Annual Report to the Alaska Board of Game on Intensive Management for Moose with Wolf Predation Control in Unit 13

Prepared by the Division of Wildlife Conservation
February 2012

Interim annual updates are limited to sections that have changed substantially since the prior annual report in February. For complete information, see the prior annual report.

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_2012

C) Program name(geographic description/GMU and species/herd):
GMU 13 Wolf Predation Control Area/GMU 13/moose

D) Existing program includes an *Intensive Management Plan* in regulation (5AAC 92.125).

E) Game Management Unit(s) fully or partly included in IM program area:
Units 13(A), 13(B), 13(C), and Unit 13(E)

F) IM objectives for moose:
Population objective for Unit 13 is 17,600 – 21,900 (including Unit 13(D)) and harvest objective for Unit 13 is 1,050 – 2,180 (including Unit 13(D)).

For those Units covered by the Unit 13 wolf predation control area, population objectives for Units 13(A), 13(B), 13(C), and 13(E) are 3,500 – 4,200, 5,300 – 6,300, 2,600 – 3,500, and 5,000 – 6,000 moose respectively and harvest objectives for Units 13(A), 13(B), 13(C), and 13(E) are 210 – 420, 310 – 620, 155 – 350, and 300 – 600 moose respectively.

G) Month and year the current predation control program was originally authorized:
March 2000 by the Board (minimal area covered in Units 13(A), 13(B), and 13(E); Same-day-airborne take first allowed January 2004); plan renewed March 2005 (IM area increased to include Unit 13(C)), plan renewed again October 2010 (current area open to predation control has been stable since 2006; current plan active through 31 October 2016)

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 in March 2000.

J) Indicate if an habitat management program funded by the Department or from other sources is currently active in this IM area: (Y/N) Yes
The Alphabet Hills Prescribed Burn plan is active and will be implemented given prescription conditions

K) Size of IM program area (square miles) and geographic description:

[1] For purpose and context of this report format, see appendix.
[2] The interim annual update may be limited only to sections that changed substantially since prior annual report [*e.g., only Tables 3 and 6 in areas with a fall ungulate survey and only wolf control*]

- 15,413 square miles
- All lands within Units 13(A), 13(B), 13(C), and that portion of Unit 13(E) east of the Alaska Railroad, except National Park Service and other federal lands where same-day-airborne take of wildlife is not allowed

L) Size and geographic description of area for assessing ungulate abundance within IM area:
Continuous count areas (CA) 3, 5, 6, 10, 13, 14, and 16 across Unit 13 encompassing a total of 3,219 square miles

M) Size and geographic description of area for ungulate harvest reporting (specify if different areas or multiple species):
Unit 13 covering 23,367 square miles

N) Size and geographic description of area for assessing predator abundance (specify if different areas or multiple species):
Unit 13 covering 23,367 square miles

O) Size and geographic description of predation control area (specify if different areas or multiple species):
Total IM area: 15,413 square miles (14,550 square miles open to predation control in regulatory year 2011; closures include populated areas and federal lands where same-day-airborne take of wildlife is not allowed)

P) Criteria for evaluating progress toward IM objectives:
- population abundance
- calf:cow ratios
- bull:cow ratios
- harvest

Q) Criteria for success with this program:
Achieve population and harvest objectives (listed above) with the following composition benchmarks: a minimum of 25 bulls:100 cows for Unit 13, 25 calves:100 cows for Unit 13(A) and 30 calves:100 cows for Units 13(B), 13(C), and 13(E)

R) **Department recommendation for IM program in this reporting period**:
The Department recommends continuation of the program (details provided in sections 6)

2) Prey data

Date(s) and method of most recent abundance assessment for moose (if statistical variation available, describe method here and show result in Table 1):
Fall trend count surveys are conducted annually November – December to determine sex and age composition of moose. The most recent surveys were conducted in November 2011. Trend count data, corrected for estimated sightability were extrapolated to estimate unit-wide population abundance.

Compared to IM area, was a similar trend and magnitude of difference in abundance observed in nearby non-treatment area(s) since program inception (Y/N)? **No** and in the last year (Y/N)? **No.**

Describe comparison if necessary:

Moose abundance in CAs receiving treatment has more than doubled since program inception, whereas abundance in CA 15 in Unit 13(D) which is adjacent to the current IM area has been relatively stable. The moose abundance in CAs receiving treatment increased substantially between 2010 and 2011, while abundance in CA 15 declined substantially.

Date(s) of most recent age and sex composition survey (if statistical variation available, describe method here and show results in Table 1):

Fall trend count surveys provide age and sex composition data; most recent surveys November 2011.

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 (Y/N) **No** and in the last year (Y/N)? **No**

Describe comparison if necessary:

Same as above

Table 1. Moose abundance, age and sex composition in assessment area (L) since program reauthorization in Year 6 (2006) to reauthorization review in Year 11 (RY 2011) in continuous CAs in the Unit 13 Wolf Predation Control Area. Regulatory year is 1 July to 30 June (e.g, RY 2011 is 1 July 2011 to 30 June 2012).

