

Brown Bear Management Report and Plan, Game Management Unit 6:

Report Period 1 July 2019–30 June 2024, and
Plan Period 1 July 2024–30 June 2029

Charlotte Westing



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Species management reports and plans provide information about species that are hunted or trapped and management actions, goals, recommendations for those species, and plans for data collection. Detailed information is prepared for each species every 5 years by the area management biologist for Game Management Units in their areas, who also develops a plan for data collection and species management for the next 5 years. This type of report is not produced for species that are not managed for hunting or trapping or for areas where there is no current or anticipated activity. Unit reports are reviewed and approved for publication by regional management coordinators and are available to the public via the Alaska Department of Fish and Game's public website.

This species management report and plan was reviewed and approved for publication by Jeff Selinger, retired Management Coordinator for Region II of the Division of Wildlife Conservation.

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Purpose of this Report

This report provides a record of survey and inventory management activities for brown bear (*Ursus arctos*) in Game Management Unit 6 during the 5 regulatory years 2019–2023, along with plans for the next 5 regulatory years 2024–2028. A regulatory year (RY) begins on 1 July and ends on 30 June (e.g., RY19 = 1 July 2019–30 June 2020). This report is primarily produced to provide agency staff with data and analysis to help guide and record agency efforts. It is also made available to the public to inform them about wildlife management activities. The Alaska Department of Fish and Game’s (ADF&G, the department) Division of Wildlife Conservation (DWC, the division) publishes these reports on a 5-year cycle to document trends and describe potential changes in data collection activities for brown bear.

I. RY19–RY23 Management Report

Management Area

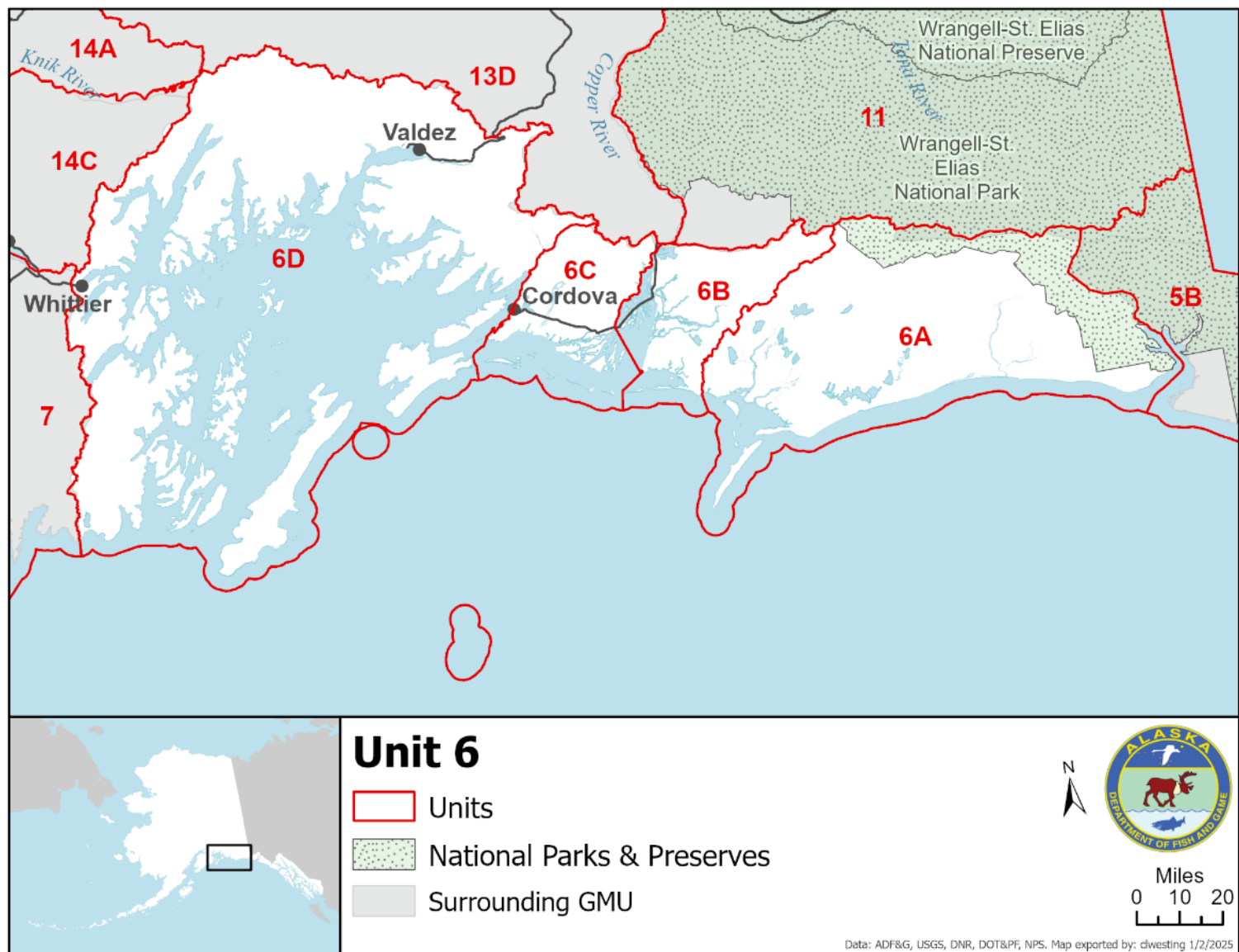
Unit 6 is approximately 10,140 mi² of land, including the area of Prince William Sound, the Copper River Delta, and the North Gulf Coast of Alaska. It is divided into 4 administrative units (Units 6A, 6B, 6C, and 6D; Fig. 1). The terrain includes rugged mountains, old-growth forest, coastal wetlands, and muskeg meadows.

