

BC Caribou Research Program - Mortality Site Investigation Form

LOCATION

Date of site visit (DD/MM/YYYY): _____ Date mort. signal received: _____ Date of death _____

General location: _____ Personnel: _____

Waypoint: _____ UTM Zone: _____ E: _____ N: _____ or Lat: _____ Long: _____

ANIMAL IDENTIFICATION

WLH ID: _____ **OTHER ID:** _____ **Herd:** _____

Found dead Euthanized Euth. method: _____ If Euth. collect blood **2 x gold top**

State of decomposition (Circle): Fresh / Bloated / Active decay (maggots) / Desiccated / Bones Collar only

Ear tag(s) (number and colour): Left: _____ Right: _____

Collar recovered: Yes / No Freq.: _____ Ser. No.: _____ Circle: Functional / Damaged / Destroyed / N/A

MORTALITY SITE DESCRIPTION

Describe mortality site and document with photos/video, especially for nonpredated "drop dead" animals. Photos should include wide angle, medium and close-up views with a scale reference.

Circle: No snow / Snow / Fluffy Snow depth (cm): _____ Ice crust Circle: Light/Moderate/Heavy Sinking depth (cm): _____

Pictures

Video

EXTERNAL EXAM

Select all that apply. Describe any abnormal findings and 'Other' in comments section on page 3.

Carcass Location		Carcass State		Body Condition		Body/Skin/Hair		Eyes		Ears/Nose	
In open	<input type="checkbox"/>	Fresh #	<input type="checkbox"/>	Excellent	<input type="checkbox"/>	Hair loss	<input type="checkbox"/>	Clear	<input type="checkbox"/>	Ear crusting	<input type="checkbox"/>
In water	<input type="checkbox"/>	Frozen	<input type="checkbox"/>	Good	<input type="checkbox"/>	Ticks/parasites	<input type="checkbox"/>	Swollen	<input type="checkbox"/>	Ulcers/sores	<input type="checkbox"/>
In cover	<input type="checkbox"/>	Decomposed	<input type="checkbox"/>	Fair	<input type="checkbox"/>	Lumps/warts	<input type="checkbox"/>	Cloudy	<input type="checkbox"/>	Discharge *	<input type="checkbox"/>
Buried	<input type="checkbox"/>	Intact #	<input type="checkbox"/>	Poor	<input type="checkbox"/>	Wounds	<input type="checkbox"/>	Discharge *	<input type="checkbox"/>	Other	<input type="checkbox"/>
On roadside	<input type="checkbox"/>	Disarticulated	<input type="checkbox"/>	Emaciated	<input type="checkbox"/>	Besnoitia cysts eyes/legs/face	<input type="checkbox"/>	Other	<input type="checkbox"/>		
Collar only	<input type="checkbox"/>	Scattered	<input type="checkbox"/>	Unknown	<input type="checkbox"/>			One / L / R / Both	<input type="checkbox"/>		
Other	<input type="checkbox"/>	Scavenged	<input type="checkbox"/>			Other	<input type="checkbox"/>				
Oral Cavity		Teeth		Bones and Joints		Hooves/Feet		Feces		Reproductive	
Ulcers/sores	<input type="checkbox"/>	Teeth worn	<input type="checkbox"/>	Fracture(s)	<input type="checkbox"/>	Excessive wear	<input type="checkbox"/>	No feces	<input type="checkbox"/>	Lactating	<input type="checkbox"/>
Rumen content	<input type="checkbox"/>	Teeth irregular	<input type="checkbox"/>	Joints swollen	<input type="checkbox"/>	Abnormal wear	<input type="checkbox"/>	Diarrhea	<input type="checkbox"/>	Udder abnormal	<input type="checkbox"/>
Blood	<input type="checkbox"/>	Teeth broken	<input type="checkbox"/>	Joint fluid clear/pus/blood	<input type="checkbox"/>	Overgrown	<input type="checkbox"/>	Fecal staining mild/mod/extr.	<input type="checkbox"/>	Vaginal discharge *	<input type="checkbox"/>
Other	<input type="checkbox"/>	Feed impacted	<input type="checkbox"/>			Antler deform.	<input type="checkbox"/>			Other	<input type="checkbox"/>
		Other	<input type="checkbox"/>	Retained velvet	<input type="checkbox"/>			Rectal prolapse	<input type="checkbox"/>	Testes abnorm.	<input type="checkbox"/>
				Other	<input type="checkbox"/>			Other	<input type="checkbox"/>	Penis discharge *	<input type="checkbox"/>
										Other	<input type="checkbox"/>

