Interim Report to the Alaska Board of Game on Intensive Management for Moose with Wolf Predation Control in GMU24B

Prepared by the Division of Wildlife Conservation
August 2013

1) Description of IM Program[1]

A) **This report is an** interim **evaluation for a predation control program authorized by the Alaska Board of Game (Board) under 5 AAC 92.124(c)**

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

February ___ August X **(interim annual update) Year** 2013

C) **Program name**: Unit 24B wolf predation control program (Fig. 1)

D) **Existing program** has **an associated Operational Plan:** Version 1 - February 2012

E) Game Management Unit(s) fully or partly included in IM program area: Unit 24B

F) IM objectives for moose: **population size** 4,000-4,500 **harvest** 150-250

G) Month and year the current predation control program was originally authorized by the Board: March 2012**. Indicate date(s) if renewed:** No renewals

H) **Predation control is currently** active **in this IM area**.

I) **If active, month and year the current predation control program began**: March 2012

J) An habitat management program funded by the Department or from other sources is currently active in this IM area: No

K) **Size of IM program area (square miles) and geographic description:** Unit 24B-13,523 mi^2

L) **Size and geographic description of area for assessing ungulate abundance:** Upper Koyukuk Management Area (UKMA)-1,360 mi^2

M) **Size and geographic description of area for ungulate harvest reporting: (**1) Allakaket/Alatna Residents, (2) 24B-13,523 mi^2, and (3) UKMA-1,360 mi^2,

N) **Size and geographic description of area for assessing predator abundance:** UKMA-1,360 mi^2

O) **Size and geographic description of predation control area:** UKMA-1,360 mi^2

P) **Criteria for evaluating progress toward IM objectives**: Calf:cow ratios, yearling bull:cow ratios, moose abundance, collared calf survival, collared yearling survival **,** harvest reporting on report cards, days hunted on report cards, harvest reporting from Household

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

Surveys, Catch-per-unit-effort from Household Surveys (hours/hunt trip, miles traveled/ hunt trip, cost/hunt trip, etc.)

Q) **Criteria for success with this program**: Harvest of 35-40 moose in UKMA.

