Species Management Report and Plan ADF&G/DWC/SMR&P-2020-31

Black Bear Management Report and Plan, Game Management Unit 2:

Report Period 1 July 2013-30 June 2018, and

Plan Period 1 July 2018–30 June 2023

Tessa Hasbrouck



©2010 ADF&G. Photo by Stephen Bethune.



Alaska Department of Fish and Game

Black Bear Management Report and Plan, Game Management Unit 2:

Report Period 1 July 2013–30 June 2018, and Plan Period 1 July 2018–30 June 2023

PREPARED BY:

<u>Tessa Hasbrouck</u> Assistant Area Wildlife Biologist

APPROVED BY:

<u>Richard Nelson</u> Management Coordinator

REVIEWED BY:

<u>Ross Dorendorf</u> Area Wildlife Biologist

PUBLISHED BY:

<u>Sky M. Guritz</u> Technical Reports Editor

©2020 Alaska Department of Fish and Game

Alaska Department of Fish and Game Division of Wildlife Conservation PO Box 115526 Juneau, AK 99811-5526



This funding provided support for Federal Aid in Wildlife Restoration Furbearer Survey and Inventory Project 17.0.

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.

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 Richard Nelson, Management Coordinator for the Division of Wildlife Conservation.

Species management reports and plans are available via the Alaska Department of Fish and Game's public website (www.adfg.alaska.gov) or by contacting Alaska Department of Fish and Game's Division of Wildlife Conservation, PO Box 115526, Juneau, AK 99811-5526; phone: (907) 465-4190; email: dfg.dwc.publications@alaska.gov. The report may also be accessed through most libraries, via interlibrary loan from the Alaska State Library or the Alaska Resources Library and Information Services (www.arlis.org).

This document, published in PDF format only, should be cited as:

Hasbrouck, T. R. 2020. Black bear management report and plan, Game Management Unit 2: Report period 1 July 2013–30 June 2018, and plan period 1 July 2018–30 June 2023. Alaska Department of Fish and Game, Species Management Report and Plan ADF&G/DWC/SMR&P-2020-31, Juneau.

Please contact the authors or the Division of Wildlife Conservation at (907) 465-4190 if you have questions about the content of this report.

The State of Alaska is an Affirmative Action/Equal Opportunity Employer. The Alaska Department of Fish and Game complies with Title II of the Americans with Disabilities Act of 1990. This document is available in alternative communication formats. If you need assistance, please contact the Department ADA Coordinator via fax at (907) 465-6078;TTY/Alaska Relay 7-1-1 or 1-800-770-8973.

ADF&G does not endorse or recommend any specific company or their products. Product names used in this publication are included for completeness but do not constitute product endorsement.

Cover Photo: Black bear in tree on Prince of Wales Island. ©2010 ADF&G. Photo by Stephen Bethune.

Contents

Purpose of this Report	. 1
I. RY13–RY17 Management Report	. 1
Management Area	. 1
Summary of Status, Trend, Management Activities, and History of Black Bear in Unit 2	. 3
Management Direction	. 3
Existing Wildlife Management Plans	. 3
Goals	. 4
Codified Objectives	
Amounts Reasonably Necessary for Subsistence Uses	
Intensive Management	
Management Objectives	
Management Activities	
1. Population Status and Trend	
2. Mortality-Harvest Monitoring and Regulations	. 4
3. Habitat Assessment-Enhancement.	
Nonregulatory Management Problems or Needs	
Data Recording and Archiving	
Agreements	
Permitting	
Conclusions and Management Recommendations	
II. Project Review and RY18–RY22 Plan	16
Review of Management Direction	16
Management Direction	16
Goals	
Codified Objectives	
Amounts Reasonably Necessary for Subsistence Uses	
Intensive Management	
Management Objectives	
Review of Management Activities	
1. Population Status and Trend	
2. Mortality-Harvest Monitoring	
3. Habitat Assessment-Enhancement.	
Nonregulatory Management Problems or Needs	
Human-bear conflicts	
Data Recording and Archiving	
Agreements	
Permitting	
References Cited	18

List of Figures

Figure 1. Map of Game Management Unit 2 boundaries, Southeast Alaska
Figure 2. Map showing reported black bear harvest by Wildlife Analysis Area (WAA) during regulatory years 2013–2017, Unit 2, Southeast Alaska
Figure 3. Average skull size (length plus width) of harvested black bears during regulatory years 2013–2017, Unit 2, Southeast Alaska
Figure 4. Male-to-female ratio of the Unit 2 black bear reported harvest during regulatory years 2013–2017, Southeast Alaska
Figure 7. Proportion of successful hunter transportation methods by year for regulatory years 2008–2017, Unit 2, Southeast Alaska
List of Tables
Table 1. Black bear reported harvest for regulatory years 2008–2017, Unit 2, Southeast Alaska. 6
Table 2. Black bear harvest by Wildlife Analysis Area (WAA) for regulatory years 2013–2017, Unit 2, Southeast Alaska
Table 3. Reported black bear harvest by permit type (DL027, DL028, GL000) and by guides,

with bait, or with dogs for regulatory years 2013-2017, Unit 2, Southeast Alaska	12
Table 4. Reported success and effort rates for regulatory years 2013-2017, Unit 2, Southeast	
Alaska.	13

Purpose of this Report

This report provides a record of survey and inventory management activities for black bear (*Ursus americanus*) in Unit 2 for the 5 regulatory years 2013–2017 and plans for survey and inventory management activities in the following 5 regulatory years 2018–2022. 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 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, the department) 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 black bear management report of survey and inventory activities that was previously produced every 3 years.

