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**CHAPTER 3: BLACK BEAR MANAGEMENT REPORT**

From: 1 July 2010  
To: 30 June 2013

**LOCATION**

**GAME MANAGEMENT UNIT:** 1C (7,600 mi<sup>2</sup>)

**GEOGRAPHICAL DESCRIPTION:** The Southeast Alaska mainland and the islands of Lynn Canal and Stephens Passage lying between Cape Fanshaw and the latitude of Eldred Rock, including Sullivan Island and the drainages of Berners Bay.

**BACKGROUND**

**HABITAT DESCRIPTION**

Most high-quality Unit 1C black bear habitat is confined to a relatively narrow band of forest between saltwater and the coastal mountains. A large portion of the unit encompasses high elevation peaks and ice fields. A few large river valleys, such as the Taku, Speel, Endicott, Chuck, Port Houghton, and Berners Bay, have streams that support salmon and other anadromous fish. Portions of the unit have been logged and contain clearcuts that are in various seral stages. As elsewhere in Southeast Alaska, habitat changes continue to occur from clearcut logging. Although early successional stages (3–20 years post logging) provide black bears with an abundance of forage, later stages result in the disappearance of understory plant species as conifer canopies close and light does not penetrate to the forest floor. Second-growth stands also lack large hollow trees and root masses that are used for dens. Therefore, although logging may result in an increase in black bear forage in the short term, the long-term result of logging will be a decline in bear numbers due to the disappearance of a productive understory (Suring et al. 1988). The Alaska Department of Fish and Game (ADF&G) has estimated approximately 1,300 square miles of forested habitat in Unit 1C with approximately 38–50 mi<sup>2</sup> having been logged by clearcutting. These logging operations occurred from the time of World War II in Excursion Inlet to 1999 near Echo Cove.

Unit 1C black bears primarily eat vegetation during early spring, although they likely prey on moose calves and Sitka black-tailed deer fawns where available. Important foraging areas are beach lines, estuaries, wetlands, small forest openings, subalpine meadows, and disturbed areas such as avalanche chutes, and clearcuts. Major vegetative foods include grasses and sedges, skunk cabbage, devil's club, horsetail, and berries that have persisted through the winter. During summer and fall bears accumulate fat for hibernation and their diets may change from mostly vegetative to largely fish for individuals with access to salmon streams. Berries are also important during summer and fall. Poor fish runs or berry crops are thought to result in low cub production and survival in the following spring because of low energy reserves prior to den-up.

Mainland black bears share ranges with brown bears, especially in major river valleys such as the Taku River, and Berners Bay. Brown bears are rare to nonexistent on the Unit 1C islands and are seen only occasionally in the immediate Juneau area.

Bear habitat near Juneau is currently affected by one significant human related factor, human garbage. Although bears are numerous locally due to productive natural habitat, the availability of garbage as an attractive alternative or additional food source promotes high bear densities. With restrictions against firearms discharge within the city and borough of Juneau (CBJ), these urban areas provide a “refuge,” where bears are not subjected to hunter harvest. This absence of a harvest, along with the high human density in the area, ensures a high level of conflict with bears.

## **HUMAN USE HISTORY**

Black bears have been hunted for many years in Unit 1C, although harvest information was not collected until 1973 when sealing was first required. Since then, all successful hunters have been required to take hides and skulls to a sealing agent, allowing ADF&G to acquire information on harvested bears and hunter effort. Hunting effort information for unsuccessful hunters was not available before 2009, and it may take a couple more years to ensure all black bear hunters are aware of the requirement and have tickets prior to hunting. As in past reports, we have information for successful hunts, and now, limited information for unsuccessful hunters.

### *Regulatory history*

For most years since statehood the black bear hunting season has been from 1 September through 15 June or 30 June, and the bag limit for residents has been 1–3 bears annually, only 1 of which could be a blue or glacier bear. Since 1990, the bag limit for residents has been 2 bears (not more than 1 glacier bear) and for nonresidents, 1 bear per year.

### *Historical harvest patterns*

The harvest percentage by residency status did not change significantly through the 1990s. Beginning in the early 2000s, the resident black bear harvest began to decline, and the nonresident harvest began to increase. Resident hunters historically accounted for 60–70% of the annual harvest. Approximately half of nonresidents hunt without a guide in the unit. Nonresident hunters must purchase metal big game locking tags to affix to each bear harvested. The fact that black bear hunting opportunities exist in most other states, along with the cost of these tags (\$225 for nonresident citizens and \$300 for nonresident aliens), probably reduces the number of nonresidents who hunt black bears in Unit 1C.

