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TECHNICAL MEMO

Date: December 13th, 2012

To: Andrew Carne

From: Bonnie Burns

Re: Early Winter Wildlife Survey for Rau and Wind River Trail – Archer Cathro

An early winter wildlife survey was conducted on November 13th, 2012, following the route of the Wind River Trail and the Rau area in anticipation of a possible upgrade to a winter only road.

Helicopter:	B206 (C-FDRZ) Trans North
Pilot:	Ashton Williams
Observers:	Stu Withers, Bruce McGregor
Observer – Navigator:	Grant Lortie
Observation Conditions:	Excellent – clear and bright, winds calm, air temp -26°C
Survey Time:	Nov 13: 10:51 to 12:33 Nov 13: 13:41 to 15:20
Total survey time:	3 hours 21 minutes
Total flying time:	5.3 hours (from 12:33 to 13:41 was flying to and from Rackla for refuelling)

Introduction

This survey further examines the Wind River Trail access route option to the Rau Property. Valley wetlands were devoid of wildlife except for a few hare and occasional marten sign. Moose, the primary target species were predictably found at high elevations in the subalpine shrub zone in the uplands on both sides of the proposed route, and most notably on the north flank of the Patterson Range above the Beaver River wetland.

The only other wildlife noted was an Arctic migrant snowy owl.

Results

The tracked flight route and the waypoints of observations are displayed on the map attached to this memo.

Moose:

At the time of the survey, the 156 observed moose should be considered a minimum on the examined terrain, as some calf-cow pairs had undoubtedly left for denser cover and isolation lower in these drainages. A review of the matrix does show that calf-cow pairs occur, with a few exceptions, as isolated pairs. Overall the ratios indicate a balanced and stable moose

population. These ratios are similar to those documented during biophysical studies undertaken in the general area in 2010 (Laberge Environmental Services, 2010).

Of interest and for unknown reasons, most of the calf-cow pairs were found on the Davidson Range and most of the bulls and nearly half of the unattended cows were located on the Patterson Range.

Moose observations and locations are summarized below in Table 1.

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TABLE 1	**MOOSE SIGHTINGS AND LOCATIONS**				
Waypoint	Mature Male	Immature Male	Female	Calf	Comments
2					Tracks of 3 – 5 animals
3	4		7		North Flank of Davidson Range; Cache Cr to Rankin Creek
5			1	1	
6			1		
7			1	1	
8			1	1	
9		1	2		
10	5		1		
11			1	1	
12			1		
13			2	1	
14			1	1	
15			4		Rankin Creek
16			3	1	Rankin Creek
17	8	2, 8	1	1	Rankin Creek
18	9	3	9, 7, 6, 7, 3, 1	3, 1	Head of creek north of Rankin Creek
19		2	1		
20		1			
21	2				
22	3		2		North flank of Patterson Range
23	1				
24	1				
25	2	1	2		South flank of the range north of McQuesten Wetland and Clark Lakes
26			1	1	
27	5		5, 1	1	
28	1		1	1	
29	1		1		
30			2		
31			2	1	
32			1	1	
Totals:	**42**	**18**	**79**	**17**	**156**
Bull / Cow Ratio: 53/100					
Calf / Cow Ratio: 22/100					

DISCUSSION

Given the results of the June survey and these findings, it appears that the Keno-Ladue-Lower Rankin Creek route option to the Scougale Creek Crossing provides fewer negative impacts on moose and other wetland values associated with the Wind River Trail option. The late winter survey scheduled for early March 2013 should further clarify this conjecture. Therefore we would like to recommend including this portion in our late winter survey, as well as the previously identified study areas.

Apart from the route option research, another and quite separate consideration has to be addressed. The Beaver River Wetland has not seen the level of scrutiny and recent research afforded to the upper McQuesten Wetlands. Little empirical information is known on this section of the Beaver River (A. von Finster, pers. comm.), M. O'Donoghue, pers. comm.) (J. Hawkings, per. Somm.), (Jamie Kenyon, pers. comm.).

The Rau 2013 study guidelines for baseline studies include the Beaver River as a receiving environment. Aquatic surveys, including fisheries assessments will be conducted here this summer by Laberge Environmental Services and the various field crews will record observations on ungulate and waterfowl utilization during their surveys. However, we feel it is not up to the proponent to provide in-depth long term studies on areas that have minimal data. It should be part of the governments' mandates to research and identify wildlife utilization in this watershed. They have done good work in other parts of the Territory. The Beaver River wetland has demonstrated that is important moose calving habitat (June Memo, LES) and it appears to be a waterfowl staging and rearing area similar to the McQuesten wetlands. It behoves the government (Territorial and/or federal, .i.e. CWS) to increase the knowledge base in this area. For example, a thorough waterfowl survey requires close to three months, with temporary camps established in the wetlands to identify nesting areas, brood counts, brood mortality through predators (i.e. pike), species richness, etc, etc.

