Species Management Report and Plan ADF&G/DWC/SMR&P–2021–42

Black Bear Management Report and Plan, Game Management Unit 3:

Report Period 1 July 2013–30 June 2018, and

Plan Period 1 July 2018–30 June 2023

W. Frank Robbins

2021

Alaska Department of Fish and Game Division of Wildlife Conservation

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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.

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Purpose of this Report

This report provides a record of survey and inventory management activities for black bear (*Ursus americanus*) in Unit 3 for the 5 regulatory years 2013–2017 and plans for survey and inventory management activities in the following 5 regulatory, 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 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 more efficiently report on trends and to 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 were previously produced every 2 years.

I. RY13–RY17 Management Report

Management Area

Game Management Unit 3 is in Southeast Alaska, also known as Alaska's Panhandle, and is part of ADF&G, DWC's Region I management area. It covers an area of approximately 7,800 square kilometers (3,012 mi^2). on islands in the central portion of the Panhandle (Fig. 1). Kupreanof, Kuiu, Etolin, Wrangell, Mitkof, and Zarembo, in descending order, are the largest islands in the unit. Smaller islands include several near the mouth of the Stikine such as Rynda, Kadin, and Sokolof Islands.

Elevation within Unit 3 ranges from sea level to about 1,200 meters (3,937 ft.). Predominant vegetative communities occurring at low-moderate elevations (<460 m) include Sitka spruce (*Picea sitchensis*) western hemlock (*Tsuga heterophylla*) coniferous forest, mixed-conifer muskeg, and deciduous riparian forests. Mountain hemlock (*Tsuga mertensiana*) dominated forest comprises a subalpine, timberline band occupying elevations between 460 m (1,509 ft) and 760m (2,493 ft) .

Most land area in Unit 3 is within the Tongass National Forest and under federal ownership, with smaller parcels under tribal, state, and private ownership. This area has experienced a significant amount of logging activity since the 1950s. Initial access to most hunting areas is by water; however, in many areas, once hunters arrive by boat there are extensive networks of logging roads which provide additional access to hunting areas. The communities of Petersburg, Wrangell, and Kake are in Unit 3 which have local road systems that hunters use to access hunting areas.

Sitka black-tailed deer (*Odocoileus hemionus sitkensis*), moose (*Alces alces andersoni*), wolves (*Canis lupus ligoni*), and black bears (*Ursus americanus*) are present and widely distributed throughout Unit 3. A small number of brown bears (*Ursus arctos*) also occur on those islands which are separated from the mainland by short water crossings.

Information about Unit 3 black bears is limited to a Mitkof Island denning study (Erickson et al.