Summary of Status, Trend, Management Activities, and History of Brown Bear in Unit 6

Brown bears inhabit most of Unit 6, except for the islands and the mainland of western Unit 6D, as well as 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. The distribution in Unit 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, with variable wild salmon runs due to severe “wash-out” events and are mostly incompatible with brown bear populations.

As in other parts of Alaska, brown bears consume a wide variety of foods, including salmon, berries, grasses, sedges, cow parsnip, carrion, and roots. Bears undoubtedly prey on Sitka black-tailed deer (*Odocoileus hemionus sitkensis*), which are an introduced species in Prince William Sound (Unit 6D); however, this is believed to be only an opportunistic occurrence. Moose were introduced to the Copper River Delta during 1949–1958 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 on Montague Island may have declined by the mid-1980s, based on anecdotal reports. These changes may have been related to years of high harvest between RY62 and RY82. However, it is also important to note 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 ft and dramatically altered salmon habitat. Changes were observed in both



Note: GMU stands for Game Management Unit.

Figure 1. Map of Game Management Unit 6 and its administrative units, Alaska.

abundance and distribution, with some areas experiencing extirpations of subpopulations of pink salmon (*Oncorhynchus gorbuscha*) and chum salmon (*O. keta*; Spies 2007). Additionally, logging in the 1960s and 1970s may have affected bear populations. The fall hunting season on Montague Island was closed in RY89, and the spring season closed in RY93. By the early 2000s, track and den indices had improved, 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 Island.

Harvest is monitored through mandatory sealing, which began in 1961. The total annual harvest increased substantially in the late 1980s. Average annual kill in RY69–RY88 was 35 bears ($SD \pm 12.1$).¹ In RY89–RY08, the average yearly harvest was 47 bears ($SD \pm 13.4$). Between RY92 and RY97, the season dates in Unit 6D were modified 3 times to adjust harvest levels, and from RY09 to RY18, harvest increased again, with an average of 52 bears taken annually ($SD \pm 10.5$). All units (Units 6A, 6B, 6C, and 6D) showed increases during this time, but Units 6A and 6D showed the largest increases. Harvest in those areas can be greatly influenced by the presence or absence of individual guides and by market forces that motivate them.

Beginning in RY97 for resident hunters and in RY01 for all hunters, 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. Harvest was believed to be conservative, and bears were thought to be potentially preying on 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 in Unit 6 probably compare favorably with Miller's (1993) estimates from elsewhere in southern coastal Alaska. Hinchinbrook Island likely falls within a high-density range (>175 bears/1,000 km²) similar to that of 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 km²), consistent with contiguous coastal habitat to the southeast and the northern Alaska Peninsula.

Logging activity may have reduced brown bear abundance and distribution in parts of Unit 6 (portions of Units 6A and 6D). Old-growth stands are important habitat for coastal bears (Schoen 1990, Schoen and Beier 1990, Schoen et al. 1987). Logging also provides access to roads, increases human activity, and stimulates development that increases bear-human interactions and leads to increased brown bear mortality (McLellan and Shackleton 1988, Smith and Van Daele 1990).

Extensive clearcutting of old-growth timber on private and state land in Unit 6A occurred between Icy Bay and Cape Yakataga and continued northward in the Yakataga and Duktoth river drainages between 1969 and 2008. In total, about 20,000 acres were logged, resulting in a 40-mile-long clear-cut. 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

¹ SD stands for standard deviation.

increased the displacement or conspicuousness of bears, but it is unknown whether the increased harvest in Unit 6A is related to logging.

