Interim Report to the Alaska Board of Game on Intensive Management for Caribou with Wolf Predation Control in Game Management Units 9B, 17B&C, and 19A&B, the Mulchatna Caribou Herd

Prepared by the Division of Wildlife Conservation
August 2015

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 annual evaluation for a predation control program authorized by the Alaska Board of Game (Board) under 5 AAC 92.111

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

February ___ (annual report) August _X_ (interim annual update[2]) Year 2015

2) Prey data

Date(s) and method of most recent summer abundance assessment for caribou (if statistical variation available, describe method here and show result in Table 1)

The last successful photo-census of post-calving aggregation was conducted on June 25, 2015. Data are currently under analysis.

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) N/A **and in the last year (Y/N)** N/A? **Describe comparison if necessary:**

Not Applicable: This program was initiated in March, 2012 (RY11). It is too early to determine trends in abundance that resulted from these activities.

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

October 14-15, 2014

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) N/A **and in the last year (Y/N)** N/A? **Describe comparison if necessary:**

Observed calf ratios in the eastern segment of the MCH with no predator control were 33 calves:100 cows, and in the western segment were 27 calves:100 cows (Table 1). Observed bull ratios in the eastern no predator control area were 31 bulls:100 cows, and in the western segment were 38 bulls:100 cows.

[1] For purpose and context of this report format, see *Intensive Management Protocol, section on Tools for Program Implementation and Assessment*

[2] The interim annual update may be limited only to sections that changed substantially since prior annual report

Table 1. **Caribou abundance, age and sex composition in assessment area (L) since program implementation in year 1 (not exclusively limited to inception of predation control) to reauthorization review in year 2017 in** Mulchatna Caribou Herd Predation Management Area. **Regulatory year is 1 July to 30 June (e.g, RY 2010 is 1 July 2010 to 30 June 2011).**

Eastern Segment of the MCH (No Predator Control)

		Composition (number per 100 cows)		
Period	RY	Calves	Bulls	Total *n*
Year 0	2010	17	13	2,581
Year 1	2011	14	18	2,649
Year 2	2012	22	17	2,217
Year 3	2013	14	27	1,479
Year 4	2014	33	31	2,226

Western Segment of the MCH (Active Predator Control)

		Composition (number per 100 cows)		
Period	RY	Calves	Bulls	Total *n*
Year 0	2010	23	23	2,011
Year 1	2011	28	34	1,995
Year 2	2012	38	29	2,636
Year 3	2013	23	27	1,743
Year 4	2014	27	38	2,567

All Areas Combined

			Composition (number per 100 cows)		
Period	RY	Abundance (variation)	Calves	Bulls	Total *n* [a]
Year 0	2010	-	20	17	4,592
Year 1	2011	-	19	22	5,282
Year 2	2012	25,000-35,000[b]	30	23	4,853
Year 3	2013	20,000-30,000[b]	19	27	3,222
Year 4	2014	-	30	35	4,793

[a] Includes caribou not assigned to the Eastern or Western Segment of the MCH.
[b] Preliminary estimate of abundance based on the Rivest methodology (Rivest et al. 1998).

Describe trend in abundance or composition:

Not Applicable: This program was initiated in March 2012 (RY2011). It is too early to determine trends in abundance or composition resulting from these activities.

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

Period	RY	Reported			Estimated		Total harvest	Other mortality	Total
		Male	Female	Unk Sex	Unreported	Illegal			
Year 0	2010	250	220	4	Unk	Unk	470	Unk	474
Year 1	2011	240	243	9	Unk	Unk	492	Unk	492
Year 2	2012	171	182	4	Unk	Unk	357	Unk	357
Year 3	2013	69	35	1	Unk	Unk	105	Unk	105
Year 4	2014	124	51	5	Unk	Unk	180	Unk	180

Describe trend in harvest:

There has been a decline in the reported harvest since 1999 due to a combination of progressively more-restrictive hunting regulations, decreased population size, and changes in caribou distribution.

