Interim Annual Report to the Alaska Board of Game on Intensive Management for Fortymile Caribou with Wolf Predation Control

in the Upper Yukon-Tanana Predation Control Area of Game Management Units 12, 20B, 20D, 20E and 25C

Prepared by the Division of Wildlife Conservation
August 2015

1) Description of IM Program[1]

A) This report is an annual **evaluation for a predation control program authorized by the Alaska Board of Game (Board) under 5 AAC 92.113**

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

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

C) Program name: Upper Yukon-Tanana Predation Control Program (UYTPCP).

D) Existing program has **an associated Operational Plan**

E) Game Management Unit(s) fully or partly included in IM program area: Units 12, 20B, 20D, 20E and 25C.

F) IM objectives for Fortymile caribou herd (FCH): population size 50,000–100,000 and harvest 1,000–15,000.

G) Month and year the current predation control program was originally authorized by the Board: November 2004**. Indicate date(s) if renewed:** March 2009 and February 2014

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

I) If active, month and year the current predation control program began: January 2005

J) A 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: 18,750 mi^2 in that portion of Unit 12 north of the Alaska Highway; that portion of Unit 20D within the Goodpaster River drainage upstream from and including the South Fork Goodpaster River drainage, and within the Healy River, and the Billy and Sand creek drainages; that portion of Unit 20B within the Salcha River drainage upstream from and including the Goose Creek drainage, and within the Middle Fork of the Chena River drainage; all of Unit 20E; and that portion of Unit 25C within the Birch Creek drainage upstream from the Steese Highway bridge, and within the area draining into the south and west bank of the Yukon River upstream from the community of Circle (Fig. 1). However, predation control activities have not been authorized by the National Park Service on Yukon-Charley Preserve.

[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 [*e.g., only Tables 3 and 6 in areas with a fall ungulate survey and only wolf control*]

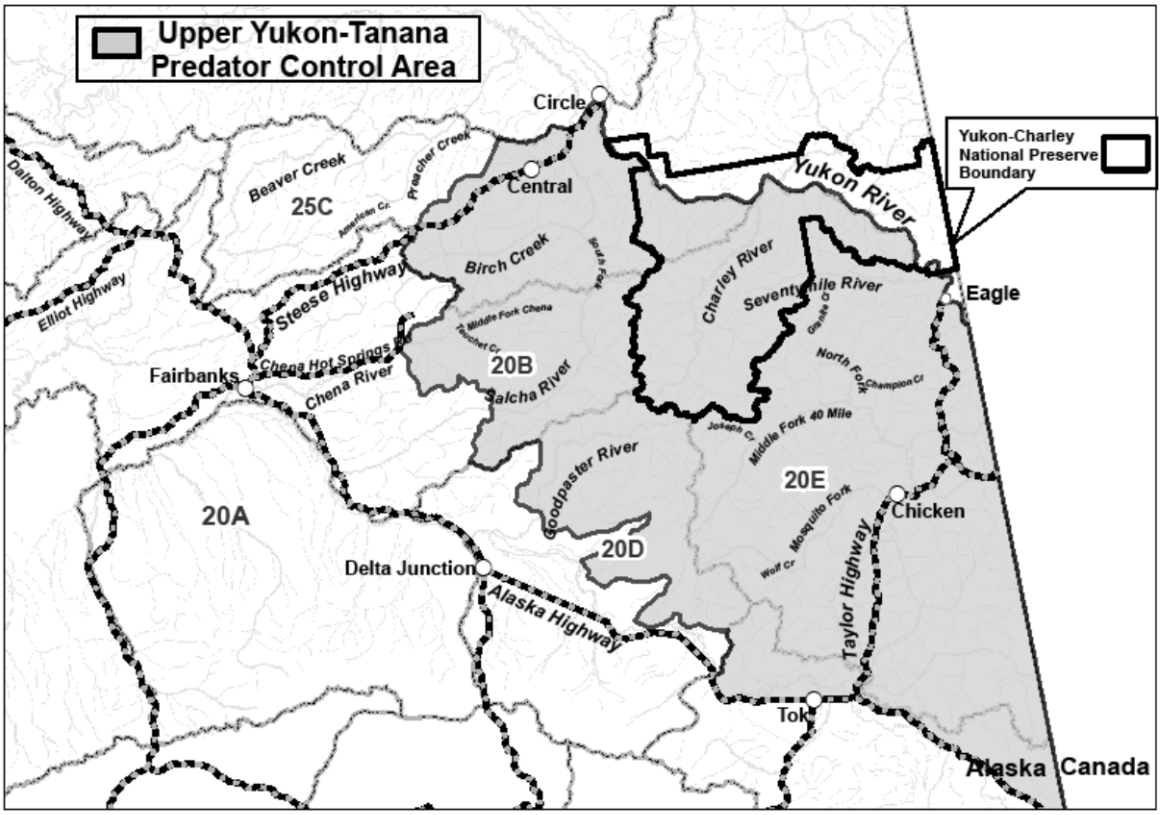

Figure 1. Upper Yukon–Tanana Predator Control Program Area (18,750 mi^2)

L) Size and geographic description of area for assessing ungulate abundance: Caribou-25,217 mi^2 FCH hunt area (Fig. 2).

