Black Bear Management Report and Plan, Game Management Units 7 and 15

Report Period 1 July 2013–30 June 2018, and

Plan Period 1 July 2018–30 June 2023

Jason Herreman

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Alaska Department of Fish and Game Division of Wildlife Conservation

Species Management Report and Plan ADF&G/DWC/SMR&P-2022-22

Black Bear Management Report and Plan, Game Management Units 7 and 15:

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PREPARED BY:

Jason Herreman
Assistant Area Wildlife Biologist

APPROVED BY:

Jeff Selinger
Management Coordinator

PUBLISHED BY:

Sky M. Guritz
Technical Reports Editor

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

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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 Jeff Selinger, Management Coordinator for Region II 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). To subscribe to email announcements regarding new technical publications from the Alaska Department of Fish and Game, Division of Wildlife Conservation please use the following link: http://list.state.ak.us/mailman/listinfo/adfgwildlifereport.

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Cover Photo: Black bear on Knight Island, Prince William Sound, Alaska. ©2018 ADF&G. Photo by Jason Herreman.

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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 Game Management Units 7 and 15 for the 5 regulatory years 2013–2017 and plans for survey and inventory management activities in the next 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 agency efforts but is also provided to the public to inform it of wildlife management activities. In 2016 the Alaska Department of Fish and Game's (ADF&G, the department) Division of Wildlife Conservation (DWC) launched this 5-year report to report more efficiently on trends and to describe potential changes in data collection activities over the next 5 years. It replaces the black bear management report of survey and inventory activities that was previously produced every 3 years.

I. RY13–RY17 Management Report

Management Area

Units 7 and 15 combined make up an area approximately 8,397 mi^2, which encompasses the Kenai Peninsula. The Kenai Peninsula has 3 major population centers including Seward, Kenai/Soldotna, and Homer, as well as numerous smaller towns interspersed throughout the peninsula. The U.S. Fish and Wildlife Service is the largest land manager on the peninsula with land throughout Units 7, 15A, 15B, and 15C.

Unit 7 is approximately 3,520 mi^2 in area and consists of the eastern portion of the Kenai Peninsula bounded by the western edge of the Kenai Mountains, the Russian River, and the Harding Ice Field on the west and the western edge of the Sargent Ice Field and eastern edge of Spencer Glacier on the east (Fig. 1). The landscape of Unit 7 consists of mountainous terrain interspersed with river and creek drainages, a few large lakes, and ice fields. Riparian areas and hillsides are densely forested until reaching the alpine zone. Approximately 78% of Unit 7 is comprised of federally managed lands; 50% U.S. Forest Service (USFS) Chugach National Forest, 22% National Park Service (NPS) Kenai Fjords National Park, 5% U.S. Fish and Wildlife Service (USFWS) Kenai National Wildlife Refuge, and 1% other federal land.

Unit 15 incorporates the western portion of the Kenai Peninsula and is broken up into 3 administrative units, 15A (1,314 mi^2), 15B (1,121 mi^2), and 15C (2,441 mi^2). Each unit is significantly different in its topography, flora, and ecological history. Unit 15A is the most northern unit separated from Unit 15B by the Kenai River and Skilak Lake. Unit 15C is the most southerly unit separated from Unit 15B by the Tustumena Glacier, Tustumena Lake, and the Kasilof River (Fig. 2).

Unit 15A is relatively flat with a multitude of small lakes leading up to the foothills of the Kenai Mountains in the east. The dominant flora is a mixed spruce/hardwood climax community. The Kenai National Wildlife Refuge is the largest landholder in Unit 15A. No significant habitat disturbance has occurred in Unit 15A since the last large wildfire that occurred in 1969 and encompassed approximately 85,306 acres.

