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CHAPTER 5: BROWN BEAR MANAGEMENT REPORT

From: 1 July 2012
To: 30 June 2014

LOCATION

GAME MANAGEMENT UNIT: 6 (10,140 mi^2)

GEOGRAPHIC DESCRIPTION: Prince William Sound and North Gulf Coast

BACKGROUND

Brown bears inhabit most of Unit 6, with the exception of the islands and mainland of western Unit 6D and Middleton Island in the Gulf of Alaska. Brown bears are common on the mainland east of Columbia Glacier to Icy Bay and on Hinchinbrook, Montague, Hawkins, and Kayak islands. Distribution in 6D appears unchanged from that observed by Heller (1910). This distribution is largely influenced by the presence of salmon rich rivers and streams. The western portions of Unit 6D are dominated by rugged mountains and small streams that have variable wild salmon runs due to severe "wash-out" events.

As in other parts of the state, brown bears consume a wide variety of foods, including salmon, berries, grasses, sedges, cow parsnip, carrion, and roots. Bears undoubtedly prey upon Sitka black-tailed deer, which are an introduced species to Prince William Sound (Unit 6D.) However, this is believed to be only an opportunistic occurrence. Moose were introduced during 1949–1958 to the Copper River Delta and by the mid-1970s, had expanded east to Icy Bay (Paul 2009). This may have provided an additional food source for brown bears and may have influenced their numbers in Units 6A, 6B, and 6C.

Brown bear numbers may have declined on Montague Island by the mid-1980s, based on anecdotal reports. These changes may have been related to years of high harvest between regulatory years RY62 and RY82. It is also important to note, however, that the landscape of Montague Island was substantially changed by the 1964 Good Friday Earthquake, which raised portions of the island by as much as 34 feet and dramatically altered salmon habitat. Changes were observed in both abundance and distribution, with some areas experiencing extirpations of subpopulations of pink and chum salmon (Spies 2006.) Additionally, logging occurred in the 1960s and 1970s and may have impacted bear populations. The fall hunting season on Montague was closed in RY89 and the spring season closed in RY93. By the early 2000s track and den indices had improved (Table 1) and anecdotal reports suggested that the population had rebounded. The Board of Game reopened the Montague fall bear season (RB100) in RY01 in response to an increasing population and many complaints of bears pursuing deer hunters and associated gut piles in popular deer hunting areas. In RY09, a spring hunt (RB101) began on Montague.

Harvest is monitored by mandatory sealing that began in 1961. Total annual harvest increased substantially in the late 1980s and continued at a high level through RY92. Average annual kill RY62–RY81 was 33 bears (σ = 9.3). However, harvest began to increase, and RY82–RY91 the average yearly harvest was 47 bears (σ = 11.8). Between RY92 and RY97, the season dates in Unit 6D were modified 3 times to adjust harvest levels. The average annual harvest RY92–RY01 was stable at 42 bears (σ = 12.1). From RY02 to RY11 harvests increased again with an average of 64 bears taken annually (σ = 7.9). All subunits showed increases during this time, but Unit 6A showed the largest increase. The increase in Unit 6A appears to be related to the increased activity by one guide. Fish runs have been consistent (N. Keiser, Assistant Area Biologist, Commercial Fisheries, ADF&G Yakutat, personal communication) and do not appear responsible for the increase in the bear population.

The Board of Game changed the bag limit for brown bears in Units 6A, 6B, and 6C from 1 bear every 4 years to 1 bear per year, beginning in RY97 for resident hunters and in RY01 for all hunters. Harvest was believed to be conservative and bears were thought to be potentially preying upon moose calves to a limiting degree (Crowley, 2001). In-unit sealing and abbreviated reporting period requirements were discontinued in RY05.

Based on habitat and fish abundance, densities for Unit 6 probably compare favorably to Miller's (1993) estimates from elsewhere in southern coastal Alaska. Hinchinbrook Island is likely within a high-density range (>175 bears/1,000 km^2) that included Kodiak Island, much of the Alaska Peninsula, and parts of Southeast Alaska. Montague Island is more likely to have a medium density (40–175 bears/1,000 km^2) consistent with contiguous coastal habitat to the southeast and with the northern Alaska Peninsula.