The Unit 1C annual harvest has risen steadily over the past 40 years, with a mean of 47 in the 1970s, 73 in the 1980s, and 96 bears in the 1990s. The annual harvest peaked in 2000 at 152 bears. Approximately 80% of the harvest has occurred in the spring season, with males outnumbering females in the harvest about 3 to 1. There are differences, though slight, in the sex ratio of the harvest in spring vs. fall, with the fall harvest having a higher percent of female bears. This is probably due to females with yearlings rejecting them by the fall season, thereby being alone and legal for harvest.

### *Historical harvest locations*

The black bear harvest in Unit 1C is fairly well distributed. The areas with the most harvest are the west side of Lynn Canal and the area south of the Taku River (Table 1). WAA 2304 is the St. James Bay area that attracts mostly local residents of Unit 1C. It contains several good anchorages for boaters, and the estuary provides bear hunters with ample opportunity to spot and stalk bears. WAAs 2305 and 2306 are at the southern end of the Chilkat Range and have been partially logged. The road system in this area provides opportunities for hunters to use ATVs to hunt bears. This is a very popular area for Hoonah residents because of its proximity to their community, and because it is the nearest area to Hoonah where black bears are present. WAAs 2823–2927 are located between Snettisham and Cape Fanshaw in the southern portion of the subunit. Nonresidents who are on combination hunts for brown and black bears harvest many of the bears taken in this area. A typical hunt begins in Unit 4 for brown bears, and then finishes in this area for black bears.

### **URBAN BEAR MANAGEMENT**

The tendency for black bears to take advantage of human food or garbage as alternative foods has been one of the greatest management problems regarding black bears within this unit. Bears that have become conditioned to human food are difficult to discourage, and it has often been necessary to move or destroy such animals. Despite enforcement and public education efforts, the number of bear–human conflicts and resulting complaints to ADF&G and public safety agencies required a significant expenditure of effort and resources. Studies to determine the usefulness of aversive conditioning to discourage bears were conducted in 1989 and 1990, but little success was seen with garbage-conditioned bears, and intensive and repeated treatment of bears was not practical (McCarthy and Seavoy 1992).

Along with the sporadic killing of urban bears, Douglas area staff also trapped and moved bears in spite of the general ADF&G policy to not move bears (ADF&G 1990). In many cases a combination of public sentiment and staff incentive made moving bears a less onerous option than destroying them, especially after a single incident for an animal. In some cases bears were simply hauled to the end of the Juneau road system, while at other times they were transported to a more remote mainland location by boat. As one would expect, translocation of bears is not overly effective, as many problem animals returned to former urban neighborhoods and habits, and moving bears is expensive in terms of transportation costs and staff time. However, a small number of the black bears moved from downtown Juneau remained in remote areas where they were released.

## **MANAGEMENT DIRECTION**

### **MANAGEMENT OBJECTIVES**

- Maintain a mean annual male skull size (length plus width) of at least 17.5 inches.
- Maintain a 3:1 male to female ratio in the harvest.

It is difficult to obtain direct population information on black bears (such as aerial surveys for population size and composition), so we collect sealing data (from harvested bears) as an indirect method of monitoring the populations. Skull measurements and sex ratios are indices we have historically used in this effort. Hunters will generally select the largest bear they encounter on a

hunt, and these large bears tend to be males. If the availability of larger male bears decreases, then hunters are likely to shoot smaller bears, male and female.

The 3:1 male to female objective in the harvest was arrived at by consensus among ADF&G biologists as a means to manage the harvest in a conservative manner. The reasoning is that there is a 50:50 sex ratio at birth, and ½ of the breeding-age sows are legal for harvest each year (sows with cubs are protected). Because of the relative low productivity of black bears, it is imperative to protect the female portion of the population as much as possible. By monitoring the female portion of the harvest, we can also gain insight into the availability of male bears in the population.

The objective of maintaining a 17.5-inch mean male skull size is based on the long-term average for male bears harvested in Unit 1C. If skull size or age of harvested bears changes over time significantly, this could be an indication that the population parameters have changed. If the mean skull size declines, this may mean that availability of larger bears has declined as well.

As black bear managers, we use the above indices as trend indicators more than decision trigger points. We continually look for ways to interpret these data in a meaningful manner, and measures such as hunter effort and guided hunters vs. unguided hunters can affect the size and sex of bears harvested. Harvest data, collected during sealing, may or may not reflect any real changes in the population as a whole. Management biologists take these variables into consideration when interpreting the above indices, as well as changes to habitat, weather, and access patterns. We stress that skull size and age of harvested bears is at best a general, indirect measure of what is happening with a portion of the population. Whether these indices can measure real changes to populations and can be of management use has not yet been demonstrated.

