

Brown Bear Management Report and Plan, Game Management Unit 20D:

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

Robert W. Schmidt



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This species management report and plan was reviewed and approved for publication by Jason Caikoski, Management Coordinator for Division III of the Division of Wildlife Conservation.

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Cover Photo: Two adult brown bears standing up and facing each other in an old burn area in southwestern Unit 20D, Interior Alaska. ©2014 ADF&G. Photo by Darren Bruning.

Contents

Purpose of this Report.....	1
I. RY14–RY18 Management Report	1
Management Area.....	1
Summary of Status, Trend, Management Activities, and History of Brown Bears in Unit 20D....	1
Management Direction.....	2
Existing Wildlife Management Plans	2
Goals	2
Codified Objectives	2
Amounts Reasonably Necessary for Subsistence Uses	2
Intensive Management.....	2
Management Objectives.....	3
Management Activities	3
1. Population Status and Trend	3
2. Mortality-Harvest Monitoring and Regulations.....	4
3. Habitat Assessment-Enhancement.....	7
Nonregulatory Management Problems or Needs.....	7
Data Recording and Archiving	7
Agreements	7
Permitting.....	7
Conclusions and Management Recommendations	7
II. Project Review and RY19–RY23 Plan	8
Review of Management Direction	8
Management Direction.....	8
Goals	8
Codified Objectives	8
Amounts Reasonably Necessary for Subsistence Uses	8
Intensive Management.....	8
Management Objectives.....	8
Review of Management Activities.....	8
1. Population Status and Trend	8
2. Mortality-Harvest Monitoring, and Regulations.....	9
3. Habitat Assessment-Enhancement.....	9
Nonregulatory Management Problems or Needs.....	9
Data Recording and Archiving	9
Agreements	9
Permitting.....	9
References Cited	9

List of Tables

Table 1. Unit 20D brown bear reported harvest and mortality data, Interior Alaska, regulatory years 2014–2018.	6
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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 20D during the 5 regulatory years 2014–2018, along with plans for the next 5 regulatory years 2019–2023. 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 bears.

I. RY14–RY18 Management Report

Management Area

Unit 20D encompasses approximately 5,637 mi² and is located in the central Tanana River Valley in Interior Alaska. The community of Delta Junction, located 100 miles southeast of Fairbanks, is on the west side of the Game Management Unit. The northern portion of the unit is in the Tanana Hills, with elevations ranging from 851 to 6,444 feet, and includes the Goodpaster, Volkmar, and Healy river valleys. The southern portion of Unit 20D consists of the Tanana River floodplain, the lower Delta River floodplain, the Delta Agricultural Project, the drainages of the Robertson, Johnson, and Gerstle rivers, and the northern foothills and mountains of the Alaska Range with elevations up to 10,278 feet. Lowland vegetation is a mosaic of peatland bogs, shrub-dominated early-successional forest, and mature black spruce (*Picea mariana*) forest. Vegetation in the hills, foothills, and mountains transitions from taiga at lower elevations to shrub communities and then to alpine tundra at higher elevations. The climate is typical of Interior Alaska, where temperatures frequently reach 80°F in summer and -40°F in winter. Snow depths are generally less than 32 inches. Strong southern Chinook winds are often experienced in the winter in the Delta Junction area, which is not typical in other areas of Interior Alaska. These winds bring mild temperatures and ridge tops in the high country of southern Unit 20D are often blown free of snow. Although Chinook winds have less influence on northern Unit 20D, the area is still occasionally affected by these events and is more substantially influenced by east winds, which play a comparable role in the Delta Junction area.

Summary of Status, Trend, Management Activities, and History of Brown Bears in Unit 20D

Brown bears, also referred to as grizzly bears in Interior Alaska, are distributed throughout Unit 20D. The Tanana River separates brown bear habitat into two distinct types within the unit. Unit 20D south of the Tanana River has similar habitat to the adjacent Unit 20A, consisting of the foothills and mountains of the northcentral Alaska Range. The brown bear habitat in Unit 20D north of the Tanana River has similar habitat as the adjacent Unit 20E and is considered the Tanana Hills. Hunter access to southern Unit 20D is excellent, while hunter access is more difficult in northern Unit 20D.

Until RY91, Unit 20D brown bear hunting regulations consisted of a bag limit of 1 bear every 4 regulatory years, a hunting season from 1 September to 31 May, and a \$25 resident tag fee. During RY92–RY94 the regulations were liberalized in northern Unit 20D to 1 bear per year, and the season was lengthened to 10 August–30 June to provide greater opportunity for hunters in this area of low bear harvest.