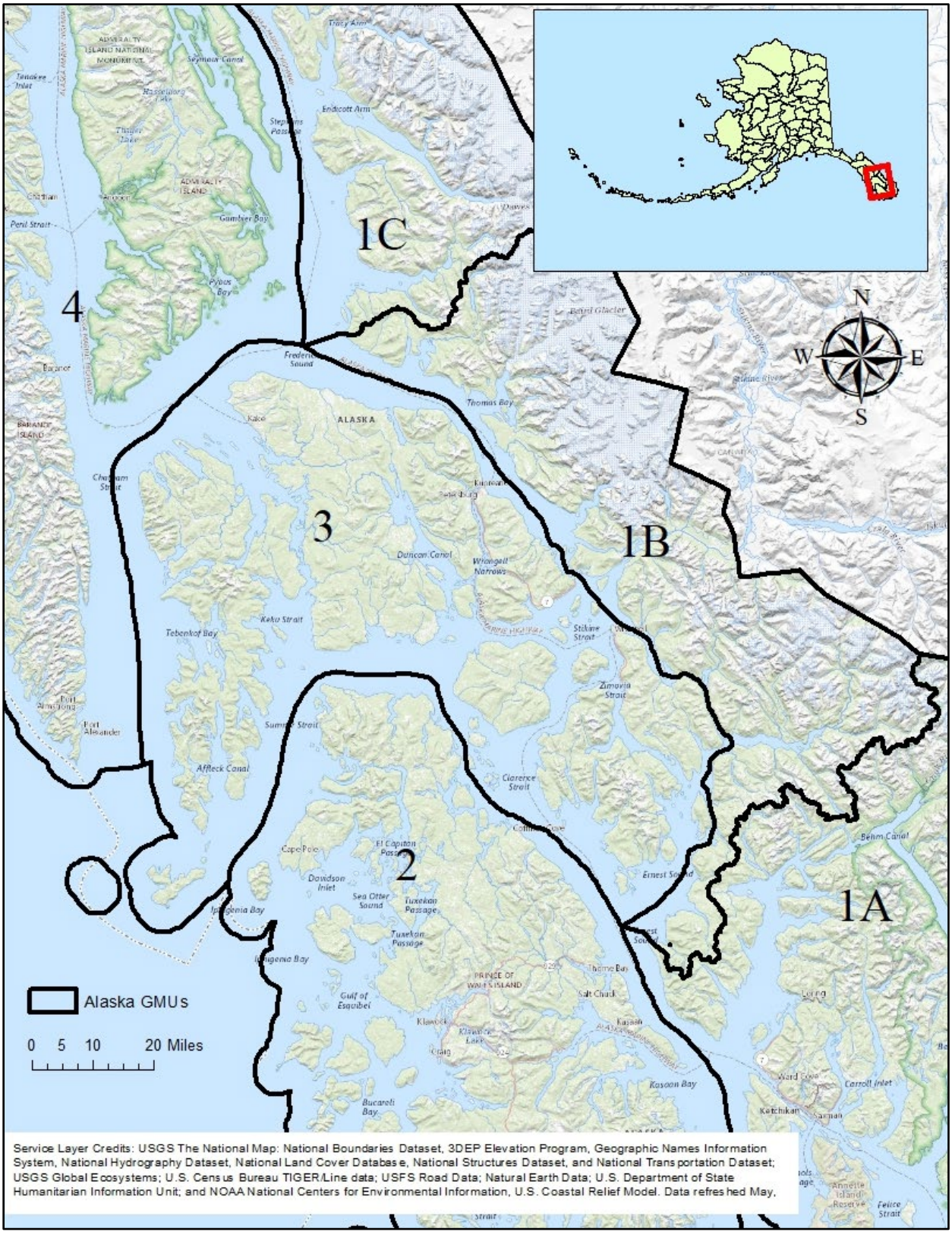

Figure 1. Map of Game Management Unit 3, Region 1, Southeast Alaska.

1982), a population estimation study conducted on northern Kuiu Island (Peacock 2004), harvest sealing records, anecdotal public reports, and observations by ADF&G staff.

Summary of Status, Trend, Management Activities, and History of Black Bear in Unit 3

Most high-quality black bear habitat in Unit 3 is associated with low-elevation, old-growth forest with abundant and productive salmon (*Oncorhynchus spp*.) streams. Small openings and disturbed areas, such as wetlands, avalanche chutes, clearcuts, and subalpine meadows are also important black bear foraging areas. Black bear diets range from mostly vegetarian to mostly carnivorous, and the species may subsist by scavenging or by predation on large and small mammals or fish. In Unit 3, black bears primarily eat vegetation during early spring. Major foods include grasses and sedges, *Equisetum spp*., and berries, primarily *Vaccinium spp.*, which persist through winter. Later in spring, black bears may be efficient predators of moose calves and/or Sitka black-tailed deer fawns. During summer and fall, when bears accumulate fat reserves for winter hibernation, bears with access to salmon streams eat large quantities of fish. Berries are also important during the summer and fall months. Poor fish runs or berry crops result in low cub production and survival the following spring.

ADF&G are concerned about the extensive habitat changes throughout the unit due to logging. ADF&G staff estimated that of the 7,760 km^2 (2,996 mi^2) of terrestrial habitat in Unit 3, about 3,880 km^2 (1,498 mi^2) is forested. More than 129,000 acres of forested habitat in Unit 3 have been logged. As a result, timber harvest poses the most serious threat to black bear habitat in the unit over the long term. Black bears exploit increases in forage in early-successional plant communities immediately after logging and may temporarily benefit from clearcutting. However, this food source is lost approximately 20–25 years postlogging with canopy closure, and second-growth forests provide little bear habitat. Precommercial thinning and pruning of second-growth stands can extend the short-term benefits to bears, but the long-term effects of logging are detrimental. Large clearcuts on Mitkof, Wrangell, and Kupreanof Islands will diminish in habitat value over the next few decades (Suring et al. 1988). The proliferation of roads associated with logging is also of concern as roads increase human access and make bears increasingly vulnerable to harvest.

Black bears are indigenous to Unit 3 and are traditionally hunted for food, skulls, and hides. Black bears with cinnamon pelage occur on a few islands in Unit 3. A small proportion of bears taken from Mitkof, Wrangell, and Kuiu Islands are cinnamon colored. Glacier bears are uncommon in the unit. Two records exist of glacier bears being harvested in the unit since 1973, both taken from Kuiu Island. ADF&G are aware of one anecdotal report of a glacier bear that was reportedly taken at Security Bay, Kuiu Island in the years prior to 1973, when sealing began. No Kermode bears (those with white pelage) have been reported in the unit.

