SPECIES	Alaska Department of Fish and Game
	Division of Wildlife Conservation
MANAGEMENT REPORT	(907) 465-4190 PO Box 115526
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CHAPTER 8: BLACK BEAR MANAGEMENT REPORT

From: 1 July 2010
To: 30 June 2013

LOCATION

GAME MANAGEMENT UNIT: 6 (10,140 mi^2)

GEOGRAPHIC DESCRIPTION: Prince William Sound and North Gulf of Alaska coast

BACKGROUND

Black bears are common throughout most of Unit 6, except on Montague, Hinchinbrook, several smaller islands in Prince William Sound (PWS), and Kayak and Middleton islands along the North Gulf of Alaska Coast (NGC). Density is highest in western PWS and lower in eastern PWS and along the NGC. Modafferi (1978) roughly estimated densities of 500, 230, and 300 bears/1,000 km^2 in western PWS, eastern PWS, and along the NGC, respectively. Other density estimates for good habitat in PWS have ranged from 400 to 10,000 bears/1,000 km^2 (Grauvogel 1967; McIlroy 1970; Modafferi 1982). Harvest data and incidental observations by guides, charters, and local hunters indicated that distribution and general abundance increased throughout Unit 6 during the 1990s to a high level, possibly in response to new salmon hatcheries coming online during the 1980s. None of these estimates, however, were obtained by methods considered reliable for estimating bear population size or density. Since the early 2000s, stakeholders have expressed concern that the population is declining throughout the western PWS.

Black bears in Unit 6 primarily eat vegetation in the early spring. Especially important foraging areas are those that contain early emergent vegetation, including coastal sedge meadows and avalanche shoots. Major foods include grasses, sedges, skunk cabbage, and horsetail. Diets shift as the summer progresses and bears consume more fish, particularly salmon of any available species. Berries are also very important in the summer and fall. Meat from terrestrial animals probably comprises comparatively little of the diet of bears in PWS.

Weather conditions can lead to fluctuations in food abundance which affect black bear populations in Unit 6. Reduced food availability can impact the age of first reproduction, pregnancy rates (if fall resources are insufficient), and cub mortality. Competition and predation by brown bears also may influence the distribution and abundance of black bears. The highest density of black bears occurs in western PWS where very few brown bears are present.

Black bears exhibit sexual segregation during the spring (Modafferi 1982). Modafferi (1982) found that male black bears in Unit 6D tended to move down to beaches after emerging from winter dens to feed on new sedges and grasses, making them more vulnerable to harvest during

this period. Females tended to remain away from beaches, instead favoring south-facing slopes and avalanche chutes that green up early in the season. Both in Alaska (Schwartz et. al. 1986) and Minnesota (Rogers 1987), den emergence was correlated with weather conditions, though in Alaska it was a secondary correlate to Julian date.

Harvest monitoring began in 1973 with mandatory sealing of hides. Before this requirement, annual harvest estimates ranged from "practically nil" (Robards 1954) to more than 100 during 1965 and 1966 (McIlroy 1970). Sealing records indicated an average annual take of 103 bears from 1973 (when sealing records begin) to 1980, 206 from 1981 to 1990, 267 during 1991–2000, and 519 from 2001 to 2010. The Anton Anderson Memorial Tunnel (Whittier road) opened to highway vehicles in June 2000, which has allowed easier access for bear hunters in Unit 6D. Although the increasing trend in harvest began 4 years before the Whittier road opened, easier access has allowed the number of hunters to continue increasing in Unit 6D.

Hunting pressure may affect local populations. McIlroy (1970) reported declining harvest and hunter success, and increasing hunter-days per harvested bear, indicating a declining black bear population in Valdez Arm (Unit 6D) between 1966 and 1969. Relatively high hunter effort documented by Modafferi (1978) around Whittier in 1977 may also have indicated a reduced population in western Unit 6D. Concern over the increase in black bear harvest in PWS has led to a series of regulatory actions starting in 2003, including season date changes, limitations on bear baiting, and the prohibition of shooting from a boat. The management objective, prior to this reporting cycle, of 200 bears in the harvest has been regularly exceeded since 1985. In fact harvest has been double (5 years) or triple (7 years) the harvest objective every year since 2001. The majority of this harvest (75–90%) comes from the western portion of 6D. Additionally, the percentage of females in the harvest in 6D has exceeded management objectives since 2006.

The average skull size of males in 6D has been below 17 inches in all but two years since 2005. Crowley (2011) reported that mean male skull size exhibited a decreasing trend with increasing harvest density in Unit 6D. The relationship was stronger from 2005 to 2009 than during the previous two 5-year periods, suggesting that harvest was increasingly impacting age of bears harvested.

MANAGEMENT OBJECTIVES

The management objective for Unit 6 black bears is to maintain a black bear population that will sustain a 3-year average annual harvest of 350–400 bears composed of less than 30% females and with a minimum male average skull size of 17 inches.

METHODS

Information was gathered regarding the population status of black bears from sealing certificates, harvest ticket reports, conversations with stakeholders, and opportunistic observations of black bears during other wildlife surveys. Harvest data are summarized by regulatory year (RY), which begins 1 July and ends 30 June (e.g., RY12 = 1 July 2012–30 June 2013).