Harvested bears are not representative of the population as a whole, but rather a measure of hunter selectivity. Thus, changes in skull size and age may have more to do with hunter demographics and selectivity than with changes in the bear population structure. Also, several scenarios could lead to changes in these indices, and without population information we have no way of determining what is causing the change. If the average skull size or age of bears declines, this could be because fewer older bears are available, or because the bear population is productive and younger bears are more prevalent and more likely to be taken. Based on Sterling Miller's work (Miller and Miller 1990), skull size and age are not sensitive enough to show changes in a population until major changes have already taken place. Therefore, managers need to be careful when interpreting the meaning behind any changes in skull size and age data.

Region I staff engaged in multiple discussions about black bear management and management objectives in Region I during this report period, focusing on the decreasing harvest in several areas of Region I, and the changing successful hunter demographics (resident vs. nonresident). As an attempt to curb an increasing and unsustainable harvest of black bears the Alaska Board of Game (BOG), during its 2010 meeting, implemented a regulation requiring unguided nonresident hunters to acquire a registered guide or have a draw permit to hunt black bears in Units 1-3. Implementation of the regulation began 1 July 2012.

## METHODS

Staff of the departments of fish and game and public safety sealed black bear hides and skulls taken by successful hunters. Hunters were legally required to seal bears within 30 days of the date of kill. 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 use of commercial services, including guides. We checked all bears for tattoos or ear tags, an indication that ADF&G personnel captured the bear previously. We collected a premolar from each bear and sent it to Matson's Laboratory in Montana for age determination.

## RESULTS AND DISCUSSION

### POPULATION STATUS AND TREND

Population estimates are not available for Unit 1C black bears. Information obtained during sealing cannot be used to measure population trends. Although harvest information gained from sealing records, such as skull size, age, and sex ratios, may provide some indication of population trends, correlations between these measures and harvest sustainability will continue to elude us in the absence of accompanying demographic data. Research is needed to identify population parameters so we might better assess population trends and harvest sustainability.

#### *Population size*

There have been no black bear population studies in Unit 1C. 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. Density estimates for Unit 1C are based on studies conducted in similar habitats in western Washington State in the 1960s (Poelker and Hartwell 1973). We believe minimum densities in mainland Southeast Alaska are slightly higher than the 1.4 bears per mi<sup>2</sup> found in the Washington study area. Assuming a density of 1.5 bears per mi<sup>2</sup> of forested habitat, ADF&G estimates 1,950 black bears in Unit 1C. Black bear densities are probably similar in Unit 1C to other Southeast mainland areas, and we have assumed density to be consistent throughout the forested areas of the unit. Depending on the availability of human food to bears, mainly garbage, and the tolerance of the human population, bear density near communities may differ from elsewhere in the unit. For example, in comparing bear densities near Juneau with Gustavus, because of conditions noted above, the bear density near Juneau is probably higher than the extended natural habitat. In Gustavus, where there are no restrictions on firearms discharge and most bears that frequent residential areas are killed, there is undoubtedly a lower bear density near the community than away from it.

All black bears harvested in Unit 1C must be sealed, at which time data on skull size and age are collected as 2 of the main sets of biological data. The department uses these data as 2 sets of indices of the status of the black bear populations. Even with variability in skull size and age there have been no significant changes in the data we have collected over the past 3 report periods, so based on these data, we don't have reason to suspect that the unit wide population has changed significantly. The harvest during the first 2 years of this report period was higher than the last 2 years of the previous period; and the harvest during this report period was substantially lower the third year than the first 2 (Table 2).

The number of bears near the city of Juneau appears to be increasing, based on the number of nuisance bear calls to the JPD and ADF&G. This is likely the result of female bears teaching their cubs to feed on refuse, and seeking safety from adult male bears in congested areas. It gives the impression that bears are increasing because they are more persistent and visible. The cubs' learned behavior does lead to periodic generational increases of nuisance bears.

### *Population composition*

Our management objective of a 3:1 male-to-female harvest ratio is aimed at assuring a minimal harvest of female bears. We lack reliable information on the composition of the bear population, but use the indirect index of the harvest sex ratio for insight into the availability of male bears in the population. On a very gross scale, if the harvest of females increases, we interpret that as meaning fewer large male bears are available to hunters.

### *Distribution and movements*

Black bears are present throughout the mainland and on most islands in Unit 1C. The larger mainland river drainages harbor brown bears that likely displace black bears from some locations. The distances black bears move in and around the unit is generally unknown, except in the areas adjacent to 2 proposed mining sites: the Alaska Juneau Mine (AJ Mine) in the Sheep Creek valley just southeast of Juneau and the Kensington mine just north of Berners Bay. Home ranges for black bears were estimated at both of these sites using radio collared animals (n=7 and n=12 respectively). Average home range sizes were 6 km<sup>2</sup> and 8 km<sup>2</sup>, respectively, at the 2 sites (Robus and Carney 1995, Robus and Carney 1996). Urban bear home range estimates were calculated using GPS equipped radio-collar data from captured bears. The mean home range size was 12 km<sup>2</sup> (n=4, range 5 km<sup>2</sup>- 23 km<sup>2</sup>) (ADFG, Unpublished data). These compare similarly to home ranges of bears in Washington state (Poelker and Hartwell 1973), giving some credibility to our rationale of using black bear density data from the Washington state study for Southeast Alaska.