Information about Unit 3 black bears is limited to a Mitkof Island denning study (Erickson et al. 1982), a population estimation study conducted on northern Kuiu Island (Peacock 2004), harvest sealing records, anecdotal public reports, and observations by ADF&G staff. Although ADF&G lacks quantitative demographic information on black bears in the unit, harvest records and anecdotal evidence indicate that the unit's black bear population declined over the last decade

(RY00–RY09). ADF&G biologists believe that the population has stabilized at moderate levels. Bear density is not consistent throughout the unit. For instance, although black bears occur on Zarembo Island; their numbers remain very low. Bear densities are also relatively low on Etolin and other islands south of Sumner Strait. Density is believed to be much higher on Kuiu, Kupreanof, and Mitkof islands, which have more abundant and productive salmon streams.

Kuiu Island accounts for 25% of the Unit 3 land area and produced about 55% of the unitwide black bear harvest from 1990 to 1999. Kuiu Island male skull sizes are larger on average than those from any other area of the state except Prince of Wales Island in Unit 2. Compared to other Unit 3 islands, Kuiu Island has a relatively high number of salmon streams and more shoreline miles per square mile of area than other islands. Roads associated with logging also provide easy access to the north end of Kuiu, where the highest harvest occurs. After increasing dramatically during the late 1990s, the proportion of successful hunters using motor vehicles on Kuiu has decreased in recent years. The decrease in motor vehicle use on Kuiu is primarily attributable to the departure of one transporter who had previously provided highway vehicles to his clients on the island. Kupreanof and Mitkof Islands produced annual black bear harvests averaging 33% and 8% of the Unit 3 bear harvest, respectively, throughout the 1990s. These percentages correspond closely to the percentage of Unit 3 land area on each island, 36% and 7%, respectively. Both islands have several highly productive salmon streams and extensive logging road networks, which aid hunter access.

Annual harvests remained relatively stable from 1973–1980, averaging 43 bears per year. The harvest increased in the early 1980s, rising from 81 bears in 1981 to 166 bears in 1992. By the early 1990s the unit had gained worldwide recognition for producing trophy-sized black bears, and in 1993 the harvest increased to 232 bears. By 2000 the annual harvest had increased over ten-fold since 1973, when 29 bears were killed. In the regulatory year 2000, the Unit 3 harvest was 309 bears, with 165 (53%) of those taken on Kuiu Island. From 2000 to 2009, approximately 73–85% of the annual harvest occurred during the spring season. Since 1973, males have outnumbered females in the harvest about 4 to 1. The percentage of the harvest attributable to nonresident hunters increased from less than 50% in 1990 to 80% in 2000. Since 1992, the majority of black bears taken in the unit by nonresidents have come from Kuiu Island. Most nonresidents hunt without a guide in the unit. Nonresident hunters must purchase tags to affix to each bear harvested. The cost of these tags ($450 for nonresident citizens and $600 for nonresident aliens starting in 2017) may limit the number of nonresident hunters who hunt black bears.

Black bear hunting regulations have changed and adapted over time. Sealing of black bears was first required in 1973. Prior to 2009, hunters were not required to obtain a hunt harvest ticket or registration permit for black bear; thus, effort data for unsuccessful hunters had previously been unavailable and information on hunt effort was available only for successful hunters. For most years since statehood black bear hunting season extended from 1 September through 30 June, and the bag limit for residents has been 2 bears annually, only 1 of which could be a blue or glacier bear. From 1980 through 1983 the season closed on 15 June, and the resident bag limit was only 1 bear. Bag limits were the same for nonresidents and residents until 1990, when the nonresident bag limit was reduced from 2 bears to 1 bear per year. In 1982 it became legal to use bait to hunt black bears year-round. In 1988 the Alaska Board of Game (board) limited baiting in Southeast Alaska to 15 April–15 June. From 1989–1997 the department issued an average of 4

bear baiting permits per year in the unit. Each baiting permit allows the permittee to establish 2 individual bear baiting stations in the unit. The highest number of baiting permits issued was 11 in 2004. Hunting bears with dogs has been legal since 1966 and requires a permit issued by ADF&G. No one has requested a permit to hunt bears with dogs in the unit. Since 1996 hunters have been required to salvage the edible meat of all black bears killed in Southeast Alaska from 1 January–31 May.