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

Management Direction

EXISTING WILDLIFE MANAGEMENT PLANS

A formal plan for brown bear management in Unit 6 has not been developed.

GOALS

Manage brown bear populations to provide for sustained annual use by hunters and wildlife viewers.

CODIFIED OBJECTIVES

Amounts Reasonably Necessary for Subsistence Uses

Brown bears in Unit 6 have a negative customary and traditional use finding.

Intensive Management

Brown bears in Unit 6 have a negative intensive management finding.

MANAGEMENT OBJECTIVES

- Maintain seasons and bag limits that would provide for a unitwide 3-year average harvest of 35–65 bears, which will be considered within each calendar year.
- Manage for a 3-year average of less than 40% female bears.

MANAGEMENT ACTIVITIES

1. Population Status and Trend

ACTIVITY 1.1. Record observations of brown bears seen incidentally during other survey work and anecdotal reports from the public.

Data Needs

Incidental observations are insufficient to estimate the population or detect changes that would trigger management action. Statistical estimates of brown bears, derived from a sample-based estimator with a measure of precision, would be needed to detect changes in the population.

Methods

Global Positioning System (GPS) locations and characteristics are recorded for any brown bears observed during aerial survey flights. Anecdotal reports are recorded with the maximum level of available detail. Aerial surveys during RY19–RY23 were conducted only on Hinchinbrook Island due to budget limitations, competing survey priorities, and snow conditions. Surveys were timed to coincide 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. Dens, bear locations, and tracks are recorded.

Results and Discussion

The number of dens observed in the RY19 survey (11 dens) is consistent with the average across the 10 surveys flown on Hinchinbrook Island since 1989. Although no bears were observed, this is not uncommon in these surveys, as timing and snow conditions can affect observability.

Recommendations for Activity 1.1

Continue to collect anecdotal and incidental data on brown bears.

2. Mortality-Harvest Monitoring and Regulations

ACTIVITY 2.1. Monitor harvest through sealing records and effort from permit reports.

Data Needs

Harvest must be assessed to understand the potential impact on brown bear populations.

Methods

Harvest information was gathered from sealing certificates and permit reports. 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 measured skull total length and zygomatic width. Tooth samples were collected to determine age. We recorded the harvest date, days hunted, transportation used, and harvest location within uniform coding units, which are small, defined areas within Unit 6 that represent watersheds, islands, or island groups. Illegal kills were included when known. Unreported harvest could include wounding losses and bears taken by hunters who did not seal (i.e., unknown illegal kills) and historically have been estimated at 12% of the overall total reported harvest. However, numerous unquantifiable variables undoubtedly affect numbers from year to year. Unsuccessful hunters were not required to report, except in the Montague Island registration hunts. Harvest data are summarized by regulatory year.

Season and Bag Limit

The following regulations were in effect during RY19–RY23.

Unit, area	Bag limits ^a	Resident open season	Nonresident open season
Units 6A, 6B, and 6C	1 bear every regulatory year	1 Sep–10 Jun (general hunt)	1 Sep–10 Jun (general hunt)
Unit 6D Montague Island	1 bear every 4 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	1 bear every 4 regulatory years	15 Oct–25 May (general hunt)	15 Oct–25 May (general hunt)

^a Bag limits for residents and nonresidents.

Results and Discussion

Harvest by Hunters-Trappers

The average total harvest in Unit 6 during RY19–RY23 was 54 bears (SD $\pm$ 19; Table 1). Both the average harvest and the standard deviation were higher than the previous 10-year (RY09–RY18) average of 52 bears (SD $\pm$ 11).

RY19 includes 2020, when the COVID-19 pandemic resulted in the closure of all nonresident spring bear hunting by emergency order. Bear harvest was high over the following 3 years, presumably because people sought outdoor recreation opportunities and hunts were rebooked for future years. Harvest reached its highest recorded level in RY22, with 77 bears taken; however, in RY23, the harvest returned to more normal levels, with 47 bears taken (Table 1).

Harvest levels varied within Unit 6 (Table 1) and in how they compared with the previous 10-year (RY09–RY18) and 20-year (RY99–RY18) harvest averages. In Unit 6A, the RY19–RY23 average annual harvest (22 bears) was slightly higher than the 10-year average of 19 bears and the 20-year average of 20 bears. In Unit 6B, the RY19–RY23 average annual harvest (6 bears) was slightly below the RY09–RY18 average of 7 bears and the RY99–RY18 average of 8 bears. In Unit 6C, the RY19–RY23 average annual harvest (4 bears) was slightly below the 10-year average of 6 bears and the 20-year average of 6 bears. In Unit 6D, the RY19–RY23 average annual harvest (22 bears) was slightly higher than the 10-year average of 20 bears and the 20-year average of 19 bears.