Hides and skulls were sealed for all black bears in the reported harvest. Harvest included bears taken by licensed hunters and bears killed in defense of life or property. Staff checked each hide for sex identifiers and took skull measurements for total length and zygomatic width. We

recorded harvest date, days hunted, transportation used, and location of harvest within Uniform Coding Units (UCUs). UCUs are small, defined areas within Unit 6 representing watersheds, islands, or island groups. Illegal kills are included when known and unreported kills are estimated. Unreported harvest included wounding loss and bears taken by hunters and not sealed (unknown illegal kills). Tooth samples have been collected periodically since sealing began but consistently since RY04 from bears harvested in Unit 6D to determine age. Teeth were also examined to determine the feasibility of female reproductive history reconstruction (Coy and Garshelis 1992). Harvest ticket data have been available since 2010 and can be used to evaluate effort.

RESULTS AND DISCUSSION

POPULATION STATUS AND TREND

There are currently no techniques for population estimation that are achievable within our budget constraints. Stakeholder reports consistently indicate that black bears in western PWS have become more difficult to find for everything from wildlife viewing to hunting. However, it is unclear if this is a result of fewer conspicuous bears (the bears have become educated about beach hunters) or if the numbers are truly down. Numerous stakeholders have expressed concern about the effects of the severe winter of RY11 and the late spring of RY12. Anecdotal reports suggest that cub survival may have been very poor for both years.

MORTALITY

Harvest

Season and Bag Limit. The seasons for Unit 6 were as follows: 6A and B was 20 August–30 June, 6C was 1 September–30 June, and 6D was 10 September–10 June. The bag limit was 1 bear in Unit 6.

Board of Game Actions and Emergency Orders. The Board of Game made no regulatory changes regarding black bears in Unit 6 during this reporting period.

Hunter Harvest. Total harvest in Unit 6 grew at an average rate of about 12% annually from RY98 (303 bears) to RY07 (674 bears) when the harvest peaked. Since RY07, harvest has declined at an average rate of about 10% annually. Harvest in RY10, RY11, and RY12 was 550, 510 bears, and 396 bears respectively (Table 1). Harvest in the latter two years may have been affected by weather conditions. RY11 was a 100-year weather event exceeding records for snowfall and retention. While snowfall in RY12 was not nearly as significant as in the previous year, spring was late in RY12. Spring conditions significantly influence the phenology of forage plants, which in turn may influence the distribution of bears and whether or not become available to hunters.

Most of the bear harvest (80–90% since RY98) in Unit 6 is from PWS (Unit 6D). For RY10, RY11, and RY12, the harvest was 82%, 91%, and 87%, respectively, from Unit 6D. Areas of PWS that are closest to Whittier experience the highest harvest pressure (Fig. 1). This is true for many other species. Harvest densities are calculated as bears harvested per kilometer using population zones that were used by Modafferi (1978) for density calculations. Two zones show the most dramatic increase in the late 1990s, Ester/Eaglek and Passage/Whittier. Harvest data relative to population abundance must be interpreted with caution on a fine scale because areas

may receive harvest pressure that is disproportionate to resource availability. However, even before the effort for bears in PWS increased, bears were thought to be considerably more abundant in western PWS. Harvests during this reporting period declined in all subunits (Table 1) but most notably in Unit 6D.

Sex composition of the harvest varies between subunits (Table 1). Unit 6A has the lowest proportional harvest of females with less than 15% females taken in all of the last 20 years. The percent of females in the harvest during RY10, RY11, and RY12 was 11%, 9% and 10% respectively. The highly selective nature of this harvest is likely due to nearly all participants using guides and the distance and expense relative to hunting that area. Unit 6B experiences very little hunting pressure, especially since the closure of the Copper River Highway at Mile 34 in 2011. As a result, the percent take of females is highly volatile. In most years the percent take of females is 25% or lower. In RY10, 27% females were taken ($n = 11$). In RY11, 17% females were taken ($n = 6$). In RY12, 50% females were taken ($n = 4$). Unit 6C experiences higher harvest pressure due to its proximity to Cordova and presence of the Copper River Highway. The 20-year average (RY89-RY09) percent of females in the harvest is 25%. The 10-year average (RY99-RY09) is 27%. Percent take of females in RY10, RY11, and RY12 was 35%, 36%, and 33% respectively. The percent of females in the harvest in Unit 6D has also increased (Fig. 2). While the 20-year average was 25% as in Unit 6C, the 10-year average was higher with 29% females taken. RY10 had 31% females in the harvest. RY11 and RY12 had the two highest values for percent females taken, with 41% and 46%, respectively. Harvest in Unit 6D is 10 times higher than the other subunits and therefore percentage results are least likely to be affected by sample size. Percentage of females in the harvest in Unit 6D has exceeded management objectives since RY06.

Mean skull size among males harvested varied from 16.89 to 17.19 inches for each of the last 5 years (Table 2). The largest skulls (RY10 average = 18.13 inches) came from Unit 6A, and the smallest (RY08 average = 16.58 inches) was from Unit 6C. In most years, Unit 6D had the lowest mean skull size compared with other subunits.