In fall 2000, due to concerns over the steadily increasing harvest of black bears by nonresident hunters, the board established a harvest guideline of 120 bears annually for nonresidents on Kuiu Island. In 2001, the first year it was implemented, the new harvest guideline resulted in the emergency closure of the entire fall nonresident season on Kuiu after nonresidents harvested 110 bears, or 92 percent of the allowable quota, during the spring season. No additional emergency closures have been necessary and the nonresident harvest on Kuiu stabilized at an average of 112 bears annually.

Due to concerns about wounding loss, the board passed a regulation at its Region I meeting in November 2004 requiring a wounded black or brown bear to count against the bag limit of the hunter for the regulatory year in Units 1–4. At its statewide meeting in February 2004, the board passed a regulation allowing the sale of handicraft articles made from the fur of black bears.

Recent declines in harvests following a long-term trend of increasing harvests raised department concerns about whether black bears were being managed sustainably in Southeast Alaska. This, along with concerns expressed by agency biologists, big game guides, hunters, and members of the public about what appeared to be fewer bears in parts of the region, prompted the department and others to seek regulatory action at the Alaska Board of Game meeting in November 2010 regarding the black bear harvest. At the meeting, the board adopted a proposal submitted by the Alaska Professional Hunters Association (APHA) requiring nonresident black bear hunters who do not enlist the services of a registered hunting guide to obtain a drawing permit before hunting black bears in Units 1–3. APHA's contention was that whereas the guides were held to a limited number of hunts by the United States Forest Service, there was no such limit on hunter effort existed for independent unguided nonresident hunters and those enlisting the services of transporters or outfitters. During testimony on APHA's proposal, the board asked the department to provide estimates of bear numbers and densities for specific geographical areas that were believed to constitute discrete black bear management areas. In response, the department identified 10 discrete management areas within Units 1–3 and provided estimates of bear population numbers and densities within each bear management area.

After reviewing population and density data, the board asked the department to use regulatory years 2007–2009 as base years for analyzing black bear harvest data. Using the mean annual black bear harvest by resident, guided nonresident, and unguided nonresident hunters during regulatory years 2007–2009, the Board of Game allocated harvest between guided and unguided nonresident hunters and established the numbers of unguided nonresident draw permits to be made available within each of the 10 established geographic black bear management areas. Three of the 10 bear management areas are located in Unit 3; they are Kuiu Island, Kupreanof Island, and the remainder of Unit 3. In order to address the relatively high harvest of female bears during the fall season, in November 2008 the Board of Game created a controlled use area prohibiting the use of motorized land vehicles for black bear hunting in Units 2 and 3 during the month of

September with the exception of transportation directly to and from public transportation facilities and boat launches. In RY11 the Unit 3 controlled use area was modified to include only Kupreanof, Mitkof, and Wrangell islands. In RY12 the regulation was allowed to sunset in Unit 3.

As a result of the board's action, starting in RY12 nonresident black bear hunters who do not hire a guide are required to possess a drawing permit prior to hunting black bears in Units 1–3. By adjusting the numbers of drawing permits issued, the department can control the numbers of bears taken by unguided nonresident hunters. At the same time, registered guides are also expected to limit their harvests of black bears to the mean annual harvest that they experienced during regulatory years 2007–2009. In addition, guides are expected to limit their harvest geographically based on each of their previous harvest distributions within the 10 individual black bear management areas during regulatory years 2007–2009.

Management Direction

Existing Wildlife Management Plans

Southeast Alaska Black Bear Management Plan in 1976 Alaska Wildlife Management Plans (ADF&G 1976).

Goals

- To provide for a sustainable harvest of black bear in Unit 3.
- To provide the greatest opportunity to participate in hunting of black bear in Unit 3.

Codified Objectives

Amounts Reasonably Necessary for Subsistence Harvest

There was a positive customary and traditional use determination by the Alaska Board of Game for black bears in Unit 3 with the amount reasonably necessary for subsistence set at 15–20 black bears.

Intensive Management

Not applicable.

Management Objectives

- Maintain an average spring skull size and an average annual male skull size of at least 18.5 inches.
- Maintain a male-to-female ratio of 3:1 in the harvest.

MANAGEMENT ACTIVITIES

1. Population Status and Trend

Population estimates are not available for black bear in this unit. Information obtained during sealing cannot be used to measure population trends. Harvest information gained from sealing records, average skull sizes, average ages, and sex ratios provide an indication of black bear population trends.

2. Mortality-Harvest Monitoring and Regulations

ACTIVITY 2.1. Monitor the Unit 3 black bear harvest through sealing records.

Data Needs

Since 1972, all black bears harvested in Unit 3 have been sealed. During sealing, biological data was collected (skull size, age, and sex ratio) which was used to monitor population health.