			Composition (number per 100 females)			
Period	RY	Moose observed (Estimated Abundance)	Calves	Yearling bulls	Males	Total *n*
Year 6	2006	3845 (12,050)	23.7	8.3	28.9	3845
Year 7	2007	4334	22.1	10.6	30.5	4334
Year 8	2008	4310 (13,680)	19.4	11.6	33.4	4310
Year 9	2009	4875 (14,710)	22.9	9.3	32.8	4875
Year 10	2010	5112 (15,900)	21.4	9.7	28.2	5112
Year 11	2011	5432 (16,960)	23.3	9.6	31.7	5432

Description of trend in abundance or composition:

Moose across the Unit 13 control area have increased since IM program inception. Cows continue to increase annually across the control area. Based on extrapolation of fall count area densities, corrected for estimated sightability, moose population estimates were calculated in 2006 by subunit: 2,450 moose in Unit 13(A), 3,950 moose in Unit 13(B), 1,230 moose in Unit 13(C), and 4,420 moose in Unit 13(E). Moose population estimates in 2011 by subunit were: 3,890 moose in Unit 13(A), 5,340 moose in Unit 13(B), 1,950 moose in Unit 13(C), and 5,780 moose in Unit 13(E).

Table 2. Moose harvest in Unit 13 (assessment area M). Methods for estimating unreported harvest are described in Survey and Inventory reports.

Period	RY	Reported		Estimated		Other mortality	Total
		Male	Female/Unknown	Unreported	Illegal	Vehicle	
Year 6	2006	688	4	25	25	75	817
Year 7	2007	644	4	25	25	75	773
Year 8	2008	730	5	25	25	75	860
Year 9	2009	857	3	25	25	75	958
Year 10	2010	929	1	25	25	75	1055

Describe trend in harvest:

The general trend in harvest has been consistently positive across the treatment portion of Unit 13 and relatively stable in Unit 13(D) which is adjacent to the treatment area. Easily accessible road-side areas continue to receive the most hunting pressure. Harvest has increased in recent years in remote portions of the unit due to the steady increase in moose abundance as well as the any-bull drawing permits for those areas (2009-current).

The reported harvest in Year 6 by subunit was 225, 172, 57, 68, and 156 in 13(A), 13(B), 13(C), 13(D), and 13(E) respectively. An additional 14 moose were reported in Unit 13(Z).

The reported harvest in Year 11 (2011 preliminary) by subunit is 270, 272, 108, 79, and 166 in 13(A), 13(B), 13(C), 13(D), and 13(E) respectively. An additional 4 moose were reported in Unit 13(Z).

3) Predator data

Date(s) winter 2010-11 and method of most recent spring abundance assessment for wolves (if statistical variation available, describe method here and list in Table 3):

The most recent spring abundance estimate for Unit 13 of 152 (spring 2011) was derived over the course of the 2010-2011 winter and is based on wolf and track sightings gathered from staff biologists, hunters, trappers, and pilots, adjusted for documented harvest.

Date(s) fall 2010 and method of most recent fall abundance assessment for wolves (if statistical variation available, describe method here and list in Table 3):

The most recent fall abundance assessment of 303 wolves (fall 2010) was derived using the same methods. The preliminary fall 2011 abundance estimate is 238 – 291.

The wolf population in Unit 13 has been relatively stable since RY 2006. The annual take by all methods has reflected this trend, although take is more sensitive to changes in annual weather conditions than are population trends.

Table 3. Wolf abundance objectives and removal in wolf assessment area (N) of the Unit 13 Wolf Predation Control Area. The annual removal objective in Unit 13 depends on the fall abundance in relation to the spring objective of 135 – 165 wolves. No less than 135 wolves will remain by 30 April each RY in all of Unit 13. The annual removal since Year 6 (2006) has averaged 39% (range = 30 – 47%). No lethal or non-lethal predation control methods were used by Department personnel.

Period	RY	Fall abundance (variation)	Harvest removal		Dept. control removal	Public control removal	Total removal[a]	Spring abundance (variation)
			Trap	Hunt				
Year 6	2006	280	47	25	0	33	106	160
Year 7	2007	254	48	9	0	33	90	153
Year 8	2008	273	38	26	0	55	121	144
Year 9	2009	272	40	18	0	23	81	180
Year 10	2010	303	31	8	0	103	142	152

[a]Additional removal may be unknown method, Defense of Life and Property, vehicle kill, etc.