Average ages from male bears in Unit 6D for each regulatory year in this reporting period ranged from 6.5 to 7.5 years old. The average age of females is considerably higher, ranging from 7.5 to 10.5 for each regulatory year. Since RY11, all collected teeth have been aged. Although teeth have been collected from Unit 6D bears since RY07, only a 30% sample of each year has been aged. However, these teeth have been retained and will be aged at a later date. Reproductive histories were constructed for some years between RY04 and RY09. However PWS black bears did not appear to experience enough dietary fluctuation to lay deterministic annuli relative to parturition.

Hunter Residency. Nonresident hunters killed the majority of bears harvested in Unit 6A every year and in Unit 6B in all but one year (Table 3). Unit 6C harvest is distributed relatively evenly among all user groups. In most years, nonlocal residents and Unit 6 residents harvest similar numbers to each other. Nonlocal residents took more than 55% of the harvested bears in Unit 6D each year. Nonresident hunters took 31% or more of harvested bears in all years. Residency of successful hunters in all areas did not change significantly over the past 5 years (Table 3).

<u>Harvest Chronology</u>. The majority of the harvest in all areas occurs in the spring (Table 4). In Unit 6C, the highest amount of fall harvest was 35% of the total. In Unit 6D in most years fall harvest was about 10% of the total harvest. Harvest of females is highest in the fall, in some years and some areas, it exceeds 50%. Most fall harvest occurs in early September.

Most bears were taken in May during this reporting period (Table 4) and during the past 5 years. In RY11 and RY12 harvest in early June increased notably. A higher percentage of harvest (35% and 36%, respectively, for Unit 6D and 36% and 22%, respectively, for Unit 6C) was taken in early June. In both areas these were the highest percentages observed in early June. For Unit 6D, harvest was highest even compared with years when the season closed 30 June rather than the current of 10 June. This may be related to late and persistent snow related to the winter of RY11 when records were broken for snow depth and retention. RY12 was also characterized by a late spring although it may not have been significant compared to other years.

<u>Transport Methods</u>. Most successful hunters used boats for transportation during the past 3 years (Table 5). Airplanes provided most of the transportation in Units 6A and 6B. Highway vehicles were used in Unit 6B until 2011, when a bridge of the Copper River Highway failed. The road accessing much of Unit 6B has been impassable since that time and harvest reflects that change. Highway vehicles are most commonly used in Unit 6C. Boats were the primary means of transportation used in Unit 6D.

<u>Hunter Effort</u>. Harvest tickets have been required since RY09. Based on these data, effort in Unit 6D was highest in RY10 with about 970 hunters reporting pursuing black bears. Reported effort in RY12 was the lowest in this 4-year period, with 588 hunters reporting hunting black bears. Comparing data between harvest ticket reports of hunting activity and sealing data shows success rates of between 52% and 66% annually. The average number of days hunted by successful hunters was between 3and 4 for the last 17 years.

Less than 20% of all harvested bears were taken over bait. Black bear baiting is most popular in Unit 6C, where stations are used for taking less than 30% of harvested bears. In Unit 6D, where most black bear harvest occurs, less than 16% of harvested bears are taken over bait. Black bear baiting is seen by some as a technique that can lead to more selective harvest. In some regulatory years the harvest of females was lower among baiters than non-baiters ("spot and stalk") but it some years it was higher and some it was the same.

CONCLUSIONS AND RECOMMENDATIONS

Black bear populations and harvest in Units 6A–6C were at acceptable levels. No changes or management actions are recommended in these subunits. Management objectives were adjusted for Unit 6D during this reporting period to reflect the desire to reduce harvest in Unit 6D.

Population estimation techniques are being developed that may help to understand exploitation rates, particularly on a local level. These techniques will most likely utilize genetic mark/recapture techniques, including hair snares and biopsy darts. There is currently insufficient funding for this work to occur on the necessary scale and in PWS.

Collection of teeth from harvested bears to determine age structure in the harvest will continue. Genetics data will be collected from archived samples as well as from newly sealed bears. It

continues to be difficult to relate harvest data to population size. Education efforts to increase reporting compliance should continue.

Harvests have steadily declined, and while this may be related to regulatory action the population may also be declining. Since there is no population estimate, we do not know the exploitation rate on the population and whether or not it is sustainable. Additionally, if the population is truly depressed as stakeholders suggest, it may not be resilient against extreme environmental events. One example of such an event would be the severe winter of RY11, the effects of which are not yet fully understood.

As the effects of severe weather become more apparent, it may be necessary to pursue more aggressive means of reducing harvest. Season dates may be used to reduce harvest, particularly the harvest of females. While the percent harvest of females is highest in the fall, the overall number of animals taken is far less than in the spring. Early cessation of the spring hunt could be the most effective option. The establishment of a registration hunt may also be necessary to track harvest more accurately and promptly and close the season if an objective is met.

REFERENCES CITED

Coy, P. L. and D. L. Garshelis. 1992. Reconstructing reproductive histories of black bears from the incremental layering in dental cementum. Canadian Journal of Zoology 70: 2150–2160.

Crowley, D. W. 2011. Unit 6 black bear management report. Pages 130–142 [*In*] P. Harper, editor. Black bear management report of survey and 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.

Grauvogel, C. A. 1967. Paper on tooth aging and bears in Prince William Sound, summer '67. Typewritten report in the files of Alaska Cooperative Wildlife Research Unit, University of Alaska, Fairbanks.