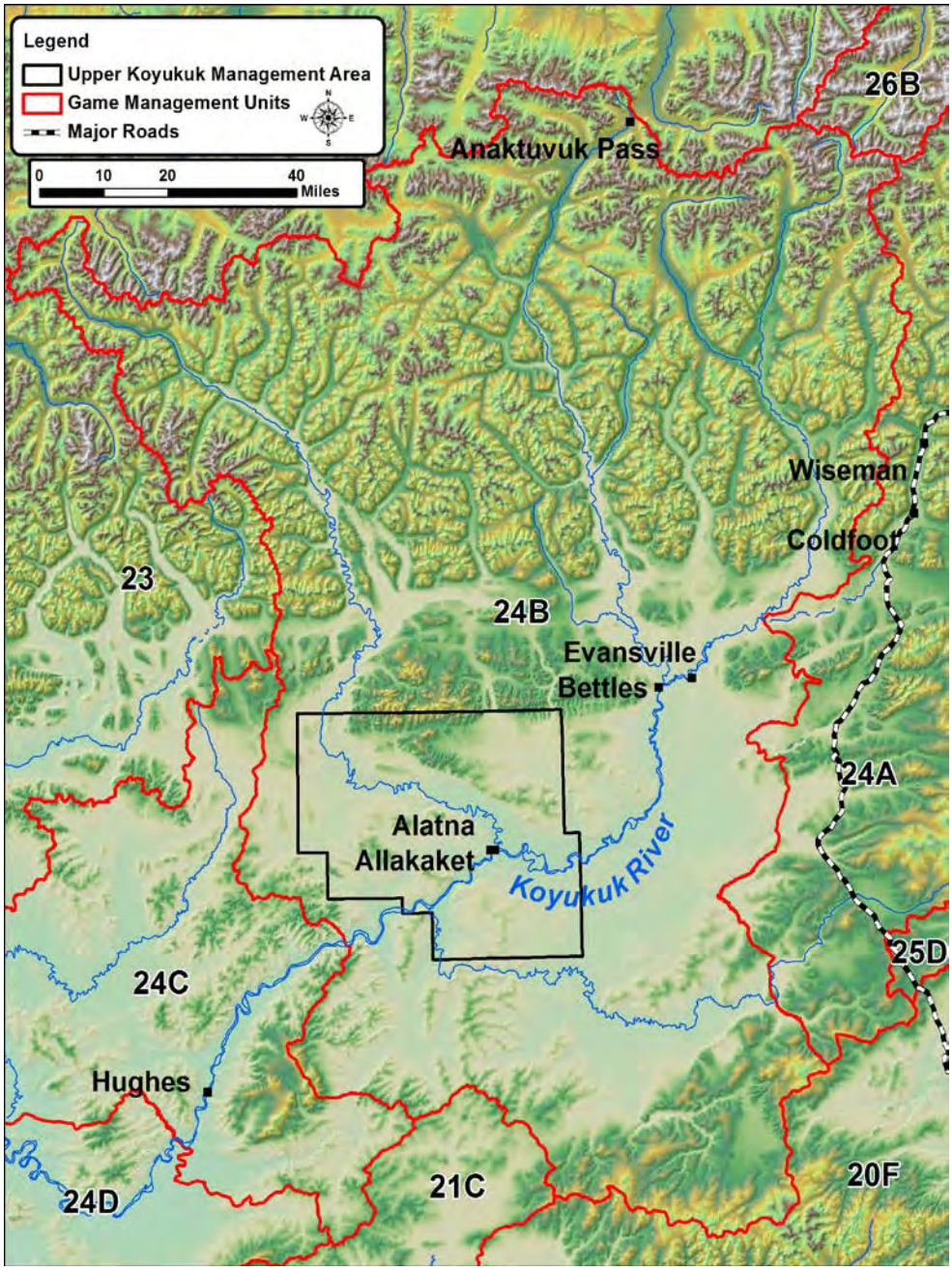

Figure 1. Upper Koyukuk Management Area (1,360 mi^2) in Game Management Unit 24(B) (13,523 mi^2).

2) Prey data

Date(s) and method of most recent fall abundance assessment for moose: November, 2011-Geospatial Population Estimator (GSPE) (Table 1)

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 for abundance comparisons

Date(s) of most recent age and sex composition survey (if statistical variation available, describe method here and show result in Table 1): November, 2011-GSPE (Table 1)

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 established only for survival rate comparisons among radiocollared moose (Table 2).

Table 1. Moose abundance, age and sex composition since program implementation in year 1 to year 2 (wolf control began in year 2) in Upper Koyukuk Management Area (UKMA). Regulatory year is 1 July to 30 June (e.g., RY 2010 is 1 July 2010 to 30 June 2011).

UKMA						
			Composition (number per 100 females)			
Period	RY	Abundance (variation)[a]	Calves	Yearling males	Males	Total n^b
	2010	405 (±23.7%; 90% C.I.)	34	8	52	-
Year 1	2011	324 (±29.0%; 90% C.I.)	49	8	103	-
Year 2	2012	-	-	-	-	-

[a] November GSPE surveys (observed moose, not corrected for Sightability).
[b] Composition estimated from GSPE surveys.

Describe trend in abundance or composition: Additional data collection needed to analyze for trend

Table 2. Radiocollared moose survival rates since implementation in year 1 to year 3 (wolf control began in year 2) in Upper Koyukuk Management Area (UKMA) and experimental non-treatment area. Survival rate calculated from date of collaring to May 31 of the regulatory year (normalized birthdate). Regulatory year is 1 July to 30 June (e.g., RY 2010 is 1 July 2010 to 30 June 2011).