I. RY13–RY17 Management Report

Management Area

Game Management Unit 2 includes Prince of Wales Island (POW) and all adjacent islands bounded by a line drawn from Dixon Entrance in the center of Clarence Strait, Kashevarof Passage, and Sumner Strait north to and including Warren Island (Fig. 1). Land area is approximately 3,600 mi² (9,300 km²) with extensive shoreline and marine influenced habitats. Total human population on POW fluctuates seasonally between 4,000 and 5,000 residents.

Land ownership on Unit 2 is a mosaic of federal, state, and private owners, all of whom have different management strategies. The Unit is 80% Tongass National Forest lands which are managed by United States Department of Agriculture, Forest Service (USFS; Southeast Alaska GIS Library 2019) for diverse opportunities including recreation, economic development, and subsistence activities. Sealaska Corporation, the largest private landowner in the unit, primarily manages their lands for economic development (e.g., timber harvest) and hunting opportunities for shareholders.

Unit 2 has a unique ecosystem with a landscape of temperate rainforest, and a mild, maritime climate which receives a large amount of annual rainfall. Wind events are the primary source of disturbance (Harris 1989; Ott 1997). There is a high density of karst and cave features caused by the chemical weathering of limestone and marble bedrock (Baichtal and Swanston 1996) which impact the hydrology and ecology of the unit. Land cover on well-drained sites was historically old-growth temperate rain forest consisting of Sitka spruce (Picea sitchensis), western hemlock (Tsuga heterophylla), red cedar (Thuja plicata), and Alaska yellow cedar (Chamaecyparis nootkatensis). On flatter terrain, as soil moisture increases, forest cover transitions to low-volume forest including shore pine (Pinus contorta), and eventually muskeg. Above approximately 2,000 ft (600 m) in elevation, the forest transitions to a subalpine zone predominantly consisting of mountain hemlock (Tsuga mertensiana), and eventually consisting of isolated areas of alpine vegetation. In forested habitat, understory consists of shrubs and forbs

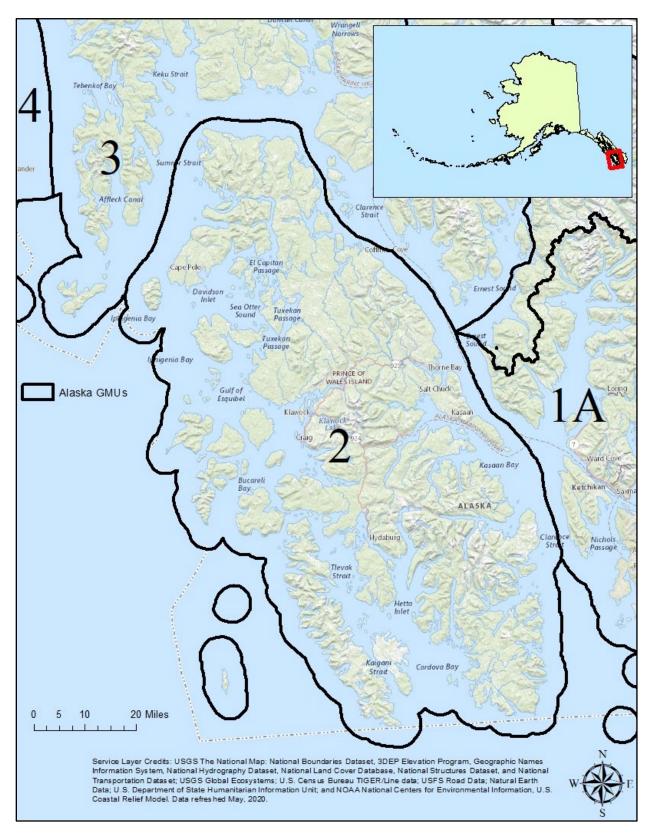


Figure 1. Map of Game Management Unit 2 boundaries, Southeast Alaska.

dominated by blueberry (*Vaccinium spp.*), salal (*Gaultheria shallon*), devil's club (*Oplopanax horridus*), and western skunk cabbage (*Lysichiton americanus*). More than 40 years of large-scale clear-cut logging continues to cause habitat changes in Unit 2. A disproportionate amount of clear-cut logging occurs in Unit 2 compared to the rest of the Tongass National Forest (USDA 2016). Unit 2 does have quality black bear habitat interspersed among the clear-cut areas, and although early seral stages (3–20 years post logging) provide black bears with abundant plant foods, later stages in succession result in the disappearance of understory as conifer canopies close and light no longer penetrates the forest floor. Second-growth stands lead to the decline of large hollow trees and root masses used for denning (Porter et al. 2020). Long-term logging impacts could result in a decline in bear population (Suring et al. 1988).