McIlroy, C. W. 1970. Aspects of the ecology and hunter harvest of the black bear in Prince William Sound. M.S. thesis. University of Alaska, Fairbanks.

Modafferi, R. D. 1978. Black bear management techniques development. Alaska Department of Fish and Game, Division of Game. Federal Aid in Wildlife Restoration Progress Report, Projects W-17-8 and W-17-9, Juneau.

Modafferi, R. D. 1982. Black bear movement and home range study. Alaska Department of Fish and Game, Division of Game. Federal Aid in Wildlife Restoration Progress Report, Projects W-17-10, W-17-11, W-21-1, and W-21-2, Job 17.2R, Juneau.

Robards, F. C. 1954. Annual report: Game, fur and game fish; Cordova, 1953. Alaska Game Commission.

Rogers, L. L. 1987. Effects of food supply and kinship on social behavior, movements, and population growth of black bears in northeastern Minnesota. Wildlife Monographs. 97:1–72.

Schwartz, C. C., S. D. Miller, and A.W. Franzmann. 1986. Denning ecology of three black bear populations in Alaska. International Conference on Bear Research and Management. 7:281–291.

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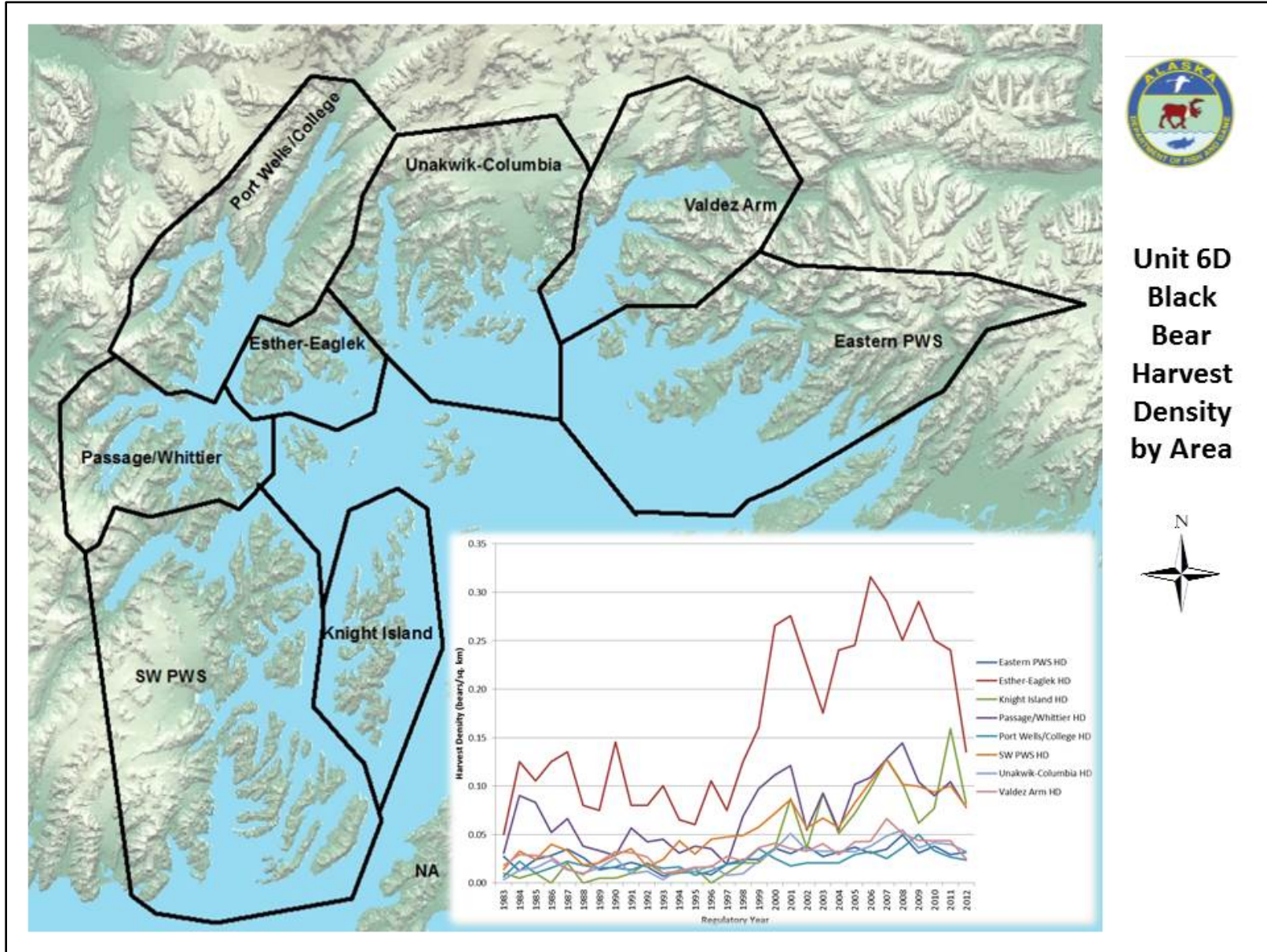
Figure 1. Harvest density RY83–RY12.
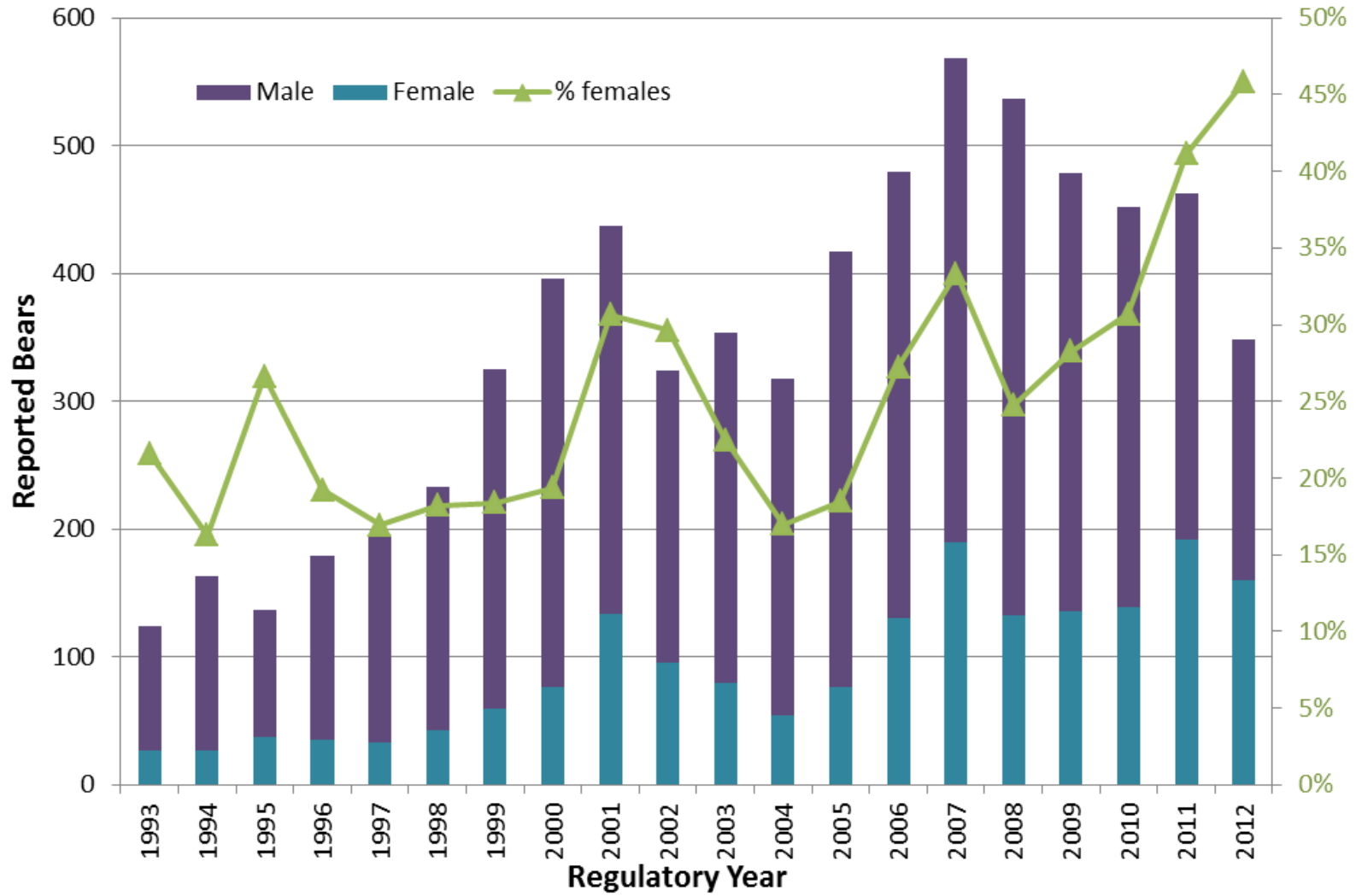
Figure 2. Unit 6D black bear harvest and percent take of females, RY08–RY12.

