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**CHAPTER 10: BROWN BEAR MANAGEMENT REPORT**

From: 1 July 2012  
To: 30 June 2014

**GAME MANAGEMENT UNIT:** 11 (12,785 mi<sup>2</sup>)

**GEOGRAPHIC DESCRIPTION:** Wrangell Mountains

**BACKGROUND**

Unit 11 is a large remote unit east of the Copper River with limited access. During 1948–1953, federal poisoning programs directed at controlling wolves incidentally reduced bear numbers. Following cessation of poisoning, bear numbers increased, and by the mid-1970s bears again were considered abundant.

Brown bear harvests averaged 16 (range = 8–27) per year throughout the 1960s and 1970s, but declined substantially after regulatory year (RY) 1978 (regulatory year begins 1 July and ends 30 June, e.g., RY78 = 1 July 1978 through 30 June 1979), when much of Unit 11 was included in the Wrangell-Saint Elias National Park and Preserve. For the next 20 years, hunting pressure was low and harvests averaged only 6 bears (range = 2–12) per year. In 1999, the Federal Subsistence Board established a federal subsistence brown bear hunting season, and the harvest began to increase. State hunting regulations were liberalized somewhat in 2003 to allow additional hunting opportunity. Although Unit 11 brown bear harvests are slowly increasing, they remain very low compared to adjacent areas with similar habitat.

**MANAGEMENT DIRECTION**

**MANAGEMENT OBJECTIVE**

- Provide maximum opportunity to hunt brown bears in Unit 11.

**METHODS**

The harvest of brown bears in Unit 11 was monitored through mandatory sealing. Skulls of sealed bears were measured, sex was recorded, and a premolar tooth was extracted for aging. Information on date and location of harvest, days afield, and mode of transportation were collected from successful hunters.

**RESULTS AND DISCUSSION**

**POPULATION STATUS AND TREND**

No brown bear surveys or censuses have been conducted in Unit 11. Frequent observations of bears by ADF&G staff and the public suggest a relatively abundant and well-distributed population of brown bears in Unit 11.

### *Distribution and Movements*

Based on incidental observations and harvest locations, brown bears inhabit most of Unit 11 except high-elevation glaciers. There have been no bear movement studies conducted in Unit 11, but we suspect the movement patterns are similar to those in adjacent Unit 13. After den emergence, most bears except females with cubs of the year move into riparian areas to feed on newly emergent vegetation and over-wintered berries. They also scavenge carcasses of ungulates that died during winter. Brown bears have been documented taking a large proportion of neonatal Mentasta caribou calves in the north Wrangell Mountains during the first several weeks of summer (Jenkins and Barten 2005). They likely prey on neonatal moose calves unitwide as well.

Throughout the summer, brown bears in Unit 11 feed in various habitats. In late summer, bears generally move into subalpine habitats to feed on ripening blueberries. Bears feed on salmon in the numerous streams located throughout Unit 11.

### **MORTALITY**

#### *Harvest*

Seasons and Bag Limits. The bear season in Unit 11 was 10 August–15 June. The bag limit was 1 bear every regulatory year; no resident tag fee required.

Alaska Board of Game Actions and Emergency Orders. There were no Board of Game actions or emergency orders issued during this reporting period.

Hunter-Induced Harvest. In RY12, 20 brown bears were reported harvested, while 15 were harvested the following regulatory year (RY13) (Table 1). Males composed 60% of the harvest during this reporting period. Over the past 5 years an average of 19 brown bears have been harvested by hunters. The mean age for male bears harvested during RY11, RY12, and RY13 were 7.8, 5.3, and 6.6 years, respectively. Mean ages of bears taken in Unit 11 are highly variable due to the small sample size. Since RY02, annual mean ages of harvested males have ranged from 6.1 to 12 years.

