

## **Brown Bear Management Report and Plan, Game Management Unit 10:**

Report Period 1 July 2014–30 June 2019, and

Plan Period 1 July 2019–30 June 2024

**David W. Crowley**



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Plan Period 1 July 2019–30 June 2024

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Hunters are important founders of the modern wildlife conservation movement. They, along with trappers and sport shooters, provided funding for this publication through payment of federal taxes on firearms, ammunition, and archery equipment, and through state hunting license and tag fees.

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This species management report and plan was reviewed and approved for publication by Todd Rinaldi, Management Coordinator 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 bear (*Ursus arctos*) in Unit 10, Unimak Island for the 5 regulatory years 2014–2018 and plans for survey and inventory management activities in the following 5 regulatory years 2019–2024. A regulatory year (RY) begins 1 July and ends 30 June (e.g., RY14 = 1 July 2014–30 June 2015). 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 3 years.

## I. RY14–RY18 Management Report

### Management Area

Unimak Island in Unit 10 is the easternmost in the chain of Aleutian Islands extending from the southwestern tip of the Alaska Peninsula (Fig. 1), and the only Aleutian Island with indigenous brown bears, caribou, and wolves. Most of the island is designated wilderness and administered by the Izembek National Wildlife Refuge (INWR). The unit is bordered by the Bearing Sea to the east and the Pacific Ocean to the west. The island is volcanic in origin with ongoing volcanic activity. Largely unvegetated habitats of glaciers, snowfields, or ash-flats dominate at elevations over 300 meters (328 yards; Pitcher et al. 1990); extensive unvegetated lava flows and cinder blows are also present at lower elevations. Bears are found throughout the entire island (approximately 3,890 km<sup>2</sup>), generally below 1,000 meters (1,094 yards) elevation. They are often observed on beaches scavenging for whales, walrus, and other dead marine mammals that have washed ashore. The community of False Pass is the only year-round human community on the island; several seafood processors operate there during summer. Weather often precludes access to and activities on the island.

### Summary of Status, Trend, Management Activities, and History of Brown Bear in Unit 10

Based on extrapolation from the 1989 capture–mark–resight population estimate at Black Lake, an estimated 250 brown bears inhabited Unimak Island in the late 1980s (Sellers 2003). In 2002 a double-count, distance-sampling method was used to survey Unimak Island. Biologists flew 239, 20-km (12.4-mi) transects resulting in an abundance estimate of 317 brown bears, with a 95% confidence interval of 235–427 (Becker and Crowley 2021). This equated to a density estimate of 110 bears/1,000 km<sup>2</sup> (110 bears/386 mi<sup>2</sup>). Harvest rate was an estimated at 3.06% at the time of the survey. Average litter size for cubs was 1.8 during the survey (Sellers 2003). INWR has conducted periodic aerial bear surveys on Unimak Island in late summer since the late 1960s to sample composition. Over decades of surveys, the proportion of maternal females observed averaged 16% and single bears averaged 53% (S. Lowe, Wildlife Biologist, INWR,

# Game Management Unit 10 Wolf and Brown Bear Range



**Figure 1. Unimak Island in Unit 10 is the only Aleutian Island with a brown bear population.**



2016 unpublished report). These values are typical of Unit 10 bears that are lightly hunted and naturally regulated, compared to more heavily hunted areas.

Brown bear hunting on Unimak Island was administered by the U.S. Fish and Wildlife Service (USFWS) from 1949 to 1979 and by ADF&G after 1979. Hunting is by drawing permit only with up to 24 tags available per year. Harvest is limited and the population is considered to be naturally regulated (Sellers 2003).

## **Management Direction**

### **EXISTING WILDLIFE MANAGEMENT PLANS**

Alaska Wildlife Plans, Brown Bear (1976) provided general goals for brown bear management:

- Provide an opportunity to hunt under aesthetically pleasing conditions.
- Provide an opportunity to take large animals.

### **GOALS**

Provide opportunities to hunt large brown bears under aesthetically pleasing conditions. The number of hunters is limited, and harvests are maintained below maximum-sustained yield.

### **CODIFIED OBJECTIVES**

None.

#### Amounts Reasonably Necessary for Subsistence Uses

None.

#### Intensive Management

None.

### **MANAGEMENT OBJECTIVES**

Maintain a high bear density with a sex and age structure that will sustain a harvest of at least 60% males. The number of hunters is limited, and harvests are maintained below maximum sustained yield.