Unit 1C black bears exhibit a wide range of colors, including black, cinnamon, and blue (glacier) color. We have received reports of glacier colored bears on the Juneau road system, and 1 glacier bear was taken in the unit during the report period; 26 cinnamon, 274 black, and 2 unknown color phase make up the overall Unit 1C harvest for the report period.

## **MORTALITY**

### *Harvest*

#### Season

1 Sep–30 Jun

1 Sep–30 Jun

#### Bag Limit

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

Nonresident hunters: 1 bear

Game Board Action and Emergency Orders. Prior to the 2010 Alaska Board of Game (BOG) department staff were involved in many discussions on how to reduce an unsustainable harvest of black bears in Southeast Alaska. The public and registered guides submitted multiple proposals during the 2010 BOG meeting. Ultimately the BOG implemented a regulation requiring unguided non-residents to obtain a registered guide or have a draw permit to hunt black

bears in Units 1-3 (ADF&G 2011, unpublished). The regulation became effective on July 1, 2012; and appeared to catch many non-resident hunters off guard. Like many new regulations we anticipate a lag effect before hunters fully understand the change for unguided non-residents. Undersubscribed permits (left over draw permits) were made available on a first come first serve basis. We issued no emergency orders relating to black bears in Unit 1C during this report period.

Hunter Harvest. Hunters reported killing 103, 99, and 73 bears in regulatory years 2010, 2011, and 2012, respectively (Table 2). The mean annual harvest of 92 bears is just slightly lower than the mean of 94 bears from the previous report period. Males were 83%, 80%, and 82% of the harvest over the report period, exceeding the management objective of 75% in each year. Average skull size for male bears during the report period was 17.7, exceeding the management objective of 17.5 and similar to the 17.8 inches reported in the previous report period. The mean age of male bears remained the same at 8.8 years compared to 8.9 years during the previous report period (Table 3). The majority of bears harvested had black pelage, although 1 glacier bear was taken by a hunter in 2010. Successful hunters spent an average of 3.0 days afield (Table 3), same as the 3.1 days of effort spent per successful hunter during the previous report period.

Since implementation of the regulation requiring hunters to return black bear harvest ticket reports, gaining reliable data from returned harvest reports remains problematic. Unlike registration permit holders, harvest ticket holders face no penalty for failing to report unsuccessful black bear hunting activity (successful hunters must still have bears sealed by the department). During this report period, harvest ticket information indicates that 556 ticket holders hunted black bear in Unit 1C. Two hundred and twenty-one (50%) hunters reported being successful, although sealing data (required process) indicate 275 bears were harvested. According to harvest ticket data, successful hunters took 3.6 days to harvest a black bear (compared to the 3.1 days reported on sealing certificates), and unsuccessful hunters spent 3.9 days hunting. Nevertheless, during this report period it appears that hunters have acquired the habit of returning harvest tickets at the end of the season. The number of hunters reporting hunt location data in this report period was 519 of 556 ticket holders, a significant increase over the 37 of the last report period. Implementation of the harvest ticket requirement will enable managers to obtain information for unsuccessful hunters. This added data will allow biologists to compute catch per unit effort data for all hunters, and help identify areas where black bear population dynamics are changing. Staff noted many non-resident hunters were unfamiliar with the new drawing permit requirement for unguided black bear hunting during RY12.

Hunter Residency and Success. Local unit residents took 53% of all black bears during the report period; nonresident hunters took 40%; and nonlocal Alaskans took 7% (Table 4). Local resident hunters took 145 bears during the report period, up slightly from 133 bears reported in 2007–2009. Nonresident hunters took fewer bears during the current report period (111) compared to the previous period (124) but the bear harvest remains relatively high for this group of hunters. The nonlocal resident harvest was 19 bears, down slightly from the previous report of 24 bears. There is substantial variability in the total number of bears taken by all demographic groups over the last 10 years. Harvest for all groups likely depends more on the availability of bears rather than effort. Although we do not have empirical data to monitor effort, anecdotal information and conversations with hunters do not suggest fewer hunters are pursuing black bears today than in the recent past.