Describe any other harvest related trend if appropriate:

During RY92-RY02 the reported harvest of bulls changed from greater than 74% bulls to an approximately equal bull:cow harvest. However, in RYs 13 and 14 the % bulls in the harvest increased to 66% and 71%, respectively, although the overall harvest dropped dramatically from the previous years. The overall decrease in harvest in RYs 13 and 14 was mostly due to the reduced snowfall, which led to poor winter travel conditions for hunters and thus poor access to caribou. Distribution of caribou also plays a part, and in recent years caribou have been widely distributed across the landscape making them difficult to locate for hunters.

3) Predator data

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

A minimum abundance estimate survey was conducted in area 'N' in February, 2012. The minimum wolf density was estimated at 2 wolves/1000 km^2 (5.2 wolves/1000 mi^2; T. A. Rinaldi, 12 January 2013, ADF&G Memo).

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

Not Applicable: Fall abundance has not been estimated due to logistic and weather constraints.

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

In RY11 local residents in some villages harvested an increased number of wolves in the wolf assessment area 'N'. In RY12 through RY14 wolf harvest decreased as did the public control removal from the predation control area. This was at least in part due to very poor winter tracking conditions (lack of snow), poor travel conditions with snowmachines due to lack of snow, but also is possibly a sign that wolf numbers have been reduced due to the high harvest in RY11.

Table 3. **Wolf abundance objectives and removal in wolf assessment area (N) of** Mulchatna Caribou Herd Predation Management Area**. Removal objective is to annually remove** 100 **% of the wolves in the wolf predation control area (O), so estimated or confirmed number remaining in the control area (O) by the May calving season each regulatory year is** 0.

Subunits 9B and 17B&C

Period	RY	Harvest removal from area N		Dept. control removal from area O	Public control removal from area O	Total removal[a] from area N	Minimum Spring abundance (variation) in area N
		Trap	Hunt				
Year 1	2011	25	69	0	11	104	14
Year 2	2012	0	18	0	4	18	-
Year 3	2013	8	2	0	0	10	-
Year 4	2014	0	0	0	0	0	-

[a] Additional removal may be 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 Operational Plan, describe progress toward objectives:

Objective(s):

Not Applicable: There are no demonstrated methods to improve caribou habitat and no reason to believe that habitat is limiting the caribou population. Nutritional indices indicate the habitat is sustaining caribou at a very high nutritional level at this time.

Area treated and method: Not Applicable

Observation on treatment response: Not Applicable

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

Not Applicable

Similar trend in nearby non-treatment areas? Not Applicable

Describe any substantial change in habitat not caused by active program: Not Applicable

Table 4. **Nutritional indicators for caribou in assessment area (L) of the** Mulchatna Caribou herd Predation Management Area.

Period	RY	Pregnancy Females >2 yrs age[a]	Female Calf Weights at 10.5 months in lbs. (n)
Year 0	2010	79%	124 (20)
Year 1	2011	78%	119 (13)
Year 2	2012	78%	127 (14)
Year 3	2013	90%	128 (14)
Year 4	2014	61%	133 (13)

[a] Pregnancy rate is based on known-aged animals from a collared sample of adult female caribou. Pregnancy status is determined in May based on observed characteristics of pregnancy (antler retention, udder development, and/or presence of a calf at heel).

Where objectives on nutritional condition were listed in the Operational Plan, describe trend in condition indices since inception of (a) habitat enhancement or (b) enhanced harvest: N/A

Evidence of trend: N/A

Similar trend in nearby non-treatment areas? 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 Mulchatna Caribou Herd Predation Management Area. 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[b]	Cost[c]		
Year 1	2012	0.0	0.0	1.0	36.0	36.0	415.0
Year 2	2013	0.0	0.0	0.5	6.0	6.0	421.2
Year 3	2014	0.0	0.0	0.3	3.0	3.0	176.3
Year 4	2015	0.0	0.0	0.3	3.0	3.0	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).