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

Prepared by the Division of Wildlife Conservation
August 2013

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[2]

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

February ___ (annual report) August _X_ (interim annual update[3]) Year_2013_

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 July 7, 2008. Photo-census counts scheduled each summer since 2008 have been unsuccessful due to a combination of poor weather conditions and lack of post calving aggregations. During a short favorable weather window on July 6-7, 2012, a modified photo survey was conducted to provide a minimum count of caribou as well as to evaluate the survey method. The modified survey focused on locating and counting only groups associated with radiocollared animals to provide an estimate of abundance and associated variance (Rivest et al. 1998). Because of this different methodology, the results of the modified photo survey are not directly comparable to previous photo-census results.

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 5-6, 2012

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

Calf ratios are highest in the western segment of MCH where the wolf control is conducted, although it should be noted that the majority of wolves were taken by

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

[2] [*Regulatory numbers for existing IM programs formerly under 5AAC92.125 were divided into groups and given new numbers in October 2012 (see IM Plan template--Version 3, January 2013)*]

[3] 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*]

ground based hunters and trappers and not by aerial wolf control participants. The average calf ratio increased from 24 calves:100 cows (2005-2010) to 33 calves:100 cows (2011-2012) in the western segment of the herd, but remain unchanged in the eastern portion (average of 20 calves:100 cows from 2005-2010 and 18 calves:100 cows from 2011-2012). There has not yet been enough use of the non-treatment areas to determine if there are differences are associated with the wolf removal treatment.

The bull ratio has also increased from an average of 22 bulls:100 cows (2005-2010) to 32 bulls:100 cows (2011-2012) in the western segment of the herd compared to an increase of 14 bull:100 cows (2005-2008) to 18 bulls:100 cows (2009-2012) in the eastern segment.

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, GMUs 17B and eastern 19B (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

Western Segment of the MCH, GMUs 18 and western 19B (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

All Areas Combined

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

[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) suggests that population has not changed since 2008 when the last photocensus was conducted in 2008.

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 resulting from these activities. Less than one year of time has occurred since treatment, so any trends would be, at most, preliminary.

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[a]	Total
		Male	Female	Unreported	Illegal			
Year 0	201[0]	249	220	Unk	Unk	449	Unk	449
Year 1	2011	223	238	Unk	Unk	470	Unk	470
Year 2	2012[c]	54	62	Unk	Unk	118	Unk	118

[a]Clarify (vehicle mortality, Defense of Life and Property, Mortuary, etc.).

[c]Data from harvest report cards for GMUs 9B,C, 17A, B, C, and 19A, B; August 6, 2013

Describe trend in harvest:

There has been a decline in the reported harvest since 1999. The majority of harvest shifted geographically from GMU 17 to GMU 18 and chronologically from fall to late winter. The majority of hunters shifted from nonresidents and nonlocal residents (i.e. people who live outside the herd's range) to local residents (i.e. people who live within the herd's range), and of those, primarily residents of GMU 18.

Describe any other harvest related trend if appropriate:

Reported harvest has changed from greater that 75% bulls to approximately equal

bull:cow harvest. Method of transportation has changed from greater than 80% aircraft to an increasing majority of transportation used being snowmachine.

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 2):

A minimum abundance estimate survey was conducted in February, 2012.

Date(s) and method of most recent fall abundance assessment for wolves (if statistical variation available, describe method here and list in Table 2):

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

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

Long-time local residents and local air taxi pilots report higher frequency of wolf sightings in the area. There has also been a continued increase in harvest by hunters and trappers suggesting that wolves remain abundant in Unit 17.

Table 3. Wolf abundance objectives and removal in wolf assessment area (N) of the 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.

Period	RY	Harvest removal from area O		Public control removal from area O	Total removal[a] from area O	Spring abundance (variation) in area N
		Trap	Hunt			
Year 1	2011	7	31	11	59	14
Year 2	2012	0	19	0	8	-

[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.

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	(May 2011) 79%	(April 2011) 124 (20)
Year 1	2011	(May 2012) 78%	(April 2012) 119 (13)
Year 2	2012	(May 2013) 79%	(April 2013) 133 (10)

[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 6. 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

[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).