

Brown Bear Management Report and Plan, Game Management Unit 18:

Report Period 1 July 2014–30 June 2019, and

Plan Period 1 July 2019–30 June 2024

Keith W. Oster



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Species management reports and plans provide information about brown bear that are hunted 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 Phillip Perry, Management Coordinator for Region V 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 18 for the 5 regulatory years 2014–2018 and plans for survey and inventory management activities in the following 5 regulatory years 2019–2023. A regulatory year (RY) begins 1 July and ends 30 June (e.g., RY15 = 1 July 2015–30 June 2016). This report is produced primarily to provide agency staff with data and analysis to help guide and record its own 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) Division of Wildlife Conservation (DWC) launched this 5-year report to more efficiently report on trends and 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

Unit 18 is a dynamic subarctic system of braided rivers, lakes, hills, mountains, extinct volcanoes, and coastline encompassing a 40,600-square mile roadless area on the edge of the Bering Sea. The Yukon and Kuskokwim rivers enter Unit 18 on its eastern border in route to the coast and these rivers roughly divide the unit into thirds. The middle third between the rivers is largely flat, wet, and dotted with many lakes. The portion north of the Yukon River and the portion south and east of the Kuskokwim River are mostly upland to mountainous with some extensive areas of forest near the rivers. Unit 18 also includes the Nelson, Nunivak and St. Matthew islands. Nelson Island is effectively connected to the mainland in the winter, but in summer it is separated by Baird Inlet to the east, the Ninglick and Kolavinarak rivers to the north and south, and the Bering Sea to the west. Nunivak and St. Michael islands lie farther west in the Bering Sea, and while they once had seasonal and sometimes abundant congregations of polar bears, they have been free of large predators for generations. Current maps for the Unit 18 boundaries and special management areas are found at <http://www.adfg.alaska.gov/index.cfm?adfg=maps.main>.

Summary of Status, Trend, Management Activities, and History of Brown Bear in Unit 18

To date, there have been no unitwide brown bear census efforts or projects completed in Unit 18. In 2002 and 2003, portions of Unit 18 and adjoining units within the Togiak National Wildlife Refuge (TNWR) were censused by refuge staff, providing a midpoint density of 40.3 brown bears per 1,000 km² as a comparative value for similar habitats found in the remainder of Unit 18 (Walsh et al. 2008). Since that time, ADF&G staff have heard concerns from the public that their interactions with brown bears while hunting or at their fish camp have been increasing, leading to a perception that brown bear populations are increasing. Commonly used indices of brown bear population status derived from harvest data show no indication that brown bear are decreasing in Unit 18, though those indices have recently been shown to be insensitive to increased harvest (Brockman et al. 2020). Brown bear harvest was lower in this reporting period

(RY14-RY18) than the previous reporting period (RY12-RY13), though the decline in harvest is likely a result of poor spring hunting conditions due to lack of snow and early breakup, and not due to a change in the abundance of brown bears.

Traditionally, bears have been important as food animals for the Yupik people of Unit 18, and some of their customs surrounding bear hunting were inconsistent with the general hunting regulations. A brown bear working group made up of representatives of Unit 18 communities was established in the early 1990s as a vehicle for local involvement on brown bear issues. With input from this group, the Alaska Board of Game established the Western Alaska Brown Bear Management Area (WABBMA) for subsistence hunting, and regulations were modified to reflect local cultural customs and to improve harvest reporting.

WABBMA included all of Units 18 and 17, and parts of Units 9 and 19A. In the WABBMA area, ADF&G administered a subsistence registration permit hunt for hunters who pursued brown bears primarily for their meat. Since RY06, the brown bear subsistence hunt has been administered on a game management unit basis, and in Unit 18 under the RB698 subsistence permit. Generally, participation and reporting on the RB698 brown bear subsistence permit has been low. Four RB698 permits were issued the first year; the most permits, 18, were issued in RY10. The total reported harvest under the RB698 subsistence permit from RY06 to RY13 was 5 brown bears, and though permits are still available annually, none have been issued since RY13.