Summary of Status, Trend, Management Activities, and History of Black Bear in Unit 2

ADF&G staff evaluates information on black bear abundance and distribution using harvest tickets, sealing records, anecdotal public reports, and observations made in the field. Sealing refers to the process of affixing a locking tag to the skull or hide of the harvested animal, and the collecting of biological information by authorized sealers. This process provides information such as sex, age, and skull size from successful hunters which is helpful in evaluating harvest objectives. Harvest ticket reports provide information such as effort and participation from unsuccessful hunters. ADF&G's management objectives are focused on maintaining a specified minimum skull size and sex ratio in the bear harvest. Skull size and sex ratio are metrics commonly used to assess population health. Because changes in skull-size trends could indicate either population shifts or changes in hunter effort and selectivity, managers must use caution when making management decisions based on these metrics.

Black bears are indigenous to Unit 2 and are traditionally valued for their meat, skulls, and hides. Hunter effort and harvest has been dynamic over time. After averaging 123 bears per year during 1980–1988, and 221 bears annually from 1989–1995, the harvest increased to a yearly average of 353 bears during 1994–2002 (Bethune 2011). During 2003–2007 the annual average increased to 431 bears. Harvest peaked in 2005 at nearly 500 bears. Black bear harvest by nonresidents in Unit 2 steadily increased over time and peaked at 89% of the total harvest during 2006 and 2007. This higher level of harvest was evaluated by ADF&G area biologists as unsustainable. A draw hunt for nonresident hunters instituted in RY12 was intended to reduce Unit 2 hunting pressure. This regulatory action limited the number of nonresident hunters through 2 separate seasons, fall (DL027) and spring (DL028).

Unit 2 has a history of human-bear conflicts primarily associated with unsecured human waste and livestock food.

Management Direction

EXISTING WILDLIFE MANAGEMENT PLANS

Alaska wildlife management plans: A public proposal for the management of Alaska's wildlife: Southeastern Alaska (ADF&G 1976).

GOALS

Provide the greatest opportunity to participate in black bear hunting (ADF&G 1976) and viewing.

CODIFIED OBJECTIVES

Amounts Reasonably Necessary for Subsistence Uses

The Alaska Board of Game found a positive customary and traditional use determination for black bear in Unit 2 (5AAC 99.025) in 2000 and established the amounts reasonably necessary for subsistence uses (ANS) as 15–20 bears in 2008.

Intensive Management

There was no intensive management in Unit 2 during RY13-RY17.

MANAGEMENT OBJECTIVES

- 1. Maintain an average skull size of at least 19.1 inches for male bears harvested each spring (January–June) or 18.0 inches for all males taken during a regulatory year.
- 2. Maintain a male-to-female sex ratio of 3:1 in the harvest.
- 3. Minimize human-bear conflicts by providing information and assistance to the public and to other agencies.

MANAGEMENT ACTIVITIES

1. Population Status and Trend

There were no activities with the primary purpose of estimating black bear abundance during this reporting period.

2. Mortality-Harvest Monitoring and Regulations

ACTIVITY 2.1.

Quantify and analyze sealing data.

Data Needs

With a positive customary and traditional finding and a corresponding ANS established, harvest must be assessed to evaluate the achievement of these objectives. ADF&G's management strategy relies on accurate hunter harvest reports and sealing records. Hunter effort and success rate, as well as skull size and male-to-female harvest ratio to help monitor changes in the population.

Methods

Hunters are required to submit bear specimens (i.e., skull plus hide 1 June–31 December, skull plus hide or meat 1 Jan–31 May) to either authorized ADF&G staff or a state appointed sealer within 30 days of kill. Biological and hunt information collected at the time of sealing includes hide color, sex, skull size (length plus width), date and location of kill, number of days hunted, transportation method, and any use of commercial services (including licensed big game guides). A premolar is collected at the time of sealing and sent to a laboratory for age determination. Harvest reports provide baseline effort and success information that is not captured in the sealing process. All hunters are required to submit a harvest report, but mandatory reporting is not enforced for general harvest hunters. Therefore, unsuccessful resident and guided nonresident harvest data is incomplete.

Residency	Bag limit	Season
Resident	2 bears, not more than 1 of which may be a blue or glacier bear by harvest ticket.	1 Sep–30 Jun
Nonresident	1 bear by harvest ticket.	1 Sep–30 Jun
Nonresident	1 bear by drawing permit only (DL027) not using registered guides.	1 Sep-31 Dec
Nonresident	1 bear by drawing permit only (DL028) not using registered guides.	1 Jan–30 Jun

Season and Bag Limit

Results and Discussion

Harvest by Hunters

During this reporting period, 719 black bears were harvested in Unit 2. Annual harvest increased across the reporting period, with an annual average of 144bears (Table 1). Bear harvest density differed across the landscape (Fig. 2) and total harvest by Wildlife Analysis Area (WAA) ranged from 0 to 92 (Table 2). Harvest was larger in WAAs that have higher density road systems or shoreline. Minimal harvest occurred on outer islands and southern Prince of Wales. Research conducted in other areas of Alaska has shown that the limiting factor in harvest size for big game is hunter access rather than wildlife abundance (Brinkman et al. 2016) which supports our analysis for Unit 2.

