Annual Report to the Alaska Board of Game on Intensive Management for Moose with Wolf, Black Bear, and Grizzly Predation Control in Game Management Unit 19A

Prepared by the Division of Wildlife Conservation
February 2013

1) Description of IM Program[1] and Department recommendation for reporting period

A) This report is an interim review _X_ or renewal evaluation ___ for a predation control program authorized by the Alaska Board of Game (Board) under 5 AAC 92.125

B) Date this report was submitted by the Department to the Board:

1 February _X_ (annual report) 1 August ___ (interim annual update[2]) Year 2013

C) Program name (geographic description/GMU and species/herd): Unit 19A wolf and bear predation control program (Fig. 1)

D) Existing program has ___ / does not have X an associated *Intensive Management Plan*

E) Game Management Unit(s) fully or partly included in IM program area: Unit 19A

F) IM objectives for moose: population size 7600-9300 harvest 400-550

G) Month and year the current predation control program was originally authorized March 2004 by the Board. Indicate date(s) if renewed: March 2009

H) Predation control is currently active _X_ or temporarily inactive ____ in this IM area

I) If active, month and year the current predation control program began December 2004 or resumed __.

J) Indicate if a habitat management program funded by the Department or from other sources is currently active in this IM area (Y/N) N

K) Size of IM program area (square miles) and geographic description: Unit 19A- 9969 mi^2

L) Size and geographic description of area for assessing ungulate abundance: Central Kuskokwim Villages Moose Management Area (MMA)- 3,853 mi^2

M) Size and geographic description of area for ungulate harvest reporting: MMA- 3,853 mi^2

N) Size and geographic description of area for assessing predator abundance: MMA- 3,853 mi^2 ; Unit 19A Bear Control Area (BCA) – 534 mi^2

O) Size and geographic description of predation control area: MMA- 3,853 mi^2

P) Criteria for evaluating progress toward IM objectives: moose abundance and harvest

Q) Criteria for success with this program: progress within the MMA that contributes towards

[1] For purpose and context of this report format, see appendix.

achieving the Unit 19A IM moose population objective of 7600-9300 and moose harvest objective of 400-550

R) **Department recommendation for IM program in this reporting period**: continue program (details provided in section 5)

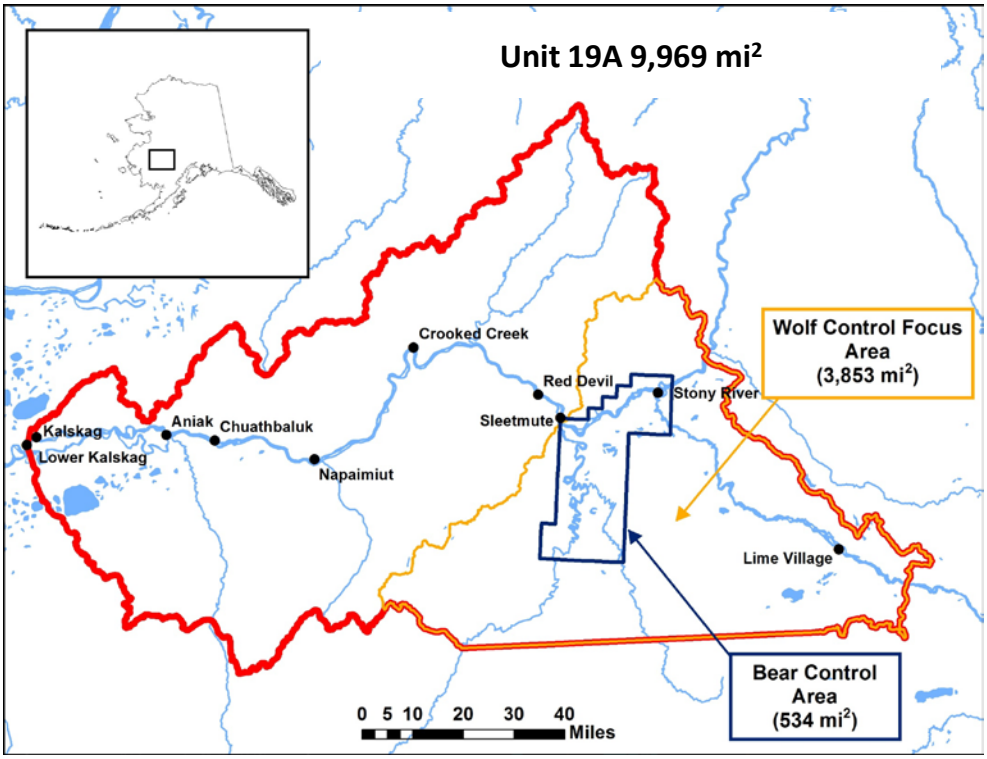

Figure 1. Unit 19A intensive management area and wolf and bear control focus areas. The wolf control focus area is the same geographic area as the Central Kuskokwim Villages Moose Management Area (MMA).