Logging activity may have reduced brown bear abundance and distribution in parts of Unit 6. Old-growth stands are important habitat for coastal bears (Schoen 1990; Schoen and Beier 1990; Schoen et al. 1986). Logging also provides access roads, increases human activity, and stimulates developments that increase bear-human interactions and lead to increased brown bear mortality (McLellan and Shackleton 1988; Smith and Van Daele 1989).

Extensive clearcutting of old-growth timber on private and state land in Unit 6A occurred between Icy Bay and Cape Yakataga, and continued north in the Yakataga and Duktoth river drainages between 1969 and 2008. In total, around 20,000 acres were logged, resulting in a 40 mile long clearcut. The last logging in the area occurred in 2007; since then, additional logging has not been considered economical. Logging may have increased hunter access to bears, or increased the displacement or conspicuousness of bears, but it is not known if the increased harvest in Unit 6A is related to logging.

The Exxon Valdez Oil Spill (EVOS) Trustee Council acquired or protected most lands scheduled for timber harvest in Unit 6D, thus removing the threat of continued, large-scale habitat loss in Prince William Sound (PWS).

MANAGEMENT DIRECTION

MANAGEMENT OBJECTIVES

- Maintain a brown bear population capable of sustaining a minimum annual harvest of 35 bears, to include a minimum of 60% males and a minimum average skull size of 23 inches.

METHODS

Information was gathered regarding the population status of brown bears from sealing certificates, permit reports, conversations with stakeholders, and opportunistic observations of brown bears during other wildlife surveys. Harvest data are summarized by regulatory year (RY), which begins 1 July and ends 30 June (e.g., RY12 = 1 July 2012–30 June 2013).

Griese (1991) established baseline estimates of brown bear numbers and densities in Unit 6. Bear habitat was defined as nonglaciated land below 3,000 feet in elevation, quantified by harvest areas (major drainages or other gross geographical characteristics), and summed for each unit. Griese (1991) estimated bear density and numbers within harvest areas using track and den surveys and local knowledge. In recent years track and den surveys were conducted on Hinchinbrook and Montague islands only. Surveys were timed with the peak emergence of brown bears from dens, which varied annually with snow conditions. An unknown proportion of bears wander the alpine regions of the islands for several days after emergence from dens, leaving easily observable tracks in the snow. Tracks, dens, and bears above 1,000 feet in elevation were tallied and linear density estimated as [(tracks/2)+dens+bears]/miles searched. Observations per hour were also calculated as an additional index for comparison.

Hides and skulls were sealed for all brown bears in the reported harvest. Harvest included bears taken by licensed hunters and bears killed in defense of life or property. Staff checked each hide for sex identifiers and took skull measurements for total length and zygomatic width. We recorded harvest date, days hunted, transportation used, and location of harvest within Uniform Coding Units (UCUs). UCUs are small, defined areas within Unit 6 representing watersheds, islands, or island groups. Illegal kills are included when known. Tooth samples are collected to determine age. Unsuccessful hunters were not required to report except in the Montague Island registration hunts.

RESULTS AND DISCUSSION

POPULATION STATUS AND TREND

Based on linear density indices, the populations of Hinchinbrook Island and Montague Island appear to have improved from the late 80s to the 2000s and have probably remained stable since that time (Table 1). Both islands are assumed to have populations of about 100 bears. Observations in some years appear to be biased by an abnormal number of tracks (Hinchinbrook RY08 and Montague RY07). While track counts are estimated conservatively, they are likely heavily influenced by snow age and the distribution of snow coverage. We managed Montague Island bears under the assumption that they were sensitive to overharvest because the population was small and relatively isolated from the mainland. Inbreeding in small, isolated populations can reduce genetic variability and may increase the danger of extinction (Mills and Smouse 1994, Randi et al. 1994). However, bears on Montague Island are likely not genetically isolated from other bears. During the 1980s and 1990s, 6–8 nuisance brown bears were transported from Valdez and Cordova and released on Montague Island. In addition, empirical and anecdotal evidence suggests that bears occasionally swim between Hinchinbrook and Montague islands, a distance of at least 7 miles in open seas with strong tidal currents.