In general, more bears are harvested in Unit 6D than in Units 6A, 6B, or 6C; however, in some years, more bears were harvested in Unit 6A (Table 1). Unit 6A harvest is generally more stable because a high proportion of participants are nonresidents, but there was a pulse in harvest in RY22 due to a relatively new guide who dramatically increased their client load. Within Unit 6D, the mainland and the eastern portion of Prince William Sound (not including the Valdez Arm) typically experience the highest bear harvests. Hinchinbrook Island experiences the second-highest level of harvest. Harvest on Montague Island has increased and is likely to remain at current levels due to land ownership and guide contracts.

Table 1. Brown bear harvest, regulatory years 2019–2023, Unit 6, Alaska.

Unit	Regulatory year	Fall harvest				Spring harvest				Total hunting harvest				Reported nonhunting ^a				Total reported kill				
		M	F	Unk	Total	M	F	Unk	Total	M	F (%)	F	Unk	Total	M	F	Unk	Total	M	F	Unk	Total
6A	2019	4	2	0	6	1	0	0	1	5	(29)	2	0	7	0	0	0	0	5	2	0	7
	2020	12	5	0	17	7	2	0	9	19	(27)	7	0	26	2	0	0	2	21	7	0	28
	2021	15	5	0	20	3	0	0	3	18	(22)	5	0	23	0	1	0	1	18	6	0	24
	2022	20	11	0	31	11	0	0	11	31	(26)	11	0	42	0	0	0	0	31	11	0	42
	2023	3	3	0	6	7	1	0	8	10	(29)	4	0	14	0	0	0	0	10	4	0	14
6B	2019	2	0	0	2	1	0	0	1	3	(0)	0	0	3	0	0	0	0	3	0	0	3
	2020	2	2	0	4	2	0	0	2	4	(33)	2	0	6	0	0	0	0	4	2	0	6
	2021	1	2	0	3	4	0	0	4	5	(29)	2	0	7	0	0	0	0	5	2	0	7
	2022	3	3	0	6	1	0	0	1	4	(43)	3	0	7	0	0	0	0	4	3	0	7
	2023	2	0	0	2	4	0	0	4	6	(0)	0	0	6	0	0	0	0	6	0	0	6
6C	2019	2	2	0	4	1	0	0	1	3	(40)	2	0	5	0	1	0	1	3	3	0	6
	2020	1	0	0	1	1	2	0	3	2	(50)	2	0	4	0	0	0	0	2	2	0	4
	2021	1	0	0	1	2	0	0	2	3	(0)	0	0	3	0	0	0	0	3	0	0	3
	2022	3	1	0	4	1	0	0	1	4	(20)	1	0	5	1	0	0	1	5	1	0	6
	2023	0	0	0	0	2	0	0	2	2	(0)	0	0	2	0	0	0	0	2	0	0	2
6D	2019	2	5	0	7	4	0	0	4	6	(45)	5	0	11	1	0	0	1	7	5	0	12
	2020	4	1	0	5	15	5	0	20	19	(24)	6	0	25	0	1	0	1	19	7	0	26
	2021	0	1	0	1	20	6	0	26	20	(26)	7	0	27	0	2	0	2	20	9	0	29
	2022	2	1	0	3	16	4	0	20	18	(22)	5	0	23	0	1	0	1	18	6	0	24
	2023	4	0	0	4	15	6	0	21	19	(24)	6	0	25	1	0	0	1	20	6	0	26
Unit 6 total	2019	10	9	0	19	7	0	0	7	17	(35)	9	0	26	1	1	0	2	18	10	0	28
	2020	19	8	0	27	25	9	0	34	44	(28)	17	0	61	2	1	0	3	46	18	0	64
	2021	17	8	0	25	29	6	0	35	46	(23)	14	0	60	0	3	0	3	46	17	0	63
	2022	28	16	0	44	29	4	0	33	57	(26)	20	0	77	1	1	0	2	58	21	0	79
	2023	9	3	0	12	28	7	0	35	37	(21)	10	0	47	1	0	0	1	38	10	0	48

^a Nonhunting kills include agency take, vehicle collisions, and bears killed in defense of life or property.