Hunter Residency and Success. Hunter residency is listed in Table 2. Prior to the establishment of Wrangell-Saint Elias National Park in 1979, nonresident hunters took an average of 11 bears per year (range = 2–18, RY61–RY78). Over the next 2 decades, very few nonresidents harvested brown bears each year (average = 2; range 0–5). The nonresident harvest slowly increased after RY03 and following the liberalization in regulations. Since RY08, nonresidents harvest an average of 8 bears annually while residents only harvest 4 bears. Take by residents was also relatively low following designation of the Wrangell-St. Elias National Park, averaging 5 bears per year (range = 0–8; RY79–RY02). Similar to nonresidents, the resident take also has increased slightly since regulations were changed. Successful bear hunters averaged 5.9 days to take a bear during RY12 and 2.9 days during RY13. Annual hunter effort is highly variable in Unit 11.

Harvest Chronology. Most of the brown bears taken during this reporting period were harvested during the fall season (Table 3). Since sealing was initiated in RY61, fall harvests have continued to dominate the brown bear take in Unit 11. Presumably, fall harvests are higher because more bears are taken by hunters on combination hunts for other big game.

Transport Methods. Aircraft have been the most effective method of transportation for successful brown bear hunters in Unit 11 (Table 4). In RY12, hunter access by boat in Unit 11 was the second most successful means of transportation, accounting for 20% of the bears harvested. However, in RY13 no bears were taken using boats. Use of ground transportation in Unit 11 is very restricted; the only access points are along the Nabesna and McCarthy roads. In addition, some of the most popular trails have been closed to off-road vehicles by the National Park Service (NPS) due to negative environmental impacts.

#### *Other Mortality*

No bears were reported taken in defense of life or property (DLP) during this reporting period. Although much of the unit is remote, most problem bears are killed near home-sites and cabins along the Nabesna and McCarthy roads. More bears are likely killed each year than are reported because of the work involved with salvaging and preserving the hides and skulls of bears taken DLP and the remote nature of Unit 11 communities. By liberalizing hunting regulations, such as allowing residents to take bears without big game tags as well as the opportunity to take 1 bear per year versus 1 bear every 4 years, bears that ordinarily would be taken under DLP are more likely to be taken under general hunting regulations.

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

There are few cabins or home-sites in this remote unit away from the road system. Future settlement will be limited because much of the land is included in Wrangell-St. Elias National Park or has been conveyed to the local Native corporation, Ahtna Inc. Minimal private inholdings and NPS facilities are the only sources of development, and are concentrated along the Nabesna and McCarthy roads. The number of people living in and visiting McCarthy has increased appreciably in recent years, and as a result, bear problems have become more frequent. This increase in human-bear conflicts could result in more DLP-killed bears. However, NPS has acknowledged the increased potential for conflict and has developed a program to minimize incidents. Overall, Unit 11 is considered good brown bear habitat because of the variety of vegetation types, large tracts of undeveloped land, and the presence of ungulates and numerous salmon streams throughout the unit.

### **CONCLUSIONS AND RECOMMENDATIONS**

The Unit 11 brown bear harvest averaged 17 bears over the last 2 years, down from 22 bears during the last reporting period. The harvest density continues to be very low in Unit 11, with only 1 bear per 1,000 km<sup>2</sup> of available habitat (area <4,000 ft) taken during RY11, compared to 3 bears per 1,000 km<sup>2</sup> in Unit 13. This corresponds to a single bear taken in Unit 11 per 386 square miles of available habitat. Harvested bears continue to be mostly male (60% during this reporting period), and large old bears are commonly taken in this unit.

Brown bears are considered abundant in Unit 11. Frequent sightings of females with cubs suggest good productivity. Studies in Unit 13, which is adjacent to Unit 11, suggest the Copper River basin has good productivity rates for interior brown bear populations. The coastal influence in southern Unit 11 also provides additional resources to bears in this area. Given the low yearly harvests and the large amount of habitat that serves as refugia due to NPS regulations, hunting likely has no influence on brown bear numbers, composition, or productivity trends in the unit.

Given the minimal impact current harvests have on this brown bear population, providing the maximum opportunity to take bears in this unit should continue. Unless land management and access changes dramatically in Unit 11, a management objective of providing the maximum opportunity to hunt brown bears reflects a realistic and biologically sound objective for this unit. The current population is considered healthy, and bears are common across the entire unit. No changes in bag limits or season dates are necessary this time.