* Discharge Clear / Cloudy / Purulent (Pus) / Blood Collect samples/swabs

Consider slinging out/removing intact and fresh carcasses for necropsy by a project veterinarian – For high priority herds

Winter ticks: No / Yes Collect 10+ engorged and not engorged, half of sample in 70% ETOH and half of sample frozen without ETOH

Winter tick count (in 2 locations) Number of ticks - sample 1(shoulder): _____ Number of ticks - sample 2 (rump): _____

Hair Loss: None / Mild (5-20%) / Moderate (20-40%) / Severe (40-80%) / Extreme (>80%)

INTERNAL EXAM

Before sampling, take pictures of opened chest (showing heart and lungs) and abdominal cavities (Left side: showing intact gastrointestinal tract, liver, spleen). Take pictures of and describe all abnormal findings in comments section.

1) EXAMINE	Normal	Abnormal	3) IF PREGNANT			
Mouth/Tongue/Larynx/Esophagus	<input type="checkbox"/>	<input type="checkbox"/>	Crown-rump length fetus: _____ cm Fetal weight: _____ g			
Trachea and large airways	<input type="checkbox"/>	<input type="checkbox"/>				
Lungs (front, middle, back lobes)	<input type="checkbox"/>	<input type="checkbox"/>	Evidence of abortion: Yes / No Evidence of fetal or placental abnormalities: Yes / No / Unk			
Heart (chambers/valves/blood vessels)	<input type="checkbox"/>	<input type="checkbox"/>				
Liver	<input type="checkbox"/>	<input type="checkbox"/>	CALL PROGRAM VET FROM FIELD IF EVIDENCE OF ABORTION OR ABNORMAL; COLLECT FETUS AND PLACENTA <input type="checkbox"/>			
Left and right kidneys	<input type="checkbox"/>	<input type="checkbox"/>				
Spleen	<input type="checkbox"/>	<input type="checkbox"/>	4) IDENTIFY PROXIMATE CAUSE OF DEATH (for health related – include details in comments on next page)			
Lymph nodes (under skin, in abdomen)	<input type="checkbox"/>	<input type="checkbox"/>				
Rumen	<input type="checkbox"/>	<input type="checkbox"/>	COD	Confidence	Species	Confidence
Glandular stomach (abomasum)	<input type="checkbox"/>	<input type="checkbox"/>	Predation <input type="checkbox"/>	Defin. <input type="checkbox"/>	Wolf <input type="checkbox"/>	Defin. <input type="checkbox"/>
Small intestine (several sections)	<input type="checkbox"/>	<input type="checkbox"/>	Hunter <input type="checkbox"/>	Prob. <input type="checkbox"/>	Grizzly Bear <input type="checkbox"/>	Prob. <input type="checkbox"/>
Large intestine/colon (several sections)	<input type="checkbox"/>	<input type="checkbox"/>	Collision <input type="checkbox"/>	Poss. <input type="checkbox"/>	Black Bear <input type="checkbox"/>	Poss. <input type="checkbox"/>
Skull/spine	<input type="checkbox"/>	<input type="checkbox"/>	Natural <input type="checkbox"/>		Unk. Bear <input type="checkbox"/>	
Reproductive tract (female and male)	<input type="checkbox"/>	<input type="checkbox"/>	Accident <input type="checkbox"/>		Cougar <input type="checkbox"/>	
Other	<input type="checkbox"/>	<input type="checkbox"/>	Health <input type="checkbox"/>		Wolverine <input type="checkbox"/>	
2) EVALUATE INTERNAL FAT RESERVES – Circle appropriate			Unknown <input type="checkbox"/>		Lynx <input type="checkbox"/>	
Subcutaneous:	Plentiful/Moderate/Scant/None		Other <input type="checkbox"/>		Other <input type="checkbox"/>	
Heart:	Plentiful/Moderate/Scant/None					
Mesentery/Omentum:	Plentiful/Moderate/Scant/None					
Kidney:	Plentiful/Moderate/Scant/None					
Marrow:	Red-Runny/Pink-Semi-Solid/Firm-Creamy					
Do not crack bones.						



COMMENTS FOR EXTERNAL EXAM, INTERNAL EXAM, SUSPECTED PROXIMATE vs. ULTIMATE CAUSE OF DEATH
If animal is found alive, describe symptoms (e.g. lying down, circling, vocalizing, aggressive, dull, etc.)

Questions in the field or the lab? Contact Dr. Helen Schwantje 250-751-3234 or cell 250-361-7619

CARIBOU TISSUE SAMPLES TO COLLECT IN THE FIELD (AS AVAILABLE)

Samples MUST be processed ASAP when back at the office. Post-field sub-sampling described on the following processing sheet.