### **MANAGEMENT ACTIVITIES**

#### 1. Population Status and Trend

ADF&G does not conduct any activities to monitor the bear population in Unit 10. INWR staff periodically conduct aerial bear surveys on Unimak Island in late summer to monitor

composition. Annual surveys by Izembek National Wildlife Refuge (INWR) staff provides long-term composition data.

Interpretation of harvest data to reflect population status is not possible with the low number of bears killed annually. For many bear populations harvest statistics are commonly used indicators of brown bear population trends. Anecdotal information and trend indicators contribute to the knowledge base of managers in making decisions in the absence of recent estimates of abundance and density. However, for the Unimak Island bear population, harvest is restricted to less than 20 bears per year (mostly male), which are too few for any useful population analyses.

## 2. Mortality-Harvest Monitoring and Regulations

ACTIVITY 2.1. Assess the number of brown/grizzly bears that are harvested by hunters and other sources of mortality that might have an impact on the population.

### *Data Needs*

Harvest statistics are the most commonly used indicators of brown bear harvest and population trends. Without estimates of population such as abundance, growth rate, or harvest rate, management is based largely on harvest-data indicators.

### *Methods*

Bear hunters were required to report their hunting activity including a drainage-specific location of kill. Skulls and hides of harvested bears must be salvaged and presented to ADF&G for data collection and tagging with identification seals. A tooth is extracted from each skull to determine age structure of the harvest. Many Unit 10 bears were sealed by INWR staff, who are authorized state-appointed sealers.

### *Season and Bag Limit*

Drawing hunt DB375 was open 1 October–31 December with 12 permits available. DB376 was open 1–31 May, also with 12 permits available. There is 1 governor’s tag drawing permit that can be used either fall or spring season. The bag limit for drawing hunts was 1 bear every 4 regulatory years. RB525 was open year-round to residents only within 3 miles of False Pass, with a bag limit of 1 bear per year.

### *Results and Discussion*

#### Harvest by Hunters

A total of 8 female bears and 52 males (85%) were harvested for an annual average of 12.2 bears per year during the RY14–RY18 reporting period (Table 1). Average female age in the harvest was 6.9 years; male age averaged 9.3 years. Average skull sizes (length + width) for

**Table 1. Brown bear hunter success and harvest by season and sex in Unit 10, Unimak Island. DB375 and DB376 are fall and spring seasons, respectively; RB525 is the year-round, near False Pass village hunt.**

Hunt	Regulatory year	Permits issued	Percent did not hunt	Percent unsuccessful hunters	Percent successful hunters	Males	(%)	Females	(%)	Total reported harvest
DB375	2014	12	42	0	100	5	71	2	29	7
DB375	2015	12	42	17	83	4	80	1	20	5
DB375	2016	12	42	0	100	5	71	1	14	7 <sup>a</sup>
DB375	2017	12	50	67	33	2	100	0	0	2
DB375	2018	12	33	50	50	3	75	1	25	4
DB376	2014	12	17	30	70	6	86	1	14	7
DB376	2015	12	33	25	75	6	100	0	0	6
DB376	2016	12	17	20	80	7	88	1	13	8
DB376	2017	12	8	27	73	7	88	1	13	8
DB376	2018	12	58	40	60	3	100	0	0	3
RB525	2014	1	0	0	100	1	100	0	0	1
RB525	2015	0	0	0	0	0	0	0	0	0
RB525	2016	1	0	0	100	1	100	0	0	1
RB525	2017	4	0	50	50	2	100	0	0	2
RB525	2018	1	0	100	0	0	0	0	0	0
Total	2014	25	28	17	83	12	80	3	20	15
Total	2015	24	38	21	79	10	91	1	9	11
Total	2016	25	28	11	89	13	81	2	13	16 <sup>a</sup>
Total	2017	28	25	43	57	11	92	1	8	12
Total	2018	25	44	50	50	6	86	1	14	7

<sup>a</sup> Includes 1 harvested bear of unknown sex.

females and males, respectively, were 21.0 and 25.7 inches. Harvest density was approximately 3.4 bears/1,000 km<sup>2</sup> (3.4 bears/386 mi<sup>2</sup>).

### Permit Hunts

Harvest by hunt permit is reported in Table 1.

### Hunter Residency and Success

Hunter success averaged 71.6% in Unit 10 (Table 1). Nonresidents comprised 42.4% of successful hunters.

### Harvest Chronology

During RY14–RY18, 25 bears were harvested in October and 32 in May with RB375 and RB376 hunt permits (Table 1).

