
CHAPTER 20: BLACK BEAR MANAGEMENT REPORT

From: 1 July 2010
To: 30 June 2013¹

LOCATION

GAME MANAGEMENT UNIT: 20E (10,681 mi²)

GEOGRAPHIC DESCRIPTION: Fortymile, Charley, and Ladue River drainages, including the Tanana uplands and all drainages into the south bank of the Yukon River upstream from and including the Charley River drainage

BACKGROUND

Black bears live throughout forested habitat in Unit 20E. Observations by long-term area residents indicate that black bear numbers have fluctuated since at least 1960 in relation to grizzly bear population trends (Kelleyhouse 1990). Black bear numbers were thought to be highest following federal predator control poisoning efforts during the 1950s that caused grizzly bear numbers to decline and remain depressed during the 1960s and early 1970s. As grizzly bear numbers recovered during the 1970s through the mid-1980s, black bear numbers appeared to decline. Grizzly bears have been known to kill black bears, but how important that mortality is to black bear population trend in Unit 20E is not known. Black bear abundance may also have declined due to poor habitat quality. Until the 1990s, fire suppression activities in Unit 20E allowed extensive areas of black spruce forest to reach maturity, a stage that does not produce high quality black bear food.

During the 1990s and early 2000s, the black bear population in Unit 20E appeared stable. The highest densities are believed to occur in the hardwood habitats near the community of Chicken and along the Yukon River. Extensive fires in 2004 and 2005 have resulted in improved black bear habitat in large portions of Unit 20E. Historically, interest in black bear hunting in the unit has been low.

MANAGEMENT DIRECTION

MANAGEMENT GOALS

- Protect, maintain, and enhance the black bear population and its habitat in concert with other components of the ecosystem.
- Provide the greatest sustained opportunity to participate in hunting black bears.

¹ At the discretion of the reporting biologist, this unit report may contain data collected outside the report period.

MANAGEMENT OBJECTIVE

- Maintain at least 55% males in the harvest during the report period.

METHODS

Harvest was estimated using mandatory harvest report cards. To increase the reporting rate, reminder letters were sent to hunters who did not initially report. Data obtained from the reports were used to determine total harvest, hunter residency, success rates, harvest chronology, and transportation used. Additional harvest data, including skull size, salvage of meat, and bait use, were collected during the optional process of sealing harvested bears. Harvest data were summarized by regulatory year (RY), which begins 1 July and ends 30 June (e.g., RY12 = 1 July 2012–30 June 2013). Hunters were required to register all black bear bait stations and the distribution of bait stations and harvest were monitored.

RESULTS AND DISCUSSION

POPULATION STATUS AND TREND

Population Size and Composition

During RY10–RY12, no surveys were conducted to determine black bear population size or trend. The Unit 20E black bear population was estimated at 1,200–1,800 bears. This population estimate was based on limited radiotelemetry data collected in adjacent Unit 12 (Kelleyhouse 1990), and on density estimates in Unit 20A of 12–18 black bears/100 mi² (46–67/1,000 km²; Hechtel 1991) and 12–19 black bears/100 mi² (46–75/1,000 km²; C. Gardner, ADF&G unpublished data, Fairbanks). Both density estimates in Unit 20A excluded cubs of the year.

The composition of the Unit 20E black bear population is unknown. In 2004 and 2005, approximately 1,875 mi² (4,856 km²) of black bear habitat burned within, or adjacent to, Unit 20E. The effect of wildfires on black bear population trend in Unit 20E is unknown.

Distribution and Movements

Black bears inhabit all of the forested habitats within Unit 20E. Their movement patterns within the subunit are unknown.

MORTALITY

Harvest

Season and Bag Limit. There was no closed season for black bears in Unit 20E, and the bag limit was 3 bears. Harvest of cubs in the first year of life and females accompanied by cubs was prohibited.

