

# **Brown Bear Management Report and Plan, Game Management Unit 11:**

Report Period 1 July 2014–30 June 2019, and  
Plan Period 1 July 2019–30 June 2024

**Heidi L. Hatcher**





# Brown Bear Management Report and Plan, Game Management Unit 11

Report Period 1 July 2014–30 June 2019, and  
Plan Period 1 July 2019–30 June 2024

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This species management report and plan was reviewed and approved for publication by Todd Rinaldi, Management Coordinator for Region IV for 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 bears (*Ursus arctos*) in Game Management Unit 11 for the 5 regulatory years 2014–2018 and plans for survey and inventory management activities in the next 5 regulatory years, 2019–2023. A regulatory year (RY) begins 1 July and ends 30 June (e.g., RY23 = 1 July 2023–30 June 2024). This report is produced primarily to provide agency staff with data and analysis to help guide and record agency efforts but is also provided to the public to inform it of wildlife management activities. In 2016 the Alaska Department of Fish and Game’s (ADF&G, the department) Division of Wildlife Conservation (DWC) launched this 5-year report to report more efficiently on trends and to describe potential changes in data collection activities over the next 5 years. It replaces the brown bear management report of survey and inventory activities that was previously produced every 2 years.

## I. RY14–RY18 Management Report

### Management Area

Game Management Unit 11 (12,784 mi<sup>2</sup>) consists of that area draining into the headwaters of the Copper River south of Suslota Creek and the area drained by all tributaries into the east bank of the Copper River between the confluence of Suslota Creek with the Slana River and Miles Glacier. Unit 11 includes a wide variety of terrain and habitat, from glaciers and high alpine to spruce forest and salmon streams. Most of Unit 11 is included in the Wrangell-Saint Elias National Park and Preserve.

Maps describing the current boundaries and special management areas in Unit 11 can be found on the ADF&G website

(<https://www.adfg.alaska.gov/index.cfm?adfg=huntingmaps.gmuinfo&gmu=11>).

### Summary of Status, Trend, Management Activities, and History of Brown Bear in Unit 11

Unit 11 is a large remote area east of the Copper River with limited access. During 1948–1953, federal poisoning programs directed at controlling wolves were thought to incidentally reduce bear numbers as well. Anecdotally, bear numbers increased after the cessation of poisoning, and by the mid-1970s brown bears were considered abundant in the area.

Brown bear harvests averaged 16 annually (range = 8–24) from RY61 through RY78, at which point much of Unit 11 became incorporated into Wrangell-Saint Elias National Park and Preserve. Harvest decreased, averaging only 6 bears annually (range = 2–12) from RY79 through RY99. The Federal Subsistence Board established a federal subsistence brown bear hunting season in 1999, and in RY04 a resident exemption for brown bear tags was instated for Unit 11. Brown bear harvest remained steady from RY00 through RY13. The harvest averaged 16 bears annually (range = 9–26) from RY00 to RY09 and 17 bears annually (range = 15–20) from RY10 through RY13.

# Management Direction

## EXISTING WILDLIFE MANAGEMENT PLANS

Management direction set in the brown bear management plan for the Nelchina Basin, including Unit 11, has been modified through public comments, staff recommendations, and Board of Game actions over the years (ADF&G 1976). A record of these changes can be found in the division's previous species management reports.

## GOALS

- Provide the greatest opportunity to participate in hunting brown bears.
- Encourage recreational utilization of brown bears in the area.
- Increase public awareness of brown bear behavior to reduce adverse bear-human interactions.

## CODIFIED OBJECTIVES

### Amounts Reasonably Necessary for Subsistence Uses

The Board of Game has made a negative customary and traditional use determination for Unit 11 brown bear, so no predetermined number of brown bears are necessary for subsistence uses.

### Intensive Management

Brown bears are not designated as an intensive management species in the state of Alaska, and there are no intensive management plans in Unit 11 that would affect bear management.

## MANAGEMENT OBJECTIVES

Provide the greatest sustained opportunity to participate in hunting brown bears.

