

Interim Annual Report to the Alaska Board of Game on Intensive Management for Moose with Wolf and Brown/Black Bear Predation Control in Unit 19D East

**Prepared by the Division of Wildlife Conservation
15 August 2011**



Interim annual updates are limited to sections where data have been collected between the prior annual report in February and end of the regulatory year on 30 June. For complete information, see the prior annual report.

Predator data

Wolves

Date(s) and method of most recent spring abundance assessment for wolves: March 2009- aerial reconnaissance survey.

Date(s) and method of most recent fall abundance assessment for wolves: March 2009, calculated by subtracting total removal from following spring abundance estimate.

Other research or evidence of trend or abundance status in wolves:

KEECH, M. A. , M. S. LINDBERG, R. D. BOERTJE, P. VALKENBURG, B. D. TARAS, T. A. BOUDREAU, AND K. B. BECKMEN. 2011. Effects of predator treatments, individual traits, and environment on moose survival in Alaska. *Journal of Wildlife Management* 75:1361–1380.

Table 3a. Wolf abundance and removal in Wolf Control Focus Area (WCFA). Removal objectives are to reduce wolf numbers as low as possible in the WCFA and to maintain a minimum of 40 wolves in all of Unit 19D east to ensure wolves persist in the unit. The WCFA was established in RY10. Prior to RY10, control was conducted in various different geographic areas. All values listed are for the current WCFA.

Period	Regulatory Year	Fall abundance ^a	Harvest removal		Dept. control removal	Public control removal ^b	Total removal	Spring abundance ^c
			Trap	Hunt				
Year 1	2001–2002	89	19	3	0	N/A	22	67
Year 2	2002–2003	--	28	5	0	N/A	33	--
Year 3	2003–2004	--	9	1	0	17	27	--
Year 4	2004–2005	--	12	2	0	12	26	--
Year 5	2005–2006	26	9	1	0	3	13	13
Year 6	2006–2007	29	13	1	0	2	16	13
Year 7	2007–2008	--	6	2	0	19	27	--
Year 8	2008–2009	--	4	3	0	19	26	--
Year 9	2009–2010	37	7	4	0	4	15	22
Year 10	2010–2011 ^d	--	6	0	0	13	19	--

^aCalculated from spring abundance and harvest in each RY when spring abundance surveys were conducted.

^bPublic control removal began in RY03.

^cCalculated by extrapolating density within a 3,210 mi² aerial reconnaissance survey area within the WCFA to the entire WCFA.

^dPreliminary data.

Black Bears

Date(s) and method of most recent spring abundance assessment for black bears. May 2010- mark-recapture estimator.

Date(s) and method of most recent fall abundance assessment for black bears: November 2009- calculated by subtracting total removal from May 2010 abundance estimate.

Other research or evidence of trend or abundance status in black bears:

KEECH, M. A. , M. S. LINDBERG, R. D. BOERTJE, P. VALKENBURG, B. D. TARAS, T. A. BOUDREAU, AND K. B. BECKMEN. 2011. Effects of predator treatments, individual traits, and environment on moose survival in Alaska. *Journal of Wildlife Management* 75:1361–1380.

Table 3b. Black bear abundance and removal in Bear Control Area (BCA). Removal objective is to reduce bear numbers as low as possible within the BCA.

Period	Regulatory Year	Spring abundance ^a (95% CI)	Harvest removal		Dept. control removal		Public control removal		Total removal	Fall abundance ^{a,b}
			FA ^c	SPR ^d	FA	SP	FA	SP		
Year 1	2001–2002	--	1	0	0	0	0	0	1	--
Year 2	2002–2003	96(±13) ^e	4	0	0	67 ^f	0	0	73	--
Year 3	2003–2004	30(±9) ^e	1	5	0	26 ^f	0	0	32	23
Year 4	2004–2005	--	0	1	0	0	0	0	1	Near 0
Year 5	2005–2006	--	1	5	0	0	0	0	6	--
Year 6	2006–2007	70(±14) ^g	0	0	0	0	0	0	0	--
Year 7	2007–2008	--	1	7	0	0	0	0	8	70
Year 8	2008–2009	--	1	5	0	0	0	0	9	--
Year 9	2009–2010	102 ^{g,h}	4	0	0	0	0	6	10	--
Year 10	2010–2011	--	0	0	0	0	4	16	20	92 ^h
Year 11	2011–2012	--	--	--	--	--	1 ^h	--	--	--