Harvest of female bears can vary considerably from year to year and between units. The proportion of females in the average harvest in all of Unit 6 during RY19–RY23 was 27%, which is slightly less than the RY09–RY18 average of 32% and within the management objective. Units 6B and 6C are more likely to have a high take of females; however, the overall harvest in each area is low in most years. In Unit 6C, for example, the average annual proportion of females in the RY09–RY18 harvest was 40%, but the average annual harvest was 2 bears (Table 1).

Unitwide skull size of harvested males generally increased until RY11, when average skull size in the harvest began to decrease. Since RY20, it has returned to >24 inches. However, the 10-year average, 20-year average, and the average for this reporting period (RY19–RY23) were all >24 inches. In Units 6A and 6B, skull sizes dropped dramatically in RY19, when far fewer bears were taken, but returned to larger sizes later in the reporting period. Unit 6C skull sizes were volatile due to the low number of bears killed. Unit 6D skull size increased since RY14 and has remained >24 inches (Table 2).

Female annual mean skull size has remained very stable, varying little from 21 inches. In Unit 6A, the skull size of harvested females also decreased in RY19 but returned to >21 inches the following year (Table 2).

The average age of harvested males increased over a 20-year period, from 5.6 years in RY92 to 10.1 years in RY11, and has since declined to an average of 5.8 years in RY19 (Table 2). Since then, it has increased, reaching an average of 7.2 years during RY19–RY23 (Table 2). The average age of females ranged from 5.5 to 9.8 years during RY19–RY23 (Table 2). In previous reporting periods, the average age of females was relatively stable (6–7 years), whereas this reporting period was influenced by less harvest in some years and by a few very old bears.

Permit Hunts

The number of permits issued for the fall bear hunt on Montague Island (RB100) is usually between 80 and 110 per year. In RY20, the second-highest number of permits (103) was issued (Table 3). This may again reflect increased effort resulting from the COVID-19 pandemic. Many of these permits are acquired by deer hunters who want the option to legally harvest a bear if one makes them uncomfortable while deer hunting; they are not targeting bears. This is demonstrated by more than 50% of hunters in all years during RY19–RY23 reporting they did not hunt bears, and by the correspondingly low success rate (4% average for RY19–RY23). The average annual fall harvest was 1 bear for both the reporting period (RY19–RY23) and the 10 years prior (RY09–RY18).

In contrast, hunters who acquire a permit to hunt on Montague Island during the spring hunt (RB101) are likely to make a more concerted effort to hunt bears. Since the hunt's inception in RY09, an average of 34 permits has been issued annually. During the reporting period (RY19–RY23), an average of 74% of permit holders reported that they did not hunt, and an average of 25% of those who did hunt succeeded in harvesting a bear (Table 3).

The combined average annual harvest for the fall and spring hunts (RY19–RY23) was approximately 4 bears; the annual maximum allowable harvest is 5 bears. During RY19–RY23, the combined harvest exceeded the maximum allowable harvest in 1 of the 5 years (Table 3).

Table 2. Brown bear harvest mean skull size (length plus width) and mean age (years), regulatory years 2019–2023, Unit 6, Alaska.

Unit	Regulatory year	Males				Females			
		Skull (in)	<i>n</i> (skull)	Age	<i>n</i> (age)	Skull (in)	<i>n</i> (skull)	Age	<i>n</i> (age)
6A	2019	22.1	5	3.8	5	19.1	2	6.5	2
	2020	24.5	21	8.6	17	21.4	7	4.0	4
	2021	25.1	18	6.1	8	22.2	6	8.0	2
	2022	24.5	31	6.8	24	22.0	11	5.7	11
	2023	25.1	10	8.8	9	21.5	4	7.5	4
6B	2019	19.8	3	5.5	2	—	—	—	—
	2020	24.1	4	8.0	4	21.1	2	10.0	2
	2021	25.7	5	14.0	3	20.7	2	6.0	1
	2022	26.2	4	6.7	3	21.6	3	7.0	3
	2023	24.0	6	6.8	6	—	—	—	—
6C	2019	25.2	3	8.7	3	21.6	3	8.3	3
	2020	24.2	2	6.0	2	21.3	2	4.0	2
	2021	22.9	2	10.0	1	—	—	—	—
	2022	21.6	5	3.8	5	19.8	1	1.0	1
	2023	25.5	2	8.5	2	—	—	—	—
6D	2019	24.6	7	6.1	7	20.1	5	3.6	8
	2020	24.2	19	7.8	19	20.8	8	5.5	3
	2021	24.7	21	7.0	7	21.5	9	10.9	5
	2022	25.0	18	8.8	18	22.2	6	7.6	5
	2023	24.1	20	7.1	18	21.4	6	8.3	6
Unit 6 combined	2019	23.2	18	5.8	17	20.6	10	5.6	10
	2020	24.3	46	8.1	42	21.1	19	5.5	16
	2021	24.9	46	7.9	19	21.7	17	9.8	10
	2022	24.5	58	7.2	50	21.9	21	6.2	20
	2023	24.4	38	7.6	35	21.5	10	8.0	10

Note: En dash indicates no data.