In RY95 regulations were further liberalized to meet intensive management objectives, and a Unit 20D harvest objective of 5–15 bears per year was established. The bag limit for the portion of southern Unit 20D east of the Gerstle River was expanded to 1 bear per year and a hunting season of 10 August–30 June, and the resident tag fee was removed for this area and for northern Unit 20D. In RY03, hunting regulations were updated for southern Unit 20D west of the Gerstle River to coincide with the rest of the unit.

In RY17 regulations were further liberalized when brown bears were allowed to be taken over bait stations in northern Unit 20D. Since the early 2010s there have been multiple proposals during each Board of Game cycle to allow brown bear baiting in all of Unit 20D. During this same time period surrounding units began allowing brown bear baiting or made other liberalizations to brown bear hunting seasons. The Unit 20D brown bear population estimates that are currently used for management decisions are from the late 1980s to early 2000s, and the estimates were extrapolations from neighboring units (Bruning 2015).

Management Direction

EXISTING WILDLIFE MANAGEMENT PLANS

There are no formal wildlife management plans for brown bears in Unit 20D.

GOALS

- G1. Maintain the brown bear population and its habitat in concert with other components of the ecosystem.
- G2. Provide maximum opportunity to hunt brown bears in Unit 20D.

CODIFIED OBJECTIVES

Amounts Reasonably Necessary for Subsistence Uses

- C1. Unit 20D has a positive finding for customary and traditional use of brown bears. The amounts necessary for subsistence uses (ANS) for Unit 20D outside the Fairbanks nonsubsistence area is 1–2 bears.

Intensive Management

Not applicable.

MANAGEMENT OBJECTIVES

- M1. Manage harvest to maintain a 5-year average annual take of 10–20 bears.
- M2. Manage harvest to maintain a 5-year average annual harvest composed of at least 55% males.

MANAGEMENT ACTIVITIES

1. Population Status and Trend

Population estimates are not available for brown bears in Unit 20D. Information obtained during sealing cannot be used to measure population trends. Although harvest information gained from sealing records such as average skull sizes, ages, and sex ratios may provide some indication of brown bear population trends in the absence of accompanying demographic data, correlations between these measures and harvest sustainability continue to be unknown. Research is needed to identify population parameters so DWC wildlife managers can assess population trends and harvest sustainability.

ACTIVITY 1.1. Deploy and maintain radio collars on brown bears in Unit 20D.

Data Needs

Baseline data on brown bears in Unit 20D is lacking. Radiocollared bears will be monitored to examine movement patterns and survival to support management activities.

Methods

ADF&G staff fitted brown bears with Global Positioning System (GPS) Iridium and VHF collars. During capture days we searched in all major drainages of southern Unit 20D in the foothills of the Alaska Range with two PA-18 Super Cubs, from the edge of tree line to higher in elevation until habitat was no longer available (> 6,000 ft) or the terrain was too steep for a safe capture. When a bear was located by an observer plane the crew contacted the R44 helicopter by radio. Once the helicopter landed in the vicinity of the bear, one member of the helicopter team stayed with the helicopter, while two crew members located the bear on foot. Bears were immobilized using Telazol following standard protocols and fitted with a tracking collar. Each bear was weighed and assigned a unique number, which was indicated with an ear tag and lip tattoo.

Collared bears are monitored via fixed-winged aircraft to obtain data that GPS collars cannot provide remotely, such as productivity and cub survival.

Results and Discussion

A total of 10 collars were deployed in RY18. Due to poor weather conditions and lack of helicopter availability only 2 GPS collars were deployed in October 2018; 1 male and 1 female were collared. The remaining 8 collars (7 GPS, 1 VHF) were deployed in May 2019; 5 males and 3 females were collared. Very few conclusions can be made at this time due to the small sample size and limited locational data collected during this reporting period. Collared bears will

continue to be monitored; locational data will be analyzed and presented in the RY19–RY23 report.

Recommendations for Activity 1.1

Continue.

2. Mortality-Harvest Monitoring and Regulations

ACTIVITY 2.1. Monitor harvest through sealing records. (Objective M1)

Data Needs

Annual sealing data are needed to track the number of harvested brown bears, percentage of males in the harvest, ages of bears at the time of harvest, and the distribution of the harvest. These data can be used as indices of trends. Because of the lack of recent population estimates for brown bears, trends in the total harvest, ages of bears at harvest, and the sex composition of harvested bears are the primary information used to guide management decisions regarding Unit 20D brown bears.