MORTALITY

Harvest

Season and Bag Limit.

The following regulations were in effect during this period:

RY12 and RY13 Unit and Bag Limits	Resident Open Season	Nonresident Open Season
Unit 6A, 6B, and 6C Residents and Nonresidents: One bear every regulatory year	1 Sep–10 Jun (General hunt)	1 Sep–10 Jun (General hunt)
Unit 6D Montague Island Residents and Nonresidents: One bear every four regulatory years by registration permit	15 Oct–31 Dec (RB100) 1 Apr–25 May (RB101)	15 Oct–31 Dec (RB100) 1 Apr–25 May (RB101)
Unit 6D Remainder Residents and Nonresidents: One bear every four regulatory years	15 Oct–25 May (General Hunt)	15 Oct–25 May (General Hunt)

Board of Game Actions and Emergency Orders. No regulatory changes were made during this reporting period. No emergency orders were released.

Hunter Harvest. Total harvest in Unit 6 during RY12 and RY13 was considerably lower, 43 bears and 48 bears, respectively, than the previous 10-year average of 64 bears (RY02–RY11, σ=8, Table 2). However, harvest in the last decade was abnormally high. The harvest of the last 2 years is similar to the previous norm (average harvest from RY92–RY00 was 42 bears, σ=12).

Harvest levels varied by subunit, and varied in how they compared to the previous 10-year harvest average (RY02–RY11). Some subunit harvests were similar to the 10-year average. Others were lower, but still within a "normal" level of harvest (Table 2). In Unit 6A, annual harvests in RY12 and RY13 (15 bears and 19 bears, respectively) were lower than the RY02–RY11 average of 23 bears but higher RY92–RY01 average of 14 bears. Harvests in RY11 and RY12 in Unit 6B of 10 bears and 7 bears, respectively, were comparable to the RY02–RY11 average of 9 bears. Harvest in Unit 6C was also comparable, with 5 bears and 8 bears, respectively, compared to the previous 10-year average of 7 bears. Harvest in Unit 6D was considerably less in RY12 and RY13, with 13 bears and 14 bears taken, respectively, compared to averages of 24 bears RY02–RY11, and 18 bears RY92–RY01.

In general, more bears are harvested in Unit 6D than in any other subunit. During RY12 and RY13, however, more bears were harvested in Unit 6A (Table 2). Unit 6A harvest may be more stable due to the high proportion of participants that are guided; Unit 6D has more participation by nonlocal Alaskans who hunt without a guide. Within Unit 6D, the mainland and eastern

portion of PWS (not including the Valdez Arm) typically experience the highest bear harvest. Hinchinbrook Island experiences the second highest level of harvest.

Harvest of females can vary considerably from year to year and between subunits (Table 2). The proportion of females in the harvest in all of Unit 6 in RY12 and RY13 was 31% and 30%, respectively, slightly less than the RY02–RY11 average of 35% and within the management objective. Units 6B and 6C are more likely to have proportionately high take of females; however, the overall harvest in each of these areas is low. In Unit 6C for example, the average annual proportion of females in the harvest RY02–RY11 was 46% but the average annual harvest was 7 bears.

Considering 20 years of data (RY94–RY13) and all areas, annual mean skull size among harvested males has shown an increasing trend (R^2 = 0.63). Skull size in Unit 6A has remained relatively constant but all other subareas have increased. Annual mean skull size was commonly 22–23 inches in the late 1980s and early 1990s. The mean male skull size was 24.0 in RY12 and 24.6 inches in RY13 (Table 3) and is within objectives. Female annual mean skull size has remained very stable, varying little from 21 inches.