Hunter Residency and Success

Nonresidents take most of the brown bears harvested in Unit 6. During RY19–RY23, nonresidents took 61% of the Unit 6 harvest. Nearly all hunters in Unit 6A are nonresidents (78% during RY19–RY23). Unit 6 residents take a small percentage (13% during RY19–RY23) of the Unit 6 harvest and primarily hunt in Units 6B and 6C. Nonlocal Alaska residents most commonly pursue bears in Unit 6D. Unitwide, harvest by nonlocal Alaska residents comprised 37% of the total for this reporting period (Table 4).

Table 3. Montague Island brown bear permit hunt participation and harvest, regulatory years 2019–2023, Unit 6, Alaska.

Hunt	Regulatory year	Permits issued	Permits that did not hunt (%)	Success (%)	Males	Males (%)	Females	Females (%)	Unknown	Total harvest	Hunt quota
Fall RB100	2019	75	63	7	0	0	2	100	0	2	—
	2020	103	67	3	1	100	0	0	0	1	—
	2021	78	68	4	0	0	1	100	0	1	—
	2022	55	75	7	0	0	1	100	0	1	—
	2023	71	80	0	0	—	0	—	0	0	—
Spring RB101	2019	31	77	0	0	—	0	—	0	0	—
	2020	32	81	33	2	100	0	0	0	2	—
	2021	34	62	38	5	100	0	0	0	5	—
	2022	46	85	29	2	100	0	0	0	2	—
	2023	46	65	25	3	75	1	25	0	4	—
Hunts combined	2019	106	67	6	0	0	2	100	0	2	5
	2020	135	70	8	3	100	0	0	0	3	5
	2021	112	66	16	5	83	1	17	0	6	5
	2022	101	79	14	2	67	1	33	0	3	5
	2023	117	74	13	3	75	1	25	0	4	5

Note: En dash indicates no data. The success rate was 0% for fall (RB100) hunters in RY23 and spring (RB101) hunters in RY19. There were no separate hunt quotas for RB100 and RB101.

Table 4. Successful brown bear hunter residency, regulatory years 2019–2023, Unit 6, Alaska.

Unit	Regulatory year	Successful hunters						Total
		Unit 6 residents		Nonlocal Alaska residents		Nonresidents		
		No.	(%)	No.	(%)	No.	(%)	
6A	2019	0	(0)	2	(29)	5	(71)	7
	2020	0	(0)	3	(12)	23	(88)	26
	2021	0	(0)	2	(9)	21	(91)	23
	2022	0	(0)	5	(12)	37	(88)	42
	2023	2	(14)	5	(36)	7	(50)	14
6B	2019	1	(33)	0	(0)	2	(67)	3
	2020	2	(33)	0	(0)	4	(67)	6
	2021	3	(43)	1	(14)	3	(43)	7
	2022	2	(29)	1	(14)	4	(57)	7
	2023	2	(33)	4	(67)	0	(0)	6
6C	2019	2	(40)	0	(0)	3	(60)	5
	2020	1	(25)	1	(25)	2	(50)	4
	2021	1	(33)	0	(0)	2	(67)	3
	2022	3	(60)	2	(40)	0	(0)	5
	2023	0	(0)	1	(50)	1	(50)	2
6D	2019	3	(27)	7	(64)	1	(9)	11
	2020	5	(20)	8	(32)	12	(48)	25
	2021	2	(7)	8	(30)	17	(63)	27
	2022	0	(0)	6	(26)	17	(74)	23
	2023	2	(8)	8	(32)	15	(60)	25
Unit 6 combined	2019	6	(23)	9	(35)	11	(42)	26
	2020	8	(13)	12	(20)	41	(67)	61
	2021	6	(10)	11	(18)	43	(72)	60
	2022	5	(6)	14	(18)	58	(75)	77
	2023	6	(13)	18	(38)	23	(49)	47

Note: Percentage of harvest may not sum to 100% due to rounding.

Harvest Chronology

From a unitwide perspective, in most years, the spring harvest was only slightly higher than the fall harvest. During RY19–RY23, 4 of 5 years had higher spring harvests (Table 5). The lack of spring harvest in RY19 resulted from the COVID-19 closure for nonresident bear hunters.