2) Prey data

Date(s) and method of most recent abundance assessment for moose: March 2011-Goespatial moose population estimate (GSPE) in MMA

Compared to IM area, was a similar trend and magnitude of difference in abundance observed in nearby non-treatment area(s) since program inception Non-Treatment Area Not Established (Y/N) and in the last year Non-Treatment Area Not Established (Y/N)?

Date(s) of most recent age and sex composition survey: November 2011-east/west line transects in Holitna/Hoholitna Drainages

Compared to IM area, was a similar composition trend and magnitude of difference in composition observed in nearby non-treatment area(s) since program inception Non-Treatment Area Not Established (Y/N) and in the last year Non-Treatment Area Not

Established (Y/N)?

Table 1. Moose abundance, age and sex composition in Central Kuskokwim Villages Moose Management Area (MMA) since program implementation in year 1 to year 9. Regulatory year is 1 July to 30 June (e.g, RY 2010 is 1 July 2010 to 30 June 2011).

			Composition (number per 100 females)[2]		
Period	RY	Abundance (variation)[1]	Calves	Males	Total *n*
Year 1	2004	1085 moose (± 17%; 90% CI)	--	--	--
Year 2	2005	--	24	8	307
Year 3	2006	--	--	--	--
Year 4	2007	1703 moose (± 28%; 90% CI)	45	35	200
Year 5	2008	--	27	34	124
Year 6	2009	--	36	51	129
Year 7	2010	962 moose (± 18% at 90% CI) 1666 (± 36% 90% CI) –w/scf	19	48	212
Year 8	2011	--	31	38	164
Year 9	2012	--	--	--	--

[1]February/March GSPE surveys (observed moose, not corrected for sightability unless denoted w/scf).
[2]November line transect surveys; 2005 composition survey conducted in a larger geographic area than other years.

Describe trend in abundance or composition: No detectable trend in moose abundance within the MMA

Table 2. Moose harvest in Central Kuskokwim Villages Moose Management Area (MMA) since program implementation in year 1 to year 9. Regulatory year is 1 July to 30 June (e.g, RY 2011 is 1 July 2011 to 30 June 2012).

Period	RY	Reported		Total harvest	Other mortality[a]	Total
		Male	Female			
Year 1	2004	37	--	37	--	37
Year 2	2005	42	--	42	--	42
Year 3	2006	1[b]	--	1	0	1
Year 4	2007	2[b]	--	2	0	2
Year 5	2008	1[b]	--	1	4	5
Year 6	2009	1[b]	--	1	1	2
Year 7	2010	3[b]	--	3	0	3
Year 8	2011	2[b]	--	2	1	3
Year 9	2012[c]	1	--	1	0	1

[a]Mortuary harvest
[b]Hunting season closed, except within the Lime Village Management Area
[c]Preliminary data

Describe trend in harvest: declined due to hunting season closure in most of the MMA

Describe any other harvest related trend if appropriate: None

3) Predator data

Wolves

Date(s) and method of most recent spring abundance assessment for wolves: February 2011- aerial reconnaissance survey and public control permittee interviews

Date(s) and method of most recent fall abundance assessment for wolves: February 2011- calculated by subtracting total removal from MMA following spring abundance estimate

Other research or evidence of trend or abundance status in wolves: Pre-control wolf estimate was modeled at 75 – 100 in MMA

Table 3. Wolf abundance and removal in Central Kuskokwim Villages Moose Management Area (MMA) since program implementation in year 1 to year 9. Removal objective is to reduce wolf numbers as low as possible in the MMA and to maintain 30-36 in all of Unit 19A to ensure wolves persist in the Unit. Regulatory year is 1 July to 30 June (e.g, RY 2010 is 1 July 2010 to 30 June 2011)