### REFERENCE CITED

Jenkins, K. J., and N. L. Barten. 2005. Demography and decline of the Mentasta caribou herd in Alaska. *Canadian Journal of Zoology* 83(9):1174–1188. doi:10.1139/z05-111

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Table 1. Unit 11 brown bear harvest, Southcentral Alaska, regulatory years<sup>a</sup> 2009–2013.

Regulatory year	Hunter kill						Nonhunting kill <sup>b</sup>			Total kill			
	M	(%)	F	(%)	Unk	Total	M	F	Unk	M	F	Unk	Total
<i>2009</i>													
Fall 2009	16	(70)	7	(30)	0	23	0	0	0	16	7	0	23
Spring 2010	3	(100)	0	(0)	0	3	0	0	0	3	0	0	3
Total	19	(73)	7	(27)	0	26	0	0	0	19	7	0	26
<i>2010</i>													
Fall 2010	9	(64)	5	(36)	0	14	0	0	0	9	5	0	14
Spring 2011	1	(25)	3	(75)	0	4	0	0	0	1	3	0	4
Total	10	(56)	8	(44)	0	18	0	0	0	10	8	0	18
<i>2011</i>													
Fall 2011	9	(82)	2	(18)	0	11	0	0	0	9	2	0	11
Spring 2012	2	(50)	2	(50)	0	4	0	0	0	2	2	0	4
Total	11	(73)	4	(27)	0	15	0	0	0	11	4	0	15
<i>2012</i>													
Fall 2012	10	(59)	7	(41)	0	17	0	0	0	10	7	0	17
Spring 2013	2	(67)	1	(33)	0	3	0	0	0	2	1	0	3
Total	12	(60)	8	(40)	0	20	0	0	0	12	8	0	20
<i>2013</i>													
Fall 2013	9	(60)	6	(40)	0	15	0	0	0	9	6	0	15
Spring 2014	0	(0)	0	(0)	0	0	0	0	0	0	0	0	0
Total	9	(60)	6	(40)	0	15	0	0	0	9	6	0	15

<sup>a</sup> Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 2009 = 1 July 2009–30 June 2010.

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

Table 2. Unit 11 brown bear successful hunter residency, Southcentral Alaska, regulatory years<sup>a</sup> 2009–2013.

Regulatory year	Local <sup>b</sup>		Nonlocal		Nonresident		Successful hunters
	resident	(%)	resident	(%)		(%)	
2009	6	(23)	9	(35)	11	(42)	26
2010	2	(11)	4	(22)	12	(67)	18
2011	4	(27)	1	(7)	10	(67)	15
2012	4	(20)	7	(35)	9	(45)	20
2013	3	(20)	6	(40)	6	(40)	15

<sup>a</sup> Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 2009 = 1 July 2009–30 June 2010.

<sup>b</sup> Local means residents of Unit 11 and Unit 13.

Table 3. Unit 11 brown bear harvest chronology percent by month, Southcentral Alaska, regulatory years<sup>a</sup> 2009–2013.

Regulatory year	Harvest chronology percent by month							<i>n</i>
	Aug	Sep	Oct	Nov	Apr	May	Jun	
2009	12	65	12			8	4	26
2010	22	39	17			6	17	18
2011	20	47	7			7	20	15
2012	20	55	10	0	10	0	5	20
2013	27	60	13	0	0	0	0	15

<sup>a</sup> Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 2009 = 1 July 2009–30 June 2010.

Table 4. Unit 11 brown bear harvest percent by transport method, Southcentral Alaska, regulatory years<sup>a</sup> 2009–2013.

Regulatory year	Harvest percent by transport method									<i>n</i>
	Airplane	Horse	Boat	3- or 4-wheeler	Snowmachine	ORV	Highway vehicle	Walking	Unk	
2009	38	12	23	8	0	0	4	15	0	26
2010	50	0	22	6	0	6	11	6	0	18
2011	47	20	13	7	0	0	13	0	0	15
2012	40	5	20	10	5	0	15	5	0	20
2013	60	0	0	7	0	7	13	13	0	15

<sup>a</sup> Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 2009 = 1 July 2009–30 June 2010.