The average age of harvested males has increased (R^2 = 0.75), based on analysis of the last 20 years of data (RY94–RY13). Average age of males was around 6 years and is now 9 years. Average age of females was relatively stable during the reporting period (Table 3). Average female age fluctuates regularly between 6 and 7 years. In Units 6A and 6B, the average age of male bears is less than 10 years. However, older bears have been taken in recent years in Units 6C and 6D. In Unit 6C, this is probably a result of small sample sizes but in Unit 6D it more likely means older bears have been taken in the last 5 years.

Permit Hunts. The number of permits issued for the fall bear hunt on Montague Island (RB100) grew to a peak of 108 permits in RY07 and has since declined (Table 4). Many of these permits are acquired by deer hunters that just want the option of legally harvesting a bear if they have any trouble while deer hunting; they are not targeting bear. This is demonstrated by the 49% of hunters that reported that they did not hunt bears and the correspondingly low success rate (4%). The 10-year average fall harvest RY02–RY11was 2 bears.

In contrast, hunters acquiring a permit to hunt on Montague in the spring hunt (RB101) are likely making a much more concerted effort to hunt bears. Since the hunt's inception in RY09, an average 32 permits have been issued annually. Though 53% of permit holders reported they did not hunt (Table 4), 29% of those who did hunt succeeded in harvesting a bear (Table 4). Average annual harvest (RY09-RY13) was approximately 5 bears, which is the annual maximum allowable harvest (MAH). The combined harvest between fall and spring hunts since RY09 has exceeded the maximum allowable harvest an average of 3 out of every 5 years.

Hunter Residency. Nonresidents take most of the brown bears harvested in Unit 6. During this reporting period, they took 71% and 76% of the harvest in RY12 and RY13, respectively (Table 5). Nearly all who hunt in Unit 6A are nonresidents. Local residents take a small percentage of the harvest in Unit 6 and hunt primarily in Unit 6B and Unit 6C. Nonlocal Alaska residents most commonly pursue bears in Unit 6D. Harvest by nonlocal Alaska residents was down considerably in RY13 in Unit 6D.

Harvest Chronology. From a unitwide perspective, harvest is mostly evenly distributed between the spring and the fall. However, seasonal harvest varies among subunits. Most harvest in Unit 6A takes place in the fall. Conversely, most harvest in Unit 6D takes place in the spring. In Units 6B and 6C harvest is evenly distributed between the fall and spring. Peak brown bear harvests typically occurred during September and May during the reporting period (Table 6). Uses of the later season dates made possible by extending the season may be becoming more popular. In RY12 early June made up 7% of the harvest and in RY13 it made up 11% of the harvest.

Transport Methods. Airplanes and boats were the most important methods of transportation overall in Unit 6 (Table 7). Typically, Unit 6A is almost entirely accessed by plane. In Unit 6B, airplanes are most commonly used but boats and highway vehicles are also popular means. In Unit 6C, highway vehicles and boats are predominant because of road and boat launch access. In Unit 6D, boats and to a lesser degree, aircraft are important because of the sheltered waters of PWS. These patterns were consistent throughout this reporting period as well as the last 5 years (Table 7).

Other Mortality

There were 3 bears killed in defense of life or property during the reporting period, all in Unit 6C (Table 2). Two of these bears were a male and female pair of 2-year-olds that became habituated to human food and waste in the Eyak River subdivision. One bear was killed at the end of RY12 and the other in the beginning of RY13. A third bear (a female) was killed in defense of life or property near mile 2 of the Copper River Highway. The number of bears killed illegally or wounded and not retrieved is unknown.

HABITAT

Assessment

There were no habitat assessment activities in Unit 6 during the reporting period.

Enhancement

There were no habitat enhancement activities in Unit 6 during the reporting period.

NONREGULATORY MANAGEMENT PROBLEMS/NEEDS

Fish waste related to sport fishing is consistently a challenge to preventing problems from food habituated bears. Additional measures should be taken to educate anglers on proper conduct.

CONCLUSIONS AND RECOMMENDATIONS

Management objectives should be adjusted to be more measurable and to guide management action. We recommend the following management objectives:

- Maintain seasons and bag limits that would provide for a unitwide 3-year average harvest of 35–65 bears considered on the calendar year.

- Manage for a 3-year average of less than 40% female bears.