However, seasonal harvest varies among units. Most of the harvest in Unit 6A occurs in the fall, by hunters also pursuing moose or goats. Conversely, most harvest in Unit 6D takes place in the spring. In Units 6B and 6C, harvest is nearly evenly distributed between the fall and spring. Peak brown bear harvests typically occurred in September and May during RY19–RY23 (Table 5).

The average length of a bear hunt in Unit 6 is about 4 days. In Units 6C and 6D, the average was between 4 and 5 days in RY19–RY23. In Units 6A and 6B, hunters, on average, were in the field 3–4 days. In the previous 10 years (RY09–RY18), Units 6A, 6B, and 6D averaged 4–5 days, and Unit 6C averaged 3 days.

Table 5. Brown bear harvest chronology percent by harvest period, regulatory years 2019–2023, Unit 6, Alaska.

Unit	Regulatory year	Harvest periods											<i>n</i>
		September		October		November		April		May		June	
		1–15	16–30	1–15	16–31	1–15	16–30	1–15	16–30	1–15	16–31	1–15	
6A	2019	14	14	57	0	0	0	0	0	0	0	14	7
	2020	15	38	4	8	0	0	0	4	15	15	0	26
	2021	26	26	22	13	0	0	0	0	9	4	0	23
	2022	35	20	18	3	0	0	0	0	3	18	5	40
	2023	21	7	7	7	0	0	0	0	14	43	0	14
6B	2019	0	0	67	0	0	0	0	0	0	0	33	3
	2020	40	20	0	20	0	0	0	0	20	0	0	5 ^a
	2021	0	43	0	0	0	0	0	29	0	14	14	7
	2022	43	29	0	0	14	0	0	0	14	0	0	7
	2023	17	17	0	0	0	0	17	0	17	17	17	6
6C	2019	25	0	25	25	0	0	0	0	0	0	25	4 ^b
	2020	0	25	0	0	0	0	0	0	50	0	25	4
	2021	0	33	0	0	0	0	0	0	0	0	67	3
	2022	0	20	20	0	40	0	0	0	20	0	0	5
	2023	0	0	0	0	0	0	0	0	50	0	50	2
6D	2019	0	0	0	55	0	9	0	9	0	27	0	11
	2020	0	0	0	12	0	8	0	0	36	44	0	25
	2021	0	0	0	4	0	0	4	0	15	78	0	27
	2022	0	0	0	9	4	0	0	0	17	70	0	23
	2023	0	0	0	8	8	0	0	0	28	56	0	25
Unit 6 combined	2019	8	4	28	28	0	4	0	4	0	12	12	25
	2020	10	20	2	10	0	3	0	2	27	25	2	60
	2021	10	17	8	7	0	0	2	3	10	38	5	60
	2022	23	15	11	4	5	0	0	0	9	31	3	75
	2023	9	4	2	6	4	0	2	0	23	45	4	47

^a Includes 1 bear taken in December.^b Includes 1 bear taken in February.*Note:* Percentage of harvest may not sum to 100% due to rounding.

Transport Methods

Airplanes and boats were the most important modes of transportation overall in Unit 6 (Table 6). Typically, Unit 6A is accessed almost entirely by airplane; however, 3- or 4-wheelers were reported as the last mode of transportation used by more than 25% of successful hunters in RY19–RY23. In Unit 6B, airplanes were most common, though highway vehicles were also popular. In Unit 6C, highway vehicles, 3- or 4-wheelers, off-road vehicles, and boats are predominant due to road and boat-launch access. In Unit 6D, boats and, to a lesser extent, aircraft are important because of the sheltered waters of Prince William Sound. These patterns were consistent throughout this reporting period (Table 6) and the preceding 10 years (RY09–RY18).

Other Mortality

The number of brown bears killed illegally or wounded and not retrieved is unknown. There were 8 bears killed in defense of life or property during RY19–RY23. Three bears were killed in Unit 6A, 2 in Unit 6C, and the remaining 3 in Unit 6D. In the past, most of these occurred in or near the communities of Valdez or Cordova; however, during RY19–RY23, most of these were taken in the backcountry. While the hobby of raising poultry has grown in popularity, the use of electric fences is becoming more common. Electric fences are necessary to prevent bear losses and subsequent defense-of-life-or-property killings. ADF&G continues to develop educational materials and to conduct a fence-lending program. Three bears were killed by agency personnel for public safety, all in Valdez.

Alaska Board of Game Actions and Emergency Orders

No regulatory changes or emergency orders occurred during RY19–RY23.

Recommendations for Activity 2.1

Continue to monitor harvest data and mortality data as much as possible.