Alaska Board of Game Actions and Emergency Orders. Starting in RY09 the board required hunters to possess harvest tickets for black bears in all units where black bear sealing was required, including Unit 20E. The sealing requirement in Unit 20E was eliminated in RY10, except for bears removed from Alaska or sold, and salvage requirements for black bears harvested during 1 June–31 December were changed to allow hunters to salvage either the hide or meat with no requirement to salvage the skull. Also beginning in RY10, sealed black bear hides and skulls taken under a hunting license were allowed to be sold. The board also increased the maximum number of bait stations allowed to be registered by guides from 2 to 10 beginning

in spring 2011. In March 2012 the board approved same-day-airborne take of black bears at bait stations in Unit 20E, provided the black bear is at the bait station and that the hunter is at least 300 feet from the airplane.

No emergency orders were issued during RY10–RY12.

Harvest by Hunters. During RY10–RY12, 59–91 hunters ($\bar{x} = 75$) reported taking 16–38 black bears ($\bar{x} = 24$) annually in Unit 20E (Table 1). Estimated harvest rate was 1–2% of the adult population, but without detailed population estimates the precise harvest rate is unknown. A total of 71 black bears, including 49 males, were killed during this 3-year period, and a record high harvest of 38 bears in RY11. Males made up 69–76% of the harvest ($\bar{x} = 71\%$) during RY10–RY12, meeting the harvest objective of >55% males for all 3 years. The average harvest during RY02–RY09 was 15 bears, ranging 56–86% males ($\bar{x} = 73\%$). During RY10–RY12, 53% of harvested bears were sealed, and the average skull size of sealed males (17.0 in, $n = 26$) was slightly higher than the RY95–RY00 average (16.4 in). Similar skull sizes and the high percentage of males in the harvest suggest that human-induced mortality had minimal effects on this population.

Beginning in RY10, information on black bears harvested over bait is only available from the optional process of sealing harvested bears. During RY10–RY12, 62% of spring-harvested sealed bears were taken over bait. This compares to an average of 41% and 55% spring-harvest over bait during RY07–RY09 and RY04–RY06 respectively.

Hunter Residency and Success. The overall success rate of 31% during RY10–RY12 was higher than the 23% reported in RY09, the first year harvest tickets were issued for black bears in Unit 20E (Table 2). Success rates among Alaska residents (30%) and nonresidents (37%) were similar. During RY10–RY12, Alaska residents harvested an average of 90% of the black bears taken in Unit 20E, and 81% of Alaska resident hunters who had their bears sealed reported salvaging at least some meat. Unit 20E residents took an average of 23% of the harvest, same as the previous 5-year average of 23%. During RY10–RY12, 7 black bears were killed by nonresidents; 10% of the total harvest. This was higher than the previous 5-year average of 7% of the total harvest, and a record high 6 black bears were harvested by nonresidents in RY12. Spring 2013 was the first time that grizzly bears were allowed to be harvested over bait in Unit 20E; this resulted in an increased interest in guided nonresident bear hunts over bait and led to a higher harvest of black bears by nonresidents.

Harvest Chronology. During RY10–RY12 an average of 45% and 55% of the black bear harvest occurred during fall (August and September) and spring (May and June), respectively (Table 3). In RY12, only 6% of the black bear harvest occurred during May, likely due to prolonged winter conditions with deep snow persisting through the month. During RY02–RY09, 47–74% ($\bar{x} = 59\%$) of the harvest took place in fall.

Transport Methods. During RY10–RY12, 4-wheelers (30%) and highway vehicles (42%) were the most common modes of transportation used by successful black bear hunters (Table 4). Use of 4-wheelers will likely continue to be prevalent among Unit 20E black bear hunters because of the abundance of ATV trails in the area.

HABITAT

Assessment

Black bear habitat is extensive in Unit 20E. Only treeless habitat, generally above elevations of 4,000 feet, is not black bear habitat. Blueberries, crowberries, and cranberries are widely available, and bearberries are available in a few areas. Extensive human-caused changes in the quantity and quality of black bear habitat are not expected because little development has occurred or is planned within black bear habitat in Unit 20E.