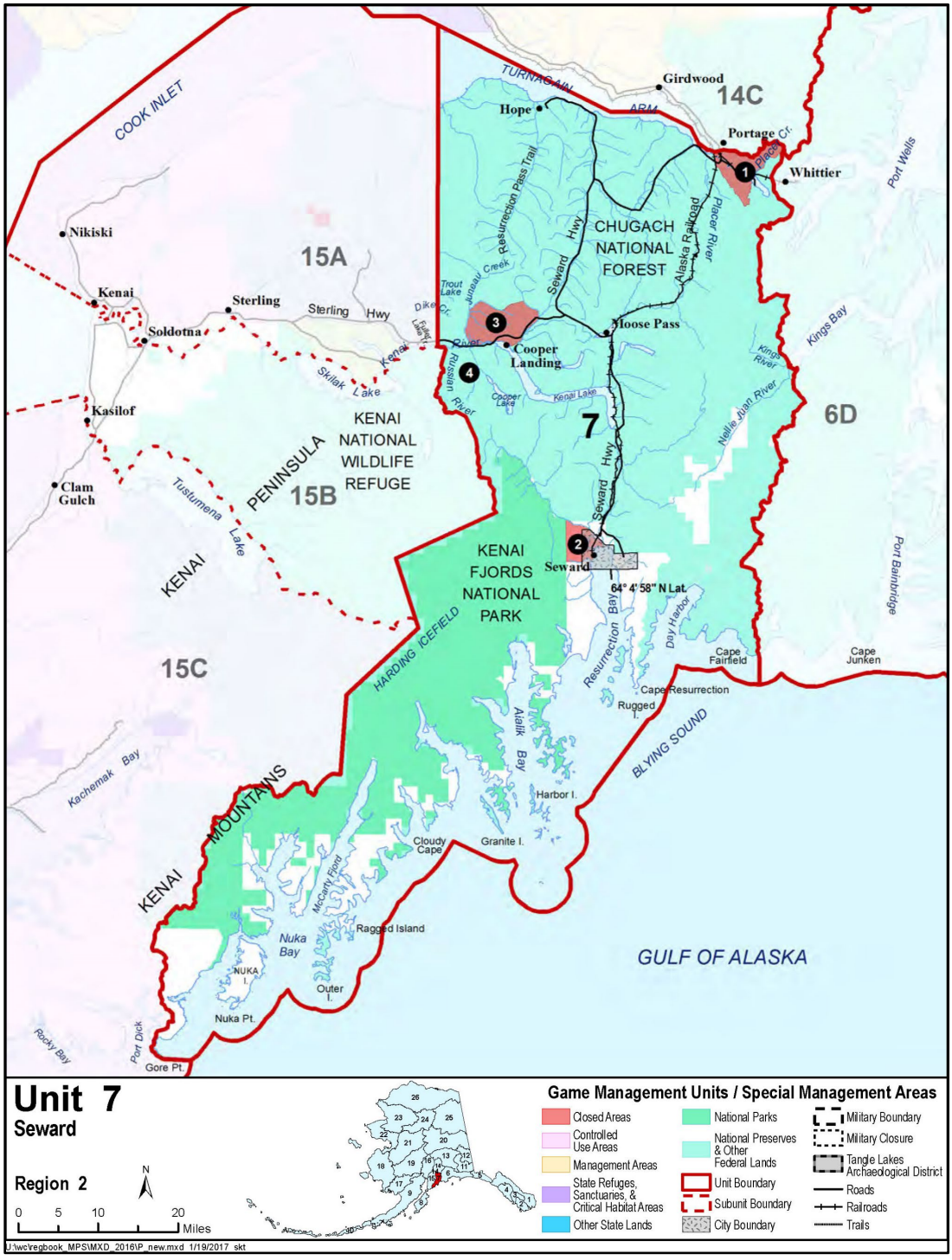

Figure 1. Map of Unit 7 boundaries with indicators of controlled use areas (numbered circles), administrative subunits, and federal lands as found in the Alaska Hunting Regulations.