Male skull size exceeded the annual minimum 18.0-inch objective for the combined spring and fall harvest and the 19.1-inch objective for spring were met each year of the reporting period, except in 2013 (Fig. 3). Annual average female skull size remained stable during this reporting period when compared to the previous reporting period. Guided hunters harvested larger bears (average = 19.2 inches) than nonguided hunters (average = 18.3 inches). On average, harvested male bears were 7 years old, and harvested female bears were 9 years old. The objective of maintaining a 3:1 sex ratio was met each year of this reporting period (Fig. 4). Total bear harvest by hunters was smaller in the fall season than in spring; but females were harvested in larger proportions in the fall compared to spring (Table 1).

Regulatory year		Н	unter k	cill		Nonhunting kill ^a				Total estimated kill ^b					
	Male	Female	Unk	Total	Baited ^c	Male	Female	Unk	Total	# Male	% M	# Female	% F	Unk	Total
2008															
Fall	64	59	0	123	0	1	0	0	1	65	52	59	48	0	124
Spring	176	27	0	203	24	0	0	0	0	176	87	27	13	0	203
Total	240	86	0	326	24	1	0	0	1	241	74	86	26	0	327
2009															
Fall	26	32	3	61	0	2	0	0	2	28	44	32	53	3	63
Spring	145	36	0	181	8	1	0	0	1	146	80	36	20	0	182
Total	171	68	3	242	8	3	0	0	3	174	72	68	28	3	245
2010															
Fall	27	24	0	51	0	3	0	0	3	30	56	24	44	0	54
Spring	151	54	0	205	20	0	1	1	2	151	73	55	27	0	206
Total	178	78	0	256	20	3	1	1	5	181	70	79	30	0	260
2011															
Fall	25	21	0	46	0	1	0	0	1	26	55	21	45	0	47
Spring	219	54	0	273	26	0	0	2	2	219	80	54	20	2	275
Total	244	75	0	319	26	1	0	2	3	245	77	75	23	2	322
2012															
Fall	19	14	0	33	0	5	0	0	5	24	63	14	37	0	38
Spring	100	19	0	119	11	0	0	0	0	100	84	19	16	0	119
Total	119	33	0	152	11	5	0	0	5	124	79	33	21	0	157
2013															
Fall	20	12	0	32	0	0	1	0	1	20	61	13	39	0	33
Spring	66	9	0	75	19	0	0	0	0	66	88	9	12	0	75
Total	86	21	0	107	19	0	1	0	1	86	80	22	20	0	108
2014															
Fall	26	18	0	44	0	3	1	1	4	29	60	19	40	0	48
Spring	83	18	0	101	11	0	0	0	0	83	82	18	18	0	101
Total	109	36	0	145	11	3	1	1	4	112	75	37	25	0	149

 Table 1. Black bear reported harvest for regulatory years 2008–2017, Unit 2, Southeast Alaska.

-continued-

Table 1. Page 2 of 2.

Regulatory year		Hunter kill			Nonhunting kill ^a				Total estimated kill ^b						
	Male	Female	Unk	Total	Baited ^c	Male	Female	Unk	Total	# Male	% M	# Female	% F	Unk	Total
2015															
Fall	20	13	0	33	0	2	1	1	3	22	61	14	39	0	36
Spring	88	33	0	121	16	0	0	0	0	88	73	33	27	0	121
Total	108	46	0	154	16	2	1	1	3	110	70	47	30	0	157
2016															
Fall	32	17	0	49	0	1	0	0	1	33	66	17	34	0	50
Spring	89	6	0	95	9	0	0	0	0	89	94	6	6	0	95
Total	121	23	0	144	9	1	0	0	1	122	84	23	16	0	145
2017															
Fall	26	20	0	46	0	4	0	0	4	30	60	20	40	0	50
Spring	114	9	0	123	14	0	0	0	0	114	93	9	7	0	123
Total	140	29	0	169	14	4	0	0	4	144	83	29	17	0	173

^a Includes DLP kills, research mortalities, and other known human-caused mortality. ^b Percent by sex based only on known harvest total. ^c Bears reported harvested over bait.