3. Habitat Assessment-Enhancement

There were no habitat assessment or enhancement projects for brown bears in Unit 6 during RY19–RY23.

NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS

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

Efforts continue to educate the public about the importance of securing attractants in urban settings to prevent bears from being killed in defense of life or property. Outreach materials are widely distributed and being explored across different media, including social media.

Data Recording and Archiving

Harvest data are stored in an internal database on the Wildlife Information Network server. Research datasheets are entered, scanned, and stored on the Cordova ADF&G server. Original datasheets are stored in file folders in the Cordova office. Historical survey notes and datasheets are being digitized and scanned for permanent storage on the file server.

Table 6. Percentage of brown bear harvest by transport method, regulatory years 2019–2023, Unit 6, Alaska.

Unit	Regulatory year	Percent harvest								<i>n</i>
		Airplane	Boat	Airboat	3- or 4-wheeler	Snowmachine	ORV ^a	Highway vehicle	Unknown	
6A	2019	71	0	0	29	0	0	0	0	7
	2020	62	8	0	27	0	0	0	4	26
	2021	57	22	0	13	0	9	0	0	23
	2022	45	19	0	33	0	2	0	0	42
	2023	71	14	0	14	0	0	0	0	14
6B	2019	67	0	0	0	0	0	33	0	3
	2020	67	0	0	0	17	0	17	0	6
	2021	43	14	0	0	29	0	14	0	7
	2022	71	0	14	0	0	0	14	0	7
	2023	50	17	0	0	17	0	17	0	6
6C	2019	20	40	0	0	0	0	40	0	5
	2020	50	25	0	0	0	0	0	25	4
	2021	33	33	0	0	0	0	33	0	3
	2022	0	0	0	0	0	0	60	40	5
	2023	0	100	0	0	0	0	0	0	2
6D	2019	36	64	0	0	0	0	0	0	11
	2020	4	92	0	0	0	0	0	4	25
	2021	22	74	0	0	4	0	0	0	27
	2022	17	83	0	0	0	0	0	0	23
	2023	4	96	0	0	0	0	0	0	25
Unit 6 combined	2019	46	35	0	8	0	0	12	0	26
	2020	37	42	0	11	2	2	2	5	62
	2021	38	45	0	5	5	3	3	0	60
	2022	37	36	1	18	0	1	5	1	76
	2023	30	62	0	4	2	0	2	0	47

Note: Percentage of harvest may not sum to 100% due to rounding.

^a Off-road vehicle.

Agreements

None.

Permitting

None.

Conclusions and Management Recommendations

Brown bear population numbers were probably stable during RY19–RY23. Three-year averages of brown bear harvest were within the range of 35–65 per calendar year in all years of this reporting period. Additionally, females in the harvest were below 40% in all years of this 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 may continue on Montague and Hinchinbrook islands as only an anecdotal measure of abundance, distribution, and snow conditions.

Changes to permitting for guided hunts on private land will probably influence the harvest on Montague Island and make it more likely that the maximum allowable harvest will be reached. Harvest on Montague Island should be kept within the maximum allowable harvest, at least on a 3-year rolling average.

II. Project Review and RY24–RY28 Plan

Review of Management Direction

MANAGEMENT DIRECTION

Currently, tools to assess the status of brown bear populations and the sustainability of harvest are not funded. To assess the achievement of management goals, the techniques for assessing them should be provided with funding.

GOALS

No change from the RY19–RY23 report.

CODIFIED OBJECTIVES

Amounts Reasonably Necessary for Subsistence Uses

No change from the RY19–RY23 report.

Intensive Management

No change from the RY19–RY23 report.

MANAGEMENT OBJECTIVES

No change from the RY19–RY23 report.

REVIEW OF MANAGEMENT ACTIVITIES

1. Population Status and Trend

ACTIVITY 1.1. Record observations of brown bears seen incidentally during other survey work and anecdotal reports from the public.

Data Needs

No change from the RY19–RY23 report.

Methods

No change from the RY19–RY23 report.

2. Mortality-Harvest Monitoring

ACTIVITY 2.1. Monitor harvest through sealing records and effort from permit and harvest ticket reports.

Data Needs

No change from the RY19–RY23 report.

Methods

No change from the RY19–RY23 report.

3. Habitat Assessment-Enhancement

No habitat assessment or enhancement activities are planned for brown bears in Unit 6 during RY24–RY28.

NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS

Efforts should continue to educate the public about the importance of securing attractants in urban settings to prevent bears from being killed in defense of life or property. Outreach materials will continue to be developed across different media, including social media.

Data Recording and Archiving

No change from the RY19–RY23 report.

Agreements

None.

Permitting

None.

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