Management Direction

EXISTING WILDLIFE MANAGEMENT PLANS

None specifically to brown bear.

GOALS

- G1. Maintain a viable brown bear population in Unit 18.
- G2. Obtain brown bear population and harvest information.
- G3. Minimize adverse interactions between bears and the public.
- G4. Maintain productive working relationships with local residents and other agencies.

CODIFIED OBJECTIVES

Amounts Reasonably Necessary for Subsistence Uses

Unit 18 has a positive customary and traditional use finding for brown bear, as determined by the Board of Game, with an amount necessary for subsistence uses of 20–30 brown bears per year.

Intensive Management

None.

MANAGEMENT OBJECTIVES

- M1. Monitor harvest through the sealing program, subsistence registration permit reports, and contacts with the public.
- M2. Inform the public of methods to minimize bear-human conflicts by reducing the attractiveness of fish camps, dumps, and other attractants.

MANAGEMENT ACTIVITIES

1. Population Status and Trend

There were no population status and trend activities during RY14–RY18.

2. Mortality-Harvest Monitoring and Regulations

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

Data Needs

All brown bears harvested in Unit 18 are required to be sealed or their harvest is required to be reported via registration permit. Data collected during the sealing process and information from registration permits are used by brown bear managers to analyze the impacts of harvest by monitoring trends in the age and sex distribution of harvested brown bears.

Methods

Brown bear harvested by hunters or killed in defense of life and property (DLP) in Unit 18 were sealed to monitor harvest. Harvest data were archived in the brown bear sealing database accessible through ADF&G's Wildlife Information Network database (WinfoNet). Harvest is reported by regulatory year. Information recorded for each brown bear included date of kill, name of hunter, specific location of kill, method of take and transportation, commercial services used, presence of tattoos or other marks, sex of the bear, hide color, and skull length and width. A tooth from each bear skull was sent to Matson's Laboratory (Manhattan, Montana) for cementum age determination.

Seasons and Bag Limits

Seasons and bag limits for brown bear during RY14–RY18 were as follows:

Bag limits	Seasons	
	Resident seasons	Nonresident seasons
1 bear every regulatory year	1 September–31 May	1 September–31 May
1 bear every regulatory year by permit	1 September–31 May (Subsistence hunt only)	None

Baiting season	
Bait site registration begins 1 April	Use of bait allowed 15 April–31 May ^a

^a Black bears may be taken over bait in the same season as brown bears, as well as from 1 June through 30 June.

Results and Discussion

Harvest by Hunters

During RY14–RY18, hunters harvested an annual average of 21 brown bears per year with a range of 27 bears in RY14 and 14 bears in RY17 (Table 1). The average age of harvested brown bears was 8.5 years old, which is consistent with the prior 10-year average of 8.1 years old. Harvests of brown bears increased from RY00–RY04, in part due to liberalizations from the Board of Game, from 1 brown bear every 4 years to 1 every year. Harvest remained relatively stable from RY04 to RY11, but has since declined to levels last observed in the early 2000s. This decline in harvest is not likely related as much to fluctuations in brown bear numbers, but rather to other unidentified factors that affected hunters (e.g., weather, spring snow conditions, guide availability). Male brown bears comprised 52% of total harvest in RY14–RY18, a decrease from 65% during the last reporting period, RY12–RY13 (Perry 2015). While we cannot exclude the higher harvest regime observed during RY04–RY11 as a factor in causing this shift in sex structure of harvest, it is likely more an effect of a greater proportion of harvest being attributed to opportunistic fall hunting over the RY14–RY18 period than prior years.