Table 1. Unit 6 black bear harvest, RY08–RY12.

Subunit/ Date	Reported						Nonhunting kill			Estimated kill		Total estimated kill					
	Hunter kill																
	M	F	(% F)	Unk	Total	Over bait	M	F	Unk.	Unreported	Illegal	M	(%	F	(%)	Unk	Total
6A/Fall 08	16	3	(16)	0	19	0	0	0	0	2	0	16	(84)	3	(16)	2	21
Spring 09	21	3	(13)	0	24	13	0	0	0	3	0	21	(88)	3	(13)	3	27
6A/Total	37	6	(14)	0	43	13	0	0	0	5	0	37	(86)	6	(14)	5	48
6A/Fall 09	1	3	(75)	0	4	0	0	0	0	0	0	1	(25)	3	(75)	0	4
Spring 10	33	3	(8)	0	36	21	0	0	0	4	0	33	(92)	3	(8)	4	40
6A/Total	34	6	(15)	0	40	21	0	0	0	5	0	34	(85)	6	(15)	5	45
6A/Fall 10	3	0	(0)	0	3	0	0	0	0	0	0	3	(100)	0	(0)	0	3
Spring 11	29	4	(12)	0	33	17	0	0	0	4	0	29	(88)	4	(12)	4	37
6A/Total	32	4	(11)	0	36	17	0	0	0	4	0	32	(89)	4	(11)	4	40
6A/Fall 11	5	1	(17)	0	6	0	0	0	0	1	0	5	(83)	1	(17)	1	7
Spring 12	5	0	(0)	0	5	0	0	0	0	1	0	5	(100)	0	(0)	1	6
6A/Total	10	1	(9)	0	11	0	0	0	0	1	0	10	(91)	1	(9)	1	12
6A/Fall 12	3	0	(0)	0	3	0	0	0	0	0	0	3	(100)	0	(0)	0	3
Spring 13	6	1	(14)	0	7	0	0	0	0	1	0	6	(86)	1	(14)	1	8
6A/Total	9	1	(10)	0	10	0	0	0	0	1	0	9	(90)	1	(10)	1	11
6B/Fall 08	1	1	(50)	0	2	0	0	0	0	0	0	1	(50)	1	(50)	0	2
Spring 09	6	3	(33)	0	9	0	0	0	0	1	0	6	(67)	3	(33)	1	10
6B/Total	7	4	(36)	0	11	0	0	0	0	1	0	7	(64)	4	(36)	1	12
6B/Fall 09	2	0	(0)	0	2	0	0	0	0	0	0	2	(100)	0	(0)	0	2
Spring 10	8	0	(0)	0	8	0	0	0	0	1	0	8	(100)	0	(0)	1	9
6B/Total	10	0	(0)	0	10	0	0	0	0	1	0	10	(100)	0	(0)	1	11
6B/Fall 10	2	0	(0)	0	2	0	0	0	0	0	0	2	(100)	0	(0)	0	2
Spring 11	6	3	(33)	0	9	0	0	0	0	1	0	6	(67)	3	(33)	1	10
6B/Total	8	3	(27)	0	11	0	0	0	0	1	0	8	(73)	3	(27)	1	12
6B/Fall 11	1	0	(0)	0	1	0	0	0	0	0	0	1	(100)	0	(0)	0	1
Spring 12	1	0	(0)	0	1	0	0	0	0	0	0	1	(100)	0	(0)	0	1
6B/Total	2	0	(0)	0	2	0	0	0	0	0	0	2	(100)	0	(0)	0	2

Table 1. continued.

Subunit/ Date	Reported						Nonhunting kill			Estimated kill		Total estimated kill					
	Hunter kill						M	F	Unk.	Unreported	Illegal	M	(%)	F	(%)	Unk.	Total
	M	F	(% F)	Unk.	Total	Over bait											
6B/Fall 12	2	1	(33)	0	3	0	0	0	0	0	0	2	(67)	1	(33)	0	3
Spring 13	3	0	(0)	0	3	0	0	0	0	0	0	3	(100)	0	(0)	0	3
6B/Total	5	1	(17)	0	6	0	0	0	0	1	0	5	(83)	1	(17)	1	7
6C/Fall 08	4	0	(0)	0	4	0	0	0	0	0	0	4	(100)	0	(0)	0	4
Spring 09	22	6	(21)	0	28	4	2	0	0	3	0	24	(80)	6	(20)	3	33
6C/Total	26	6	(19)	0	32	4	2	0	0	4	0	28	(82)	6	(18)	4	38
6C/Fall 09	9	3	(25)	1	13	0	2	2	0	2	0	11	(69)	5	(31)	3	19
Spring 10	22	9	(29)	0	31	9	0	0	0	4	0	22	(71)	9	(29)	4	35
6C/Total	31	12	(28)	1	44	9	2	2	0	5	0	33	(70)	14	(30)	6	53
6C/Fall 10	4	3	(43)	0	7	0	0	0	0	1	0	4	(57)	3	(43)	1	8
Spring 11	29	14	(33)	0	43	8	0	0	0	5	0	29	(67)	14	(33)	5	48
6C/Total	33	17	(34)	0	50	8	0	0	0	6	0	33	(66)	17	(34)	6	56
6C/Fall 11	3	1	(25)	0	4	0	1	1	0	0	0	4	(67)	2	(33)	0	6
Spring 12	17	10	(37)	0	27	7	0	0	0	3	0	17	(63)	10	(37)	3	30
6C/Total	20	11	(35)	0	31	7	1	1	0	4	0	21	(64)	12	(36)	4	37
6C/Fall 12	3	4	(57)	0	7	0	0	0	0	1	0	3	(43)	4	(57)	1	8
Spring 13	21	8	(28)	0	29	7	0	0	0	3	0	21	(72)	8	(28)	3	32
6C/Total	24	12	(33)	0	36	7	0	0	0	4	0	24	(67)	12	(33)	4	40
6D/Fall 08	85	43	(34)	0	128	0	2	0	1	15	0	87	(67)	43	(33)	16	146
Spring 09	317	89	(22)	0	406	54	0	1	0	49	0	317	(78)	90	(22)	49	456
6D/Total	402	132	(25)	0	534	54	2	1	1	64	0	404	(75)	133	(25)	65	602
6D/Fall 09	27	25	(48)	1	53	0	0	2	0	6	0	27	(50)	27	(50)	7	61
Spring 10	315	109	(26)	2	426	67	0	0	0	51	0	315	(74)	109	(26)	53	477
6D/Total	342	134	(28)	3	479	67	0	2	0	57	0	342	(72)	136	(28)	60	538
6D/Fall 10	17	25	(60)	0	42	0	0	0	0	5	0	17	(40)	25	(60)	5	47
Spring 11	296	114	(28)	1	411	67	0	0	0	49	0	296	(72)	114	(28)	50	460
6D/Total	313	139	(31)	0	452	67	0	0	0	54	0	313	(69)	139	(31)	54	507

Table 1. continued.