Harvest Chronology. During the report period, 79% of bears taken were killed in the spring season (Table 5). The spring harvest component is identical to the harvest reported in the previous period. May represents the month with the highest black bear harvest in Unit 1C at 66%. The spring season, specifically the month of May, has historically produced the highest harvest of bears. This is due to the hunters' interest in taking a bear with a prime pelt. Bear pelts are prime if the animal is taken shortly after den emergence; black bears are known to emerge in the largest numbers in early to mid-May.

Harvest in Particular Areas (WAAs). The harvest during this report period was again concentrated in the handful of WAAs that produced most of the bears in the preceding 2 report periods. These areas are centered on the south end of the Chilkat Range (2304–2306) and the area between Snettisham and Cape Fanshaw (2823–2927) (Table 1). The WAAs adjoining the Juneau urban area (2515, 2515, 2517) also produce several bears annually which is likely due to access provided by the Juneau road system.

Transport Methods. Boats continued to be the dominate means of transport to the field, used by 73% of successful hunters during the report period (Table 6). Other methods included foot, highway vehicles, airplanes, and off-road vehicles. The reason boat access is so prevalent is that, during the spring, black bears can be found on nearly any uninhabited beach as they forage for newly emergent sedges. By using a boat, hunters can cover a lot of area with relative ease and likely will have an opportunity to pursue 1 or more bears. Modes of transportation for successful black bear hunters vary slightly year-to-year but hunters using boats have consistently been the highest percentage of users.

#### *Other Mortality.*

During this report period, ADF&G, and private citizens killed 3, 10, and 5 bears during 2010, 2011, and 2012 respectively. The bears were killed either in defense of life or property, or because they were garbage conditioned and considered to be a public safety concern. Law enforcement agencies did not kill any bears during the report period.

## **HABITAT**

### *Assessment*

The most critical impacts to habitat in this unit will resort from a number of proposed developments in Unit 1C. The proposed 400-acre golf course on north Douglas Island continues to be discussed, and will likely lead to additional development by private homeowners as lands become available. This area is attractive to bears because of the salmon in Petersen Creek, as well as abundant skunk cabbage and blueberries in the area. Undoubtedly, this development will affect bears more from a human–bear interaction standpoint than from the footprint of the golf course itself. Another potential area of development is the mainland coast from Echo Cove to Cascade Point. A pioneer road was constructed to Cascade Point during the report period with plans to extend the road up Lynn Canal to the Katzechin River delta moving Juneau's road connection closer to the Haines and Klondike highways. Increased highway traffic, increased access to the area by recreational users, and interactions between bears and refuse at the newly developed areas could affect the bear population in that area. In the past, logging has been a concern. Although several areas have been logged in the past, no active logging is occurring in the unit at present. There are long term plans to continue logging in some previously cut areas

(i.e., Chilkat Range), and to log new areas in southern portions of the unit but it does not appear logging is as economically attractive as it once was in the unit.

#### **NONREGULATORY MANAGEMENT PROBLEMS/NEEDS**

Urban Bear Management Activities. During the report period staff continued a substantial effort to shift ADF&G involvement away from instant response to nuisance bear reports to advising callers on how to reduce the attraction for bears in the hopes that the animals would return to wild habitats. Only in the case of an intractable bear that repeatedly caused problems did we make an effort to trap and remove or relocate an animal.

We continued to work to provide the public with bear and refuse information through public service announcements via the daily newspaper, a weekly newspaper, and radio, including an annual program in the spring we use to prepare the community for seasonal bear activity. These types of department announcements serve to remind the community of the value of having bears in the area, and the need to manage refuse responsibly.

Staff participated in neighborhood meetings in areas with high levels of urban bear activity, and several outdoor safety programs (e.g., Kid Safe) each year to reinforce proper refuse management, and appropriate behavior in bear habitat. In addition, staff presented a Fireside Chat program at the Mendenhall Glacier Visitors Center about urban bears in Juneau. Much of the information for the program was collected from 5 radio-collared female black bears. Presenting tangible information to the public, such as hourly locations of bears, is a powerful tool to help people acquire a sense of ownership in the local bear resource, and to reinforce the need for proper refuse management.

### **CONCLUSIONS AND RECOMMENDATIONS**

The Unit 1C bear harvest continued to increase initially during the report period, peaking at 103 bears in 2010. During the remainder of the period (2010–2012) the harvest was slightly lower than the levels during the last reporting period. Hunters continue to voice concerns that they are seeing fewer bears, at least in the southern portion of Unit 1C. The black bear harvests from southern portions of Unit 1C (Tracy Arm-Cape Fanshaw) are lower than in the past. It is unclear if this trend will continue, and if it does, what that means about bear numbers. Similar declines in harvest and the number of bears seen are being reported in Unit 2 (Prince of Wales Island) and portions of Unit 3. The Alaska BOG passed a regulation requiring unguided non-residents to have a draw permit or registered guide to hunt black bears in an attempt to curb an unsustainable harvest in Units 1-3. Two of our indices of population health (skull size and age) were similar throughout the report period, as were days hunted per bear. These measurements were also similar to the means of the previous report period. Although skull size is a measurement we monitor as an indicator of overall population health, skull size measurements may not be sensitive enough to detect changes until they become very pronounced. The continued stable age structure of the harvest and hunter effort give us some comfort as managers that the black bear population may not have changed significantly.