## MANAGEMENT ACTIVITIES

### 1. Population Status and Trend

There were no activities incorporated into the Unit 11 brown bear management program for assessing population status or trends during RY14–RY18.

In May 2019, the National Park Service (NPS) conducted a noninvasive double-observer mark-resight aerial survey for brown bears that covered much of Unit 11. Preliminary results suggest that brown bear densities within Unit 11 are consistent with recent density estimates in nearby units (J. Putera, Wildlife Biologist, Wrangell-Saint Elias National Park and Preserve, Copper Center, Alaska, personal communication).



Additionally, new information suggests that the proportion of older females in the overall harvest of Unit 13 may give insight into overall brown bear population trends, and this metric will be analyzed for future reports (Brockman et al. 2020).

## 2. Mortality-Harvest Monitoring and Regulations

ACTIVITY 2.1. Monitor and evaluate brown bear harvest through bear sealing data.

### *Data Needs*

Monitoring and analyzing annual harvest data is important to understand harvest composition as well as hunter metrics associated with successful harvests, which are instrumental for sustained yield management.

### *Methods*

DWC staff and state-appointed sealing agents seal skulls and hides of harvested bears. They measure the skulls, determine sex, extract a premolar tooth for aging, and collect hair-hide samples for genetic research. They also collect information on date and location of harvest, time spent afield, method of take, and method of transportation used.

### *Seasons and Bag Limits*

Under state regulations, both residents and nonresidents may harvest 1 bear in Unit 11 every regulatory year with season dates of 10 August–30 June. Effective spring 2016 (RY15), hunters may harvest brown bears over registered bait stations. Bear baiting season is 15 April–30 June.

Nonresidents must be accompanied by a guide and in possession of a big game locking tag. No locking tags are required for resident hunters. All brown bears harvested in Unit 11 must be sealed within 30 days of kill, with evidence of sex naturally attached to the hide.

State hunting regulations apply within Wrangell-St. Elias National Preserve but not within Wrangell-St. Elias National Park. On both park and preserve lands under federal subsistence regulations, federally-qualified subsistence hunters may harvest 1 brown bear every regulatory year with season dates of 10 August–15 June. Brown bears harvested under federal regulations are subject to state sealing requirements.

### *Results and Discussion*

#### *Harvest by Hunters*

Brown bear harvest in Unit 11 during RY14–RY18 averaged 10 bears annually (Table 1), which is the lowest 5-year average since RY99–RY03.

From RY04 through RY13, brown bear harvest averaged 18 bears annually. The percentage of females in the harvest was 34%, which has been typical for the unit harvest since RY99.

Fifty brown bears were sealed from the Unit 11 harvest during RY14–RY18 (32 males, 18 females). Of those, 48 had complete skull measurements and 44 were aged via tooth cementum rings. Male skulls averaged 22.4 inches (range 18.1–26.7 inches,  $n = 30$ ) and the average age of

males from which a tooth was collected was between 8 and 9 years old (range 3–22 years,  $n = 26$ ).

This average age of male bears is equivalent to what it was in RY99–RY03, when the 5-year average for harvest was similar to RY14–RY18. From RY04 to RY13, however, when harvest averaged 18 bears annually, the average age of male bears harvested fell to between 6 and 7 years. The average size of male skulls has remained stable throughout these periods.

Female skulls averaged 20.2 inches (range 18.7–22.3 inches,  $n = 18$ ) during RY14–RY18, and the average age of harvested females from which a tooth was collected was between 7 and 8 years (range 3–17 years,  $n = 18$ ). There are no apparent trends in skull size of females harvested or average age compared with previous time periods.

