

# MAINTENANCE OF MOOSE COLLARS TO SUPPORT UNBC RESEARCH PROJECT

Moose ID: 15-5641, Collar ID: GSM20500

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*Moose  
mortality  
investigation  
no. 8 – March  
25, 2016*

## Summary

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Moose ID: 15-5641

Collar type: Vectronics Vertex

Collar ID: GSM20500

Sex: Female

Area: Chinchaga

Frequency: 152.810

Cause of death: wolf predation

Date of death: March 23 2016 (reduced movement noted); March 24 2016 (mortality notice received)

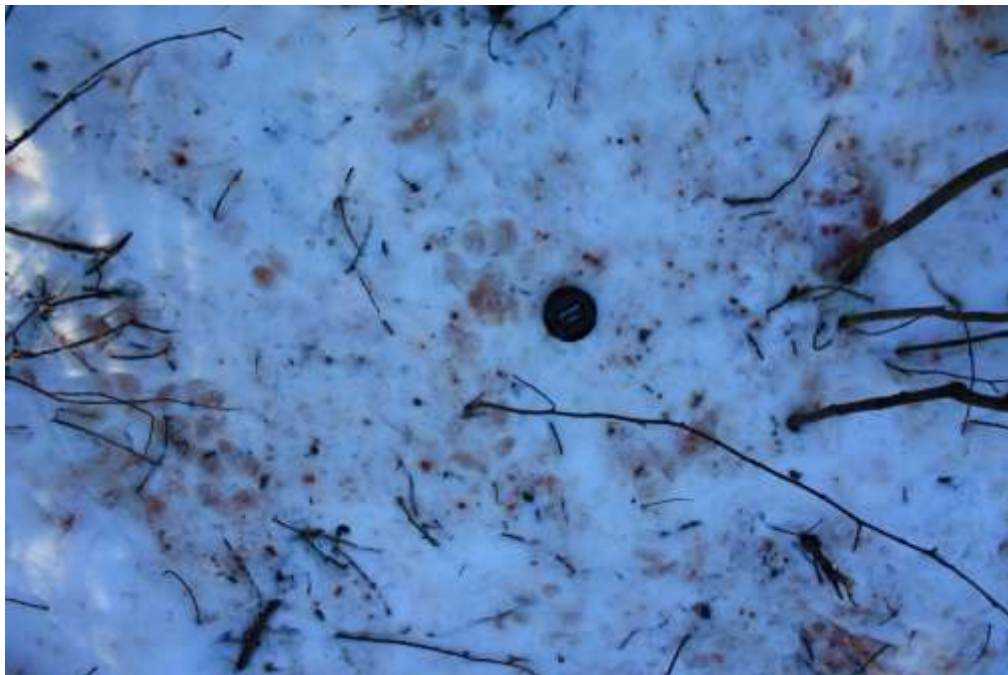


Figure 1. Moose 15-5641 was found with two wolves on the carcass.

Photo shows wolf track with camera lens for scale, March 25 2016

**Background:**

On March 24, 2016, we received notification of potential mortality for moose ID 15-5641 by Caslys Consulting Ltd. (Caslys). Caslys indicated that movement rates were abnormal on this collar since March 23, 2016. On March 25, 2016, we deployed to retrieve the collar. There was no opportunity for First Nations involvement on this investigation due to the statutory holiday and landing/flight conditions precluded additional crew members.

**Methods:**

The mortality site was accessed via helicopter from the Fort Nelson airport. The last known location of the collar was used to set the flight path and aerial telemetry techniques were used to get an exact location of the collar prior to landing. Location, habitat details, and photographs were taken. The time elapsed since mortality limited the internal biological samples available from moose 15-5641. The sampling protocol followed the BC Moose Research Mortality Investigation Form from the BC Ministry of Forests, Lands and Natural Resources (see *Appendix A*). Wildlife health ID numbers were assigned to each sample and are linked to the moose ID number.