Note: There were inhibiting factors for the early winter survey flight. Our pilot was not in Mayo and had to fly in from Stewart the morning of our survey resulting in a relatively late departure. The fuel was cached at the Rackla airstrip and accessing such a remote location for fuel resulted in the loss of precious daylight hours, especially in dicey weather, for work at this time of the year. The flight to Rackla is visible on the map. Returning to fuel up in Mayo would result in a similar situation. It would have been more expedient had a barrel or two been placed at the small gravel pit at the Wind River Trail junction, which would have saved Archer Cathro the added expense of flying lengthy distances for fuel.

REFERENCES

Laberge Environmental Services. 2010. Biophysical Investigations for the Proposed Rau Road Route, 2012. Prepared for ATAC Resources Ltd, Vancouver, BC.

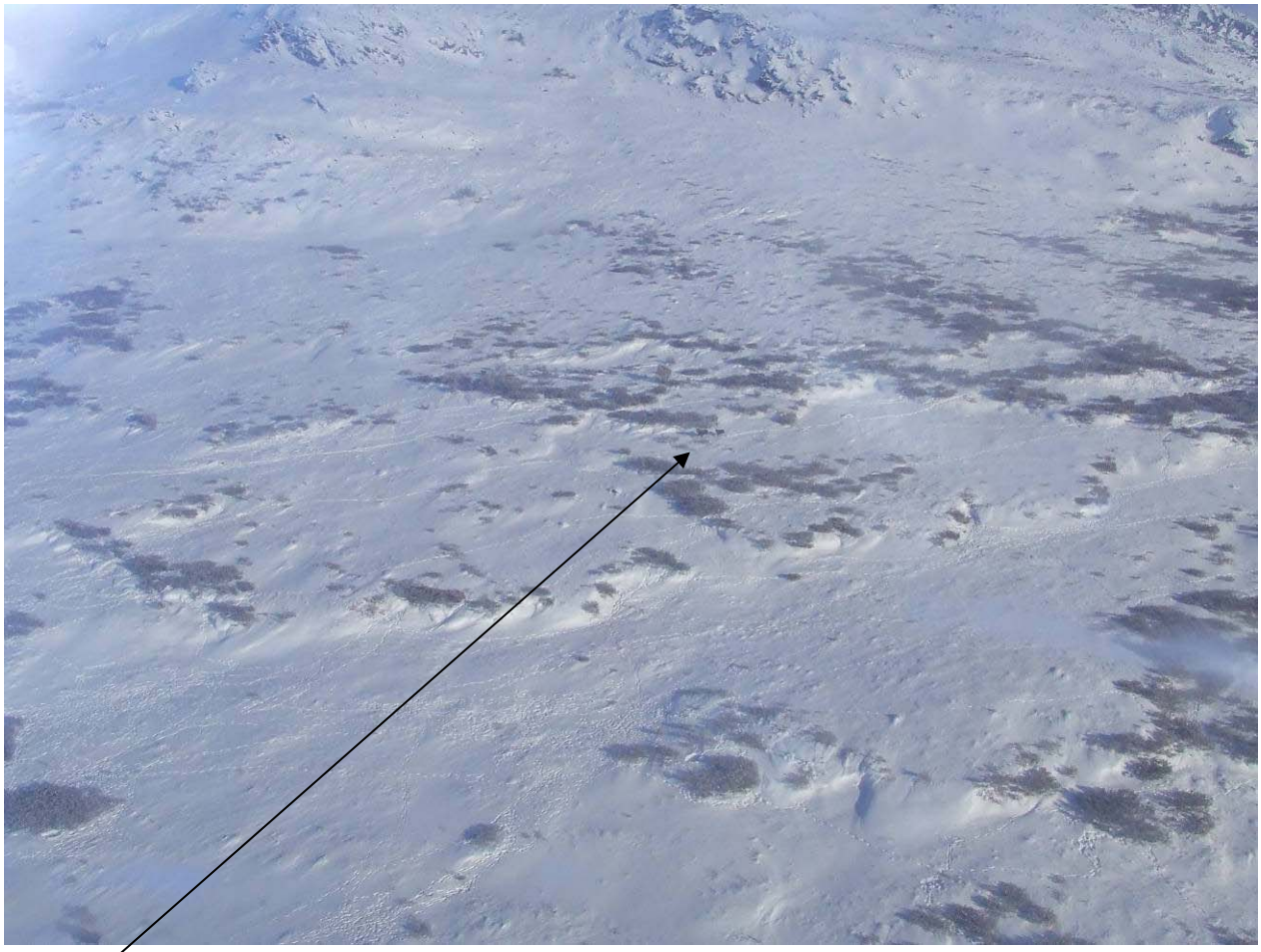
Laberge Environmental Services. 2012. Technical Memo – Spring Wildlife Survey for Wind River Trail. Prepared for Archer Cathro, Vancouver, BC