**Table 1. Brown bear harvest, regulatory years 2014–2018, Unit 11, Alaska.**

	Harvest over bait		Harvest not over bait		Total harvest <sup>a</sup>	Percent female
	Total	Percent female	Total	Percent female		
RY14						
Fall 2014	–	–	7	57	7	57
Spring 2015 <sup>b</sup>	–	–	0	–	0	–
Total	–	–	7	57	7	57
RY15						
Fall 2015	–	–	14	36	14	36
Spring 2016	1	0	1	0	2	0
Total	1	0	15	33	16	31
RY16						
Fall 2016	–	–	6	17	6	17
Spring 2017	1	100	0	–	1	100
Total	1	100	6	17	7	14
RY17						
Fall 2017	–	–	6	50	6	50
Spring 2018	4	25	1	100	5	40
Total	4	25	7	57	11	45
RY18						
Fall 2018	–	–	4	25	4	25
Spring 2019	4	25	1	0	5	20
Total	4	25	5	20	9	22

*Note:* En dash indicates no data. There were no fall bear baiting seasons in Unit 11 during RY14–RY18.

<sup>a</sup> Includes harvest with no date of kill specified.

<sup>b</sup> Harvest over bait during the spring season in Unit 11 was legalized in spring 2016 (RY15).

## Hunter Residency and Success

Nonresident hunters represented 54% of Unit 11 brown bear harvest during RY14–RY18 (Table 2). Hunters who live in Units 11 or 13 (“local residents”) represented 57% of the resident harvest (Table 2). Residents hunted an average of 4.7 days while nonresidents hunted an average of 3.9 days. This difference is typical, as nonresidents are required to obtain a guide or hunt with second-degree kindred in order to harvest brown bears in Alaska.

**Table 2. Residency of successful brown bear hunters, regulatory years 2014–2018, Unit 11, Alaska.**

Regulatory year	Local resident <sup>a</sup>		Nonlocal resident		Nonresident	
	Harvest	Percent of total	Harvest	Percent of total	Harvest	Percent of total
2014	2	29	2	29	3	42
2015	5	31	3	19	8	50
2016	1	14	1	14	5	72
2017	3	27	2	18	6	55
2018	2	22	2	22	5	56

<sup>a</sup> Local represents residents of Units 11 or 13.

## Harvest Chronology

In Unit 11, harvest of brown bears over registered bait stations became legal in RY15 for the spring bear baiting season. As a result, the spring brown bear harvest increased compared to the previous reporting period (RY09–RY13). Before harvest over bait was allowed, the majority of harvest typically occurred in the fall (August–October; Table 3); after harvest over bait was allowed, harvest was more evenly distributed between spring (May–June) and the fall months.

**Table 3. Brown bear percent of harvest by month, regulatory years 2014–2018, Unit 11, Alaska.**

Regulatory year	Aug	Sep	Oct	Nov	Dec–Mar	Apr	May	Jun	<i>n</i>
2014	43	43	14	0	0	0	0	0	7
2015	31	44	13	0	0	0	13	0	16
2016	0	71	14	0	0	0	0	14	7
2017	18	27	0	9	0	9	18	18	11
2018	22	22	0	0	0	0	33	22	9

*Note:* Percentages may not add to 100% due to rounding.

## Transport Methods

Airplanes are the most commonly used transportation for successful brown bear harvest in Unit 11, followed by all-terrain vehicles (ATVs), as well as boats and highway vehicles (Table 4). In some years, horses also represent a significant portion of successful transportation methods. The unique access and land status situations in Unit 11 result in this wide variety of transportation

methods, which is markedly different from the trends seen in more accessible units such as neighboring Unit 13.

**Table 4. Percentage of brown bear harvest by transportation used, regulatory years 2014–2018, Unit 11, Alaska.**

Regulatory year	Airplane	Horse	Boat	ATV <sup>a</sup>	Snow-machine	ORV <sup>b</sup>	Highway vehicle	Foot	Other	<i>n</i>
2014	43	14	14	29	0	0	0	0	0	7
2015	69	6	0	6	0	0	13	6	0	16
2016	14	29	14	0	0	0	29	14	0	7
2017	18	9	9	36	9	0	18	0	0	11
2018	33	0	33	22	0	0	11	0	0	9

*Note:* Percentages may not add to 100% due to rounding.

<sup>a</sup> ATV stands for all-terrain vehicle.

<sup>b</sup> ORV stands for off-road vehicle.