Brown bear population numbers were probably stable during the reporting period. New survey techniques should be assessed for estimating the population and determining the maximum

acceptable level of harvest. In the meantime, brown bear track and den surveys should continue on Montague and Hinchinbrook islands as an anecdotal measure of abundance, distribution, and snow conditions.

Changes in permitting for guided hunts on private land will probably influence the harvest on Montague Island and make it more likely that the MAH will be reached. Harvest on Montague Island should be held to levels within the MAH at least on a 3 year rolling average.

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While this unit report was actually published in 2016, it is part of the set of 2015 unit species management reports, so we suggest citing the report as a 2015 report to maintain its relationship to the other 2015 unit reports.

Product names used in this publication are included for completeness but do not constitute product endorsement.

Table 1. Brown bear population indices of linear density and previous year's harvest in Unit 6D.

Area	Regulatory year[a]	Observations			Miles searched	Linear density index [(t/2)+d+b]/mi	Obs/hr
		tracks	dens	bears			
Hinchinbrook Island	RY89	34	8	0	100	0.25	38.1
	RY92	26	9	0	100	0.22	7.9
	RY03	124	9	0	148	0.48	25.2
	RY04	64	6	3	100	0.41	36.8
	RY05	94	12	0	148	0.40	44.2
	RY07	95	16	9	148	0.49	25.4
	RY08	227	26	2	148	0.96	37.8
	RY11	99	14	7	148	0.48	22.5
Montague Island	RY89	10	4	0	165	0.05	9
	RY00	58	3	0	210	0.15	18
	RY01	80	3	0	210	0.21	23
	RY02	134	1	0	210	0.32	27
	RY03	74	7	0	163	0.27	31
	RY04	154	2	1	210	0.38	38
	RY05	166	2	3	210	0.42	38
	RY07	221	7	10	210	0.61	26
	RY08	98	7	4	210	0.29	18
	RY09	163	5	1	210	0.42	28

[a] Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 2012 = 1 July 2012–30 June 2013.

Table 2. Unit 6 brown bear harvest, regulatory years[a] (RY) 2009–2013.

Area	Regulatory year	Fall harvest				Spring harvest				Total hunting harvest					Reported nonhunting				Total reported kill			
		M	F	Unk	Total	M	F	Unk	Total	M	% M	F	Unk	Total	M	F	Unk	Total	M	F	Unk	Total
6A	RY09	9	6	0	15	9	2	0	11	18	69	8	0	26	0	0	1	1	18	8	1	27
	RY10	8	10	0	18	3	0	0	3	11	52	10	0	21	0	0	0	0	11	10	0	21
	RY11	9	4	0	13	3	1	0	4	12	71	5	0	17	0	2	0	2	12	7	0	19
	RY12	7	2	0	9	3	3	0	6	10	67	5	0	15	0	0	0	0	10	5	0	15
	RY13	8	3	0	11	6	2	0	8	14	74	5	0	19	0	0	0	0	14	5	0	19
6B	RY09	0	5	0	5	4	0	0	4	4	44	5	0	9	0	0	0	0	4	5	0	9
	RY10	1	4	0	5	3	2	0	5	4	40	6	0	10	0	0	0	0	4	6	0	10
	RY11	0	3	0	3	3	2	0	5	3	38	5	0	8	0	0	0	0	3	5	0	8
	RY12	2	2	0	4	5	1	0	6	7	70	3	0	10	0	0	0	0	7	3	0	10
	RY13	0	3	0	3	4	0	0	4	4	57	3	0	7	0	0	0	0	4	3	0	7
6C	RY09	4	3	0	7	3	0	0	3	7	70	3	0	10	0	0	0	0	7	3	0	10
	RY10	2	4	0	6	2	1	0	3	4	44	5	0	9	0	0	0	0	4	5	0	9
	RY11	1	3	0	4	2	0	0	2	3	50	3	0	6	0	0	0	0	3	3	0	6
	RY12	1	1	0	2	2	0	0	2	3	75	1	0	4	1	0	0	1	4	1	0	5
	RY13	1	2	0	3	3	0	0	3	4	67	2	0	6	1	1	0	2	5	3	0	8
6D	RY09	1	1	0	2	18	4	0	22	19	79	5	0	24	3	3	0	6	22	8	0	30
	RY10	2	2	0	4	15	6	0	21	17	68	8	0	25	0	0	0	0	17	8	0	25
	RY11	4	4	0	8	17	7	0	24	21	66	11	0	32	0	0	0	0	21	11	0	32
	RY12	3	0	0	3	6	4	0	10	9	69	4	0	13	0	0	0	0	9	4	0	13
	RY13	1	2	0	3	9	2	0	11	10	71	4	0	14	0	0	0	0	10	4	0	14
Total	RY09	14	15	0	29	34	6	0	40	48	70	21	0	69	3	3	1	7	51	24	1	76
	RY10	13	20	0	33	23	9	0	32	36	55	29	0	65	0	0	0	0	36	29	0	65
	RY11	14	14	0	28	25	10	0	35	39	62	24	0	63	0	2	0	2	39	26	0	65
	RY12	13	5	0	18	16	8	0	24	29	69	13	0	42	1	0	0	1	30	13	0	43
	RY13	10	10	0	20	22	4	0	26	32	70	14	0	46	1	1	0	2	33	15	0	48