Period	RY	Fall abundance[a]	Harvest removal		Dept. control removal	Public control removal	Total removal	Spring abundance
			Trap	Hunt				
Year 1	2004	--	3	0	0	40	43	--
Year 2	2005	44-46	2	0	0	36	38	5-7
Year 3	2006	--	0	0	0	7	7	--
Year 4	2007	27	0	3	0	12	15	12
Year 5	2008	--	1	0	0	19	0	--
Year 6	2009	--	0	0	0	2	2	--
Year 7	2010	30	1	0	0	10	11	19
Year 8	2011	--	0	0	0	8	8	--
Year 9	2012[b]	--	0	0	--	0	0	--

[a] Calculated by subtracting total removal from MMA following spring abundance in each RY when spring abundance surveys were conducted
[b] Preliminary data

Black Bears

Date(s) and method of most recent spring abundance assessment for black bears. None

Date(s) and method of most recent fall abundance assessment for black bears. None

Other research or evidence of trend or abundance status in black bears: Population of 250–300 black bears in Unit 19A is based on known bear densities in similar habitats in other game management units in Interior Alaska. MILLER S., G.C. WHITE, R.A. SELLERS, H.V. REYNOLDS, J.W. SCHOEN, K. TITUS, V.G. BARNES, JR., R.B. SMITH, R.R. NELSON, W.B. BALLARD, AND C.C. SCHWARTZ. 1997. Brown and black bear density estimation in Alaska using radiotelemetry and replicated mark-resight techniques. *Wildlife Monographs* 133. *in* BOUDREAU T.A. 2005. Units 19, 21A and 21E black bear management report. Pages 218–222 in C. Brown, editor. Black bear management report of survey and inventory activities 1 July 2001–30 June 2004. Alaska Department of Fish and Game. Project 17.0. Juneau, Alaska.

Table 4. Black bear abundance and removal in Bear Control Area (BCA) since bear control was added to the control program in Year 9. Removal objective is to reduce bear numbers as low as possible within the BCA. Regulatory year is 1 July to 30 June (e.g, RY 2010 is 1 July 2010 to 30 June 2011).

Period	RY	Spring abundance (95% CI)	Harvest removal		Dept. control removal		Total removal	Fall abundance
			FA[a]	SPR[b]	FA	SP		
Year 9	2012	135–160[c]	0[d]	--	0	--	0	--

[a] Fall
[b] Spring
[c] Based on known bear densities in similar habitats
[d] Preliminay data

Grizzly Bears

Date(s) and method of most recent spring abundance assessment for grizzly bears. None.

Date(s) and method of most recent fall abundance assessment for grizzly bears. None.

Other research or evidence of trend or abundance status in grizzly bears: Population of 200 brown bears in Unit 19A is based on known bear densities in similar habitats in other game management units in Interior Alaska. MILLER S., G.C. WHITE, R.A. SELLERS, H.V. REYNOLDS, J.W. SCHOEN, K. TITUS, V.G. BARNES, JR., R.B. SMITH, R.R. NELSON, W.B. BALLARD, AND C.C. SCHWARTZ. 1997. Brown and black bear density estimation in Alaska using radiotelemetry and replicated mark-resight techniques. *Wildlife Monographs* 133. *in* Boudreau, T.A. 2003. Units 19 and 21 brown bear management report. Pages 195–205 *in* C. Healy, editor. Brown bear management report of survey and inventory activities 1 July 2000–30 June 2002. Alaska Department of Fish and Game. Juneau, Alaska.

Table 5. Grizzly bear abundance and removal in Bear Control Area (BCA) since bear control was added to the control program in year 9. Removal objective is to reduce bear numbers as low as possible within the BCA. Regulatory year is 1 July to 30 June (e.g, RY 2010 is 1 July 2010 to 30 June 2011).

Period	RY	Spring abundance (95% CI)	Harvest removal		Dept. control removal		Total removal	Fall abundance
			FA[a]	SPR[b]	FA	SP		
Year 9	2012	10[c]	0[d]	--	0	--	0	--

[a] Fall
[b] Spring
[c] Based on known bear densities in similar habitats
[d] Preliminary data

4) Habitat data and nutritional condition of prey species

Where active habitat enhancement is occurring or was recommended in the *Intensive Management Plan*, describe progress toward objectives: No active habitat enhancement occurring.

