

Interim Report to the Alaska Board of Game on Intensive Management for Moose and Caribou with Wolf Predation Control in the Upper Yukon/Tanana Rivers

**Prepared by the Division of Wildlife Conservation
August 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) Prey data

Date(s) and method of most recent [fall/spring] abundance assessment: Caribou–June 2010 photo census; Moose–November 2011 geospatial moose population survey.

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 Caribou – October 2011 composition survey; Moose – November 2011 geospatial moose population survey

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 1a. Fortymile Caribou Herd (FCH) abundance, age and sex composition in FCH_hunt area since the herd was added to the control program in year 3. A regulatory year is 1 July to 30 June (e.g, RY11 is 1 July 2011 to 30 June 2012).

Period	Regulatory Year	Abundance	Composition (number per 100 cows)		
			Calves	Bulls	Total <i>n</i>
Year 1	2004–2005	--	--	--	--
Year 2	2005–2006	--	--	--	--
Year 3	2006–2007	43,837 ^a	34	43	4,995
Year 4	2007–2008	44,673 ^a	37	36	5,228
Year 5	2008–2009	46,510 ^b	33	37	4,119
Year 6	2009–2010	51,675 ^b	34	59	4,503
Year 7	2010–2011	--	32	43	7,169
Year 8	2011–2012	--	25	42	3,949

^aModeled population estimate

^bMinimum population estimate from photo census

Describe trend in abundance or composition: 2–4% annual rate of increase during RY06–RY09, based on modeling and photo census results

Table 1b. Moose abundance, age and sex composition in Unit 20E West and 20E Central moose survey areas in southern Unit 20E since program implementation in year 1 to year 8. A regulatory year is 1 July to 30 June (e.g, RY11 is 1 July 2011 to 30 June 2012).

Period	Regulatory Year	Abundance (variation)	Composition (number per 100 cows)		
			Calves	Bulls	Total <i>n</i>
Year 1	2004–2005	2268 (90% CI±17%)	24	55	516
Year 2	2005–2006	2913 (90% CI±14%)	23	52	887
Year 3	2006–2007	3352 (90% CI±15%)	31	42	1104

Period	Regulatory Year	Abundance (variation)	Composition (number per 100 cows)		
			Calves	Bulls	Total <i>n</i>
Year 4	2007–2008	3469 (90% CI±14%)	26	48	935
Year 5	2008–2009	3147 (90% CI±11%)	28	60	865
Year 6	2009–2010	3950 (90% CI±12%)	30	58	1046
Year 7	2010–2011	3894 (90% CI±15%)	28	70	987
Year 8	2011–2012	4148 (90% CI±16%)	14	67	1071

Describe trend in abundance or composition: Moose increased during RY04–RY11 based upon point estimates with non-overlapping 90% confidence intervals in RY04 and RY11.

Table 2a. Fortymile Caribou harvest in FCH_hunt area since the herd was added to the control program in year 3. A regulatory year is 1 July to 30 June (e.g. RY11 is 1 July 2011 to 30 June 2012). Methods for estimating unreported harvest are described in Survey and Inventory reports.

Period	Regulatory Year	Reported			Estimated		Total harvest
		Male	Female	Unreported	Illegal	Yukon	
Year 1	2004–2005	--	--	--	--	--	--
Year 2	2005–2006	--	--	--	--	--	--
Year 3	2006–2007	601	247	10	10	5	873
Year 4	2007–2008	746	262	10	10	5	1033
Year 5	2008–2009	696	217	10	10	10	913
Year 6	2009–2010	891	192	10	10	20	1083
Year 7	2010–2011	636	89	10	10	5	750
Year 8	2011–2012	918	103	10	10	5	1046

Describe trend in harvest: Harvest controlled by fixed annual harvest quota. Annual quota was 850 during RY06–RY09, 795 in RY10, and 1000 in RY11.

Describe any other harvest related trend if appropriate: None.