Hunter access is primarily by aircraft and limited to a few lakes and landing areas where high hunting pressure occurs. However, there are large areas throughout Unit 18 that provide refuge for bears because they are not accessible by hunters. Most of the total reported harvest (75%) during RY14–RY18 occurred in the Kilbuck-Kuskokwim Mountains west of Bethel and in the southern portions of Unit 18 on the drainages of the Kanektok and Goodnews rivers. Harvests during RY14–RY18 (a 5-year average of 21 brown bears per year) were lower than the previous 10-year average of 30.9 brown bears per year. Total harvests are not believed to be impacting the population status in the unit.

Baiting for black bears in Unit 18 was first authorized to begin in the spring of RY08, and baiting for brown bears was authorized to begin in the spring of RY17. Each person may register

Table 1. General season brown bear harvest by sex and drainage, regulatory years 2004–2018, Unit 18, Southwest Alaska.

Regulatory year	Total harvest	Kuskokwim Bay drainage ^a				Yukon River drainage				Unknown location or sex
		Fall harvest		Spring harvest		Fall harvest		Spring harvest		
		Male	Female	Male	Female	Male	Female	Male	Female	
2004	38	14	18	1	1	0	1	3	0	0
2005	28	13	7	5	2	0	0	1	0	0
2006	23	11	7	4	0	0	0	0	0	1
2007	33	19	6	2	1	1	0	4	0	0
2008	31	15	8	3	1	0	0	3	0	1
2009	26	13	5	2	1	0	0	3	0	2
2010	35	16	5	8	2	2	0	2	0	0
2011	39	17	10	2	1	2	0	4	1	2
2012	34	7	12	6	0	2	4	1	0	2
2013	22	9	2	6	0	4	1	0	0	0
2014	27	9	10	2	0	1	3	2	0	0
2015	22	8	8	0	1	3	2	0	0	0
2016	25	3	10	2	1	3	4	2	0	0
2017	14	6	4	2	0	0	1	0	0	1
2018	17	7	4	0	0	2	1	1	0	2

^a The Kuskokwim Bay drainage includes the drainages of the Kuskokwim River and all drainages to the south in Unit 18.

2 bait sites, and because no permit is required for brown or black bears in Unit 18, we do not know whether bear baiters are mainly targeting brown or black bears. However, the number of bait sites increased in RY17 when brown bear baiting began (Fig. 1). Over the RY14–RY18 period, 1 brown bear was reported harvested over bait.

Defense of life or property (DLP) losses are reported infrequently. By their nature, DLP instances are unplanned; people involved in DLP kills are unprepared for dealing with a dead bear, and they generally have poor knowledge of proper procedures. We made progress with DLP reporting, but we probably do not hear about many of the bears killed under DLP circumstances. We recorded 4 DLP brown bears during RY14–RY18. In the past we have had as many as 6 reported in a single regulatory year.

Permit Hunts

Subsistence registration permits (RB698) are available to hunters who take brown bears primarily for the meat. Prior to 2005, the subsistence permit included multiple units within the WABBMA. Since 2005, each unit in the previous management area has a separate subsistence permit as a way to streamline hunting regulations for subsistence hunts. Under the Unit 18 permit, hunters must salvage the meat for human consumption, the bag limit is 1 brown bear per regulatory year, resident tag fees are exempted, the hide and skull need not be salvaged, hunters must report their hunting activity after receiving a prompt by mail, and the sealing requirement is eliminated unless the hide or skull is removed from a unit with subsistence hunts. If a brown bear is presented for sealing under this last provision, the trophy value of the hide is destroyed by removing the skin of the head and the front claws, and these parts are retained by ADF&G. There were no RB698 subsistence brown bear permits issued during RY14–RY18.

Hunter Residency and Success

Resident harvest of brown bear in Unit 18 has declined in recent years while nonresident harvest has remained relatively stable. Resident harvest ranged from 4 to 9 brown bears during RY14–RY18, and ranged from 13 to 25 brown bears the 10 years prior (RY03–RY13). Of the 105 brown bears harvested in RY14–RY18, 32% were harvested by Alaska residents and 68% were harvested by nonresidents. Prior to RY14–RY18, harvest was split almost evenly between residents (49%) and nonresidents (51%) from RY00 to RY13, which is comparable to the averages calculated back to 1968 when records in Unit 18 begin. The observed declines in resident harvest coincide with a regional period of early breakup and poor travel conditions for spring hunting.