UKMA							
Period	RY	Collared calves (n)	Survival (%)	# of months cohort monitored	Collared yearlings (n)	Survival (%)	# of months cohort monitored
Year 1	2011	21	100	2	-	-	-
Year 2	2012	30	97	7	21	81	12
Year 3	2013	-	-	-	29	97	3

experimental non-treatment area							
Period	RY	Collared calves (n)	Survival (%)	# of months cohort monitored	Collared yearlings (n)	Survival (%)	# of months cohort monitored
Year 1	2011	20	80	2	-	-	-
Year 2	2012	30	73	7	16	56	12
Year 3	2013	-	-	-	22	86	3

Table 3. **Moose harvest in (1) Allakaket and Alatna using Household Survey data collected by Subsistence Division, (2) 24B using harvest reporting data collected by Wildlife Conservation Division, and (3) UKMA in year 1 to year 2 (wolf control began in year 2). Regulatory year is 1 July to 30 June (e.g., RY 2010 is 1 July 2010 to 30 June 2011).**

Period	RY	(1) Allakaket/Alatna Household Surveys[a]				(2) Harvest Reports[b]			(3) UKMA Calculated Harvest[e]
		"Catch-per-unit-effort"			Estimated Harvest[c]	Allakaket /Alatna harvest[c]	24B Harvest (all other hunters)	24B Total Harvest[d]	
		Miles per Trip	Cost per Trip	Hours per Trip					
Year 1	2011	65.8	$86.37	13.2	16.2	4	28	31	16
Year 2	2012	58.1	$99.99	14.4	18.7	13	24	33	16

[a] Alatna and Allakaket weighted averages.
[b] Unit 24B total reported harvest, equals sum of previous two columns minus Allakaket/Alatna harvest outside of Unit 24B.
[c] Includes some harvest from outside of Unit 24B.
[d] An unknown amount of moose harvest occurs on federal harvest reporting mechanisms.
[e] Using UCU location information, calculated harvest includes a portion of the Household Survey harvest determined to be from within the UKMA and a portion of the 24B total harvest from within the UKMA.

Describe trend in harvest: Assessment of trend is premature because all harvest data was collected prior to wolf control activities.

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): March/April 2013- observations during aerial surveys and predator control

Date(s) and method of most recent fall abundance assessment for wolves (if statistical variation available, describe method here and list in Table 2): May 2013- calculated for pre-control RY12 by subtracting total removal from UKMA from pre-control RY12 abundance estimate.

Other research or evidence of trend or abundance status in wolves: Pre-control wolf abundance in the UKMA was estimated at 25-60

Table 4. Wolf abundance objectives and removal in Upper Koyukuk Management Area (UKMA) in year 1 to year 2 (wolf control began in year 2). Removal objective is to reduce wolf numbers as low as possible in the UKMA and to maintain 100-140 in all of Unit 24B to ensure wolves persist in the unit. The fall 2008 modeled wolf population estimate for all of Unit 24B was 202-284. Regulatory year is 1 July to 30 June (e.g., RY 2010 is 1 July 2010 to 30 June 2011).

Period	RY	Pre-control abundance	Harvest removal from		Dept. control removal	Public control removal	Total removal[a]	Post-control abundance
			Trap	Hunt				
Year 1	2011	25-60	0	2	0	n/a	2	23-58
Year 2	2012	36-37	0	0	23	n/a	23	13-14

[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: No active habitat enhancement

Describe any substantial change in habitat not caused by active program: A wildfire in summer 2013, occurred in Siruk Creek drainage with a fire perimeter of 20,363 acres in the UKMA. A wildlife in summer 2013, occurred in Prospect Creek drainage with a fire perimeter of 64,078 acres partially (approx. 70%) within experimental non-treatment area.

Table 5. Nutritional indicators for moose in 24B and a portion of 24A.

Period	RY	Twinning Rate (%) (n)
	2010	37 (54)
Year 1	2011	52 (52)
Year 2	2012	43 (49)

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 Unit 24B. 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	Cost[c]		
Year 1	2012	0.0	0.0	5.0	137.5	137.5	0.0
Year 2	2013	2.1	43.3	6.0	150.8	194.1	0.0

Year 3							
Year 4							
Year 5							
Year 6							

[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).