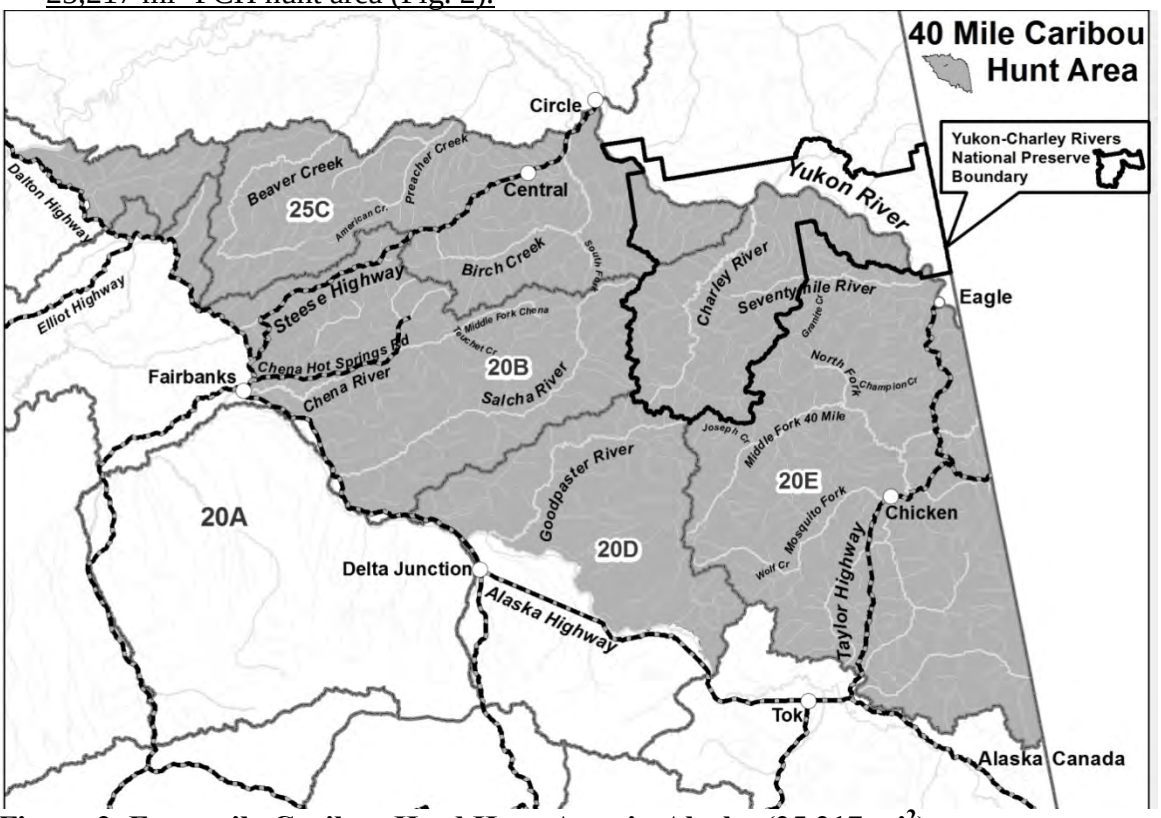

Figure 2. Fortymile Caribou Herd Hunt Area in Alaska (25,217 mi^2).

M) Size and geographic description of area for ungulate harvest reporting: Caribou–FCH hunt area, 25,217 mi^2.

N) Size and geographic description of area for assessing predator abundance: Upper Yukon–Tanana Predation Control Area (UYTPCA), 18,750 mi^2.

O) Size and geographic description of predation control area: UYTPCA, 18,750 mi^2.

P) Criteria for evaluating progress toward IM objectives: Caribou abundance and harvest.

Q) Criteria for success with this program: FCH population = 50,000–100,000 and harvest = 1,000–15,000 caribou.

2) Prey data

Date(s) and method of most recent fall/spring **abundance assessment for:** Caribou–June 2010 photocensus (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.

Date(s) of most recent age and sex composition survey for: Caribou – October 2014 composition survey (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 not established.

Table 1. 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. Regulatory year is 1 July through 30 June (e.g., RY04 = 1 July 2004 through 30 June 2005).

	Regulatory		Composition (number per 100 cows)		
Period	year	Abundance	Calves	Bulls	Total *n*
Year 1	2004	--	--	--	--
Year 2	2005	--	--	--	--
Year 3	2006	43,837[a]	34	43	4,995
Year 4	2007	44,673[a]	37	36	5,228
Year 5	2008	46,510[b]	33	37	4,119
Year 6	2009	51,675[b]	34	59	4,503
Year 7	2010	--	32	43	7,169
Year 8	2011	--	25	42	3,949
Year 9	2012	--	22	40	4,832
Year 10	2013	--	28	38	3,921
Year 11	2014	--	25	34	4,794

[a] Modeled population estimate.
[b] Minimum population estimate from photocensus.