Methods

Hunters are required to submit bear skulls and hides for sealing within 30 days of kill. An authorized ADF&G staff member or a state-appointed sealer (e.g., Department of Public Safety authorized sealer) sealed black bear hides and skulls. Biological and hunt information collected included pelage color, sex, skull size (length and width), date and location of kill, number of days hunted, transportation method, and use of commercial services, including guide use. A premolar was collected from most bears and sent to Matson's Laboratory (Milltown, Montana) for age determination. Bears killed under defense of life or property provisions (DLP), road-killed bears, illegally-killed bears, or bears killed during research efforts were also sealed. Harvest and age data were entered into the ADF&G database (WinfoNet). Harvest data are summarized by regulatory year (RY), which begins 1 July and ends June 30 (e.g., RY19 = 1 July 2019–30 June 2020).

Season and Bag Limit

Season	Bag limit
1 September–30 June	Resident hunters: 2 bears Nonresident hunters with guide: 1 bear Kuiu Island: Nonresident hunters without guide: 1 bear by drawing permit only (DL029) Kupreanof Island: Nonresident hunters without guide: 1 bear by drawing permit only (DL030) Unit 3 remainder: Nonresident hunters without guide: 1 bear by drawing permit only (DL031)

Results and Discussion

ADF&G has used skull size as a metric in management objectives since the late 1980s. Perhaps the most appropriate use of skull-size data for black bear management is either as an indication of a change in the population size, population composition, or a change in hunter effort. Age, genetics, and environmental factors such as habitat and forage quality all influence black bear skull size. A decreasing average skull size may indicate a decline in that segment of the population composed of larger, older bears, and could indicate an overall population decline. However, an increasing average skull size could also indicate a reduction in the proportion of younger bears in the population. ADF&G biologists do not have a technique to precisely describe what such a change might indicate but skull-size data is used in conjunction with other data to assess current population status.

Harvest by Hunters-Trappers

Unit 3 hunter harvests ranged from 111–203 bears annually during this report period (Table 1). The average annual harvest of 145 bears annually during this report period was well below the preceding 10-year average (RY03–RY12) of 201 bears annually. The 111, 115, and 111 bears killed by hunters in 2013, 2014, and 2015, respectively, represent the lowest annual harvests since the 1983–1984 season. This decline in harvest can partially be attributed to the lower number of hunters after the requirement for drawing permits for nonresidents was instituted in 2012.

Males made up 81% of the Unit 3 harvest during this reporting period, ranging from 77% to 85%. In 2008 the average male skull size fell below the management objective and began a declining trend that continued into the current report period. During this report period, the average male skull size ranged from 18.0–18.3 inches, well below the management objective of 18.5 inches (Table 2). The average age of harvested males during the report period was 6.6 years, which was below the preceding 5-year average (RY08–RY12) of 7.3 years (Table 2). The male to female ratio during this report period was over 4:1, above the management objective of 3:1. The average number of days hunted for successful hunters was 3.2 during this reporting period, ranging from 2.9 to 3.6 days (Table 3).

A total of 6 individuals were issued bear baiting permits during the report period, a decrease from the total of 20 individuals during the previous 5-year period. Each bear baiting permit allows a hunter to establish up to 2 individual bait stations. During this report period an average of 3 hunters were authorized to establish bear baits, and 3.4 bear baits were registered annually. This is a decline from the previous 5-year period when an average of 6 hunters were authorized to establish an average of 9.4 bear baits annually.

During the report period, harvest by guided nonresident hunters accounted for 38% of the overall harvest, ranging from 32% and 45%.

Table 1. Black bear harvest during regulatory years 2013–2017, Unit 3, Southeast Alaska.

	Hunter kill						Nonhunting kill[a]			Total estimated kill				
Season	Male	Female	Percent female	Unk	Total	Over bait	Male	Female	Unk	Male	Female	Percent female	Unk	Total
Fall 2013	14	16	50	0	30	0	1	1	1	17	17	50	2	36
Spring 2014	75	6	7	0	81	1	1	0	0	76	6	7	0	82
Total	89	22	20	0	111	1	2	1	1	93	23	20	2	118
Fall 2014	15	9	38	0	24	0	1	0	0	16	9	36	0	25
Spring 2015	74	17	19	0	91	0	0	0	1	74	17	19	1	92
Total	89	26	23	0	115	0	1	0	1	90	26	22	1	117
Fall 2015	14	8	36	0	22	0	0	0	0	14	8	36	0	22
Spring 2016	77	12	13	0	89	0	0	0	0	77	12	13	0	89
Total	91	20	18	0	111	0	0	0	0	91	20	18	0	111
Fall 2016	28	10	26	0	38	0	1	0	0	29	10	26	0	39
Spring 2017	127	18	12	0	145	1	0	0	0	127	18	12	0	145
Total	155	28	15	0	183	1	1	0	0	156	28	15	0	184
Fall 2017	20	15	43	1	36	0	1	0	1	21	15	42	2	38
Spring 2018	141	26	16	0	167	0	0	0	0	141	26	16	0	167
Total	161	41	20	1	203	0	1	0	1	162	41	20	2	205

[a] Includes defense of life or property (DLP) kills, research mortalities, and other known human-caused accidental mortality.