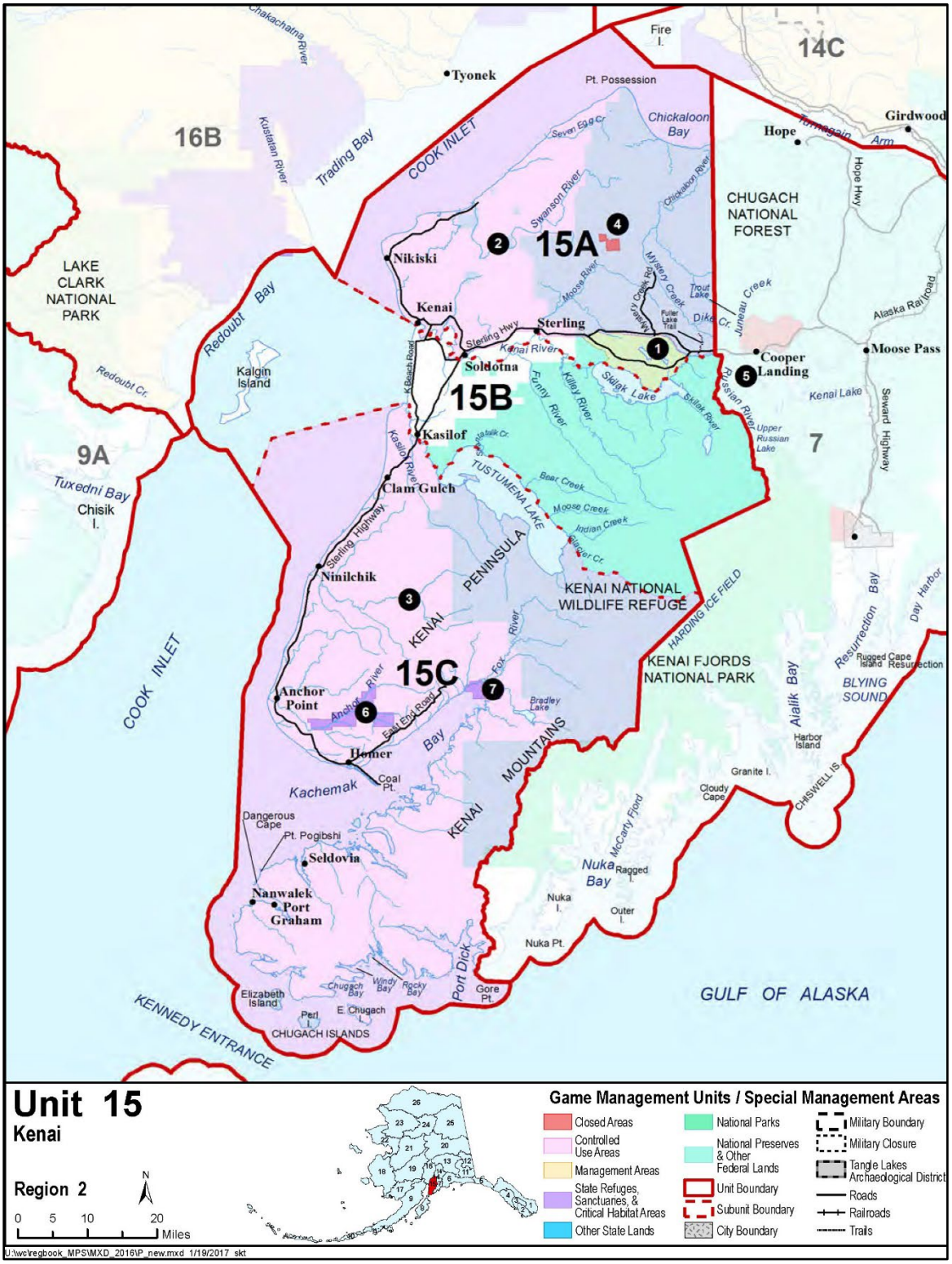

Figure 2. Map of Unit 15 boundaries with indicators of controlled use areas (numbered circles), administrative subunits, and federal lands as found in the Alaska Hunting Regulations.

The Kenai National Wildlife Refuge is also the largest landholder in Unit 15B. The western portion of Unit 15B is similar to Unit 15A in topography and flora. As you go east however, Unit 15B becomes more mountainous and transitions into an alpine ecosystem. Forests within Unit 15B succumbed to widespread spruce bark beetle (*Dendroctonus rufipennis*) infestations that began in the 1990s. Unlike Unit 15A, Unit 15B recently experienced significant habitat turnover in the form of the 2014 Funny River Fire that burned approximately 196,610 acres, the majority of which was in Unit 15B. This fire burned in a mosaic pattern and should provide good wildlife habitat in the near future.

Unit 15C is significantly different from both Units 15A and 15B. Refuge lands make up only a small portion of the unit in the northeast corner. The rest of Unit 15C is a mix of state, private, and municipal land ownership. The portion of Unit 15C north of Kachemak Bay and the Fox River peaks in the Caribou Hills and the Ninilchik Domes sloping down to the lowlands. Very few small lakes are present but numerous riparian areas exist draining from the highlands. Dominant vegetation is a mosaic consisting of spruce (*Picea* spp.*)*, willow (*Salix* spp.*)*, reed grass (*Calamagrostis canadensis,* particularly in salvage logged areas)*,* alder (*Alnus* spp.*)*, and some hardwood stands (*Betula* spp. and *Populus* spp.*)*. The portion of Unit 15C north of Kachemak Bay has seen fairly consistent habitat disturbance over the past 2 decades in the form of wildfires, beetle kill, logging, and human development. The portion of Unit 15C south of Kachemak Bay and the Fox River consists of a very different ecotype compared to the northern portion of Unit 15C as it is comprised primarily of coastal temperate rain forest and subalpine habitat.

Summary of Status, Trend, Management Activities, and History of Black Bears in Units 7 and 15

Several studies have been conducted on Kenai Peninsula black bears looking at various aspects of their ecology including predation (Franzmann and Schwartz 1986; Schwartz and Franzmann 1983, 1989), food habits (Smith 1984), habitat (Schwartz and Franzmann 1991), dispersal (Schwartz and Franzmann 1992), and denning (Schwartz et al. 1987). No surveys have ever been conducted on the Kenai Peninsula to estimate black bear population size. Black bear densities in Unit 15A were estimated at 205 bears/1,000 km^2 within the 1947 burn and 265 bears/1,000 km^2 in the 1969 burn (Schwartz and Franzmann 1991).

