

MAINTENANCE OF MOOSE COLLARS TO SUPPORT UNBC RESEARCH PROJECT

Moose ID: 15-5600, Collar ID: GSM18321

Prepared by: Ingebjorg Jean Hansen

*Moose
mortality
investigation
no. 5 – January
31, 2016*

Summary

Moose ID: 15-5600

Collar type: Vectronics Vertex

Collar ID: GSM18321

Sex: Female

Area: Clarke

Frequency: 153.030

Cause of death: wolf predation (highly probable)

Date of death: January 25 2016 (reduced movement noted); January 29 2016 (mortality notice received)



Figure 1. Moose 15-5600 hind hoof held by William Needlay January 31 2016

Background:

On January 29, 2016, we received notification of potential mortality for moose ID 15-5600 by Caslys Consulting Ltd. (Caslys). Caslys indicated that movement rates were extremely low on this collar since January 25, 2016, but that they had not received a mortality notice from Vectronics until January 29, 2016. On January 31, 2016, we deployed to retrieve the collar. William Needlay of the Fort Nelson First Nations assisted with this investigation.

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 biological samples available from moose 15-5600 as few carcass remains were present. 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 collar was located by aerial telemetry at 58.476680°, -122.008090°, or UTM 10V 557848, 6482209 in the far northeast corner of British Columbia, in the Clarke Core study area. The collar was 1600m southwest of the kill site (58.484460, -121.985350 or UTM 10V 559161, 6483095) on a lake and the leather was damaged by wolves but largely intact (fig. 2). The kill site was approximately 80m from the final location provided by the satellite data three days prior to the investigation. A 50m radius search around the kill site revealed wolf scats, moose pellets and moose hair as well as some body parts of Moose 15-5600 (the skull/upper jaw and cervical vertebrae, lower mandible, a portion of the pelvic girdle with lumbar vertebrae, front leg and hind leg with long bones attached - fig 1, 3). Samples were collected, labelled and given health ID numbers (15-5600-1 to 15-5600-7). The wolf scat contained moose hair. Moose pellets observed near the kill site appeared normal and the hooves exhibited a normal range of asymmetry and normal wear. The maxillae bones were chewed too extensively to determine if there were any underbite or overbite (mandibular or maxillary prognathism) issues with this animal.

Wolf predation is the probable cause of mortality with a typical and obvious kill site identified; the location where the moose bled out was obvious (fig. 4). However, even a time lag of only 3-4 days between the mortality event and mortality investigation (such as occurred in this case),

can make it difficult to determine whether there could have been any additional or complicating factors associated with this mortality prior to predation.

The kill site was in a large opening with patchy willow and birch shrubs and isolated black spruce (fig. 5). Scavenging was still occurring during the mortality investigation as two ravens were heard and observed. Raven feathers and droppings were present at the kill site, but no other scavenger sign was detected.

There was a large post-mortem movement of this collar attributed to wolves. The final collar location received by satellite three days prior to dispatching for retrieval was 1600m from the actual location of the collar. Caslys noted, after the investigation was complete, that a further download revealed the large movement to the lake rather accurately.

Figures: Moose 15-5600



Figure 2. The collar was located 1600m from the kill site on a lake January 31 2016



Figure 3. Some biological samples were available including the head and lower mandible as well as a long bone January 31 2016



Figure 4. The kill site had a lot of hair remaining and was well packed January 31 2016



Figure 5. Aerial view of kill site January 31 2016

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

BC MOOSE RESEARCH - MORTALITY INVESTIGATION FORM

Date: Jan 3/16 Date of Mortality (signal): Jan 29/16 (napkins) Days elapsed since death: 73
 Personnel: William Needley, Hope Jean Hansen, Tom Halbert
 General Location: E of FN (Clarke bk. area)
 Waypoint: 15-5600 UTM: Zone 10V E: 557848 N: 6482209
 collar $\{$ Lat: 58.46650° Long: -122.008090°
 Wildlife Health ID: 15-5600
 Ear Tag #: 0-795 Collar Recovered: Y N Ser. No.: 18321
 Carcass Located: Y N Collar Condition: Functional Damaged Destroyed

kill site
 10V 559161
 6483095
 ut = 58.4646°
 -121.985350°

DESCRIBE THE MORTALITY SITE and TAKE PHOTOS (Tracks, Scat, Blood, Signs of Struggle, etc)

15-5600, kill site had smudged hole w/ blood - likely final
kill site & blood out there. Collar located 1/2 mile away on
lake. Wolf track/trail led to & from collar. More wolf
bones found in debris 3-4 days since mortality event.