Nonresident harvests are expected to remain relatively stable because nonresident hunters are required to use a guide or be accompanied by a resident relative within second-degree kindred. Also, both federal refuges in Unit 18, the Yukon Delta National Wildlife Refuge (YDNWR) and TNWR, limit the number of guides operating on refuge lands. YDNWR has issued permits to 3 bear hunting guides to operate within the refuge, and TNWR has issued a permit to 1 guide to operate within the portion of TNWR that is in Unit 18. Recently, YDNWR allowed both brown bears and moose to be hunted by guided hunters north of the Yukon River, specifically the Andreafsky River drainage. Each of the federally permitted guides are allowed to take up to 5

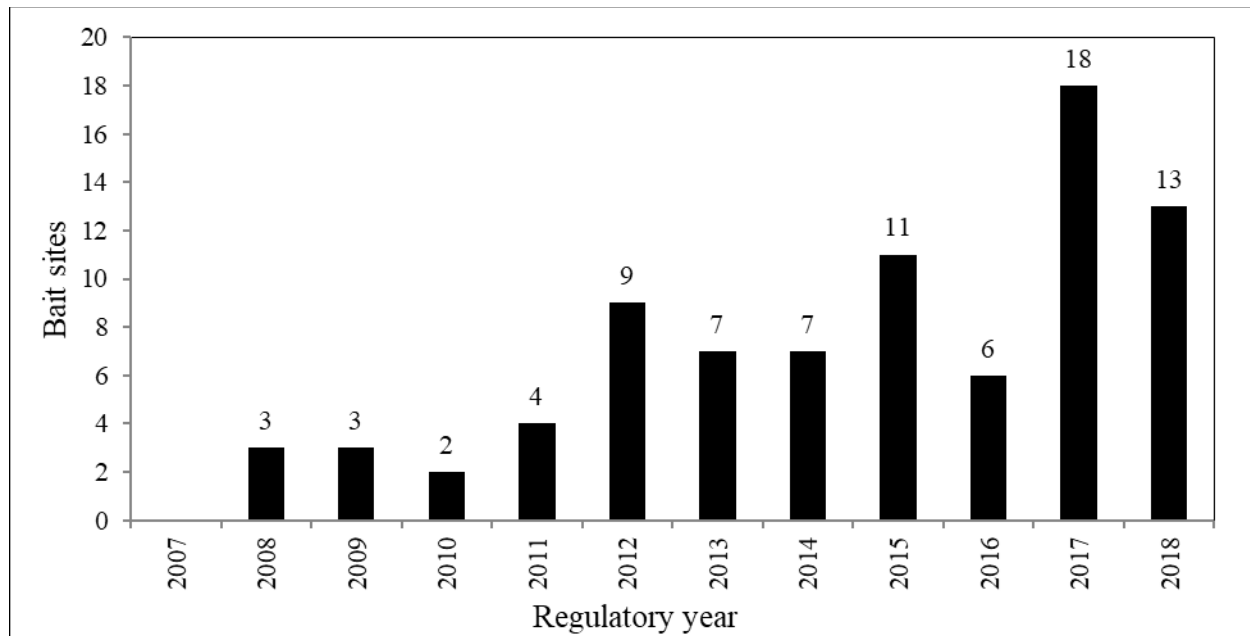


Figure 1. Registered bait sites, regulatory years 2007–2018, Unit 18, Southwest Alaska.

Note: Brown bear baiting began in RY17.

brown bears per calendar year, and there are no plans by either refuge to change that number. Because of this cap on the number of guides in federal refuges, we expect nonresident brown bear harvest to remain low.