We will continue to monitor the bear harvest through sealing requirements while gathering more specific information on kill locations and hunter effort. The harvest ticket requirement will provide needed unsuccessful hunter data to anticipate areas of concern with black bear harvest.

We will continue to work with the CBJ and other communities in Unit 1C to refine current refuse management practices and to identify alternatives that serve to reduce human and black bear conflicts.

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Table 1. Unit 1C black bear mortality 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	
2202	0	1	0	2	1	1	1	0	0	0	6
2203	1	1	2	1	0	0	0	0	1	3	9
2304	6	3	7	9	10	6	3	5	6	3	58
2305	6	1	3	9	17	4	5	7	5	3	60
2306	13	8	12	11	12	3	11	13	11	16	110
2307	3	0	4	7	4	9	2	7	11	4	51
2408	0	1	0	0	2	2	8	2	3	0	18
2409	1	0	0	1	2	2	3	3	7	1	20
2410	3	1	0	2	0	0	0	0	1	0	7
2411	0	0	1	0	0	0	1	0	0	0	2
2412	0	0	1	0	0	0	0	0	0	0	1
2413	0	0	0	0	0	2	0	0	0	0	2
2514	5	0	2	10	8	2	4	12	8	6	57
2515	6	5	9	5	8	7	6	6	11	5	68
2516	0	0	0	0	0	0	0	0	0	0	0
2517	5	3	6	11	4	8	8	4	4	6	59
2518	0	1	5	2	2	5	1	2	6	2	26
2519	2	0	2	2	6	3	0	1	3	2	21
2722	1	3	1	0	9	4	1	4	2	3	28
2823	11	8	12	11	5	5	1	6	10	5	74
2824	6	3	2	4	3	3	3	1	1	0	26
2825	5	7	6	6	10	9	8	5	4	3	63
2926	3	15	31	20	12	14	9	15	10	9	138
2927	2	7	16	15	10	7	12	17	7	11	104
Total	79	68	122	128	125	96	87	110	111	82	1008

Table 2. Unit 1C black bear harvest and other mortality, regulatory years 2003 through 2012.

Regulatory year	Reported															
	Hunter kill					Nonhunting kill				Total estimated kill						
	M	F	Unk	Total	Baited	M	F	Unk	Total	M	(%)	F	(%)	Unk	(%)	Total
2003–2004																
Fall 2003	7	6	0	13	NA	5	1	0	6	12	(63)	7	(37)	0	0	19
Spring 2004	51	8	0	59	NA	1	0	0	1	52	(87)	8	(13)	0	0	60
Total	58	14	0	72	NA	6	1	0	7	64	(81)	15	(19)	0	0	79
2004–2005																
Fall 2004	7	2	0	9	NA	0	4	0	4	7	(54)	6	(46)	0	(0)	13
Spring 2005	52	2	0	54	NA	0	1	0	1	52	(95)	3	(5)	0	(0)	55
Total	59	4	0	63	NA	0	5	0	5	59	(87)	9	(13)	0	(0)	68
2005–2006																
Fall 2005	16	11	0	27	NA	5	2	2	9	21	(58)	13	(36)	2	(6)	36
Spring 2006	79	5	0	84	NA	0	2	0	2	79	(92)	7	(8)	0	(0)	86
Total	95	16	0	111	NA	5	4	2	11	100	(82)	20	(16)	2	(2)	122
2006–2007																
Fall 2006	19	9	0	28	NA	5	5	2	12	24	(60)	14	(35)	2	(5)	40
Spring 2007	80	8	0	88	NA	0	0	0	0	80	(91)	8	(9)	0	(0)	88
Total	99	17	0	116	NA	5	5	2	12	104	(81)	22	(17)	2	(2)	128
2007–2008																
Fall 2007	20	7	0	27	NA	4	1	1	6	24	(73)	8	(24)	1	(3)	33
Spring 2008	83	7	0	90	NA	1	1	0	2	84	(91)	8	(9)	0	(0)	92
Total	103	14	0	117	NA	5	2	1	8	108	(86)	16	(13)	1	(1)	125

Table 2. continued.