**Results and Discussion:**

The animal and collar were located by aerial telemetry at 58.02379°, - 120.94931°, or UTM 10 V 621122, 6433198 in the northeastern corner of British Columbia in the Chinchaga Core study area. The final location provided by the satellite data one day prior to the investigation was less than 5m from the actual collar location. The collar was recovered intact and two black wolves were observed on the carcass of moose 15-5641 (fig 1). The wolves were scared off by the helicopter and did not return for the duration of the mortality investigation. The kill site was located in a small opening in a spruce stand near a black spruce bog (fig 2). The opening was dominated by a thick understory of willow shrubs (fig. 3) and although a straight seismic line was nearby, there were no fresh moose or wolf tracks observed on that potential movement path. The majority of the internal organs and hind quarters had been consumed. The hind limbs were not observed within 50m of the kill site. The upper limbs and head were relatively intact and 3+ ticks were observed on the front quarters. The head, right front forelimb, muscle, moose hair, moose scat, and wolf scat were collected, labelled and given health ID numbers (15-5641-1 to 15-5641-11). All wolf scat observed contained moose hair and moose pellets appeared normal. The front hooves exhibited a normal range of asymmetry and wear. The nose had been consumed, but mandibular/maxillary prognathism (underbite or overbite) was measured as 0mm (fig 4). The body condition of moose 15-5641 was observed to be excellent with round and full shoulders with upper shoulder fat measured at 4mm.

Wolf predation is the cause of mortality with wolves observed at the mortality site upon arrival for the investigation. This was a recent kill (2-3 days prior to investigation) and while the hind quarters and internal organs (except the lungs and stomachs) had been consumed, a large portion of the animal remained potentially indicative of a small pack and low scavenging activity. There were limited wolf trails to and from the kill site observed in comparison to other recent kills. The only observed scavengers were ravens (observed and heard at the kill site). No other scavenger tracks or scat was observed within a 50m search radius.

**Figures: Moose 15-5641**



Figure 2. Aerial view of 15-5641 kill site showing the small willow dominated opening, March 25, 2016



Figure 3. Willows dominated a relatively small opening that was the kill site of 15-5641, March 25, 2016.

Photographer is standing at the carcass.



Figure 4. The collar was recovered intact and there was no overbite or underbite measured on 15-5641, March 25 2016

Appendix A: Field Notes / BC Moose Research - Mortality Investigation Form

**BC MOOSE RESEARCH - MORTALITY INVESTIGATION FORM**

Date: March 25/16 Date of Mortality (signal): March 24/16 Days elapsed since death: 2-3  
 Personnel: Ingvar Hansen, Brian Peterson, Brad Knighton (pilot)  
 General Location: Chinchaga RPA  
 Waypoint: 155631 UTM: Zone 10U E: 621122 N 6433198  
 Lat: 58.02379° Long -120.94931°  
 Wildlife Health ID: 15-5641  
 Ear Tag #: \_\_\_\_\_ Collar Recovered:  Y  N Ser. No.: 20500  
 Carcass Located:  Y  N Collar Condition:  Functional  Damaged  Destroyed

**DESCRIBE THE MORTALITY SITE and TAKE PHOTOS** (Tracks, Scat, Blood, Signs of Struggle, etc)  
willow small opening near So box & seismic line <sup>fresh</sup> but no tracks  
on seismic line  
2 black-wolves seen + 2 ravens on arrival, only  
wolf tracks on site, no other scavengers.