Harvest Chronology

Prior to the arrival of caribou in Unit 18 in the mid-1990s, brown bear harvest was roughly split evenly between spring and fall seasons. This pattern was variable and depended on snow conditions that allowed travel by snowmachine in the spring for greater access. Since RY99, the fall harvest has consistently exceeded the spring harvest, which was originally attributed to caribou and/or moose hunters opportunistically taking brown bears. However, increased opportunity through the Board of Game action in 2004, and increasingly inconsistent spring snow conditions have significantly increased brown bear harvest in the fall. Over the same period, spring harvest has remained consistently variable within historical averages (Fig. 2).

Alaska Board of Game Actions and Emergency Orders

The Board of Game continued its yearly reauthorization during RY14–RY18 of the brown bear tag fee exemption for all Unit 18 brown bear hunts. At the board’s January 2017 meeting, it approved the taking of brown bears over bait; baiting for brown bears was allowed beginning 15 April 2018 (RY17). In January 2020, the board extended the brown bear hunting season end date from 31 May to 30 June, and allowed bait site registration and deployment of bait sites to occur 15 days earlier than previously allowed. The regulatory changes from the board’s January 2020 meeting take effect 1 July 2020, and are not reflected in RY14–RY18. The department made no emergency order actions during RY14–RY18.

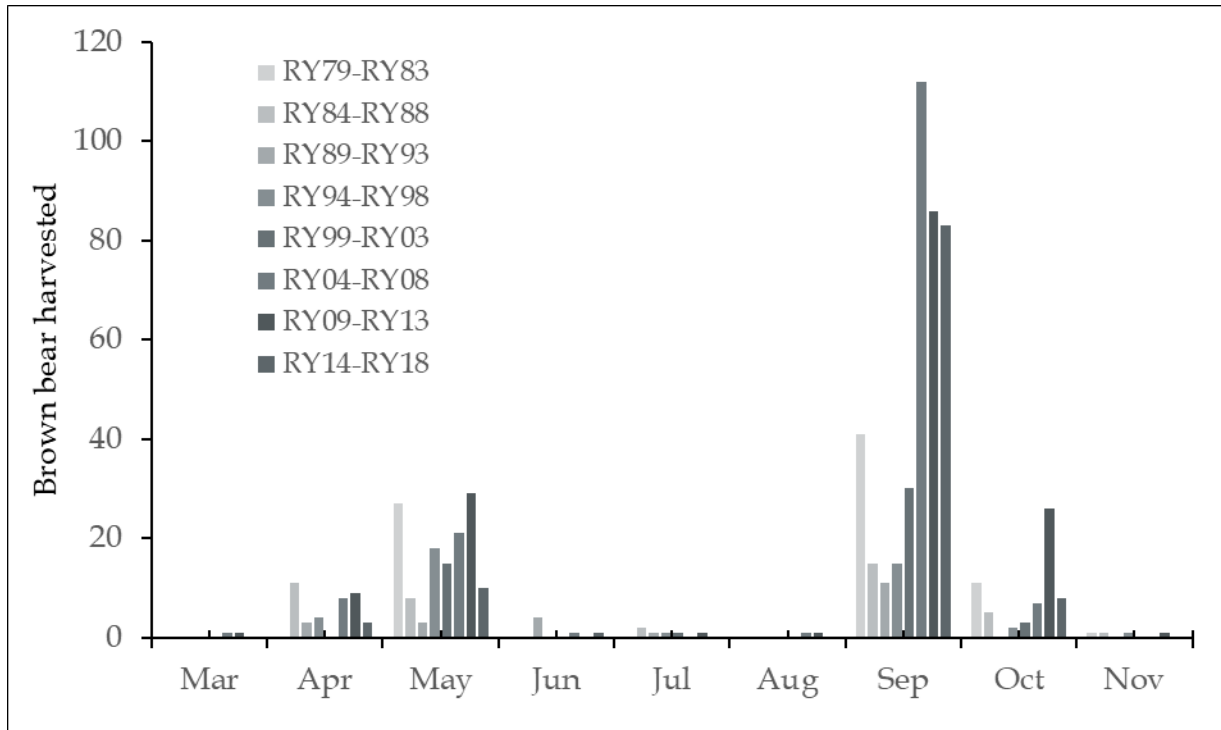


Figure 2. Brown bear harvest chronology, regulatory years 1979–2018, Unit 18, Southwest Alaska.