Regulatory year	Reported																
	Hunter kill					Nonhunting kill				Total estimated kill							
	M	F	Unk	Total	Baited	M	F	Unk	Total	M	(%)	F	(%)	Unk	(%)	Total	
2008–2009																	
Fall 2008	14	7	0	21	NA	4	2	1	7	18	(64)	9	(32)	1	(4)	28	
Spring 2009	55	11	0	66	NA	2	1	0	3	57	(83)	12	(17)	0	(0)	69	
Total	69	18	0	87	NA	6	3	1	10	75	(77)	21	(22)	1	(1)	97	
2009–2010																	
Fall 2009	8	5	0	13	NA	7	1	1	9	15	(68)	6	(27)	1	(5)	22	
Spring 2010	53	11	0	64	NA	0	1	0	1	53	(82)	12	(18)	0	(0)	65	
Total	61	16	0	77	NA	7	2	1	10	68	(78)	18	(21)	1	(1)	87	
2010-2011																	
Fall 2010	13	6	0	19	NA	3	1	2	6	16	(64)	7	(28)	2	(8)	25	
Spring 2011	73	11	0	84	NA	0	0	1	1	73	(86)	11	(13)	1	(1)	85	
Total	86	17	0	103	NA	3	1	3	7	89	(81)	18	(16)	3	(3)	110	
2011-2012																	
Fall 2011	13	7	0	20	NA	4	6	0	10	17	(57)	13	(43)	0	(0)	30	
Spring 2012	66	13	0	79	NA	1	0	1	2	67	(83)	13	(16)	1	(1)	81	
Total	79	20	0	99	NA	5	6	1	12	84	(76)	26	(23)	1	(1)	111	
2012-2013																	
Fall 2012	13	5	0	18	NA	4	2	2	8	17	(65)	7	(27)	2	(8)	26	
Spring 2013	47	8	0	55	NA	0	0	1	1	47	(84)	8	(14)	1	(2)	56	
Total	60	13	0	73	NA	4	2	3	9	64	(78)	15	(18)	3	(4)	82	

Table 3. Unit 1C successful black bear hunter effort, mean skull size, and mean age, regulatory years 2003 through 2012.

Regulatory year	Successful hunter effort			Mean skull size (inches)				Average age (years)			
	Total days	Nr hunters	Mean days per hunter	Male	<i>n</i>	Female	<i>n</i>	Male	<i>n</i>	Female	<i>n</i>
2003–2004											
Fall 2003	33	13	2.5	17.5	6	15.9	6	5.1	11	9.0	7
Spring 2004	187	59	3.2	17.8	50	15.9	8	8.7	52	8.3	8
Total	220	72	3.1	17.8	56	15.9	14	8.1	63	8.6	15
2004–2005											
Fall 2004	13	9	1.4	18.4	6	16.2	2	8.8	6	9.0	2
Spring 2005	176	54	3.3	18.5	52	16.7	2	9.9	49	7.0	2
Total	189	63	3.0	18.5	58	16.5	4	9.8	55	8.0	4
2005–2006											
Fall 2005	88	27	3.3	18.9	16	16.4	11	9.9	14	9.7	11
Spring 2006	261	84	3.1	18.5	79	16.4	5	10.1	75	8.0	5
Total	349	111	3.1	18.5	95	16.4	16	10.1	89	9.2	16
2006–2007											
Fall 2006	59	28	2.1	16.3	19	16.1	8	5.5	19	11.8	8
Spring 2007	284	88	3.2	18.3	78	16.0	8	10.1	79	9.0	8
Total	343	116	3.0	17.9	97	16.0	16	9.2	98	10.4	16
2007–2008											
Fall 2007	78	27	2.9	16.5	20	15.6	7	6.3	20	8.3	6
Spring 2008	251	90	2.8	17.9	81	15.0	7	9.7	82	5.7	7
Total	329	117	2.8	17.6	101	15.3	14	9.0	102	6.9	13

Table 3. continued.

