)	resident	(%)	Nonresident	(%)	Guided ^c	(%) ^d	residency	(%)	
2003	15	(75)	1	(5)	4	(20)	4	(19)	0	(0)	20
2004	19	(76)	2	(8)	4	(16)	3	(13)	0	(0)	25
2005	25	(57)	4	(9)	15	(34)	12	(28)	0	(0)	44
2006	26	(74)	2	(6)	7	(20)	5	(14)	0	(0)	35
2007	26	(77)	2	(6)	5	(15)	2	(6)	1	(3)	34
2008	24	(63)	5	(13)	9	(24)	3	(8)	0	(0)	38
2009	14	(67)	3	(14)	3	(14)	2	(10)	1	(5)	21
2010	25	(66)	3	(8)	9	(24)	8	(21)	1	(3)	38
2011	39	(74)	5	(9)	7	(13)	4	(8)	2	(4)	53
2012	15	(88)	2	(12)	0	(0)	0	(0)	0	(0)	17

^a Local hunters are those hunters that reside in Unit 1D.

^b Includes DLP kills, research mortalities, and other known human-caused mortality.

^c Number of nonresident kills in previous column that were taken by nonresident hunters who were guided.

^d Percentage of total bears harvested by guided nonresident hunters.

Table 3. Unit 1D black bear harvest chronology by month, regulatory years 2003 through 2012.

Regulatory year	Month												<i>n</i> ^a
	Sep	(%)	Oct	(%)	Nov	(%)	Apr	(%)	May	(%)	Jun	(%)	
2003	2	(10)	2	(10)	0	(0)	0	(0)	11	(55)	5	(25)	20
2004	0	(0)	1	(4)	0	(0)	0	(0)	18	(75)	6	(25)	25
2005	5	(12)	1	(2)	0	(0)	1	(2)	28	(65)	8	(19)	43
2006	2	(6)	2	(6)	1	(3)	0	(0)	15	(43)	15	(43)	35
2007	4	(12)	1	(3)	0	(0)	0	(0)	17	(50)	12	(35)	34
2008	10	(26)	1	(3)	0	(0)	1	(3)	17	(45)	9	(24)	38
2009	0	(0)	2	(10)	0	(0)	1	(5)	13	(65)	4	(20)	20
2010	0	(0)	1	(3)	0	(0)	0	(0)	22	(59)	14	(38)	37
2011	4	(8)	4	(8)	0	(0)	0	(0)	26	(51)	17	(33)	51
2012	1	(6)	1	(6)	0	(0)	0	(0)	4	(24)	11	(65)	17

^a Does not include bears killed during closed season.

Table 4. Unit 1D black bear mortality percent by transport method, regulatory years 2003 through 2012.

Regulatory year	Transport												<i>n</i>
	Highway vehicle	(%)	Boat	(%)	Walk	(%)	Plane	(%)	Other ^a	(%)	Unk ^b	(%)	
2003	6	(30)	6	(30)	4	(20)	1	(5)	3	(15)	0	(0)	20
2004	11	(44)	10	(40)	1	(4)	0	(0)	2	(8)	1	(4)	25
2005	8	(18)	20	(45)	5	(11)	1	(2)	8	(18)	2	(5)	44
2006	11	(31)	11	(31)	4	(11)	0	(0)	9	(26)	0	(0)	35
2007	8	(24)	13	(38)	5	(15)	1	(3)	6	(18)	1	(3)	34
2008	22	(58)	9	(24)	3	(8)	0	(0)	4	(11)	0	(0)	38
2009	7	(33)	10	(48)	1	(5)	0	(0)	2	(10)	1	(5)	21
2010	15	(39)	18	(47)	1	(3)	0	(0)	3	(8)	1	(3)	38
2011	23	(43)	15	(28)	6	(11)	0	(0)	7	(13)	2	(4)	53
2012	8	(47)	5	(29)	2	(12)	0	(0)	2	(12)	0	(0)	17

^a Includes 3- or 4-wheelers or other ORV.

^b Includes DLP, or other known human-caused mortality.

Table 5. Unit 1D black bear hunter effort, mean skull size, and mean age, regulatory years 2003 through 2012. Days hunted over 30 are excluded from table. Ages not available for all bears or years. Mean skull size not available for all bears.