Table 2. Harvested black bear mean skull size and age during regulatory years 2013–2017, Unit 3, Southeast Alaska.

	Average skull size[a]				Average age			
Regulatory year	Males	*n*	Females	*n*	Males	*n*	Females	*n*
2013	18.0	90	16.5	22	6.7	87	10.2	22
2014	18.2	88	16.5	25	6.8	81	9.8	25
2015	18.1	88	17.0	17	6.6	89	10.0	20
2016	18.0	142	16.5	26	6.1	153	8.3	28
2017	18.3	157	16.5	38	7.1	154	8.7	38

[a] Skull size = total length + zygomatic width in inches.

Table 3. Hunter effort for black bear during regulatory years 2013–2017, Unit 3, Southeast Alaska.

Regulatory year	Total days	Total hunters	Total harvest	Average days hunted
2013	399	110	111	3.6
2014	403	114	115	3.5
2015	379	108	110	3.4
2016	553	178	182	3.0
2017	579	196	201	2.9

Note: Totals do not include black bears killed in defense of life or property (DLP).

Permit Hunts

Beginning in RY12, nonresident black bear hunters without a registered big game guide were required to possess drawing permits prior to hunting black bears in the unit. Three separate unguided nonresident drawing permit areas were established in Unit 3, including Kuiu Island (DL029), Kupreanof Island (DL030), and the Remainder of Unit 3 (DL031; Table 4). Forty DL029 permits were issued annually between 2013 and 2016, and 50 were issued in 2017. Permit hunters that reported hunting ranged from 24% to 33% and harvest success ranged from 41% to 87%. An average of 16 black bears were harvested by DL029 hunters during this report period, ranging from 11 to 26. Males made up 86% of the DL029 harvest.

During this report period an average of 30 black bears were harvested by DL030 hunters annually, ranging from 22 to 41 Of the hunters holding DL030 permits, an average of 71% reported hunting, with an average success rate of 50%. Males comprised 88% of the harvest.

The number of DL031 permits issued ranged from 20 to 41 during this reporting period. DL031 hunters harvested an average of 4 bears annually with an average success rate of 24%. The DL031 harvest was 57% male.

Table 4. Hunter effort for black bears during nonresident Unit 3 draw hunts during regulatory years 2013–2017, Unit 3, Southeast Alaska.

Draw hunt	Regulatory year	Number permits	Did not hunt	Percent successful	Failed to report	Males	Percent males	Females	Percent females	Unk	Total harvest
Kuiu Island (DL029)	2013	40	11	41	0	11	92	1	8	0	12
	2014	40	16	50	3	7	64	4	36	0	11
	2015	40	16	50	0	10	83	2	17	0	12
	2016	40	14	69	0	16	89	2	11	0	18
	2017	50	17	87	3	24	92	2	8	0	26
Kupreanof Island (DL030)	2013	80	26	41	0	19	86	3	14	0	22
	2014	81	14	44	2	27	93	2	7	0	29
	2015	81	32	45	0	17	77	5	23	0	22
	2016	80	25	64	0	33	94	2	6	0	35
	2017	100	26	58	3	35	85	6	15	0	41
Unit 3 remainder (DL031)	2013	41	18	22	0	3	60	2	40	0	5
	2014	22	7	13	0	2	100	0	0	0	2
	2015	20	4	13	0	1	50	1	50	0	2
	2016	28	9	21	0	3	75	1	25	0	4
	2017	28	12	53	1	3	38	5	62	0	8
Total harvest	2013	161	55	37	0	33	85	6	15	0	39
	2014	143	41	43	5	36	86	6	14	0	42
	2015	141	52	40	0	28	78	8	22	0	36
	2016	148	48	57	0	52	91	5	9	0	57
	2017	178	61	68	7	62	83	13	17	0	75

Hunter Residency and Success

Although the percentage varies annually, during this report period nonresident hunters harvested approximately 72% of the bears harvested in the unit, nonlocal Alaskan hunters harvested about 14%, and local resident hunters about 14% (Table 5).

Table 5. Black bear hunter success by residency during regulatory years 2013–2017, Unit 3, Southeast Alaska.