Methods

Harvest of brown bears was monitored by requiring all successful hunters to present bears for sealing by ADF&G staff or another approved sealing officer within 30 days of the kill. Data collected from each brown bear during the sealing process included sex, skull length and width, transportation used by the hunter, number of days hunted, date and location of kill, and hunter name and address. A vestigial premolar tooth was extracted from each bear skull for use in age determination.. Data were summarized by regulatory year.

Season and Bag Limit

During RY14–RY18 the Unit 20D brown bear bag limit was 1 bear per year and the hunting season was 10 August–30 June for both residents and nonresidents. Cubs (< 2-years of age) and females accompanied by cubs were illegal to harvest. No resident tag fee was required.

Brown bear baiting was permitted in Unit 20D north of the Tanana River at registered bait stations 15 April–30 June beginning in the spring hunting season of RY17 (spring 2018). Hunters using bait could establish up to 2 bait stations at a time and were required to first obtain a permit issued by ADF&G. Guide operators using bait were allowed to register up to 10 bait stations.

Results and Discussion

Harvest by Hunters

For RY14–RY18, the 5-year average for annual brown bear harvest in Unit 20D was 13 bears per year, composed of 52% males, which met the objective for annual take but was slightly below the management objective for the sex ratio in the harvest (Table 1). Harvest was slightly higher in RY17 and RY18, which may be the result of increased opportunity after baiting was allowed in northern Unit 20D in the spring hunting season of RY17. During RY17 and RY18,

28% and 40% of the brown bears harvested were taken over bait, respectively. The effects of allowing brown bears to be taken over bait will be monitored, but based on current harvest numbers it appears to be sustainable.

Hunter Residency and Success

Similar to prior reporting periods, most brown bears in Unit 20D were harvested by Alaska residents during RY14–RY18. Of the total harvest, 40% of the brown bears were harvested by local residents, 58% were harvested by nonlocal residents, and 2% were harvested by nonresidents.

Harvest Chronology.

During RY14–RY18 brown bears were most commonly harvested in September and June. Overall, most of the brown bears taken in Unit 20D were killed in the fall. However, in RY16 and RY18, a higher percentage of bears were killed in the spring.

Transport Methods

During RY14–RY18 successful hunters used airplanes, horses, boats, highway vehicles, snowmachines, 3- or 4-wheelers (ATV), off-road vehicles (ORV), and their own feet (hiking, snowshoeing, and cross-country skiing) to access hunting areas. Boat, ATV/ORV and highway vehicle were the most common methods of transportation used. Airplane and horse use during RY14–RY18 decreased compared to the previous reporting period (Bruning 2015).

Other Mortality

There was 1 defense of life or property (DLP) mortality reported in RY15 and 1 DLP mortality in RY16; both bears were male.

Alaska Board of Game Actions and Emergency Orders

The Board of Game authorized brown bear baiting at registered bait stations in Unit 20D north of the Tanana River at the 2017 Interior/Eastern Arctic Board of Game meeting. This regulation took effect in the spring of RY17 (spring 2018 hunting season).

Recommendations for Activity 2.1

Continue.

Table 1. Unit 20D brown bear reported harvest and mortality data, Interior Alaska, regulatory years 2014–2018.

Regulatory year	Season	Southern Unit 20D			Northern Unit 20D			All of Unit 20D			
		Male	Female	Total	Male	Female	Total	Male	Female	Total	(%) Male
2014	Fall 2014	4	2	6	1	3	4	5	5	10	(50)
	Spring 2015	1	1	2	1	1	2	2	2	4	(50)
	Total	5	3	8	2	4	6	7	7	14	(50)
2015	Fall 2015	7	1	8	1	2	3	8	3	11	(73)
	Spring 2016	0	0	0	0	1	1	0	1	1	(0)
	Total	7	1	8	1	3	4	8 ^a	4	12	(67)
2016	Fall 2016	3	0	3	0	1	1	3	1	4	(75)
	Spring 2017	2	1	3	1	1	2	3	2	5	(60)
	Total	5	1	6	1	2	3	6 ^a	3	9	(67)
2017	Fall 2017	5	4	9	1	1	2	6	5	11	(55)
	Spring 2018	0	1	1	3	3	6	3	4	7	(43)
	Total	5	5	10	4	4	8	9	9	18	(50)
2018	Fall 2018	2	2	4	0	2	2	2	4	6	(33)
	Spring 2019	2	0	2	2	5	7	4	5	9	(44)
	Total	4	2	6	2	7	9	6	9	15	(40)

^a Mortalities included 1 bear taken under a defense of life or property permit.