Table 2b. Moose harvest in Unit 12 north of the Alaska Highway and all of Unit 20E since program implementation in year 1 to year 8. A regulatory year is 1 July to 30 June (e.g. RY11 is 1 July 2011 to 30 June 2012). Methods for estimating unreported harvest are described in Survey and Inventory reports.

Period	RY	Reported		Estimated		Total harvest
		Male	Female	Unreported	Illegal	
Year 1	2004–2005	86	0	0–5	5–10	91–101
Year 2	2005–2006	123	0	0–5	5–10	128–138
Year 3	2006–2007	141	1	0–5	5–10	147–157
Year 4	2007–2008	151	0	0–5	5–10	156–166
Year 5	2008–2009	189	0	0–5	5–10	194–204
Year 6	2009–2010	180	0	0–5	5–10	185–195
Year 7	2010–2011	184	0	0–5	5–10	189–199

^aYear 8 2011–2012 212 0 0–5 5–10 217–227

^aPreliminary data.

Describe trend in harvest: Harvest increased during RY04–RY11.

Describe any other harvest related trend if appropriate (e.g., harvest per unit effort): None

2) Predator data

Date(s) and method of most recent spring abundance assessment for wolves: May 2012- fall 2011 modeled estimate minus RY11 predator control kill, and RY11 trapper/hunter harvest.

Date(s) and method of most recent fall abundance assessment for wolves: October 2011- ADF&G Pred–Prey model which uses the relationship between spring wolf, moose and caribou population sizes to predict a likely growth rate for the wolf population from spring to fall. Mathematical equations which define model functions were taken from published predator–prey studies.

Other research or evidence of trend or abundance status in wolves: None

Table 3. Wolf abundance and removal in Wolf Control Area (WCA). Removal objective is 60–80% of pre-control fall abundance in year 1 of wolf predation control program, so estimated or confirmed number remaining by 1 May each regulatory year in the WCA must be at least 88. Regulatory year is 1 July to 30 June (e.g, RY11 is 1 July 2011 to 30 June 2012).

Period	Regulatory Year	Fall abundance (range)	Harvest removal		Dept. control removal	Public control removal	Total removal	Spring abundance (range) ^a
			Trap	Hunt				
Year 1	2004–2005	380 ^{bc} (350–410)	52	23	N/A	60	135	245 (215–275)
Year 2	2005–2006	335 ^c (300–370)	58	10	N/A	17	85	250 (215–285)
Year 3	2006–2007	362 ^c (300–425)	73	7	N/A	23	103	259 (197–322)
Year 4	2007–2008	382 ^c (366–398)	57	14	N/A	27	98	284 (268–300)
Year 5	2008–2009	372 ^d	82	11	84	49	226	146
Year 6	2009–2010	235 ^c	31	4	15	10	60	175
Year 7	2010–2011	274 ^c (262–285)	26	11	0	25	62	212 (200–223)
Year 8	2011–2012	329 ^c (315–342)	62	17	56	8	145	184 (170–197)

^aFall estimate minus all known wolf kills.

^bPre-control population estimate.

^cFall modeled estimate.

^dRevised fall modeled estimate using results from a March 2009 reconnaissance survey and RY08 removal data. The

original fall modeled estimate was 393–431.

^cRevised fall modeled estimate using results from a March 2010 reconnaissance survey and RY09 removal data. The original fall modeled estimate was 262–299.

3) Costs specific to implementing Intensive Management

Table 4. 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 the Upper Yukon/Tanana Predator 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 2012 is 1 July 2011 to 30 June 2012).

Period	FY	Predation control ^a		Other IM activities		Total IM cost	Research cost ^d
		Time ^b	Cost ^c	Time	Cost		
Year 7	2011	0.4	3.5	12.7	166.4	169.9	67.1
Year 8	2012	3.9	242.5	12.0	154.0	396.5	80.3

^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)