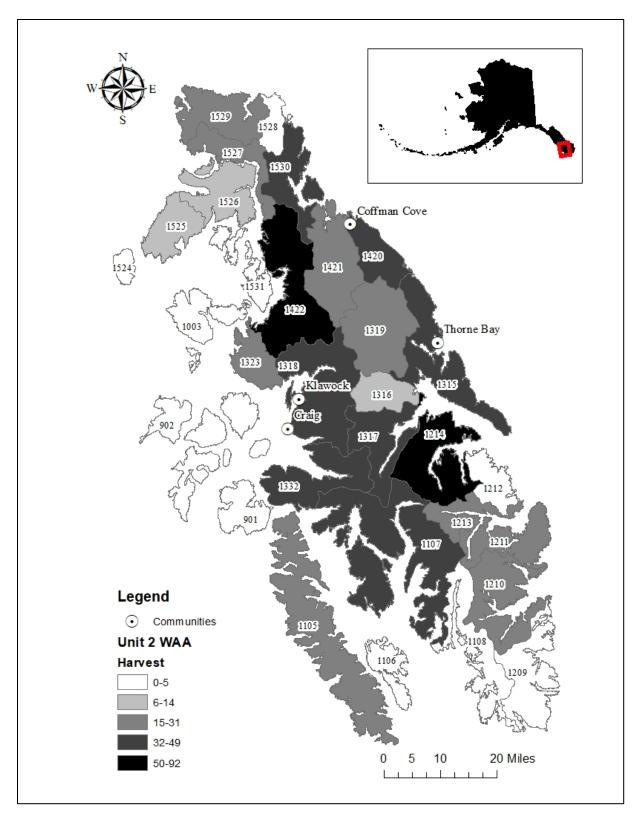


Figure 2. Map showing reported black bear harvest by Wildlife Analysis Area (WAA) during regulatory years 2013–2017, Unit 2, Southeast Alaska

WAA	2013	2014	2015	2016	2017	Average	Total
0901	0	1	1	0	0	0	2
0902	0	1	0	0	0	0	1
1003	0	0	0	0	1	0	1
1105	5	6	7	2	7	5	27
1106	0	0	0	0	0	0	0
1107	10	7	9	7	4	7	37
1108	0	1	1	0	1	1	3
1209	0	0	0	0	0	0	0
1210	2	0	2	8	7	4	19
1211	4	6	2	5	7	5	24
1212	0	0	1	1	1	1	3
1213	7	1	5	7	5	5	25
1214	11	12	12	14	24	15	73
1315	6	10	14	10	8	10	48
1316	4	0	1	0	2	1	7
1317	4	6	4	15	10	8	39
1318	3	5	2	8	11	6	29
1319	7	4	10	1	9	6	31
1323	0	6	5	3	7	4	21
1332	5	4	10	9	6	7	34
1420	7	16	6	7	12	10	48
1421	4	7	3	4	3	4	21
1422	14	24	22	22	10	18	92
1524	0	0	1	0	0	0	1
1525	0	1	0	5	2	2	8
1526	1	2	3	1	7	3	14
1527	0	2	6	6	7	4	21
1528	0	0	0	0	1	0	1
1529	6	13	4	5	3	6	31
1530	9	8	9	5	9	8	40
1531	0	3	1	0	1	1	5
Total	109	146	141	145	165	141	706

Table 2. Black bear harvest by Wildlife Analysis Area (WAA) for regulatory years 2013–2017, Unit 2, Southeast Alaska.

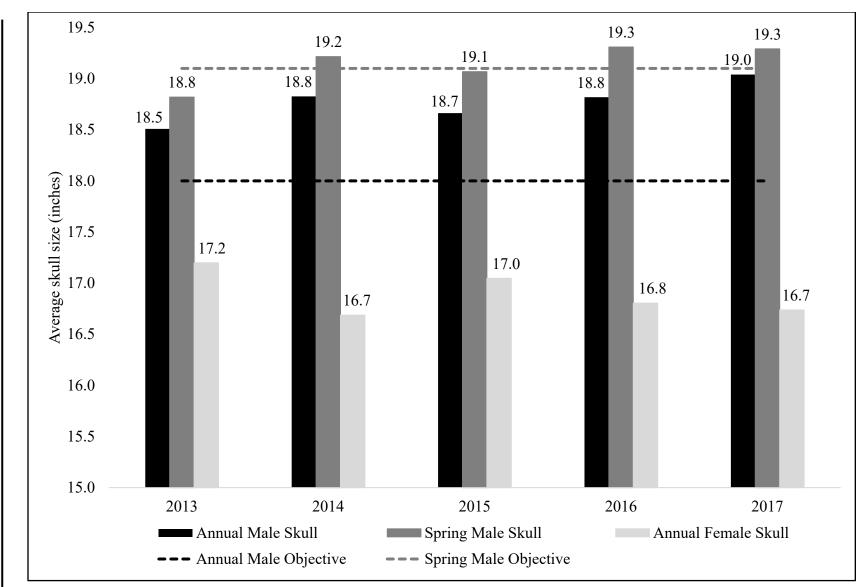


Figure 3. Average skull size (length plus width) of harvested black bears during regulatory years 2013–2017, Unit 2, Southeast Alaska.

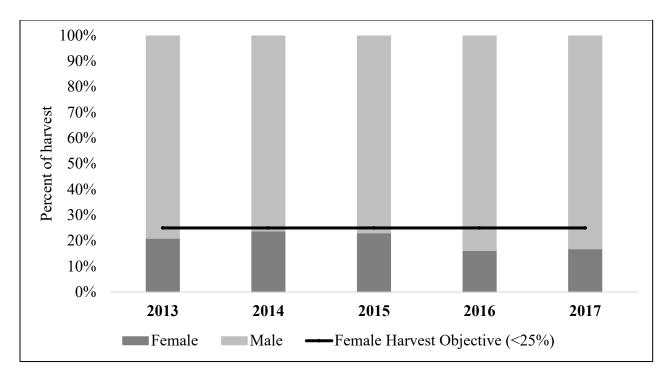


Figure 4. Male-to-female ratio of the Unit 2 black bear reported harvest during regulatory years 2013–2017, Southeast Alaska.