Regulatory year	Local resident[a]	Percent local	Nonlocal resident	Percent nonlocal	Nonresident	Percent nonresident	Total successful hunters
2013	11	10	13	12	87	78	111
2014	14	12	14	12	87	76	115
2015	7	6	18	16	85	77	110
2016	34	19	26	14	123	67	183
2017	35	17	27	13	141	70	203

[a] Local residents are those that reside in Petersburg, Wrangell, or Kake.

Harvest Chronology

During this report period, 79% of the overall harvest occurred during the spring season, with 41%–57% of all bears killed in May (Table 6).

Table 6. Black bear harvest chronology (percent) during regulatory years 2013–2017, Unit 3, Southeast Alaska.

Regulatory year	September	October	November	April	May	June	July	*n*
2013	23	4	1	11	41	19	1	114
2014	20	1	0	7	56	16	0	115
2015	16	4	0	15	48	17	0	111
2016	18	3	0	15	56	8	0	183
2017	12	6	0	8	57	17	0	202

Transport Method

Hunter transportation is primarily by boat, highway vehicle, and airplane, respectively (Table 7). Off road vehicles and 4-wheelers are rarely used to hunt black bears in Unit 3.

Other Mortality

Five DLPs were documented during the report period; however, some DLPs likely go unreported, particularly away from the Petersburg road system. ADF&G received unconfirmed reports of bears being shot and left in the field by individuals believing that bears are detrimental to deer and moose populations.

Table 7. Black bear harvest transportation type (percent) during regulatory years 2013–2017, Unit 3, Southeast Alaska.

Regulatory year	Airplane	Boat	3-4 wheeler	Off-road vehicle	Highway vehicle	Foot	Unknown	*n*
2013	10	75	1	1	10	1	2	114
2014	2	88	2	1	7	0	0	115
2015	3	84	3	0	9	0	1	111
2016	3	84	0	0	11	1	1	183
2017	2	83	<1	0	15	0	0	203

Alaska Board of Game Actions and Emergency Orders

The Alaska Board of Game took no actions concerning Unit 3 black bears during the report period. ADF&G issued no Emergency Orders for the Unit 3 black bear season during the report period.

Recommendations for Activity 2.1

Continue.

3. Habitat Assessment-Enhancement

ACTIVITY 3.1. Monitor timber harvest in Unit 3.

Data Needs

The loss of habitat resulting from timber harvest continues to pose the most serious threat to black bear in the unit. Post logging increases in berry production, primarily *Vaccinium spp.*, may contribute to short-term bear population growth. This forage source will be lost as the canopy closes, as will habitat diversity associated with old-growth forests accompanied by a loss of denning trees. The long-term effects of logging will be detrimental to black bears. Roads associated with logging increase human access and can make bears increasingly vulnerable to harvest.

Methods

Department staff routinely review and comment on proposed timber sales in an attempt to minimize the effects of logging on black bear habitat.

Results and Discussion

There are no projects to specifically enhance black bear habitat in Unit 1B. Although primarily intended as a silvicultural practice, habitat manipulation in the form of precommercial thinning and pruning has been performed in some young second-growth stands in the Thomas Bay area. This effort provides a secondary benefit to wildlife by reducing canopy cover, permitting sunlight to reach the forest floor, and increasing the production and availability of understory forage plants and berries. These benefits are relatively short-lived, approximately 20–25 years, after which canopy closure again results in loss of understory vegetation. In the absence of

additional thinning, long-term effects of clearcut logging are detrimental to black bear populations.

Recommendations for Activity 3.1.

Continue to review timber sales.

NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS

Data Recording and Archiving

Sealing data are archived on WinfoNet back to 1973 including scans of the original data sheets back to 2000. Hard copies from earlier dates are on file in the Petersburg ADF&G office.

Agreements

There were no agreements during this reporting period.

Permitting

There were no permits required for ADF&G to manage black bears during this reporting period.

Conclusions and Management Recommendations

In recent years, declining black bear harvests across much of the region, including Unit 3, have led to concerns about potential overharvest. The Unit 3 black bear harvest steadily declined from 232 bears in 2006 to 169 in 2009, the lowest unitwide harvest since regulatory year 1992. The average annual harvest of 145 bears during this report period was well below the preceding 10-year average (RY03–RY12) of 201 bears annually. In addition to the declining harvest, declining trends in both the average skull size and age of males harvested annually since RY08 further heighten concerns about black bear management in the unit. The average male skull size, which began a declining trend since RY08 continued to decline during the report period. The average male skull size during the report period was 18.0 inches, below the preceding 10-year average (RY03–RY12) of 18.3 inches. The average age of harvested males was 6.6 years, also below the preceding 10-year average (RY03–RY12) of 7.6 years. The male-to-female harvest ratio during the report period was 4:1, slightly above the management goal of 3:1.