Snow Crust:  Heavy  Light  Fluffy Snow Depth (cm): 30 cm Sinking Depth (cm) 30 cm  
isothermal

**EXTERNAL** - Describe abnormalities, collect samples, take photos

Choose all that apply

Carcass Location	Carcass Condition	Carcass State	Body Condition	Skin / Hair Coat
<input checked="" type="checkbox"/> In Open <input type="checkbox"/> Concealed <input type="checkbox"/> Buried <input type="checkbox"/> _____	<input checked="" type="checkbox"/> Fresh <input type="checkbox"/> Frozen <input type="checkbox"/> Decomposed <input type="checkbox"/> _____	<input type="checkbox"/> Intact <input type="checkbox"/> Disarticulated <input type="checkbox"/> Scattered <input checked="" type="checkbox"/> Scavenged <input type="checkbox"/> _____	<input type="checkbox"/> Excellent <input checked="" type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor <input type="checkbox"/> Emaciated <input type="checkbox"/> Undetermined	<input checked="" type="checkbox"/> Normal <input type="checkbox"/> Hide Inverted <input type="checkbox"/> Missing Hair <input type="checkbox"/> External Parasites <input type="checkbox"/> Abnormal Skin <input type="checkbox"/> Lumps / Warts <input type="checkbox"/> _____
Discharge / Blood	Diarrhea / Feces	Hoof Condition	Bones / Legs / Joints	Mouth / Teeth
<input checked="" type="checkbox"/> None <input type="checkbox"/> Mouth <input type="checkbox"/> Nose <input type="checkbox"/> Anus <input type="checkbox"/> _____	<input type="checkbox"/> None <input checked="" type="checkbox"/> Normal Pellets <input type="checkbox"/> on Tail + Hind-legs <input type="checkbox"/> _____	<input checked="" type="checkbox"/> Normal Wear <input type="checkbox"/> Worn <input type="checkbox"/> Overgrown <input type="checkbox"/> _____	<input checked="" type="checkbox"/> Normal <input checked="" type="checkbox"/> Chewed <input type="checkbox"/> Fractured <input type="checkbox"/> Compound <input type="checkbox"/> _____	<input checked="" type="checkbox"/> Normal Wear <input type="checkbox"/> Irregular / Worn <input type="checkbox"/> Broken <input type="checkbox"/> _____

Comments / Details

3 articles obs. on front quarters; hind quarters & most internal  
missing, lungs present + some stomachs.  
muscle samples taken + head + scat (moose + wolf)  
+ hair (moose), Shouldered measured (4mm)  
- kill site is small opening, fairly wide except  
right where moose carcass is laying. wolf tracks  
entry & going not extensive

**INTERNAL** - Record all abnormalities, collect samples and take photos

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	Normal	Abnormal	Comments
Lungs / Trachea	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Heart	<input type="checkbox"/>	<input type="checkbox"/>	N/A
Muscle	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Liver	<input type="checkbox"/>	<input type="checkbox"/>	N/A
Kidney	<input type="checkbox"/>	<input type="checkbox"/>	N/A
Spleen / Lymph nodes	<input type="checkbox"/>	<input type="checkbox"/>	N/A
Stomachs / Intestines	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Skull / Spine	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Reproductive Tract	<input type="checkbox"/>	<input type="checkbox"/>	N/A

If Pregnant: Record sex and crown rump length(s) of fetus(es)

Sex:      CR Length (cm):     

Back Fat Depth (mm): 4 mm  
(taken from upper shank ider)

Sex:      CR Length (cm):     



Comments/ Details

- hind quarters missing (not found w/ 10m search radius)  
 - Good body condition w/ back fat  
 - lungs, muscle

**CAUSE OF DEATH** (follow key and check appropriate boxes)

Confidence Level	Predation	Non-Predation	Unknown
<input checked="" type="checkbox"/> Definitive	<input checked="" type="checkbox"/> Wolf	<input type="checkbox"/> Collision	<input type="checkbox"/> Unknown
<input type="checkbox"/> Probable	<input type="checkbox"/> Bear	<input type="checkbox"/> Hunter Kill	
<input type="checkbox"/> Possible	<input type="checkbox"/> Cougar	<input type="checkbox"/> Hunter Wounded	
	<input type="checkbox"/> Unknown	<input type="checkbox"/> Accident	
		<input type="checkbox"/> Other	