Recommendations for Activity 2.1

Continue.

3. Habitat Assessment-Enhancement

No activities for brown bear habitat assessment or enhancement are included in Unit 18 brown bear management.

NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS

Data Recording and Archiving

- Brown bear harvest (fur sealing) data will be archived in a database accessible through WinfoNet.
- Paper copies of brown bear sealing certificates are stored in the filing cabinet located in the Bethel Area Biologist office.

Agreements

None.

Permitting

None.

Conclusions and Management Recommendations

Management Objective M1 was achieved through the continued sealing of brown bears harvested, and by the continued issuance of subsistence registration brown bear permits in Unit 18. Brown bear harvests ranged from 14 to 27 bears per year during RY14–RY18. Though harvest declined during RY14–RY18, we believe the harvestable surplus of brown bears in Unit 18 continues to be higher than 30 brown bear per year, thus meeting our codified ANS objectives. We think most of the harvest is now by residents and nonresidents who are opportunistically targeting brown bears in the unit. We anticipate little change in the number of brown bears harvested by nonresident hunters due to guide requirements for hunters, and restrictions on the number of guides allowed to operate on federal refuge lands, which make up the majority of hunt areas in Unit 18.

While the proportion of females harvested during RY14–RY18 has increased, we recommend no changes to the seasons and bag limits for general season hunts. All the higher-than-average female harvest occurred from RY14–RY16, with a 53% female harvest; in the following 2 years (RY17–RY18), female harvest was lower, at 36%. Further, indices of kill rate such as changes in age and sex structure of a harvest are often unreliable, especially when derived from small harvest datasets such as in Unit 18 (McLellan et al. 2017). Even though subsistence hunts had no participation in the last 2 reporting periods (RY12–RY13, and RY14–RY18, together totaling 7 years), we recommend they should be continued as registration permit hunts to allow an option for traditional uses of brown bears as a subsistence resource.

Management Objective M2 was achieved through outreach by staff in the Bethel ADF&G office during regulatory meetings, office visits, telephonically and by distributing statewide educational materials regarding bear safety and living with bears.

II. Project Review and RY19–RY23 Plan

Review of Management Direction

MANAGEMENT DIRECTION

There are no changes in management direction for RY19–RY23. We will continue to monitor annual harvest and listen to public concerns, should any arise.

GOALS

No change from RY14–RY18.

CODIFIED OBJECTIVES

Amounts Reasonably Necessary for Subsistence Uses

Unit 18 has a positive customary and traditional use finding for brown bear, as determined by the Board of Game, with an amount necessary for subsistence uses of 20–30 brown bears per year.

Intensive Management

None.

MANAGEMENT OBJECTIVES

- M1. Monitor harvest through the sealing program, subsistence registration permit reports, and contacts with the public.
- M2. Inform the public of methods to minimize bear-human conflicts by reducing the attractiveness of fish camps, dumps, and other attractants.

REVIEW OF MANAGEMENT ACTIVITIES

1. Population Status and Trend

No population status and trend activities are planned for RY19–RY23 in Unit 18.

2. Mortality-Harvest Monitoring

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

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 in Unit 18 brown bear management.

NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS

Data Recording and Archiving

Brown bear sealing data are recorded and archived through ADF&G's WinfoNet database on a server (<http://winfonet.alaska.gov/index.cfm>) and through this report.

Agreements

None.

Permitting

None.

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