The distribution and abundance of devil's club (*Oplopanax horridus*) and other berry producing plants such as blueberries (*Vaccinium* sp.*)*, crowberries (*Empetrum nigrum*), and currents (*Ribes* sp.*)* are an important factor affecting distribution and movements of black bears as the fruits are an important food source (Schwartz and Franzmann 1991, McLellan 2011). Devil's club may be negatively affected by spruce beetle infestation when more light penetrates to the forest floor after the removal of the canopy. However, other berry producing plants may be positively affected. Black bears appear in greater densities along the southern outer coast. This is probably due to high berry abundance, healthy salmon runs, and lower densities of competing brown bears.

Black bears have been managed as both a furbearer and big game species and are harvested by hunters for both their hides and meat. Peninsula residents value black bears as a meat resource. For many young hunters, it is the first big game animal they will harvest.

Management Direction

Existing Wildlife Management Plans

The 1976 Alaska Wildlife Management Plan (ADF&G 1976) contains a comprehensive section on black bear management for the Kenai Peninsula. The primary goal of the 1976 plan was to provide optimum harvest of black bears with a secondary goal of providing opportunity to view, enjoy, and photograph bears. Management guidelines set forth included:

- Maintain a moderate but productive black bear population.
- Encourage recreational hunting of black bears to achieve greater utilization of the resource.
- Increase public awareness of black bear behavior to reduce adverse bear-human interactions.
- Encourage public viewing of black bears.
- Regulate access and methods of hunter transport, if necessary, when in conflict with management objectives for other species.

Recent management objectives, harvest strategies, and subsequent changes have resulted from public comment, staff recommendations, and Board of Game actions, and have been reported in the division's previous species management reports. This report contains the current management plan for black bears in Units 7 and 15.

Goals

The current management goal for Kenai Peninsula black bears is to provide for optimum harvest and opportunity to view, enjoy, and photograph bears while limiting negative human-bear interactions.

Codified Objectives

Amounts Reasonably Necessary for Subsistence Uses

The Alaska Board of Game has not established a positive finding for black bears for Units 7 and 15 outside the Anchorage-Matsu-Kenai Nonsubsistence Area.

Intensive Management

The Alaska Board of Game has not designated black bears as an intensive management species in Unit 7 or 15.

MANAGEMENT OBJECTIVES

Provide the opportunity to hunt black bears using seasons and bag limits to regulate the take so as not to exceed an average of 40% females in the harvest during the most recent 3-year period.

MANAGEMENT ACTIVITIES

1. Population Status and Trend

ACTIVITY 1.1. Current monitoring of Kenai Peninsula black bear population status is limited to analysis of tooth and skull morphometrics of harvested bears to look at changes in the population structure.

Data Needs

A reliable timely population status and trend metric is needed to help direct decisions made for black bear bag limits and season dates.

Methods

Bear skull morphometric data from harvested bears are analyzed and compared between years and areas to look for changes in skull size that would indicate changes in population age structure. Tooth samples are collected from harvested bears and sent out for aging when funding allows. Aging results are then analyzed to look at changes in harvest age structure that would indicate changes in population structure.

Results and Discussion

Skull morphometrics have not proven to be a sensitive metric for tracking changes in black bear populations. Changes in skull size do not appear to show up in the harvest until several years after population level changes are believed to have occurred. For example, black bear harvest decreased dramatically starting in 2013 with little change in reported hunter effort for Unit 15C. However, skull size for males or females did not show a statistically significant change until 2015, and then the change was only seen in female skull size (Fig. 3). Tooth aging has not reliably been conducted for bears harvested in Units 7 and 15 in recent years. Teeth were not sent to be aged for many years as age results were not believed to be providing a sensitive metric for tracking population status and the department was trying to reduce costs.

Recommendations for Activity 1.1

Current population monitoring techniques need to be modified. A new metric for monitoring black bear population status and trend needs to be developed. Backlogged teeth need to be sent in for aging so that historic techniques can be used to monitor population trend until a new method is identified.