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

Table 2. Fortymile Caribou Herd (FCH) harvest in FCH hunt area since the herd was added to the control program in year 3 to year 11. A regulatory year is 1 July through 30 June (e.g., RY04 = 1 July 2004 through 30 June 2005).

		Reported on registration permit				general harvest	Estimated			
Period	Regulatory year	M	F	Unk	Total	report	Un-reported	Illegal	Yukon harvest	Total
Year 1	2004	592	243	11	846	12	5	5	0	868
Year 2	2005	557	182	2	741	4	5	5	0	755
Year 3	2006	601	247	4	852	12	5	5	0	874
Year 4	2007	746	262	4	1,012	20	5	5	0	1,042
Year 5	2008	681	217	0	898	9	5	5	0	917
Year 6	2009	881	192	10	1,083	11	5	5	0	1,104
Year 7	2010	630	89	6	725	4	5	5	15	764
Year 8	2011	935	125	6	1,066	18	5	5	15	1,119
Year 9	2012	1,081	190	26	1,297	9	5	5	15	1,341
Year 10	2013	1,152	14	20	1,186	65[a]	5	5	60	1,321
Year 11	2014	684	278	12	974	30[b]	5	5	15	1,039

[a]Includes 65 harvested in Unit 25B.
[b]Includes 20 DC851 reports from Fortymile Herd caribou harvested in this Youth Permit Hunt in early August.

Describe trend in harvest: Harvest controlled by fixed annual harvest quota. Annual quota was 850 during RY06–RY09, 795 in RY10, and 1,000 during RY11–RY14.

Describe any other harvest related trend if appropriate: None.

3) Predator data

Date(s) and method of most recent spring abundance assessment for wolves: May 2015 modeled estimate.

Date(s) and method of most recent fall abundance assessment for wolves: October 2014 – 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 the Upper Yukon-Tanana Predation Control Area since program implementation in year 1 to year 11. 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 PCA must be at least 88. Regulatory year is 1 July through 30 June (e.g., RY04 = 1 July 2004 through 30 June 2005).

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	380[bc] (350–410)	52	23	N/A	60	135	245 (215–275)
Year 2	2005	335[c] (300–370)	58	10	N/A	17	85	250 (215–285)
Year 3	2006	362[c] (300–425)	73	7	N/A	23	103	259 (197–322)
Year 4	2007	382[c] (366–398)	57	14	N/A	27	98	284 (268–300)
Year 5	2008	372[d]	82	11	84	49	226	146
Year 6	2009	235[e]	31	4	15	10	60	175
Year 7	2010	274[c] (262–285)	26	11	0	25	62	212 (200–223)
Year 8	2011	329[c] (315–342)	62	17	56	8	145	184 (170–197)
Year 9	2012	386[c] (368–403)	41	12	40	78	171	215 (197–232)
Year 10	2013	356[c] (338–373)	44	10	31	31	116	240 (222–257)
Year 11	2014	374[c] (357–393)	38	10	33	24	105	269 (252–288)

[a] Fall estimate minus all know wolf kills.
[b] Pre-control population estimate.
[c] Fall modeled estimate.
[d] Revised fall modeled estimate using results from a March 2009 reconnaissance survey and RY08 removal data. The original fall modeled estimate was 393–431.
[e] Revised fall modeled estimate using results from a March 2010 reconnaissance survey and RY09 removal data. The original fall modeled estimate was 262–299.

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 enhancement recommended by the Operational Plan and no active habitat enhancement conducted.

Table 4. Nutritional indicators for Fortymile Caribou Herd (FCH) in FCH hunt area since the herd was added to the control program in year 3 to year 11. A regulatory year is 1 July through 30 June (e.g., RY04 = 1 July 2004 through 30 June 2005).

Period	Regulatory Year	Spring Birthrates (% of cows ≥36 months that gave birth)
Year 1	2004	--
Year 2	2005	--
Year 3	2006	89
Year 4	2007	90
Year 5	2008	70
Year 6	2009	70
Year 7	2010	86
Year 8	2011	82
Year 9	2012	88
Year 10	2013	63
Year 11	2014	85

5) Costs specific to implementing Intensive Management

Table 8. 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 Upper Yukon–Tanana Predator Control Area beginning in year 7. 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).

		Predation control[a]		Other IM activities		Total IM	Research
Period	FY	Time[b]	Cost[c]	Time	Cost	cost	cost[d]
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
Year 9	2013	2.3	136.1	11.8	150.0	286.1	12.0
Year 10	2014	1.6	96.0	16.3	207.4	303.4	98.0
Year 11	2015	1.2	86.2	5.1	75.5	161.7	207.7

[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).