Subunit/ Date	Reported									Estimated kill		Total estimated kill					
	Hunter kill						Nonhunting kill										
	M	F	(% F)	Unk.	Total	Over bait	M	F	Unk.	Unreported	Illegal	M	(%)	F	(%)	Unk.	Total
6D/Fall 11	28	21	(43)	0	49	0	0	0	3	6	0	28	(57)	21	(43)	9	58
Spring 12	243	171	(41)	1	415	33	0	0	0	50	0	243	(59)	171	(41)	51	465
6D/Total	271	192	(41)	1	464	33	0	0	3	56	0	271	(59)	192	(41)	60	523
6D/Fall 12	15	20	(57)	0	35	0	0	0	0	4	0	15	(43)	20	(57)	4	39
Spring 13	170	138	(45)	1	309	27	0	0	0	37	0	170	(55)	138	(45)	38	346
6D/Total	188	159	(46)	0	347	27	0	0	0	41	0	188	(54)	159	(46)	41	388
Fall 08	106	47	(31)	0	153	0	2	0	1	18	1	108	(70)	47	(30)	20	175
Spring 09	366	101	(22)	0	467	71	2	1	0	56	13	368	(78)	102	(22)	69	539
Total	472	148	(24)	0	620	71	4	1	1	74	14	476	(76)	149	(24)	89	714
Unit 6/Total																	
Fall 09	39	31	(44)	2	72	0	2	4	0	9	2	41	(54)	35	(46)	13	89
Spring 10	378	121	(24)	2	501	97	0	0	0	60	7	378	(76)	121	(24)	69	568
Total	417	152	(27)	4	573	97	2	4	0	69	9	419	(73)	156	(27)	82	657
Unit 6/Total																	
Fall 10	26	28	(52)	0	54	0	0	0	0	6	1	26	(48)	28	(52)	7	61
Spring 11	360	135	(27)	1	496	92	0	0	0	60	9	360	(73)	135	(27)	70	565
Total	386	163	(30)	1	550	92	0	0	0	66	10	386	(70)	163	(30)	77	626
Unit 6/Total																	
Fall 11	37	23	(38)	0	60	0	1	1	3	7	1	38	(61)	24	(39)	11	73
Spring 12	266	181	(40)	1	448	40	0	0	0	54	12	266	(60)	181	(40)	67	514
Total	303	204	(40)	1	508	40	1	1	3	61	13	304	(60)	205	(40)	78	587
Unit 6/Total																	
Fall 12	23	25	(52)	0	48	0	0	0	0	6	1	23	(48)	25	(52)	7	55
Spring 13	203	148	(42)	1	352	34	0	0	0	42	10	203	(58)	148	(42)	53	404
Total	226	173	(43)	1	400	34	0	0	0	48	11	226	(56)	173	(43)	60	459

Table 2. Unit 6 black bear harvest mean skull size (length + width), RY08–RY12, and mean age (years) in Unit 6D only.

Subunit	Regulatory Year	Males Skull (in)	N	Age	n	Females Skull (in)	n	Age	n
6A	RY08	17.88	36			15.64	6		
	RY09	17.88	34			16.04	6		
	RY10	18.13	29			16.14	4		
	RY11	17.69	9			17.63	1		
	RY12	18.12	9			16.75	1		
6B	RY08	17.89	7			16.14	4		
	RY09	17.63	9				0		
	RY10	18.53	8			15.25	3		
	RY11	18.47	2				0		
	RY12	18.18	5			14.19	1		
6C	RY08	16.58	26			15.22	6		
	RY09	17.06	32			15.65	12		
	RY10	16.59	33			15.88	16		
	RY11	17.22	21			15.89	11		
	RY12	17.11	24			15.94	12		
6D	RY08	16.80	391	6.5	61	15.85	129	8.8	30
	RY09	17.11	332	7.3	91	15.57	128	7.5	34
	RY10	16.92	307	7.0	187	15.48	131	7.9	80
	RY11	16.98	268	7.5	176	15.87	187	10.4	105
	RY12	16.91	182	7.2	145	15.74	153	10.5	113
Unit 6 Total	RY08	16.89	460			15.82	145		
	RY09	17.19	407			15.59	146		
	RY10	17.01	377			15.53	154		
	RY11	17.02	300			15.88	199		
	RY12	17.01	220			15.75	167		

Table 3. Unit 6 black bear successful hunter residency, RY08–RY12.