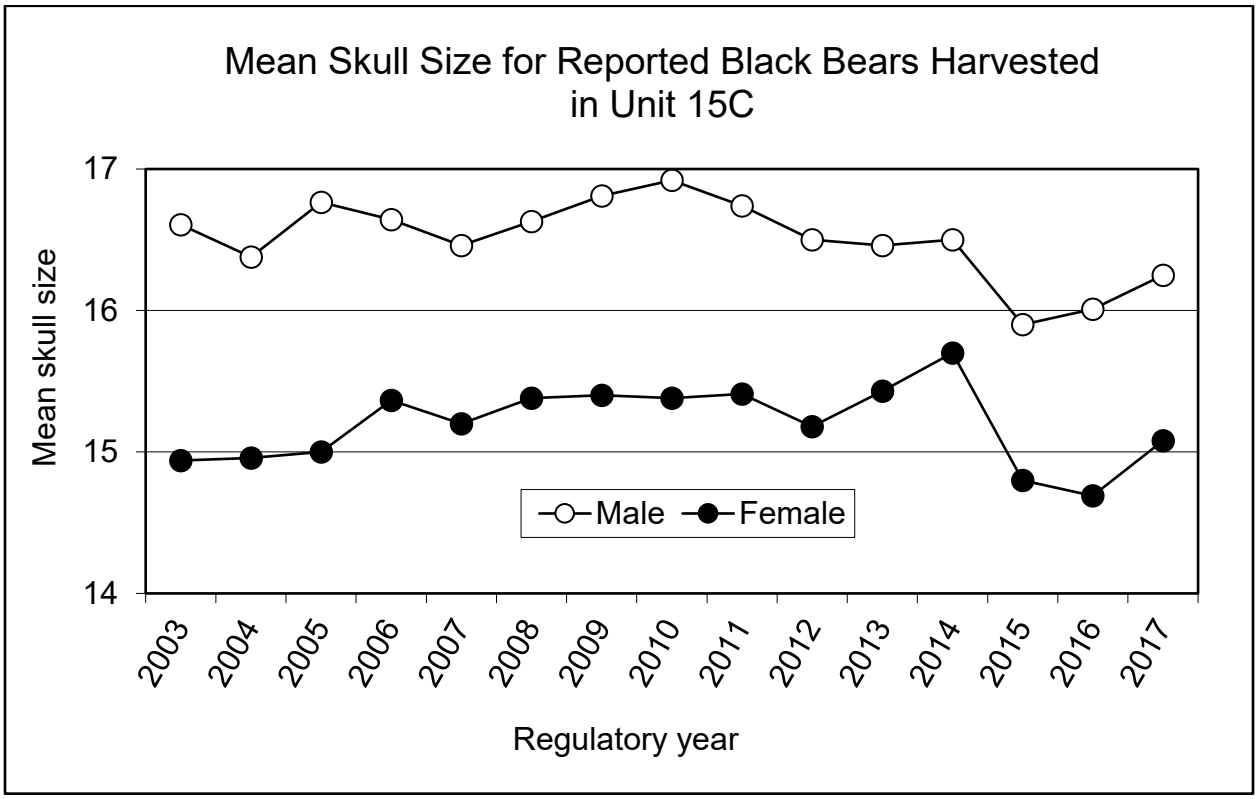

Figure 3. Mean skull size of harvested black bears in Unit 15C, Alaska.

2. Mortality-Harvest Monitoring and Regulations

ACTIVITY 2.1. Black bear harvest is monitored through the sealing process and hunter effort is recorded through hunt permit reports.

Data Needs

Reliable estimates of the sex, age, and number of animals harvested are needed to accurately track harvest.

Methods

All black bears harvested are required to be sealed at an ADF&G office or by a certified state sealer. During sealing a significant amount of information is recorded for each harvested bear. The sex and skull size of animals harvested are recorded, a tooth is taken for aging, and tattoos and marks are recorded. All females are checked for evidence of lactation, which would indicate cubs. Additional information is collected on the method of transport to the field, method of take, percentage of meat harvested, whether the animals was taken over bait or was an incidental harvest, and whether or not the hide was salvaged. If the animal is sealed at an ADF&G office, additional samples are taken including a muscle sample for genetic analysis, and hair, tissue, and bone samples for future stable isotope analysis.

Season and Bag Limit

Black bear hunting has been open year-round on the Kenai Peninsula since 1980. From 1994 to 2008, the bag limit was 2 bears per regulatory year (1 bear from 1 July to 31 December, and 1 bear from 1 January to 30 June). In 2009, the bag limit was changed to 2 bears for residents (no season restriction), and 1 bear for nonresidents. In 2010, the bag limit was further liberalized to 3 bears per regulatory year for both residents and nonresidents north of Bradley River, Bradley Lake, and Kachemak Creek; however, nonresidents are limited to 1 bear south of these boundaries.

A permit is required to establish a bear baiting station. Hunting black bears with the use of bait is allowed except in the following locations: Resurrection Creek and its tributaries in Unit 7; within 1 mile of a house, school, business, developed recreational facility, campground, or permanent dwelling; within one-quarter mile of publicly maintained roads or trails, the Alaska Railroad, or along the Kenai (including Kenai Lake), Kasilof, and Swanson rivers in Units 7 and 15. Baiting is also restricted within the Kenai National Wildlife Refuge. Completion of a bear baiting clinic is required by all bait permit holders in Units 7 and 15. The season was 15 April–15 June from 1988 through the spring of 2009. In the spring of 2010, the season was further liberalized to 15 April–30 June. Starting in spring of 2013 it became legal to take bears same day airborne at bait stations.