Permit Hunts

Nonguided nonresident hunters harvested black bears with a draw tag in the fall (DL027) and spring (DL028). Guided nonresident and resident hunters harvested bears in both seasons with harvest tickets. The number of DL027 permits (n = 30) did not change during this reporting but DL028 permits increased from 80 permits in RY13–RY15 to 100 permits in RY16–RY17.

More bears were harvested with a harvest ticket (GL000) than with a draw permit (DL027, DL028). GL000 harvest was low in 2013 but stabilized in the following years, 2014–2017. DL027 harvest was stable during this reporting period (excluding 2015), but DL028 harvest increased, likely due to the increased number of annual permits. Twenty-three percent of annual hunts were guided. On average, 14 bears were harvested annually over bait and no bears were harvested with dogs. One person received a permit each regulatory year to hunt bears with dogs in Unit 2, but they did not pursue bears for harvest during any year (Table 3).

		Permit type		Permit	Guided	harvest	Metho	Method of take		
Year	DL027	DL028	GL000	total	#	%	Bait	Dogs		
2013	16	31	61	108	23	21	19	0		
2014	15	34	99	148	29	20	11	0		
2015	9	39	94	142	32	23	16	0		
2016	15	36	94	145	28	19	9	0		
2017	17	46	107	170	51	30	14	0		
Average	14	37	91	143	33	23	14	0		

Table 3. Reported black bear harvest by permit type (DL027, DL028, GL000) and by guides, with bait, or with dogs for regulatory years 2013-2017, Unit 2, Southeast Alaska.

Hunter Residency and Success

Nonresidents harvested the majority of black bears in Unit 2 from RY13 to RY17. On average, 59% of black bear harvest was by nonresident hunters, 25% by nonlocal Alaskan hunters, and 16% by local hunters (Fig. 5). During this reporting period, 45–65% of bear hunters were successful with an average of 5 days hunting to harvest a bear (Table 4). Effort data is incomplete but provides baseline effort and success information that is not captured in the sealing process.

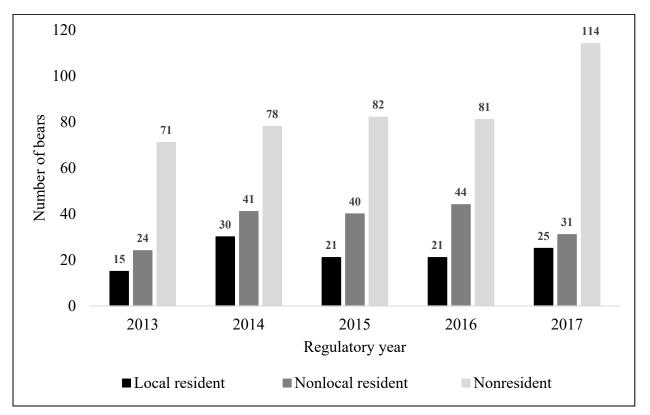


Figure 5. Number of bears harvested by year by local, nonlocal, and nonresident hunters during regulatory years 2013–2017, Unit 2, Southeast Alaska.

Regulatory	Total	Successfu	ul hunters	Total	Average days per hunter			
year	hunters	#	%	harvest	Unsuccessful	Successful		
2013	139	62	45	108	5	6		
2014	193	115	60	148	5	5		
2015	224	132	59	142	6	5		
2016	226	129	57	145	6	4		
2017	257	156	61	170	7	4		
Average	208	119	56	143	6	5		

Table 4. Reported success and effort rates for regulatory years 2013-2017, Unit 2,Southeast Alaska.

Harvest Chronology

Spring and fall black bear harvest in Unit 2 occurs in September, December, and from April to June. Peak harvest occurred in May followed by June and September (Fig. 6). Harvest chronology is a function of regulation structure, bear behavior, seasonal weather, and hunter preference.

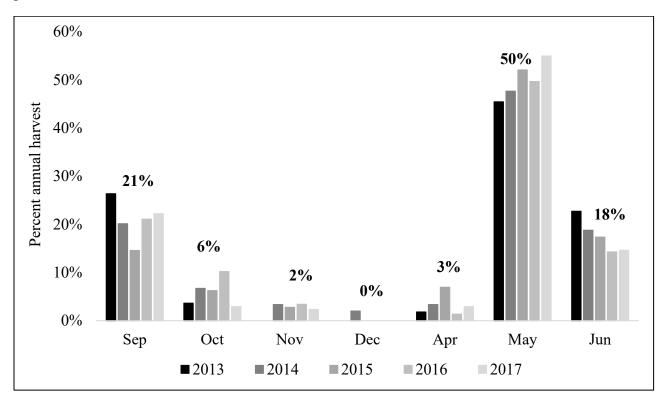


Figure 6. Black bear harvest chronology (average percent harvested by month) for regulatory years 2013–2017, Unit 2, Southeast Alaska.