Table 6. Nutritional indicators for moose in Central Kuskokwim Villages Moose Management Area (MMA) since program implementation in year 1 to year 9. Regulatory year is 1 July to 30 June (e.g, RY 2010 is 1 July 2010 to 30 June 2011).

Period	RY	Twinning Rate for Radiocollared cows >2 yrs (*n*)	Twinning Rate uncollared cows (*n*)
Year 1	2004	3/7	--
Year 2	2005	--	--
Year 3	2006	--	7/11
Year 4	2007	--	3/4
Year 5	2008	--	--
Year 6	2009	--	--
Year 7	2010	--	--
Year 8	2011	--	--
Year 9	2012	--	--

5) Department recommendations for annual evaluation (1 February) following Year 8 for Unit 19A wolf predation control program

Has progress toward defined criteria been achieved? No. No detectable change in moose abundance within the MMA.

Has achievement of success criteria occurred ? No

Recommendation for IM program (choose one): Continue with the addition of department conducted bear removal in the bear control area

6) Costs specific to implementing Intensive Management

Table 7. 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 19A during years 7 and 8. Fiscal year (FY) is also 1 July to 30 June but the year is one greater than the comparable RY (e.g, FY 2011 is 1 July 2010 to 30 June 2011).

		Predation control[a]		Other IM activities		Total IM cost	Research cost[d]
Period	FY	Time[b]	Cost[c]	Time	Cost		
Year 7	2011	0.4	3.5	5.2	47.2	50.7	0.0
Year 8	2012	0.5	3.9	2.0	31.8	35.7	0.0

[a]State or private funds only.
[b]Person-months (22 days per month)
[c]Salary plus operations
[d]Separate from implementing IM program but beneficial for understanding of ecological or human response to management treatment (scientific approach that is not unique to IM)

7) Appendix: Purpose and context of Department Report

This document provides a standard format for area biologists in the Alaska Department of Fish and Game (Department) to periodically report on progress in intensive management (IM) programs with predation control to the public and the Alaska Board of Game (Board). Predation control programs are authorized in Title 5, Chapter 92, Section 125 of the Alaska Administrative Code (5 AAC 92.125). The Department Report is premised on the 10 November 2010 draft *Guidelines for intensive management of big game in Alaska*, which describes the legal background, scientific principles, and management factors of producing and maintaining elevated harvests of ungulates (caribou, deer, or moose) in selected areas of Alaska. For IM programs initiated or renewed after 1 January 2012, the intent is that details of rationale, decision criteria involving public process and other biological and management factors for specific IM programs will be found in the corresponding *Intensive Management Plan*.

IM objectives for deer and moose are determined by the Board for a game management unit

(GMU), whereas those for caribou are determined by herd. The IM program area may be described by geography (drainage) or community(s) if it is focused in a smaller area than the one describing the corresponding IM objectives, or if the area is composed of multiple GMUs. A predation control area may be smaller, and contained within, the IM program area or the area used for assessing predator abundance in a game management unit. Thus, the number of wolves, black bears, or grizzly/brown bears remaining in the larger abundance assessment area on a specific date incorporates the potential for recolonization of the smaller control area by predators on surrounding lands (where hunting and trapping but not control methods are allowed), in addition to reproduction by predators remaining in the control area.

The Department Report to the Board documents evaluation of progress toward IM population or harvest objectives for ungulate or other objectives determined by public process for existing IM programs. Initially these reports will be only for areas with predation control to meet annual reporting requirements (Alaska Statutes, Title 16, Section 50, Part b), but they may be expanded to IM programs that only include ungulate habitat enhancement, diverse strategies for hunter access and ungulate harvest, and outreach programs (see *Guidelines*). Predator harvest is achieved through hunting and trapping regulations, whereas predation control typically removes predators by additional means such as by public participants (by special Department permit) or by Department personnel (non-lethal methods could also be applied). Report information will be used for Department recommendations and Board decisions on continuing, modifying, suspending, or terminating IM programs. The annual report will be issued on 1 February with an interim report on 1 August. These dates account for lag time in entering reported predator removal and ungulate harvest into an electronic database for archive and analysis. The August interim report will have the ungulate harvest and wolf removal from the previous regulatory year, whereas the February annual report will include most of the ungulate harvest from the prior fall and bear removal from the prior regulatory and calendar years. Report information is for a single program, but it may also be presented in a table showing multiple IM programs in a region or all IM programs statewide.