[a] Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 2012 = 1 July 2012–30 June 2013.

Table 3. Unit 6 brown bear mean skull size in inches and age, regulatory years[a] (RY) 2009–2013.

		Males				Females			
Unit	Year	Skull size	*n*	Age[b]	*n*	Skull size	*n*	Age	*n*
6A	RY09	23.9	18	7	12	21.8	8	5	4
	RY10	23.6	11	8	11	21.8	10	9	10
	RY11	25.2	11	9	6	21.0	7	10	4
	RY12	24.0	10	9	9	22.3	5	8	5
	RY13	23.6	14			22.0	4		
6B	RY09	25.7	4	7	4	21.2	5	6	2
	RY10	26.2	4	11	4	21.2	6	7	6
	RY11	23.7	3	4	1	21.1	5	7	2
	RY12	23.8	7	7	7	21.6	3	8	3
	RY13	27.5	4			21.6	3		
6C	RY09	24.8	7	10	7	20.9	3	2	1
	RY10	21.6	3	6	3	21.6	5	4	4
	RY11	26.7	3	17	1	18.3	3	2	2
	RY12	23.7	4	8	4	20.6	1		
	RY13	25.8	5			18.5	3		
6D	RY09	24.5	20	10	18	21.0	8	7	7
	RY10	25.3	17	11	17	21.4	8	9	5
	RY11	25.0	21	13	5	21.0	10	5	4
	RY12	24.3	9	11	8	19.9	4	4	3
	RY13	24.1	10			21.7	4		
Unit 6 Average	RY09	24.5	49	9	41	21.3	24	6	14
	RY10	24.6	35	10	35	21.6	29	8	25
	RY11	25.1	38	11	13	20.7	25	6	12
	RY12	24.0	35	9	28	21.3	13	7	11
	RY13	24.6	33	6	10	21.1	14	8	9

[a] Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 2012 = 1 July 2012–30 June 2013.

[b] Tooth ages for RY13 are not yet available.

Table 4. Unit 6 Montague Island brown bear permit hunt participation and harvest, regulatory years[a] (RY) 2009–2013.