Transport Methods

During this reporting period, annual boat use ranged from 23% to 35% and highway vehicle use ranged from 61% to 73% (Fig. 7). Less than 7% of hunters used an off-road vehicle, hunted on foot, or used other/unknown transportation methods. Hunting in central Unit 2 was primarily road-based, whereas the remainder of the unit was dominated by boat-based hunting. Road-based hunting increased from the previous reporting period to this reporting period.

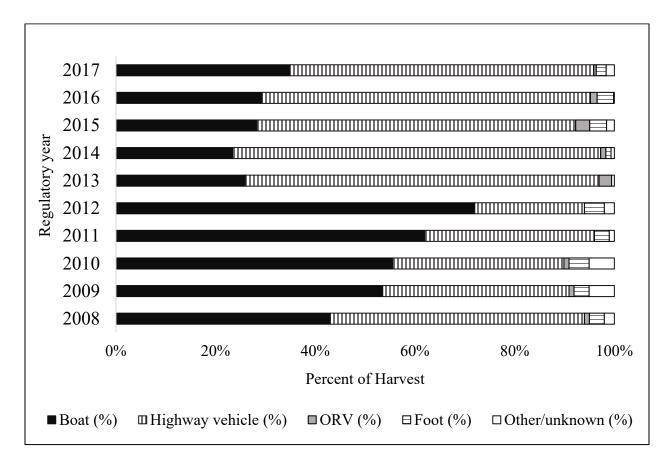


Figure 7. Proportion of successful hunter transportation methods by year for regulatory years 2008–2017, Unit 2, Southeast Alaska.

Other Mortality

Other sources of mortality include wounding loss, illegal harvest, and wildlife-human conflicts. Tracking wounded animals is complicated by the Unit's dense understory and frequent rainfall. During sealing, some hunters volunteer they shot at additional bears; however, this information is anecdotal and not recorded. Further, illegal harvest occurs in Unit 2 at an unknown rate. Historical records are inaccurate regarding the number of bears killed while getting into garbage or other human attractants in Unit 2. During this reporting period, residents and law enforcement provided 11 Defense of Life and Property (DLP) reports. Most of Unit 2 is not restricted by city

ordinances, and therefore landowners may choose to harvest a bear under hunting regulations rather than under DLP regulations.

Recommendations for Activity 2.1

Continue sealing bears and collecting hunter harvest data and encourage compliance with reporting requirements. Dog hunting permits were not well catalogued during any reporting period. ADF&G should create a database to track the number of hunting-with-dog permits.

3. Habitat Assessment-Enhancement

Habitat was altered during this reporting period through timber sales and precommercial thinning practices. Precommercial thinning was authorized in southern Prince of Wales (6,500 acres), central POW (11,543 acres), and Kosciusko Island (1,695 acres). In 2013, the Big Thorne Timber Sale received a Record of Decision and was expected to harvest 148.9 MMBF over 6,186 acres of old growth and 2,299 acres of young growth. In 2015, the USFS issued the first young growth timber sale on POW. The Dargon Point timber sale was 57.7 acres and estimated at 4,250 million board feet. In 2016, USFS created a plan to a transition away from old-growth logging practices.

Unit 2 has not benefited from any USFS habitat enhancement projects specifically intended to benefit black bears. Precommercial thinning was performed in some stands and agencies have attempted to add a wildlife component to thinning prescriptions. However, slash remains an unresolved issue associated with thinning practices. Slash creates barriers to wildlife and due to additional cost, slash is seldom removed. These barriers may last 20–25 years, after which canopy closure again results in loss of understory plants. The long-term effects of extensive clear-cut logging will be detrimental to black bear populations in this unit.

NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS

ADF&G's third objective (i.e., minimize human-bear conflicts by providing information and assistance to the public and to other agencies) is difficult to assess for success. During this reporting period ADF&G did not record specific activities that pertained to this objective. The number of annual DLP bears (n = 0-3) was low, however, the number of nonfatal human-wildlife conflicts was not recorded.

Data Recording and Archiving

Bear teeth are analyzed at Matson's Laboratory for aging and data is recorded in WinfoNet. Historical survey notes and datasheets are stored in the Ketchikan Area Office files. Wildlife management reports and plans are available online

(http://www.adfg.alaska.gov/index.cfm?adfg=librarypublications.wildlifemanagement). Memos, data forms, and other information will be stored in the Ketchikan Area Office shared hard drive.

Agreements

There were no formal agreements during the reporting period.

Permitting

There were no permitting management problems or needs during the reporting period. ADF&G supplied up to 5 permits for hound hunting each year in Unit 2. These permits required hunters to report if they used dogs during the permit period, dog breeds, number days hunted, hunting dates, number bears pursued, dog injuries, and number bears harvested. ADF&G also provided bear baiting permits which allowed bear baiters to move bait stations up to 2 times. This system was successful, and bear hunters using bait had the option to reregister their bait station in a new location.

Conclusions and Management Recommendations

Harvest was consistent during this reporting period compared to previous years. Harvest stabilized after implementing the draw permit system for nonresident hunters in 2012. The management objective of a mean male skull size of 18.0 inches during all 5 years of this reporting period was met, and the spring male objective of 19.1 inches was met during the last 4 years of this reporting period. The objective of a 3:1 male-to-female ratio was met during every regulatory year in this reporting period. Anecdotally, hunters and guides have reported a higher quality hunt post draw implementation, with less crowded hunting conditions and more bears available.