Enhancement

The implementation of the *Alaska Interagency Wildland Fire Management Plan* (Alaska Wildland Fire Coordinating Group 1998) allowed wildfires to burn in more areas than before 1984. During 2004–2005 and 2009–2013, approximately 1,875 mi² (4,856 km²) and 81 mi² (210 km²) of Unit 20E burned respectively, which has improved usable habitat for black bears in the area. Also, 3 prescribed burns were ignited during 1997–1999, affecting 148 mi² (383 km²) of black bear habitat. Revegetation by preferred plant species in burned areas provides better forage for black bears than is available in mature forests of black or white spruce.

CONCLUSIONS AND RECOMMENDATIONS

We met the management objective of 55% or more males in the harvest ($\bar{x} = 71\%$ males) during RY10–RY12. Black bears in Unit 20E were lightly harvested and were hunted both during the fall and spring primarily by nonlocal Alaska residents. Highway vehicles and 4-wheelers were used by 74% of successful hunters. The low harvest rate of predominantly male bears likely had little effect on the status and trend of the population, and skull size of sealed bears remained relatively constant. No changes in seasons, bag limits, or management goals and objectives are recommended at this time.

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Table 1. Unit 20E black bear harvest, regulatory years^a 2006–2012.

| Regulatory year | Reported | | | | | | | | | Estimated kill | | Total reported and estimated kill | | | |
|-----------------|-------------|----|-----|-------|---------------------|------------------------------|---|-----|------------|----------------|---------|-----------------------------------|-----|--------------------|--|
| | Hunter kill | | | | | Nonhunting kill ^b | | | | | | | | | |
| | M | F | Unk | Total | Baited ^c | M | F | Unk | Unreported | Illegal | M (%) | F (%) | Unk | Total ^d | |
| <i>2006</i> | | | | | | | | | | | | | | | |
| Fall 2006 | 4 | 1 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 4 (80) | 1 (20) | 0 | 5 | |
| Spring 2007 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 (100) | 0 (0) | 0 | 2 | |
| Total | 6 | 1 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 6 (86) | 1 (14) | 0 | 7 | |
| <i>2007</i> | | | | | | | | | | | | | | | |
| Fall 2007 | 4 | 1 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 4 (80) | 1 (20) | 0 | 5 | |
| Spring 2008 | 3 | 2 | 0 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 3 (60) | 2 (40) | 0 | 5 | |
| Total | 7 | 3 | 0 | 10 | 2 | 0 | 0 | 0 | 0 | 0 | 7 (70) | 3 (30) | 0 | 10 | |
| <i>2008</i> | | | | | | | | | | | | | | | |
| Fall 2008 | 9 | 2 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 9 (82) | 2 (18) | 0 | 11 | |
| Spring 2009 | 3 | 1 | 0 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 3 (75) | 1 (25) | 0 | 4 | |
| Total | 12 | 3 | 0 | 15 | 2 | 0 | 0 | 0 | 0 | 0 | 12 (80) | 3 (20) | 0 | 15 | |
| <i>2009</i> | | | | | | | | | | | | | | | |
| Fall 2008 | 6 | 4 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 6 (60) | 4 (40) | 0 | 10 | |
| Spring 2009 | 8 | 0 | 0 | 8 | 3 | 0 | 0 | 0 | 0 | 0 | 8 (100) | 0 (0) | 0 | 8 | |
| Total | 14 | 4 | 0 | 18 | 3 | 0 | 0 | 0 | 0 | 0 | 14 (78) | 4 (22) | 0 | 18 | |
| <i>2010</i> | | | | | | | | | | | | | | | |
| Fall 2010 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 4 (100) | 0 (0) | 0 | 4 | |
| Spring 2011 | 7 | 5 | 0 | 12 | 1 | 0 | 0 | 0 | 0 | 0 | 7 (58) | 5 (42) | 0 | 12 | |
| Total | 11 | 5 | 0 | 16 | 1 | 0 | 0 | 0 | 0 | 0 | 11 (69) | 5 (31) | 0 | 16 | |
| <i>2011</i> | | | | | | | | | | | | | | | |
| Fall 2011 | 11 | 6 | 0 | 17 | 0 | 0 | 1 | 2 | 0 | 0 | 11 (61) | 7 (39) | 2 | 20 | |
| Spring 2012 | 14 | 4 | 0 | 18 | 6 | 0 | 0 | 0 | 0 | 0 | 14 (78) | 4 (22) | 0 | 18 | |
| Total | 25 | 10 | 0 | 35 | 6 | 0 | 1 | 2 | 0 | 0 | 25 (69) | 11 (31) | 2 | 38 | |
| <i>2012</i> | | | | | | | | | | | | | | | |
| Fall 2012 | 7 | 3 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 7 (70) | 3 (0) | 0 | 10 | |
| Spring 2013 | 6 | 1 | 0 | 7 | 6 | 0 | 0 | 0 | 0 | 0 | 6 (86) | 1 (14) | 0 | 7 | |
| Total | 13 | 4 | 0 | 17 | 6 | 0 | 0 | 0 | 0 | 0 | 13 (76) | 4 (25) | 0 | 17 | |