Hunt	Regulatory year	Permits	% Did not hunt	% Hunted successful	Males	%	Females	%	Unk	Total harvest	Quota
Fall	RY01	58	50	14	3	75	1	25	0	4	5
RB100	RY02	37	30	8	0	0	2	100	0	2	5
	RY03	75	25	0	0		0		0	0	5
	RY04	77	30	9	3	60	2	40	0	5	5
	RY05	91	32	2	1	100	0	0	0	1	5
	RY06	81	53	5	2	100	0	0	0	2	5
	RY07	108	59	2	0	0	1	100	0	1	5
	RY08	75	41	9	2	50	2	50	0	4	5
	RY09	92	47	0	0		0		0	0	
	RY10	92	58	5	2	100	0	0	0	2	
	RY11	81	62	3	0	0	1	100	0	1	
	RY12	86	47	2	1	100	0	0	0	1	
	RY13	72	58	0	0		0		0	0	
Spring	RY09	33	55	40	5	83	1	17	0	6	
RB101	RY10	30	43	35	4	67	2	33	0	6	
	RY11	30	37	42	8	100	0	0	0	8	
	RY12	39	59	13	2	100	0	0	0	2	
	RY13	29	76	14	0	0	1	100	0	1	
Combine	RY09	125	49	9	5	83	1	17	0	6	5
	RY10	122	54	14	6	75	2	25	0	8	5
	RY11	111	55	18	8	89	1	11	0	9	5
	RY12	125	50	5	3	100	0	0	0	3	5
	RY13	101	63	3	0	0	1	100	0	1	5

[a] Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 2012 = 1 July 2012–30 June 2013.

Table 5. Unit 6 brown bear successful hunter residency, regulatory years[a] (RY) 2009–2013.

Unit	Regulatory year	Local[b] resident	(%)	Nonlocal resident	(%)	Nonresident	(%)	Residency unknown	Total successful hunters
6A	RY09	2	(8)	4	(15)	20	(77)	0	26
	RY10	0	(0)	1	(5)	20	(95)	0	21
	RY11	0	(0)	0	(0)	17	(100)	0	17
	RY12	0	(0)	0	(0)	15	(100)	0	15
	RY13	1	(5)	2	(11)	16	(84)	0	19
6B	RY09	3	(33)	2	(22)	4	(44)	0	9
	RY10	3	(30)	1	(10)	6	(60)	0	10
	RY11	0	(0)	2	(25)	6	(75)	0	8
	RY12	3	(30)	1	(10)	6	(60)	0	10
	RY13	0	(0)	2	(29)	5	(71)	0	7
6C	RY09	4	(40)	3	(30)	3	(30)	0	10
	RY10	4	(44)	3	(33)	2	(22)	0	9
	RY11	5	(83)	1	(17)	0	(0)	0	6
	RY12	1	(25)	1	(25)	2	(50)	0	4
	RY13	3	(50)	1	(17)	2	(33)	0	6
6D	RY09	2	(8)	7	(29)	15	(63)	0	24
	RY10	0	(0)	4	(16)	21	(84)	0	25
	RY11	4	(13)	13	(41)	15	(47)	0	32
	RY12	0	(0)	6	(46)	7	(54)	0	13
	RY13	1	(7)	1	(7)	12	(86)	0	14
Unit 6 Total	RY09	11	(16)	16	(23)	42	(61)	0	69
	RY10	7	(11)	9	(14)	49	(75)	0	65
	RY11	9	(14)	16	(25)	38	(60)	0	63
	RY12	4	(10)	8	(19)	30	(71)	0	42
	RY13	5	(11)	6	(13)	35	(76)	0	46

[a] Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 2012 = 1 July 2012–30 June 2013.
[b] Local resident refers to residents of Unit 6.

Table 6. Unit 6 brown bear harvest chronology by percent, regulatory years[a] (RY) 2009–2013.