Snow Crust: Heavy Light Fluffy Snow Depth (cm): 57 Sinking Depth (cm): 30
in places (patches) - wolves were able to pack down well

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 type="checkbox"/> Fresh <input type="checkbox"/> Frozen <input type="checkbox"/> Decomposed <input checked="" type="checkbox"/> <u>scattered</u> <u>scavenged</u>	<input type="checkbox"/> Intact <input type="checkbox"/> Disarticulated <input type="checkbox"/> Scattered <input checked="" type="checkbox"/> Scavenged <input checked="" type="checkbox"/> <u>heavily</u>	<input type="checkbox"/> Excellent <input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor <input type="checkbox"/> Emaciated <input checked="" type="checkbox"/> Undetermined	<input 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 checked="" type="checkbox"/> <u>unk</u>
Discharge / Blood	Diarrhea / Feces	Hoof Condition	Bones / Legs / Joints	Mouth / Teeth
<input type="checkbox"/> None <input type="checkbox"/> Mouth <input type="checkbox"/> Nose <input type="checkbox"/> Anus <input checked="" type="checkbox"/> <u>unk</u>	<input type="checkbox"/> None <input checked="" type="checkbox"/> Normal Pellets <input type="checkbox"/> on Tail + Hind-legs <input type="checkbox"/> <u>retained</u> <u>sample</u>	<input checked="" type="checkbox"/> Normal Wear <input type="checkbox"/> Worn <input type="checkbox"/> Overgrown <input checked="" type="checkbox"/> <u>chewed</u>	<input checked="" type="checkbox"/> Normal <input checked="" type="checkbox"/> Chewed <input type="checkbox"/> Fractured <input type="checkbox"/> Compound <input type="checkbox"/> _____	<input type="checkbox"/> Normal Wear <input type="checkbox"/> Irregular / Worn <input type="checkbox"/> Broken <input type="checkbox"/> _____

Comments / Details
lazyanimal but not hindering movement but abnormal.
collar found 1/2 km to WSW of kill location.
- blood, hair, some bones visible from air - kill site obvious.
- only ravens heard / sign w/it scavenging at the site
- kill site on a patchy large open area w/ isolated black
spots.

INTERNAL - Record all abnormalities, collect samples and take photos

2

	Normal	Abnormal	Comments
Lungs / Trachea	<input type="checkbox"/>	<input type="checkbox"/>	No internal organs - found
Heart	<input type="checkbox"/>	<input type="checkbox"/>	
Muscle	<input type="checkbox"/>	<input type="checkbox"/>	
Liver	<input type="checkbox"/>	<input type="checkbox"/>	
Kidney	<input type="checkbox"/>	<input type="checkbox"/>	
Spleen / Lymph nodes	<input type="checkbox"/>	<input type="checkbox"/>	
Stomachs / Intestines	<input type="checkbox"/>	<input type="checkbox"/>	
Skull / Spine	<input type="checkbox"/>	<input type="checkbox"/>	
Reproductive Tract	<input type="checkbox"/>	<input type="checkbox"/>	

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

Sex: ___ CR Length (cm): ___

Back Fat Depth (mm): _____

Sex: ___ CR Length (cm): ___



Comments/ Details

few remains - no internals.

CAUSE OF DEATH (follow key and check appropriate boxes)

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

highly

Comments/ Details

-ravens & wolf were only scavengers present
 - 2 ravens observed & heard, raven feathers

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 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 pellets

Photos Taken?

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

4

BODY CONDITION SCORING SYSTEM		
Body Condition	SCORE (Franzmann 1977)	PHYSICAL DESCRIPTION (Franzmann 1977)
	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.
5 Excellent	8	Good, fat moose with slight evidence of rump fat by feel. Bony structures of back and loin not prominent. Shoulders well fleshed.
4 Good	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.
3 Fair	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.
2 Poor	5	Two of the characteristics listed in 6 are evident.
1 Emaciated	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.

few remains; marrow in long bone looked healthy