### *Other Mortality*

Brown bear mortality occurring in defense of life or property (DLP) in Unit 11 typically ranges from 0 to 1 bear in a 5-year reporting period, but 6 brown bears were destroyed in defense of life or property during RY14–RY18. In RY15, 4 brown bears were dispatched, as a sow was destroyed in defense of life or property and her 3 cubs of the year were later discovered and euthanized. In RY16 and RY17, 1 adult sow was destroyed each year in defense of life or property. All incidents occurred in remote areas, and the sows dispatched in RY15–RY16 were in pursuit of livestock or entering buildings where food was stored at remote residences. No other nonhunting, human-caused mortalities of brown bears were reported in Unit 11 during RY14–RY18. It is suspected that actual numbers of human-caused mortality may be higher, as some bears are likely shot or wounded and not recovered or reported, but these numbers in Unit 11 are likely minimal, given the relatively low level of hunting pressure.

### *Alaska Board of Game Actions and Emergency Orders*

The Board of Game approved the harvest of brown bears over bait in Unit 11, effective in RY15 (spring 2016).

### *Recommendations for Activity 2.1*

Continue.

### 3. Habitat Assessment-Enhancement

No activities for brown bear habitat assessment or enhancement are included in Unit 11 brown bear management.

## **NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS**

### Data Recording and Archiving

State brown bear sealing data is stored on the division's internal server (<http://winfonet.alaska.gov/>).

### Agreements

A data sharing agreement is in place to provide brown bear (and other species) harvest data to Wrangell-St. Elias National Park and Preserve for RY90 through RY20.

### Permitting

No permits were needed to conduct brown bear management activities in Unit 11 during RY14–RY18.

## **Conclusions and Management Recommendations**

Given the unique land status and relatively difficult access in Unit 11, brown bear harvest pressure does not currently pose a concern for the sustainability of the population. The current management direction should be maintained, although any improvement to accessibility of state or Wrangell-Saint Elias National Preserve lands could provide for increased hunting opportunities for brown bears in Unit 11.

## **II. Project Review and RY19–RY23 Plan**

### **Review of Management Direction**

#### **MANAGEMENT DIRECTION**

The current management direction will not change in RY19–RY23.

#### **GOALS**

Unit 11 brown bear managers will continue to provide the greatest opportunity to participate in hunting brown bears, encourage the recreational utilization of brown bears, and increase public awareness of brown bear behavior to reduce adverse bear-human interactions.

#### **CODIFIED OBJECTIVES**

##### Amounts Reasonably Necessary for Subsistence Uses

There is a negative customary and traditional use determination for Unit 11 brown bear, so no predetermined number of brown bears are necessary for subsistence uses.

## Intensive Management

Brown bears are not designated as an intensive management species in the state of Alaska, and there are no intensive management plans in Unit 11 that would affect bear management in RY19–RY23.

## **MANAGEMENT OBJECTIVES**

Unit 11 brown bear managers will continue to provide the greatest sustained opportunity to participate in hunting brown bears in RY19–RY23.

## **REVIEW OF MANAGEMENT ACTIVITIES**

### 1. Population Status and Trend

New information from brown bear population studies in Unit 13 suggest that the proportion of older females in the overall harvest of brown bears for an area may give insight into overall population trends, and this metric will be analyzed for future reports (Brockman et al. 2020).

### 2. Mortality-Harvest Monitoring

ACTIVITY 2.1. Monitor and evaluate brown bear harvest through bear sealing data.

#### *Data Needs*

No change from RY14–RY18.

#### *Methods*

No change from RY14–RY18.

### 3. Habitat Assessment-Enhancement

No activities for brown bear habitat assessment or enhancement are expected to be a part of Unit 11 brown bear management.

## **NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS**

### Data Recording and Archiving

No change from RY14–RY18.

### Agreements

A data sharing agreement will be extended to provide brown bear (and other species) harvest data to Wrangell-St. Elias National Park and Preserve.

## Permitting

No permits are expected to be needed to conduct brown bear management activities in Unit 11 during RY19–RY23.

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