### Transport Methods

Bear hunters (except False Pass residents) must fly in to hunt on Unimak Island. During RY14–RY18, 88% of hunters flew in and 4% used a boat. Others walked or used an all-terrain vehicle (ATV).

### *Other Mortality*

No bears were reported as killed in defense of life or property (DLP) during RY14–RY18. This will probably change in the near future because 2 seafood processors recently began operating in False Pass. The community has a village public safety officer who handles nuisance bears and is in contact with ADF&G staff.

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

In 2015 the Board of Game increased the spring brown bear season from 10–25 May to 10–31 May.

### *Recommendations for Activity 2.1*

Continue.

### 3. Habitat Assessment-Enhancement

None.

## **NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS**

Staffing at Izembek National Wildlife Refuge (INWR) has been substantially reduced and there are no longer state-appointed sealers available to assist ADF&G in sealing bears. This is a hardship for hunters flying from Cold Bay to Anchorage and out of state. More than half of the bears (38) taken during RY14–RY18 on Unimak Island were sealed in Cold Bay. A Commercial

Fisheries Division, ADF&G biologist stationed in Cold Bay has volunteered to temporarily seal bears in May, but this might not be an option in October.

### Data Recording and Archiving

Digital data are backed up daily on an in-house server (O:\WC-DIV). Paper records are stored in file cabinets and on shelves in the area biologist and assistant area biologists' offices. Archived records are stored in indexed and labeled boxes on the second floor of the new warehouse (O:\WC-DIV\Admin King Salmon Area Office\Filing system\archived filing system index).

### Agreements

None.

### Permitting

None.

## **Conclusions and Management Recommendations**

Management objectives were met and exceeded with a high proportion of males and low overall harvest. Population size in 2002 was 317 bears with a density of 110 bears/1,000 km<sup>2</sup> (110 bears/386 mi<sup>2</sup>; Becker and Crowley 2021). Continued composition surveys by INWR suggest that the population is stable and appears to be naturally regulated. The department should consider decreasing drawing permit numbers and adding a governor's tag so that one is available for each season.

## II. Project Review and RY19–RY23 Plan

### Review of Management Direction

Beginning in 2019 ADF&G reduced the number of permits from 12 to 8 each season due to concerns with logistical problems local guides were having with transporting hunters to the field.

#### MANAGEMENT DIRECTION

- Provide an opportunity to view, photograph, and enjoy wildlife.
- Provide for an optimum harvest.
- Provide the greatest sustained opportunity to participate in hunting.
- Provide an opportunity to hunt under aesthetically pleasing conditions.
- Provide an opportunity to take large animals.
- Provide an opportunity for scientific and educational study.

#### GOALS

Provide opportunities to hunt large brown bears under aesthetically pleasing conditions. The number of hunters is limited, and harvests are maintained below maximum-sustained yield.

#### CODIFIED OBJECTIVES

None.

#### Amounts Reasonably Necessary for Subsistence Uses

None.

#### Intensive Management

None.

#### MANAGEMENT OBJECTIVES

Maintain a high bear density with a sex and age structure that will sustain a harvest of at least 60% males. The number of hunters is limited, and harvests are maintained below maximum sustained yield.

#### REVIEW OF MANAGEMENT ACTIVITIES

##### 1. Population Status and Trend

None. Cooperate with INWR on their composition surveys in advisory capacity.

## 2. Mortality-Harvest Monitoring

ACTIVITY 2.1. Assess the number of brown/grizzly bear harvested by hunters and other sources of mortality that might have an impact on the population.

Evaluate the effect on harvest of reducing the number of drawing permits annually from 24 to 16. Consider increasing drawing permits to 20.

### *Data Needs*

Harvest statistics are the most commonly used indicators of brown bear harvest and population trends. Without estimates of population such as abundance, growth rate, or harvest rate, management is based largely on harvest-data indicators.

### *Methods*

Bear hunters were required to report their hunting activity including a drainage-specific location of kill. Skulls and hides of harvested bears must be salvaged and presented to ADF&G for data collection and tagging with identification seals. A tooth is extracted from each skull to determine age structure of the harvest. Many Unit 10 bears were sealed by INWR staff, who are authorized state-appointed sealers.

## 3. Habitat Assessment-Enhancement

None.

## **NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS**

Consult with INWR regarding bear sealing arrangements. The next open season will be 10 May 2021.

The department should consider adding a governor's tag permit so that a permit is available each season.

### Data Recording and Archiving

No changes are recommended.

### Agreements

None.

### Permitting

None.

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