Regulatory year	Successful hunter effort			Mean skull size (inches)				Average age (years)			
	Total days	Nr hunters	Mean days per hunter	Male	<i>n</i>	Female	<i>n</i>	Male	<i>n</i>	Female	<i>n</i>
2008–2009											
Fall 2008	53	21	2.5	17.3	14	15.0	7	7.2	14	7.4	7
Spring 2009	157	66	2.4	18.0	54	15.5	11	9.3	54	8.5	11
Total	210	87	2.4	17.9	68	15.3	18	8.9	68	8.1	18
2009–2010											
Fall 2009	31	13	2.4	17.6	6	16.4	5	9.9	8	11.8	5
Spring 2010	200	64	3.1	17.8	53	15.7	11	8.5	53	9.6	11
Total	231	77	3.0	17.8	59	15.9	16	8.7	61	10.3	16
2010-2011											
Fall 2010	78	19	4.1	18.1	13	15.0	6	9.2	13	9.6	5
Spring 2011	267	84	3.2	17.9	73	15.6	11	8.6	71	8.6	11
Total	345	103	3.3	18.0	86	15.4	17	8.7	84	8.9	16
2011-2012											
Fall 2011	58	20	2.9	16.8	13	13.7	7	8.4	13	8.8	5
Spring 2012	270	79	3.4	17.7	66	16.0	13	9.1	60	9.0	12
Total	328	99	3.3	17.5	79	15.1	20	9.0	73	8.9	17
2012-2013											
Fall 2012	57	18	3.2	16.8	13	16.0	5	7.0	13	11.6	5
Spring 2013	125	55	2.3	17.8	47	11.5	8	9.0	47	11.9	8
Total	182	73	2.5	17.5	60	13.2	13	8.6	60	11.8	13

Table 4. Unit 1C black bear successful hunter residency, regulatory years 2003 through 2012.

Regulatory year	Local resident		Nonlocal resident		Nonresident		Unknown residency		Total
		(%)		(%)		(%)		(%)	
2003–2004	37	(52)	6	(8)	29	(40)	0	(0)	72
2004–2005	19	(30)	8	(13)	36	(57)	0	(0)	63
2005–2006	34	(31)	11	(10)	66	(59)	0	(0)	111
2006–2007	46	(40)	5	(4)	65	(56)	0	(0)	116
2007–2008	55	(47)	12	(10)	50	(43)	0	(0)	117
2008–2009	41	(47)	3	(4)	43	(49)	0	(0)	87
2009–2010	37	(48)	9	(12)	31	(40)	0	(0)	77
2010–2011	48	(46)	9	(9)	46	(45)	0	(0)	103
2011–2012	53	(54)	4	(4)	42	(42)	0	(0)	99
2012–2013	44	(60)	6	(8)	23	(32)	0	(0)	73

Table 5. Unit 1C black bear harvest chronology by month, regulatory years 2003 through 2012.

Regulatory year	Harvest periods												<i>n</i>
	Sep	(%)	Oct	(%)	Nov	(%)	Apr	(%)	May	(%)	Jun	(%)	
2003–2004	10	(14)	3	(4)	0	(0)	2	(3)	52	(72)	5	(7)	72
2004–2005	7	(11)	2	(3)	0	(0)	2	(3)	50	(80)	2	(3)	63
2005–2006	22	(20)	5	(4.5)	0	(0)	7	(6)	72	(65)	5	(4.5)	111
2006–2007	24	(21)	3	(2)	1	(1)	7	(6)	60	(52)	21	(18)	116
2007–2008	21	(18)	5	(4)	1	(1)	14	(12)	65	(56)	11	(9)	117
2008–2009	16	(18)	5	(6)	0	(0)	2	(2)	59	(68)	5	(6)	87
2009–2010	10	(13)	2	(3)	1	(1)	4	(5)	58	(75)	2	(3)	77
2010–2011	15	(14)	4	(4)	0	(0)	6	(6)	70	(68)	8	(8)	103
2011–2012	18	(18)	2	(2)	0	(0)	4	(4)	63	(64)	12	(12)	99
2012–2013	15	(20)	3	(4)	0	(0)	2	(3)	48	(66)	5	(7)	73

Table 6. Unit 1C black bear harvest percent by transport method, regulatory years 2003 through 2012.

Regulatory year	Transport												<i>n</i>
	Air	(%)	Boat	(%)	Highway vehicle	(%)	Walk	(%)	Other	(%)	Unk	(%)	
2003–2004	0	(0)	55	(76)	10	(14)	0	(0)	7	(10)	0	(0)	72
2004–2005	0	(0)	56	(89)	4	(6)	2	(3)	1	(2)	0	(0)	63
2005–2006	1	(1)	94	(85)	7	(6)	3	(3)	6	(5)	0	(0)	111
2006–2007	1	(1)	94	(81)	14	(12)	6	(5)	1	(1)	0	(0)	116
2007–2008	5	(4)	89	(76)	17	(15)	5	(4)	1	(1)	0	(0)	117
2008–2009	0	(0)	67	(77)	14	(16)	5	(6)	1	(1)	0	(0)	87
2009–2010	0	(0)	63	(82)	9	(12)	3	(4)	2	(2)	0	(0)	77
2010-2011	5	(5)	72	(70)	21	(20)	2	(2)	3	(3)	0	(0)	103
2011-2012	1	(1)	73	(74)	19	(19)	6	(6)	0	(0)	0	(0)	99
2012-2013	1	(1)	56	(77)	9	(12)	9	(12)	3	(4)	0	(0)	73