Current season and bag limits can be found online at:
https://www.adfg.alaska.gov/index.cfm?adfg=hunting.regulations

Results and Discussion

Harvest by Hunters

During the most recent 3-year period, the average harvest of females was 27% of the total harvest, which is lower than the previous 3-year average of 39% (Herreman 2014), and well below our maximum harvest objective of 40%. We believe this reflects an increase in the number of bears on the landscape in recent years as the population rebounds from the high harvest and difficult overwintering conditions seen in the winter of 2010–2011. The 5-year average annual harvest, RY13–RY17, was 313 bears (Table 1), which is below the previous reported average of 576 bears (Herreman 2014). The 5-year average annual harvest of black bears taken over bait increased slightly from 77 in RY08–RY12 to 88 bears in RY13–RY17 (Table 2). This may be due to an increase in an interest in bear baiting due to the legalization of brown bear harvest by bait in 2014. The majority of black bear harvest takes place south of Kachemak Bay (Fig. 2) where almost no baiting occurs as hunters do not find it necessary.

Hunter Residency and Success

Most successful black bear hunters on the Kenai Peninsula continue to be Alaska residents (Table 3). The proportion of successful hunters represented by nonresident hunters decreased during RY13–RY17 compared to the previous 5 years (RY08–RY12) from 30% (Herreman 2014) to 22% (Table 3). This is likely due to several transporters limiting the number of black bear trips offered because of a concern of a population decrease. A large number of hunters continue to hunt black bears on the peninsula, but the total number of hunters has decreased in

recent years (Table 3). This decrease may be due to the perceived quality of bears available for harvest as indicated by discussions with local transporters.

Harvest Chronology

May is the month when most of the black bear harvest occurs. September is the month with the highest fall harvest (Table 4). We are beginning to see an increase in bears harvested in April, which may be due to a trend of earlier spring breakup and more bears emerging earlier in the year.

Transport Methods

On average, transport by boat remained the most common method used by successful bear hunters (Table 5) from 2013–2015. However, the percent of successful hunters that used boats for transportation decreased significantly. This decrease coincides with a decrease in harvest in Unit 15C. Harvest in this unit is driven by harvest in Kachemak Bay where a population decline is believed to have occurred during this report period. Hunters using highway vehicles represented the second most used transportation type.

Alaska Board of Game Actions and Emergency Orders

No Board of Game actions were taken during RY13–RY17 and no emergency orders were issued.

Recommendations for Activity 2.1

Black bear harvest is adequately monitored using the current system and current methods should continue.

Table 1. Black bear harvest by season and sex, regulatory years 2013–2017, Kenai Peninsula, Alaska.

Regulatory year	Unit	Fall			Spring				Unknown season		Fall + spring			
		Male	Female	Total	Male	Female	Unk	Total	Male	Female	Male	Female	Unk	Total
2013	7	17	17	34	48	17	0	65	1	3	65	34	0	103
	15A	10	1	11	23	15	0	38	0	1	33	16	0	50
	15B	12	3	15	4	0	0	4	0	0	16	3	0	19
	15C	28	18	46	50	16	1	67	0	0	78	34	1	113
	Totals	67	39	106	125	48	1	174	1	4	192	87	1	285
2014	7	25	11	36	70	21	1	92	0	0	95	32	1	128
	15A	9	7	16	21	18	0	39	0	0	30	25	0	55
	15B	9	6	15	6	0	0	6	0	0	15	6	0	21
	15C	20	12	32	61	22	1	84	1	1	81	34	1	118
	Totals	63	36	99	158	61	2	221	1	1	221	97	2	322
2015	7	8	7	15	51	20	0	71	0	0	59	27	0	86
	15A	6	3	9	18	7	0	25	0	0	24	10	0	34
	15B	7	1	8	3	2	0	5	0	0	10	3	0	13
	15C	10	8	18	64	10	0	74	1	0	74	18	0	93
	Totals	31	19	50	136	39	0	175	1	0	167	58	0	226
2016	7	12	2	14	87	31	0	118	0	0	99	33	0	132
	15A	0	0	0	29	17	0	46	0	1	29	17	0	47
	15B	1	2	3	5	1	0	6	0	0	6	3	0	9
	15C	16	8	24	92	43	1	136	0	0	108	51	1	160
	Totals	29	12	41	213	92	1	306	0	1	242	104	1	348
2017	7	23	16	39	77	21	1	99	0	0	100	37	1	138
	15A	7	3	10	20	8	0	28	0	0	27	11	0	38
	15B	14	4	18	1	1	0	2	0	0	15	5	0	20
	15C	42	18	60	103	29	0	132	0	0	145	47	0	192
	Totals	86	41	127	201	59	1	261	0	0	287	100	1	388

Note: Unk = Unknown.