3. Habitat Assessment-Enhancement

No habitat assessment or enhancement activities were conducted for brown bears in Unit 20D during RY14–RY18 and none are planned for RY19–RY23.

NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS

None.

Data Recording and Archiving

- Harvest data are stored in ADF&G’s Wildlife Information Network (WinfoNet) database.
- All other electronic data and files, such as survey memos and reports, are stored on the Delta Junction area biologist’s computer and archived in WinfoNet (Project Title: Delta area survey and inventory | Brown Bear).
- Field data sheets and hard copies of files are located in the file cabinet in the Delta Junction area biologist’s office.

Agreements

None.

Permitting

None.

Conclusions and Management Recommendations

The Unit 20D brown bear harvest should continue to be monitored closely to detect changes in total harvest levels and sex ratio of the harvest, especially with added hunting opportunity provided by bear baiting in northern Unit 20D. There has been increased public interest in allowing brown bear baiting in southern Unit 20D, with multiple proposals presented to the Board of Game to liberalize bear hunting opportunity in this area. Changes in harvest that result from increased opportunity through bear baiting in northern Unit 20D may offer insight into the effects of these regulatory changes and provide additional data to evaluate if additional opportunity for brown bear baiting in southern Unit 20D is warranted in the future.

Estimates of brown bear population size in Unit 20D are from studies conducted in the 1990s in neighboring units; it is unknown how accurate these estimates are. There are no survey and inventory activities planned for assessing the brown bear population status in Unit 20D during RY19–RY23. Although information on population status and trend would be useful when evaluating management goals and objectives, current options for measuring these parameters are unfeasible given resource constraints (e.g., budget and personnel) and other regional management priorities. Therefore, a methodical, slow approach to increasing hunting opportunities is warranted.

II. Project Review and RY19–RY23 Plan

Review of Management Direction

MANAGEMENT DIRECTION

There are no changes to the management direction for brown bears in Unit 20D for RY19–RY23.

GOALS

- G1. Maintain the brown bear population and its habitat in concert with other components of the ecosystem.
- G2. Provide maximum opportunity to hunt brown bears in Unit 20D.

CODIFIED OBJECTIVES

Amounts Reasonably Necessary for Subsistence Uses

- C1. Unit 20D has a positive finding for customary and traditional use of brown bears. The ANS for Unit 20D outside the Fairbanks nonsubsistence area is 1–2 bears.

Intensive Management

Not applicable.

MANAGEMENT OBJECTIVES

- M1. Manage harvest to maintain a 5-year average annual take of 10–20 bears.
- M2. Manage harvest to maintain a 5-year average annual harvest composed of at least 55% males.

REVIEW OF MANAGEMENT ACTIVITIES

1. Population Status and Trend

ACTIVITY 1.1. Deploy and maintain radio collars on brown bears in Unit 20D.

Data Needs

No change from RY14-RY18 report.

Methods

No change from RY14-RY18 report.

2. Mortality-Harvest Monitoring, and Regulations

ACTIVITY 2.1. Monitor harvest through sealing records (Objectives M1 and M2).

Data Needs

No change from the RY14–RY18 report.

Methods

No change from the RY14–RY18 report.

3. Habitat Assessment-Enhancement

No habitat assessment or enhancement activities are planned for brown bears in Unit 20D for RY19–RY23.

NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS

Data Recording and Archiving

- Harvest data will be stored in ADF&G’s WinfoNet database.
- All other electronic data and files, such as survey memos and reports, will be stored on the Delta Junction area biologist’s computer and archived in WinfoNet (Project Title: Delta area survey and inventory | Brown Bear).
- Field data sheets and hard copies of files will be stored in the file cabinet in the Delta Junction area biologist’s office.

Agreements

None.

Permitting

None.

References Cited

Bruning, D. L. 2015. Unit 20D brown bear. Chapter 20, Pages 20-1 through 20-9 [*In*] P. Harper and L. A. McCarthy, editors. Brown bear management report of survey and inventory activities 1 July 2012–30 June 2014. Alaska Department of Fish and Game, Species Management Report ADF&G/DWC/SMR-2015-1, Juneau.