Personal Communications

Jim Hawkings, Ornithologists, Canadian Wildlife Service, Whitehorse, Yukon
Jamie Kenyon, Specialist, Conservation Programs, Ducks Unlimited, Whitehorse, Yukon
Mark O'Donoghue, Regional Biologist, YG, Whitehorse, Yukon.
Al von Finster, Fishery Biologist, (retired), Whitehorse, Yukon

PHOTOGRAPHS

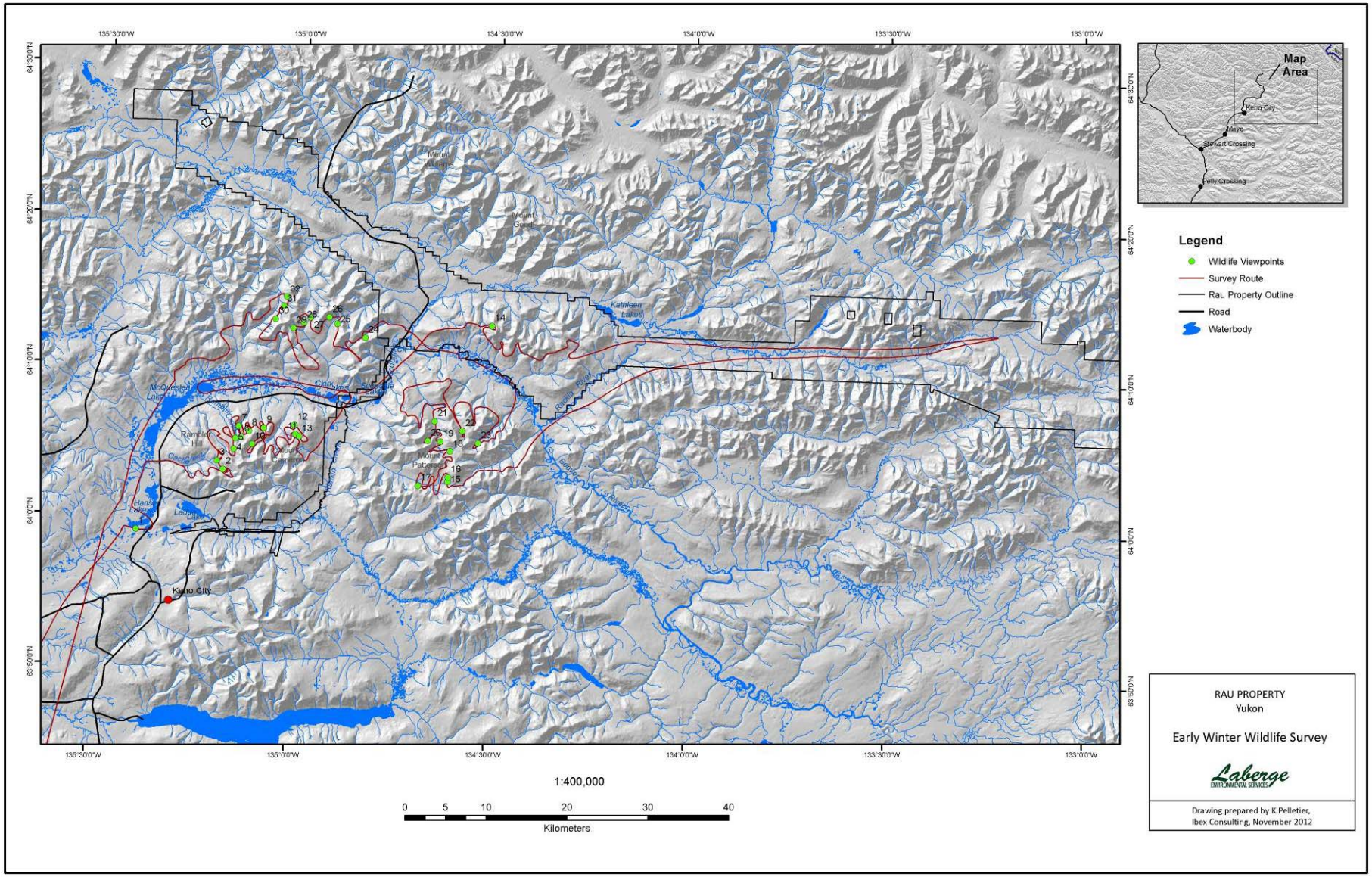
NOVEMBER 13TH, 2012



Two moose and a great deal of tracking, November 13th, 2012.

MAP

Track log and waypoints



RAU PROPERTY
Yukon

Early Winter Wildlife Survey

Laberge Environmental Services

Drawing prepared by K.Pelletier,
Ibex Consulting, November 2012