Regulatory year	Hunter effort			Mean skull size ^a (inches)				Average age (years) ^b			
	Total days	Nr hunters	Mean days per hunter	Male	<i>n</i> ^c	Female	<i>n</i>	Male	<i>n</i>	Female	<i>n</i>
2003											
Fall 2003	6	4	1.5	15.8	2	15.5	2				
Spring 2004	58	14	4.1	17.8	15	15.8	2				
Total	64	18	3.6	17.6	17	15.6	4	8.8	16	10.3	4
2004											
Fall 2004	1	1	1	16.3	1	0.0	0				
Spring 2005	110	23	4.8	17.7	21	16.3	3				
Total	111	24	4.6	16.0	21	16.3	3	12.7	21	9.4	3
2005											
Fall 2005	22	6	3.7	17.4	6	16.1	1				
Spring 2006	170	37	4.6	17.6	30	15.7	7				
Total	192	43	4.5	17.5	36	15.8	8	9.2	35	9.5	8
2006											
Fall 2006	11	5	2.2	16.4	4	15.1	1				
Spring 2007	160	30	5.3	17.3	22	15.5	8				
Total	171	35	4.9	16.5	26	15.5	9	8.3	26	5.6	9
2007											
Fall 2007	26	5	5.2	15.5	5	0.0	0	4.4	5	0.0	0
Spring 2008	81	28	2.9	17.3	21	15.69	5	6.3	24	9.0	5
Total	107	33	3.2	16.9	26	15.69	5	6.0	29	9.0	5

Table continues next page

Table 5. continued.

Regulatory year	Total days	Hunter Effort		Mean skull size ^a (inches)				Average age (years) ^b			
		Nr hunters	Mean days per hunter	Male	<i>n</i>	Female	<i>n</i>	Male	<i>n</i>	Female	<i>n</i>
2008											
Fall 2008	32	11	2.9	15.7	7	15.67	3	4.4	8	16.0	3
Spring 2009	123	27	4.6	16.9	21	15.91	4	7.7	22	10.8	5
Total	155	38	4.1	16.6	28	15.81	7	6.8	30	12.75	8
2009											
Fall 2009	2	2	1.0	16.2	1	15.54	2	4.0	1	6.5	2
Spring 2010	45	18	2.5	17.4	16	15.04	2	6.7	16	5.5	2
Total	47	20	2.4	17.4	17	15.29	4	6.5	17	6.0	4
2010											
Fall 2010	5	1	5	0.0	1	16.7	1	0.0	1	7.0	1
Spring 2011	122	36	3.4	17.4	30	15.4	6	8.0	30	6.8	6
Total	127	37	3.4	17.4	31	15.6	7	8.0	31	6.9	7
2011											
Fall 2011	10	8	1.3	17.7	2	14.0	7	14.5	2	11.4	7
Spring 2012	159	43	3.7	16.8	31	14.4	12	7.4	31	7.3	12
Total	169	51	3.3	16.8	33	14.2	19	7.8	33	8.7	19
2012											
Fall 2012	6	2	3	17.4	2	0.0	0	7.0	2	0.0	0
Spring 2013	73	15	4.9	16.8	10	15.6	5	0.0	0	0.0	0
Total	79	17	4.6	16.9	12	15.6	5	7.0	2	0.0	0

^a Skull sizes equal length plus zygomatic width.

^b Ages not available for all bears.

^c *n* represents sample size.

Table 6. 3-Year mean hunter effort, bear skull size and age comparison, regulatory years 2001–2012.

Regulatory year	Hunter effort			Mean skull size ^a (inches)				Average age (years) ^b			
	Total days	Nr hunters	Mean days per hunter	Male	<i>n</i> ^c	Female	<i>n</i>	Male	<i>n</i>	Female	<i>n</i>
2001–2003											
Total	274	73	3.8	17.4	58	15.3	20	8.4	57	9.1	21
2004–2006											
Total	474	102	4.6	16.8	81	15.7	20	8.9	82	8.2	20
2007–2009											
Total	309	91	3.4	16.9	71	15.6	16	6.4	76	10.1	17
2010-2012											
Total	375	105	3.6	17.0	76	15.1	31	7.8	74	8.5	28

^a Skull sizes equal length plus zygomatic width.

^b Ages not available for all bears.

^c *n* represents sample size.

Table 7. Unit 1D black bear mortality^a by Wildlife Analysis Areas (WAA), regulatory years 2003 through 2012.

Regulatory year	WAA							Total
	4302	4303	4304	4405	4406	4407	4408	
2003	7	12	0	0	0	1	0	20
2004	13	8	0	4	0	0	0	25
2005	25	13	2	1	1	1	1	44
2006	15	12	1	7	0	0	0	35
2007	13	15	0	3	1	2	0	34
2008	20	13	0	1	0	3	1	38
2009	9	10	0	0	0	2	0	21
2010	15	17	0	5	0	1	0	38
2011	14	17	0	11	5	5	1	53
2012	9	6	0	1	0	1	0	17

^a Includes DLP kills, research mortalities, and other known human-caused mortality.