		Harvest periods											
	Regulatory	September		October		November		April		May		June	
Unit	year	1–15	16–30	1–15	16–31	1–15	16–30	1–15	16–30	1–15	16–31	1–15	*n*
6A	RY09	(23)	(23)	(12)	(0)	(0)	(0)	(0)	(4)	(15)	(19)	(4)	26
	RY10	(38)	(43)	(5)	(0)	(0)	(0)	(0)	(0)	(10)	(0)	(5)	21
	RY11	(50)	(17)	(11)	(0)	(0)	(0)	(0)	(6)	(17)	(0)	(0)	18
	RY12	(27)	(20)	(13)	(0)	(0)	(0)	(0)	(7)	(0)	(27)	(7)	15
	RY13	(16)	(37)	(0)	(5)	(0)	(0)	(0)	(0)	(11)	(26)	(5)	19
6B	RY09	(22)	(11)	(22)	(0)	(0)	(0)	(0)	(11)	(22)	(11)	(0)	9
	RY10	(30)	(10)	(0)	(10)	(0)	(0)	(0)	(0)	(0)	(50)	(0)	10
	RY11	(25)	(13)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(63)	(0)	8
	RY12	(20)	(10)	(10)	(0)	(0)	(0)	(0)	(0)	(20)	(40)	(0)	10
	RY13	(14)	(29)	(0)	(0)	(0)	(0)	(0)	(0)	(14)	(14)	(29)	7
6C	RY09	(30)	(40)	(0)	(0)	(0)	(0)	(0)	(10)	(0)	(10)	(10)	10
	RY10	(44)	(11)	(11)	(0)	(0)	(0)	(0)	(0)	(0)	(22)	(11)	9
	RY11	(0)	(50)	(0)	(0)	(17)	(0)	(0)	(17)	(0)	(17)	(0)	6
	RY12	(50)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(50)	4
	RY13	(17)	(33)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(17)	(33)	6
6D	RY09	(0)	(0)	(7)	(14)	(0)	(0)	(0)	(4)	(25)	(46)	(4)	28
	RY10	(0)	(0)	(0)	(12)	(0)	(4)	(0)	(4)	(24)	(56)	(0)	25
	RY11	(0)	(0)	(3)	(13)	(6)	(3)	(0)	(3)	(31)	(41)	(0)	32
	RY12	(0)	(0)	(8)	(15)	(0)	(0)	(0)	(0)	(23)	(54)	(0)	13
	RY13	(0)	(0)	(0)	(14)	(7)	(0)	(0)	(7)	(21)	(50)	(0)	14
Unit 6	RY09	(15)	(15)	(10)	(5)	(0)	(0)	(0)	(5)	(18)	(27)	(4)	73
Total	RY10	(23)	(17)	(3)	(6)	(0)	(2)	(0)	(2)	(12)	(32)	(3)	65
	RY11	(17)	(11)	(5)	(6)	(5)	(2)	(0)	(5)	(20)	(30)	(0)	64
	RY12	(19)	(10)	(10)	(5)	(0)	(0)	(0)	(2)	(12)	(36)	(7)	42
	RY13	(11)	(24)	(0)	(7)	(2)	(0)	(0)	(2)	(13)	(30)	(11)	46

[a] Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 2012 = 1 July 2012–30 June 2013.

Table 7. Unit 6 brown bear harvest percent by transport method, regulatory years[a] (RY) 2009–2013.

		Percent of harvest							
Unit	Regulatory year	Airplane	Boat	Airboat	3- or 4-wheeler	Snowmachine	ORV	Highway vehicle	*n*
6A	RY09	73	19	0	8	0	0	0	26
	RY10	52	5	0	33	0	10	0	21
	RY11	71	0	0	29	0	0	0	17
	RY12	73	0	0	27	0	0	0	15
	RY13	84	5	0	11	0	0	0	19
6B	RY09	33	22	0	0	22	0	11	8
	RY10	50	10	10	10	0	0	20	10
	RY11	88	13	0	0	0	0	0	8
	RY12	50	10	0	0	0	0	30	9
	RY13	86	14	0	0	0	0	0	7
6C	RY09	0	33	0	11	11	0	44	9
	RY10	11	22	0	11	0	0	44	8
	RY11	17	17	0	0	17	0	50	6
	RY12	0	50	0	25	0	0	25	4
	RY13	0	67	0	17	0	0	17	6
6D	RY09	21	79	0	0	0	0	0	24
	RY10	28	72	0	0	0	0	0	25
	RY11	16	81	0	0	0	0	3	32
	RY12	15	85	0	0	0	0	0	13
	RY13	29	64	0	0	0	0	7	14
Total	RY09	40	43	0	4	4	0	7	67
	RY10	37	34	2	14	0	3	9	64
	RY11	40	44	0	8	2	0	6	63
	RY12	43	33	0	12	0	0	10	41
	RY13	57	33	0	7	0	0	4	46

[a] Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 2012 = 1 July 2012–30 June 2013.