Table 2. Black bear bait stations and bait harvest for the Kenai Peninsula, Alaska, regulatory years 2013–2017.

Regulatory year	Unit 7		Unit 15A		Unit 15B		Unit 15C		Units 7 and 15	
	No. stations	Harvest	No. stations	Harvest	No. stations	Harvest	No. stations	Harvest	No. stations	Harvest
2013	211	31	121	20	9	0	66	9	407	60
2014	210	48	115	25	4	1	87	15	416	89
2015	168	41	99	20	11	0	68	13	346	74
2016	168	64	99	34	17	1	91	26	375	125
2017	158	47	87	21	13	0	80	23	338	91

Table 3. Harvest effort and residency for Kenai Peninsula, Alaska, black bear hunters, regulatory years 2013–2017.

Regulatory year	Successful									Unsuccessful									Total reports
	Unit resident	%	Nonlocal[a] resident	%	Non-resident	%	Unk	%	Total	Unit resident	%	Nonlocal[a] resident	%	Non-resident	%	Unk	%	Total	
2013	107	46	91	39	37	16	0	0	235	662	46	680	47	106	7	4	0.28	1.452	1,687
2014	107	37	101	35	81	28	1	0	290	605	47	578	36	106	8	5	0.39	1.294	1,584
2015	70	41	71	42	29	17	1	1	171	571	49	489	37	104	9	3	0.26	1,167	1,338
2016	124	45	86	31	61	22	5	2	276	491	47	454	34	97	9	0	0.00	1,042	1,318
2017	137	41	100	30	91	27	9	3	337	522	50	433	31	85	8	1	0.10	1,041	1,378

Note: Harvest effort is taken from harvest ticket reports and may not reflect all known harvest. Unk = unknown.
[a] Nonlocal resident refers to Alaska residents that reside outside of Units 7 and 15.

Table 4. Chronology of black bear harvest on the Kenai Peninsula, Alaska, regulatory years 2013–2017.

Regulatory year	Jul		Aug		Sep		Oct		Nov		Dec		Jan		Mar		Apr		May		Jun		Unk		Total reports
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
2013	8	3	13	6	53	23.0	10	4	1	0.4	0	0	0	0.0	2	0.9	2	0.9	78	33	66	28	2	0.9	235
2014	8	3	18	6	40	14.0	17	6	0	0.0	0	0	0	0.0	0	0.0	4	1.0	131	45	66	23	5	2.0	289
2015	4	2	5	3	19	11.0	7	4	0	0.0	0	0	0	0.0	1	0.6	2	1.0	88	52	45	26	0	0.0	171
2016	3	1	12	4	13	4.8	7	3	0	0.0	0	0	1	0.4	3	1.0	15	6.0	128	47	91	34	1	0.4	274
2017	15	4	26	8	49	15.0	13	4	0	0.0	0	0	0	0.0	0	0.0	2	0.6	138	41	86	26	8	2.0	337

Note: Data are taken from harvest ticket reports and may not reflect all known harvest. Unk = Unknown.

Table 5. Mode of transportation for successful Kenai Peninsula, Alaska, black bear hunters, regulatory years 2013–2017.

Regulatory year	3- or 4-wheeler	%	Airboat	%	Airplane	%	Boat	%	Foot	%	Highway vehicle	%	Horse or dog team	%	Off-road vehicle	%	Unk	%	Total reports
2013	32	14	1	0.4	19	8	69	29	17	7	85	36	8	3	1	0.4	3	1	235
2014	40	14	1	0.3	27	9	103	36	12	4	99	34	3	1	1	0.3	4	1	290
2015	28	16	0	0.0	8	5	58	34	7	4	61	36	2	1	2	1.2	5	3	171
2016	46	27	0	0.0	5	3	68	40	8	5	36	21	0	0	5	3.0	1	1	169
2017	43	13	1	0.3	20	6	146	43	14	4	92	27	0	0	16	4.7	5	1	337

Notes: Data are taken from harvest ticket reports and may not reflect all known harvest. Unk = Unknown.

3. Habitat Assessment-Enhancement

No effort is currently being made to assess or enhance black bear habitat on the Kenai Peninsula. The current lack of data collection for black bear habitat can continue until a need for this information is identified.

NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS

Data Recording and Archiving

Harvest ticket data unfortunately never matches data produced through bear sealing. This appears to reflect a misunderstanding by hunters that once they have completed sealing, they do not need to fill in the harvest report. An automated system should be created to produce harvest reports from sealing reports that do not have a coinciding harvest report. Until the time that such a system is created, and databases are rectified, all harvest information should be taken from the sealing database only and harvest report cards should only be used to track hunter effort.

Agreements

No black bear management agreements currently exist.

Permitting

No special permits are needed to conduct current black bear management activities in Units 7 or 15.