Subunit	Regulatory Year	Unit 6 resident Nr	(%)	Nonlocal AK resident Nr	(%)	Nonresident Nr	(%)	Total successful hunters [a]
6A	RY08	1	(2)	9	(21)	33	(77)	43
	RY09	0	(0)	4	(10)	36	(90)	40
	RY10	0	(0)	5	(14)	31	(86)	36
	RY11	0	(0)	1	(9)	10	(91)	11
	RY12	1	(10)	1	(10)	8	(80)	10
6B	RY08	2	(18)	2	(18)	7	(64)	11
	RY09	0	(0)	6	(60)	4	(40)	10
	RY10	2	(18)	4	(36)	5	(45)	11
	RY11	1	(50)	0	(0)	1	(50)	2
	RY12	2	(33)	0	(0)	4	(67)	6
6C	RY08	11	(34)	9	(28)	12	(38)	32
	RY09	15	(34)	20	(45)	9	(20)	44
	RY10	21	(42)	12	(24)	17	(34)	50
	RY11	12	(39)	11	(35)	8	(26)	31
	RY12	13	(36)	16	(44)	7	(19)	36
6D	RY08	26	(5)	307	(57)	201	(38)	534
	RY09	31	(6)	282	(59)	166	(35)	479
	RY10	35	(8)	265	(58)	153	(34)	453
	RY11	22	(5)	299	(64)	143	(31)	464
	RY12	19	(5)	193	(55)	135	(39)	348
Unit 6 Total	RY08	40	(6)	327	(53)	253	(41)	620
	RY09	46	(8)	312	(54)	215	(38)	573
	RY10	58	(11)	286	(52)	206	(37)	550
	RY11	35	(7)	311	(61)	162	(32)	508
	RY12	35	(9)	210	(53)	154	(39)	400

[a] Total includes hunters with unknown residency and subunit.

Table 4. Unit 6 black bear harvest chronology percent by harvest period, RY08–RY12.

Subunit	Regulatory year	September 1–15	September 16–30	October 1–15	October 16–31	April 1–15	April 16–30	May 1–15	May 16–31	June 1–15	June 16–30	n
6A	RY08	16	7	7	0	0	0	16	37	2	0	43
	RY09	3	0	0	0	0	3	40	28	20	0	40
	RY10	3	3	0	0	0	0	42	33	17	0	36
	RY11	9	27	18	0	0	0	18	27	0	0	11
	RY12	10	0	10	0	0	0	20	40	0	10	10
6B	RY08	0	18	0	0	0	9	45	27	0	0	11
	RY09	0	0	10	10	0	0	40	30	10	0	10
	RY10	0	9	0	0	0	0	36	45	0	0	11
	RY11	0	50	0	0	0	0	0	50	0	0	2
	RY12	33	0	0	0	0	0	17	33	0	0	6
6C	RY08	0	6	6	0	0	3	21	47	12	0	34
	RY09	9	15	6	4	0	0	13	38	15	0	48
	RY10	6	4	2	0	0	0	20	59	8	0	50
	RY11	0	6	9	3	0	0	6	30	36	9	33
	RY12	11	3	6	0	0	0	3	56	22	0	36
6D	RY08	17	5	1	0	0	0	10	50	16	0	536
	RY09	7	3	1	0	0	0	7	62	19	0	481
	RY10	5	2	3	0	0	0	19	53	18	0	453
	RY11	7	2	1	0	0	1	4	49	35	0	467
	RY12	6	3	1	0	0	0	7	46	36	1	345
Unit 6 Total	RY08	16	6	2	0	0	0	11	49	15	0	624
	RY09	6	4	2	1	0	1	10	57	19	0	579
	RY10	5	2	2	0	0	0	21	52	17	0	550
	RY11	7	3	2	0	0	1	5	47	34	1	513
	RY12	7	3	2	0	0	0	7	46	34	1	397

[a] Includes non-hunting mortality and harvest from closed months. Less than 2 bears are taken in any year in months not included above.

Table 5. Unit 6 black bear harvest percent by transport method, RY08–RY12.

Subunit	Regulatory year	Percent of harvest							
		Airplane	Horse	Boat	3- or 4-wheeler	Snow-machine	Highway Vehicle	Unknown	n
6A	RY08	63	0	14	23	0	0	0	43
	RY09	33	0	12	43	0	0	12	40
	RY10	47	0	6	39	0	0	8	36
	RY11	91	0	0	0	0	0	9	11
	RY12	100	0	0	0	0	0	0	10
6B	RY08	55	9	9	0	9	9	9	11
	RY09	30	0	20	10	10	30	0	10
	RY10	45	0	9	0	0	45	0	11
	RY11	50	0	0	0	0	50	0	2
	RY12	50	0	17	0	0	33	0	6
6C	RY08	9	0	9	26	0	47	9	34
	RY09	2	0	10	17	0	63	8	48
	RY10	6	0	10	29	0	47	8	51
	RY11	3	0	24	24	3	27	18	33
	RY12	3	0	19	8	0	67	3	36
6D	RY08	2	0	90	4	0	2	2	538
	RY09	2	0	87	4	0	2	5	481
	RY10	2	0	91	4	0	2	1	453
	RY11	0	0	94	1	0	2	2	467
	RY12	1	0	93	2	1	3	1	349
Unit 6 Total	RY08	8	0	79	7	0	4	2	626
	RY09	5	0	74	6	0	7	6	579
	RY10	6	0	76	8	0	7	2	551
	RY11	3	0	87	3	0	4	3	513
	RY12	4	0	83	1	0	9	1	401