^aDoes not include cubs

^bCalculated by subtracting total removal from spring abundance estimate in the previous regulatory year

^cFall

^dSpring

^eRemoval estimator

^fNon-lethal removal

^gMark–recapture estimator

^hPreliminary

Grizzly Bears

Date(s) and method of most recent spring abundance assessment for grizzly bears: May 2002- estimated by using density extrapolated from other areas of Interior Alaska with comparable habitat

Date(s) and method of most recent fall abundance assessment for grizzly bears: November 2003- calculated by subtracting total removal from May 2002 abundance estimate.

Other research or evidence of trend or abundance status in grizzly bears: KEECH, M. A. , M. S. LINDBERG, R. D. BOERTJE, P. VALKENBURG, B. D. TARAS, T. A. BOUDREAU, AND K. B. BECKMEN. 2011. Effects of predator treatments, individual traits, and environment on moose survival in Alaska. *Journal of Wildlife Management* 75:1361–1380.

Table 3c. Brown bear abundance and removal in Bear Control Area (BCA). Removal objective is to reduce bear numbers as low as possible within the BCA.

Period	RY	Spring abundance ^a	Harvest removal		Dept. control removal		Public control removal		Total removal	Fall abundance ^{a,b}
			FA ^c	SP ^d	FA	SP	FA	SP		
Year 1	2001–2002	--	0	0	0	0	0	0	0	--
Year 2	2002–2003	12 ^e	0	0	0	6 ^f	0	0	6	--
Year 3	2003–2004	--	0	0	0	0	0	0	0	6
Year 4	2004–2005	--	0	0	0	0	0	0	0	--
Year 5	2005–2006	--	0	0	0	0	0	0	0	--
Year 6	2006–2007	--	0	2	0	0	0	0	2	--
Year 7	2007–2008	--	1	2	0	0	0	0	3	--
Year 8	2008–2009	--	0	0	0	0	0	0	0	--
Year 9	2009–2010	--	2	0	0	0	0	0	2	--
Year 10	2010–2011	--	0	0	0	0	0	0	0	--

^aDoes not include cubs

^bCalculated by subtracting total removal from spring abundance estimate in the previous regulatory year

^cFall

^dSpring

^eEstimated by using density extrapolated from other areas of Interior Alaska with comparable habitat

^fNon-lethal removal

1) Habitat data and nutritional condition of prey species

Table 4. Nutritional indicators for moose in Upper Kuskokwim Villages Moose Management Area (MMA).

Period	Regulatory Year	Twinning Rate for Radiocollared cows >2 yrs (<i>n</i>)	Twinning Rate uncollared cows (<i>n</i>)
Year 1	2001–2002	59% (22)	39% (46)
Year 2	2002–2003	24% (25)	36% (39)
Year 3	2003–2004	32% (31)	39% (31)
Year 4	2004–2005	44% (45)	50% (40)
Year 5	2005–2006	40% (60)	35% (29)
Year 6	2006–2007	52% (56)	50% (30)
Year 7	2007–2008	55% (51)	--
Year 8	2008–2009	33% (43)	26% (87)
Year 9	2009–2010	33% (40)	29% (45)
Year 10	2010–2011	--	37% (38)

2) Costs specific to implementing Intensive Management

Table 5. Proportional time of field level staff and cost (\$1000 = 1.0) of ADF&G personnel salary plus operations for predation control and for other intensive management activities (e.g., habitat enhancement, wildlife survey efforts beyond normal Survey and Inventory work) in Unit 19D East. Fiscal year (FY) is also 1 July to 30 June but the year is one greater than the comparable RY (e.g, FY 2010 is 1 July 2009 to 30 June 2010).

Period	FY	Predation control ^a		Other IM activities		Total IM cost	Research cost ^d
		Time ^b	Cost ^c	Time	Cost		
Year 10	2011	0.4	3.5	.4	5.0	8.5	56.0

^aState or private funds only.

^bPerson-months (22 days per month)

^cSalary plus operations

^dSeparate from implementing IM program but beneficial for understanding of ecological or human response to management treatment (scientific approach that is not unique to IM).