Comments/ Details

2 black wolves scoured off carcass upon arrival

**SAMPLES** (check if taken)

SAMPLES	STORAGE	REASON for COLLECTION
<input checked="" type="checkbox"/> Long Bone	Freeze	For Body Condition Index (Bone Marrow Fat)
<input checked="" type="checkbox"/> Jaw	Freeze	For Size and Growth
<input checked="" type="checkbox"/> Teeth	Freeze	For Aging
<input checked="" type="checkbox"/> Head (if Intact)	Freeze	For CWD
<input type="checkbox"/> Kidney + Fat	Freeze	For Body Condition Index (Kidney Fat)
<input type="checkbox"/> Liver (3 x 3 cm)	Freeze	For Toxicology
<input type="checkbox"/> Kidney (3 x 3 cm)	Freeze	For Contaminants
<input type="checkbox"/> Intestines	Freeze	For Parasites
<input checked="" type="checkbox"/> Muscle	Formalin	For moose measles / Parasites
<input type="checkbox"/> Predator DNA swab	Dry	For Predator Identification
<input type="checkbox"/> Predator Hair	Dry	For Predator Identification
<input checked="" type="checkbox"/> Predator Scat	Freeze	For Predator Identification

moose scat + hair

Photos Taken?

Send Samples to:  
 Cait Nelson  
 2080 Labrieux Road  
 Nanaimo, BC  
 V9T 6J9



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Swab Data Sheet				
Wildlife Health ID Number <u>15-5641</u>				
Swab #	1		Wound Type (circle one)	Wound Location and Description
check boxes as swabs are completed		A	Kill	
		B	Feed	
			Other	
			_____	
Swab #	2		Wound Type (circle one)	Wound Location and Description
check boxes as swabs are completed		A	Kill	
		B	Feed	
			Other	
			_____	
Swab #	3		Wound Type (circle one)	Wound Location and Description
check boxes as swabs are completed		A	Kill	
		B	Feed	
			Other	
			_____	
Swab #	4		Wound Type (circle one)	Wound Location and Description
check boxes as swabs are completed		A	Kill	
		B	Feed	
			Other	
			_____	
Predator hair or scat collected? How many? What species?				
- <del>Wolf</del> scat collected				
- 2 wolves observed leaving carcass				
- fawns only <del>scat</del> confirmed scavenger				

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<b>BODY CONDITION SCORING SYSTEM</b>		
<b>Body Condition</b>	<b>SCORE (Franzmann 1977)</b>	<b>PHYSICAL DESCRIPTION (Franzmann 1977)</b>
	10	Prime, fat animal with thick, firm rump fat by sight. Well fleshed over back and loin. Shoulders and rump round and full.
	9	Choice, fat moose with evidence of rump fat by feel. Fleshed over back and loin. Shoulders round and full.
<b>5 Excellent</b>	8	Good, fat moose with slight evidence of rump fat by feel. Bony structures of back and loin not prominent. Shoulders well fleshed.
<b>4 Good</b>	7	Average moose with no evidence of rump fat, but well fleshed. Bony structures of back and loin evident by feel. Shoulders with some angularity.
<b>3 Fair</b>	6	Moderately fleshed moose beginning to demonstrate one of the following conditions: (A) definition of neck from shoulders; (B) upper foreleg (humerus and musculature) distinct from chest; or (C) rib cage prominent.
<b>2 Poor</b>	5	Two of the characteristics listed in 6 are evident.
<b>1 Emaciated</b>	4	All Three of the characteristics in 6 are evident.
	3	Hide fits loosely about neck and shoulders. Head carried at a lower profile. Walking and running postures appear normal.
	2	Sings of malnutrition. Outline of the scapula evident. Head and neck low and extended. Walks normally but trots and paces with difficulty, cannot canter
	1	Point of no return. Generalized appearance of weakness. Walks with difficulty; cannot trot, pace or canter.
	0	Dead.