^a Regulatory year (RY) begins 1 July and ends 30 June (e.g., RY06 = 1 July 2006–30 June 2007).

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

^c Sealing requirements eliminated in RY10, and baiting information is available only from sealed bears. Baited bears for RY10–RY12 are a minimum count.

^d Includes animals with an unknown date of kill.

Table 2. Unit 20E black bear hunter residency and success, regulatory years^a 1999–2012.

| Regulatory year | Successful | | | | Unsuccessful ^b | | | | | Total hunters |
|-----------------|-------------------|----------------|-------------|-----------|---------------------------|----------------|-------------|-----|-----------|---------------|
| | Unit 20E resident | Other resident | Nonresident | Total (%) | Unit 20E resident | Other resident | Nonresident | Unk | Total (%) | |
| 1999 | 4 | 6 | 0 | 10 | | | | | | |
| 2000 | 6 | 10 | 0 | 16 | | | | | | |
| 2001 | 8 | 3 | 0 | 11 | | | | | | |
| 2002 | 8 | 13 | 1 | 22 | | | | | | |
| 2003 | 1 | 7 | 0 | 8 | | | | | | |
| 2004 | 11 | 15 | 2 | 28 | | | | | | |
| 2005 | 3 | 6 | 1 | 10 | | | | | | |
| 2006 | 2 | 5 | 0 | 7 | | | | | | |
| 2007 | 3 | 7 | 0 | 10 | | | | | | |
| 2008 | 1 | 12 | 2 | 15 | | | | | | |
| 2009 | 5 | 11 | 2 | 18 (23) | 19 | 38 | 2 | 0 | 59 (77) | 77 |
| 2010 | 7 | 9 | 0 | 16 (27) | 10 | 32 | 1 | 0 | 43 (73) | 59 |
| 2011 | 9 | 26 | 1 | 36 (40) | 16 | 30 | 6 | 3 | 55 (60) | 91 |
| 2012 | 0 | 11 | 6 | 17 (22) | 10 | 44 | 5 | 0 | 59 (78) | 76 |

^a Regulatory year (RY) begins 1 July and ends 30 June (e.g., RY99 = 1 July 1999–30 June 2000).

^b Mandatory harvest report cards required beginning in RY09.

Table 3. Unit 20E black bear harvest chronology percent by month, regulatory years^a 1999–2012.

| Regulatory year | Harvest chronology percent by month | | | | | | | | <i>n</i> |
|--------------------|-------------------------------------|-----|-----|-----|-----|-----|-----|-----|----------|
| | Jul | Aug | Sep | Oct | Nov | Apr | May | Jun | |
| 1999 | 0 | 0 | 60 | 0 | 0 | 0 | 10 | 30 | 10 |
| 2000 | 13 | 0 | 44 | 0 | 0 | 0 | 37 | 6 | 16 |
| 2001 | 0 | 27 | 18 | 0 | 0 | 0 | 9 | 46 | 11 |
| 2002 | 5 | 18 | 45 | 0 | 0 | 0 | 23 | 9 | 22 |
| 2003 | 0 | 25 | 37 | 0 | 0 | 0 | 38 | 0 | 8 |
| 2004 | 7 | 18 | 29 | 0 | 0 | 4 | 21 | 21 | 28 |
| 2005 | 0 | 30 | 20 | 0 | 0 | 0 | 10 | 40 | 10 |
| 2006 | 0 | 57 | 14 | 0 | 0 | 0 | 14 | 14 | 7 |
| 2007 | 0 | 30 | 20 | 0 | 0 | 0 | 30 | 20 | 10 |
| 2008 | 0 | 53 | 21 | 0 | 0 | 0 | 13 | 13 | 15 |
| 2009 | 0 | 28 | 28 | 0 | 0 | 0 | 44 | 0 | 18 |
| 2010 | 0 | 13 | 13 | 0 | 0 | 0 | 44 | 30 | 16 |
| 2011 | 0 | 29 | 20 | 0 | 0 | 0 | 11 | 40 | 35 |
| 2012 | 0 | 18 | 41 | 0 | 0 | 0 | 6 | 35 | 17 |