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:

Objective(s): N/A

Area treated and method: N/A

Observation on treatment response (specify which and use table if ongoing program): N/A

Evidence of progress toward objective(s) (choose one: Apparent Statistical)

Similar trend in nearby non-treatment areas (Y/N)? N/A

Describe any substantial changes in habitat not caused by active program (e.g., new wildland fires, flooding, insect mortality of vegetation, etc.): N/A

The only habitat improvement project currently planned in Unit 13 is the Alphabet Hills Prescribed Burn on the border of Units 13(A) and 13(B). This burn is contingent upon meeting burn prescriptions; no burn was conducted during this reporting period.

Winters have been mild and conducive to population growth across Unit 13 in recent years. The last severely deep snow winter across the majority of Unit 13 was 2004-2005.

Table 4. Nutritional indicators for moose in assessment area (L) of the Unit 13 Wolf Predation Control Area.

Period	RY	13A West Twinning Rate (radio-collared cows)	13(B)/13(C)/13(E) Twinning rates (random cows)
Year 6	2006	14%	
Year 7	2007	26%	53%
Year 8	2008	27%	50%
Year 9	2009	30%	
Year 10	2010	33%	

Where objectives on nutritional condition were listed in the Intensive Management Plan, Describe trend in condition indices since inception of (a) habitat enhancement or (b) enhanced harvest (clarify which: N/A)(choose Positive, No change, Negative)

Evidence of trend (choose one: Apparent Statistical)

Similar trends in nearby non-treatment areas (Y/N)? N/A

5) Costs specific to implementing Intensive Management

Table 5. Cost ($1000 = 1.0) of agency salary based on estimate of proportional time of field level staff and cost of operations for intensive management activities (e.g., predator control or habitat enhancement beyond normal Survey and Inventory work) performed by personnel in the Department or work by other state agencies (e.g., Division of Forestry) or contractors in the Unit 13 Wolf Predation Control Area. 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).

			Operations and contracting			Total cost
Period	FY	Salary[a]	Federal Aid[b]	Public Funds[c]	Other[d]	
Year 6	2007	15.0				15.0
Year 7	2008	15.0				15.0
Year 8	2009	15.0				15.0
Year 9	2010	30.0				30.0
Year 10	2011	25.0				25.0

[a]State Fish and Game fund matched 1:3 with Federal Aid (see footnote b) except for activities directly involving predator control (state funding only).
[b]Federal Aid in Wildlife Restoration (excise tax on firearms and ammunition)
[c]Capital Improvement Project or General Fund revenue from Alaska Legislature
[d]Grants, donations from private organizations, etc.

6) Department recommendations[3] for annual evaluation (1 February) following Year 10 (RY 2010) for the Unit 13 Wolf Predation Control Area—skip in final year and go to section 7

Has progress toward defined criteria been achieved? Yes

Has achievement of success criteria occurred?

Population objectives are being met in 3 of 4 treated subunits. Population estimates for Units 13(A) and 13(E) fall in the middle of their respective objective ranges. The population in 13(B) is just above the low end of the population objective range. The population in Unit 13(C) is slowly increasing, but remains well below the objective range.

Calf-to-cow ratios in general remain below objectives in all subunits (small areas within Unit 13(A) and 13(E) are meeting objectives); ratios appear stable. Bull-to-cow ratios are being met in Unit 13(A), 13(C), 13(E) and in remote portions of 13(B). Bull-to-cow ratios are just above the minimum objectives in road-accessible portions of 13(A) and 13(C), with higher ratios in more remote portions of both subunits. Bull-to-cow ratios remain just below the minimum objective in road-accessible portions of 13(B).

Harvest data for the current hunting season (RY 2011) has not yet been finalized. As of the RY 2010 hunting season, harvest objectives were being met in 1 of 4 treated subunits, with the Unit 13(A) harvest falling in the middle of the objective range. The harvest for Unit 13(B) is very close to the low end of the objective range, but remains below objectives. The harvests for Unit 13(C) and 13(E) are slowly increasing, but both remain well below their respective objective ranges.

Recommendation for IM practice(s) (specify practices and choose one action for each):
Continue Modify Suspend Terminate

Predation control **Continue**
Habitat enhancement **Continue**
Harvest strategy **Modify -** the harvest strategy may need to be altered to improve in the number of bulls. Antlerless moose (cow) harvests may become necessary to maintain harvest and keep the population and bull:cow ratio within objectives. The IM program should be suspended in individual subunits if harvest is unable to keep the population within the management objectives.

7) Evaluation (1 February) for program renewal (following final Year 15 [RY 2015]) and Department recommendations for the Unit 13 Wolf Predation Control Area

Has progress toward defined criteria been achieved (describe)? _____

[3] Prior sections include primarily objective information from field surveys; Sections 6 and 7 involve professional judgment by area biologists to interpret the context of prior information for the species in the management area.

Has achievement of success criteria occurred (describe)? _____

Recommendation for IM program (choose one): Continue Modify Suspend Terminate

Rationale for recommendation on overall program: _____

Other recommendations (if continuation is recommended, specific actions on individual practices): _____