The reason for the declining trends in harvest, average male skull size, and average male age remain unknown. The decreasing trend in harvest combined with anecdotal reports from big game guides, hunters, and agency biologists suggest that over the last decade black bear populations have declined on some Unit 3 islands. The cause of the suspected population decline remains unclear and could be due to one or more contributing factors. Those factors may include overharvest, climatic or environmental changes, wolf predation, or reductions in carrying capacity resulting from clearcut logging.

To address declining harvest trends, there is a new requirement for nonresident black bear hunters who hire a guide to possess a drawing permit prior to hunting black bears in Units 1–3. By adjusting the numbers of drawing permits issued, the department can control the number and

distribution of bears taken by unguided nonresident hunters. Registered guides will be expected to limit their harvests of black bears both numerically and geographically, to the mean annual harvests they experienced during regulatory years 2007–2009.

Although no additional management or regulatory changes are recommended at this time, ADF&G will continue to monitor the harvest and sealing data and adjust harvest quotas as necessary.

II. Project Review and RY18–RY22 Plan

Review of Management Direction

The existing management and goals appropriately direct the management of black bears in Unit 3. The management direction for Unit 3 ensures that black bears will persist as part of the natural ecosystem and ensures continued hunting and viewing opportunities.

MANAGEMENT DIRECTION

GOALS

- To provide for a sustainable harvest of black bear in Unit 3.
- To provide the greatest opportunity to participate in hunting of black bear in Unit 3.

CODIFIED OBJECTIVES

Amount Reasonably Necessary for Subsistence Uses (ANS)

There was a positive customary and traditional use determination for black bears in Unit 3 with the amount reasonably necessary for subsistence set at 15–20 black bears.

Intensive Management

Not applicable.

MANAGEMENT OBJECTIVES

- Maintain an average spring skull size and an average annual male skull size of at least 18.5 inches.
- Maintain a male-to-female ratio of 3:1 in the harvest.

REVIEW OF MANAGEMENT ACTIVITIES

1. Population Status and Trend

The Alaska Department of Fish and Game is not assessing population status or trend for black bear in Unit 3.

2. Mortality-Harvest Monitoring

ACTIVITY 2.1. Monitor black bear harvest through sealing records.

Data Needs

Since 1972 all black bears legally harvested in Unit 3 have been sealed. During sealing, biological data (skull size, age, and sex ratio) are collected and used to monitor the health of the black bear population.

Methods

Hunters are required to submit bear skulls and hides for sealing within 30 days of kill. An authorized ADF&G staff member or a state-appointed sealer (e.g., Department of Public Safety authorized sealer) will seal the hide and skull of harvested black bears. Biological and hunt information will be collected including pelage color, sex, skull size (length and width), date and location of kill, number of days hunted, transportation method, and hunter use of commercial services, including guide use. A premolar will be collected from most bears and sent to Matson's Laboratory (Milltown, Montana) for age determination. ADF&G will also seal any bear killed under defense of life or property provisions (DLP) or any that die as roadkill, illegal kill, or during research efforts. Harvest and age data will be entered into ADF&G's Wildlife Information Network database (WinfoNet). Harvest data are summarized by regulatory year (RY), which begins 1 July and ends June 30 (e.g., RY19 = 1 July 2019–30 June 2020).

3. Habitat Assessment-Enhancement

ACTIVITY 3.1. Monitor timber harvest.

Data Needs

The loss of habitat resulting from timber harvest continues to pose the most serious threat to black bear in the unit. Post logging increases in berry production, primarily *Vaccinium* sp., may contribute to short-term bear population growth. This forage source will be lost as the canopy closes, as will habitat diversity associated with old-growth forests, accompanied by a loss of denning trees. The long-term effects of logging will be detrimental to black bears. Roads associated with logging increase human access and can make bears increasingly vulnerable to harvest.

Methods

Department staff should continue to review and comment on proposed timber sales in an attempt to minimize the effects of logging on black bear habitat.

There are no projects to specifically enhance black bear habitat in Unit 3.

NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS

Data Recording and Archiving

Sealing data have been archived in WinfoNet as far back as 1973, including scans of the original data sheets dating back to 2000 with some scans of years prior to 2000. Hard copies from earlier dates are on file in the Petersburg ADF&G office.

Agreements

There are no agreements.

Permitting

There are no permits currently needed for ADF&G to manage black bear in Unit 3.

References Cited

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