II. Project Review and RY18-RY22 Plan

Review of Management Direction

MANAGEMENT DIRECTION

GOALS

Provide the greatest opportunity to participate in black bear hunting (ADF&G 1976) and viewing.

CODIFIED OBJECTIVES

Amounts Reasonably Necessary for Subsistence Uses

The Alaska Board of Game found a positive customary and traditional use determination for black bear in Unit 2 (AAC 99.025) in 2000 and established the amounts reasonably necessary for subsistence uses as 15–20 bears in 2008.

Intensive Management

There is no anticipated need for an intensive management program in Unit 2.

MANAGEMENT OBJECTIVES

- 1. Maintain an average skull size of at least 19.1 inches for male bears harvested each spring (January–June) or 18.0 inches for all males taken during a regulatory year.
- 2. Maintain a male-to-female sex ratio of 3:1 in the harvest.
- 3. Minimize human-bear conflicts by providing information and assistance to the public and to other agencies.

REVIEW OF MANAGEMENT ACTIVITIES

1. Population Status and Trend

No new activities are anticipated for the planning period.

2. Mortality-Harvest Monitoring

ACTIVITY 2.1.

Quantify and analyze sealing and harvest data.

Data Needs

No change from report section.

Methods

Hunters are required to submit bear specimens (i.e., skull plus hide 1 June–31 December, skull plus hide or meat 1 January–31 May) to either authorized ADF&G staff or a state appointed sealer within 30 days of kill. Biological and hunt information collected at the time of sealing includes hide color, sex, skull size (length plus width), date and location of kill, number of days hunted, transportation method, and any use of commercial services (including licensed big game guides). A premolar is collected at the time of sealing and sent to a laboratory for age determination. All hunters must submit a harvest report. This data is incomplete but provides baseline effort and success information that is not captured in the sealing process.

3. Habitat Assessment-Enhancement

No new activities are anticipated for the planning period. As logging continues, and large tracts of previously logged habitat rapidly convert to second-growth forest, there may be reductions in the carrying capacity for Unit 2 bears. ADF&G will continue to provide comments on USFS and ADF&G development projects that alter habitat.

NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS

Human-bear conflicts

ADF&G's third objective, to minimize human-bear conflicts by providing information and assistance to the public and to other agencies would be difficult to assess due to lack of data. DWC biologists will record conflicts in a database to allow assessment of the third objective

Data Recording and Archiving

ADF&G will store all data digitally, and all historic information will be scanned and stored on the Ketchikan Area Office shared drive.

Agreements

No formal agreements are anticipated.

Permitting

Continue to offer 5 hound hunting permits, and unlimited baiting permits each regulatory year.

References Cited

- Alaska Department of Fish and Game. 1976. Alaska wildlife management plans: A public proposal for the management of Alaska's wildlife: Southeastern Alaska. Draft proposal subsequently approved by the Alaska Board of Game. Division of Game, Federal Aid in Wildlife Restoration Project W-17-R, Juneau.
- Baichtal, J. F., and D. N. Swanston. 1996. Karst landscapes and associate resources: A resource assessment. United States Department of Agriculture, Forest Service. General Technical Report PNW-GTR-383, Portland, Oregon.
- Bethune, S. W. 2011. Unit 2 black bear management report. Pages 67–95 in P. Harper, editor.
 Black bear management report of survey-inventory activities 1 July 2007–30 June 2010.
 Alaska Department of Fish and Game, Division of Wildlife Conservation, Federal Aid in Wildlife Restoration Project 17.0, Juneau.
- Brinkman, T. J., W. D. Hansen, F. S. Chapin III, G. Kofinas, S. BurnSilver, and T. S. Rupp. 2016. Arctic communities perceive climate impacts on access as a critical challenge to availability of subsistence resources. Climatic Change 139(3-4):413–437. https://doi.org/10.1007/s10584-016-1819-6.
- Harris, A. S. 1989. Wind in the forests of Southeast Alaska and guides for reducing damage. General Technical Report PNW-244. U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station.
- Ott, R. A. 1997. Natural disturbance at the site and landscape levels in temperate rainforests of Southeast Alaska. Doctoral dissertation, University of Alaska Fairbanks.

- Porter, B., D. P. Gregovich, and S. W. Bethune. 2020. Denning ecology of black bears on intensively logged Prince of Wales Island, Southeast Alaska. Alaska Department of Fish and Game, Wildlife Research Report ADF&G/DWC/WRR-2020-1, Juneau.
- Southeast Alaska GIS Library. 2019. Tongass National Forest land status [webpage]. https://data-seakgis.opendata.arcgis.com/ (Accessed January 2019).
- Suring, L. H., E. J. Degayner, R. W. Flynn, T. McCarthy, M. L. Orme, R. E. Wood, and E. L. Young. 1988. Habitat capability model for black bear in Southeast Alaska. USDA Forest Service, Tongass National Forest, Juneau.
- United States Department of Agriculture (USDA). 2016. Tongass land and resource management plan, final environmental impact statement. United States Forest Service. R-10-MP-769e,f.