Conclusions and Management Recommendations

Black bear populations on the Kenai Peninsula continue to be resilient to current harvest pressure and environmental variation. Due to their relatively high reproductive capacity compared to other bear species and the available refuge habitat from hunters, it is unlikely that harvest would ever cause a conservation concern for black bears on the Kenai Peninsula. High harvest, however, can affect population structure and subsequent human-bear interactions, viewing opportunities, and quality hunting experiences. While harvest monitoring strategies amply document the harvest and provide opportunity to sample harvested animals, they do not adequately provide timely information about population changes. Only dramatic population changes can be detected through harvest data, several years after a change occurs. Therefore, these data are not adequate for managers to address regulation changes that require meaningful population abundance data. To fill this gap in data, a population monitoring mechanism should be developed to track population changes.

II. Project Review and RY18–RY22 Plan

Review of Management Direction

MANAGEMENT DIRECTION

The previous management objective, to not exceed an average harvest of 40% females in the most recent 3-year period, has not been an adequate target for managers to prevent what appear to be dramatic changes in the Unit 7 and 15 black bear populations as seen from changes in skull size from harvested animals, increases in nuisance problems, and reports from hunters, guides, and the general public. Changes that occurred in the Unit 15C black bear population were not prevented or detected quickly enough due to the combination of the objective being inadequate and methods being untimely, our management goal was not met in RY13–RY17.

Between 2010 and 2012 in Unit 15C the average percentage of females in the harvest was 38%. This is within the management objective yet led to dramatic shifts in the age structure of the population (as noted in skull size changes, Fig. 3), the quality of harvestable bears reported by hunters, and the number of juvenile bears noted in the population. This led to increased negative human-bear interactions. Data from 2000 to 2010 shows an average of 25% females in the harvest. During this period hunters and wildlife enthusiasts appeared happy with population levels. Also, the department received few reports of negative human-bear interactions. The low end of percent females in the harvest that appeared to lead to the changes in age structure was 35%. This suggests that any female harvest above 35% in a single year could lead to dramatic changes in the population structure and should be avoided. Historic data suggests that harvest comprised of less than 30% females does not lead to dramatic changes in population dynamics. As such, the new management objective will be to not exceed a harvest of greater than 30% females in a 3-year period.

Research should be conducted to help refine reasonable management objectives for black bear populations.

GOALS

The management goal for Kenai Peninsula black bears is to provide for optimum harvest and opportunity to view, enjoy, and photograph bears while limiting negative human-bear interactions.

CODIFIED OBJECTIVES

Amounts Reasonably Necessary for Subsistence Uses

The department will follow Board of Game process to request a review of the current ANS finding for black bear in Units 7 and 15 outside of the Anchorage-Matsu-Kenai Nonsubsistence Area

Intensive Management

No change is expected from the RY13–RY17 report period.

MANAGEMENT OBJECTIVES

Provide the opportunity to hunt black bears using seasons and bag limits to regulate the take so as not to exceed 30% females in the harvest during any a 3-year period.

REVIEW OF MANAGEMENT ACTIVITIES

1. Population Status and Trend

ACTIVITY 1.1. Monitor black bear population status using standardized reliable population metrics.

Data Needs

A reliable metric for black bear population status or trend needs to be developed. Skull size and tooth age analysis are not sensitive enough metrics to detect population level changes within a reasonable time frame for management action. To date, discussion with research staff has revolved around a few different possibilities including genetic mark recapture using hair snares and biopsy darting, which appears to be the most promising. If a true mark recapture analysis is not feasible from this method, it may still provide a harvest rate of marked animals giving biologists a reliable trend metric with which to manage.

Methods

Genetic samples from live black bears can be reliably obtained through hair snaring along bear travel corridors and salmon streams, as well as through biopsy samples taken from a helicopter during the fall, when bears are accessible in alpine areas. These samples can be genotyped to provide a set of known bears in the population. Tissue samples can be collected from all harvested bears, which can then be genotyped to provide a sample of harvested bears for comparison to known bears in the population. From this, a harvest rate can be calculated. A proportion of bears should be collared and tracked to determine if genetic sampling locations can accurately represent the population as a whole.

2. Mortality-Harvest Monitoring

ACTIVITY 2.1. Monitor black bear harvest through sealing and harvest reports.

Data Needs

No change from the RY13–RY17 reporting period.

Methods

No change from the RY13–RY17 reporting period.

3. Habitat Assessment-Enhancement

There is no habit assessment or enhancement work planned for black bears in Units 7 or 15 during RY18–RY22.

NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS

Data Recording and Archiving

No change from the RY13–RY17 reporting period.

Agreements

No change from the RY13–RY17 reporting period.

Permitting

The department does not expect to seek any black bear specific permits in Units 7 or 15 during RY18–RY22.

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