^a Regulatory year begins 1 July and ends 30 June (e.g., regulatory year 1999 = 1 July 1999–30 June 2000).

Table 4. Unit 20E black bear harvest by transport method, regulatory years^a 1999–2012.

| Regulatory year | Harvest by transport method (%) | | | | | | | | | | <i>n</i> |
|-----------------|---------------------------------|-------|--------|-----------------|-------------|-------|-----------------|---------|---------|----|----------|
| | Airplane | Horse | Boat | 3- or 4-wheeler | Snowmachine | ORV | Highway vehicle | Walking | Unknown | | |
| 1999 | 0 (0) | 0 (0) | 4 (40) | 2 (20) | 0 (0) | 0 (0) | 3 (30) | 1 (10) | 0 (0) | 10 | |
| 2000 | 1 (6) | 0 (0) | 3 (19) | 6 (38) | 0 (0) | 0 (0) | 5 (31) | 1 (6) | 0 (0) | 16 | |
| 2001 | 0 (0) | 0 (0) | 3 (27) | 2 (18) | 0 (0) | 0 (0) | 2 (18) | 4 (37) | 0 (0) | 11 | |
| 2002 | 1 (5) | 0 (0) | 0 (0) | 7 (32) | 0 (0) | 0 (0) | 12 (54) | 2 (9) | 0 (0) | 22 | |
| 2003 | 0 (0) | 0 (0) | 1 (13) | 4 (50) | 0 (0) | 0 (0) | 2 (25) | 1 (12) | 0 (0) | 8 | |
| 2004 | 0 (0) | 0 (0) | 5 (18) | 11 (39) | 0 (0) | 0 (0) | 9 (32) | 3 (11) | 0 (0) | 28 | |
| 2005 | 0 (0) | 0 (0) | 0 (0) | 6 (60) | 0 (0) | 0 (0) | 4 (40) | 0 (0) | 0 (0) | 10 | |
| 2006 | 0 (0) | 0 (0) | 0 (0) | 4 (57) | 0 (0) | 0 (0) | 2 (29) | 1 (14) | 0 (0) | 7 | |
| 2007 | 0 (0) | 0 (0) | 2 (20) | 4 (40) | 0 (0) | 0 (0) | 3 (30) | 1 (10) | 0 (0) | 10 | |
| 2008 | 2 (13) | 0 (0) | 3 (20) | 4 (27) | 0 (0) | 1 (7) | 5 (33) | 0 (0) | 0 (0) | 15 | |
| 2009 | 0 (0) | 0 (0) | 4 (22) | 8 (44) | 0 (0) | 0 (0) | 5 (28) | 1 (6) | 0 (0) | 18 | |
| 2010 | 1 (6) | 0 (0) | 2 (13) | 5 (31) | 0 (0) | 0 (0) | 6 (37) | 2 (13) | 0 (0) | 16 | |
| 2011 | 2 (6) | 0 (0) | 4 (11) | 11 (30) | 0 (0) | 0 (0) | 17 (47) | 2 (6) | 0 (0) | 36 | |
| 2012 | 0 (0) | 0 (0) | 3 (18) | 5 (29) | 0 (0) | 0 (0) | 7 (41) | 2 (12) | 0 (0) | 17 | |

^a Regulatory year begins 1 July and ends 30 June (e.g., regulatory year 1999 = 1 July 1999–30 June 2000).