Head (or obex and RPLN in field for CWD)	<input type="checkbox"/>	Spleen (palm size piece)	<input type="checkbox"/>
Pictures of jaw and incisors [#]	<input type="checkbox"/>	Lymph nodes (if abnormal)	<input type="checkbox"/>
Mandible left and right with incisors	<input type="checkbox"/>	Intestine (if abnormal + fresh) - Open and assess a few sections of large and small intestines and abomasum. Collect parasites if found.	<input type="checkbox"/>
Ear tips x 2	<input type="checkbox"/>	Rumen contents (palm full)	
Hairx100 (pluck from between shoulders)	<input type="checkbox"/>	Feces (10-20 pellets from colon)	<input type="checkbox"/>
Intact long bone #1 (femur or humerus)	<input type="checkbox"/>	Fetus and placenta	<input type="checkbox"/>
Intact metatarsus (hind foot left or right)	<input type="checkbox"/>	Uterus and ovaries (collect only if abnormal)	<input type="checkbox"/>
Skeletal muscle (from leg, palm size piece)	<input type="checkbox"/>	Calf (if newborn and dead)	<input type="checkbox"/>
Lung front lobe (palm size piece, right)	<input type="checkbox"/>	Cysts and tumors (if unknown cause, include adjacent normal tissue)	<input type="checkbox"/>
Lung middle lobe (palm size piece, left and right)	<input type="checkbox"/>	Winter ticks (10+ all life stages, engorged and not engorged)	<input type="checkbox"/>
Lung back lobe (palm size piece, left and right)	<input type="checkbox"/>		
Heart (full cross section of atria and both ventricles)	<input type="checkbox"/>	PREDATION SAMPLES	
Blood (heart/jugular in 2 x gold top)	<input type="checkbox"/>	* Fill out and attach predator ID data form if swabs collected*	
Whole left kidney + fat	<input type="checkbox"/>	DNA (hide/collar punctures/bite/rake wounds; Swab in field is best)	<input type="checkbox"/>
Whole right kidney (keep separate from left kidney)	<input type="checkbox"/>	Predator hair	<input type="checkbox"/>
Liver (palm size piece x 3 in separate bags)	<input type="checkbox"/>	Predator scat	<input type="checkbox"/>
		Other	<input type="checkbox"/>

Take three photos of teeth and jaw – one from each side and one from the front showing the incisors

**ALL SAMPLES IN SEPARATE WHIRL PAK BAGS, EACH LABELLED WITH:
 WLH ID, SPECIES, HERD, SEX, SAMPLE TYPE, DATE**

Caribou Mortality Sample Processing and Storage

SAMPLE	PROCESSING	STORAGE
Intact head	Double heavy garbage bag/seal well	Frozen ^a
Obex and retropharyngeal lymph nodes (RPLNs)	Collect and subsample as per CWD sampling protocols	a) Whole obex, ½ of each RPLN: Fixed b) ½ of each RPLN: Frozen
Mandibles	Place in bone bag(s)/seal well	Frozen
2 x Ear tips	Place in 2 separate non-manila envelopes (air dry) ^c	Room temperature ^d
Hair x 100	Separate non-manila envelope per body region collected (air dry)	Room temperature
Long bones	Place in bone bag(s)/seal well	Frozen
Metatarsus	Place in bone bag(s)/seal well	Frozen
Skeletal muscle	Place in whirl-pak /seal well	Frozen
Lung front lobe Right	Subsample at office ^{e, f} - Fixed portions in 10% formalin - Frozen in separate whirl-pak/seal well	a) 2, 1 cm thick sections (1 from each lobe, if abnormal take up to 4 per lobe): Fixed b) Remaining tissue: Frozen
Lung middle lobe Left and Right	Subsample at office - Fixed portions in 10% formalin - Frozen in separate whirl-pak/seal well	a) 2, 1 cm thick sections (1 from each lobe, if abnormal take up to 4 per lobe): Fixed b) Remaining tissue: Frozen
Lung back lobes Left and Right	Subsample at office - Fixed portions in 10% formalin - Frozen in separate whirl-pak/seal well	a) 2, 1 cm thick sections (1 from each lobe, if abnormal take up to 4 per lobe): Fixed b) Remaining tissue: Frozen
Heart	Subsample at office - Fixed portions in 10% formalin	2, 1 cm thick sections: Fixed
Heart blood	Place blood tubes in whirl-pak/seal well	Frozen
Left kidney + fat	Place in whirl-pak/seal well	Frozen
Right kidney	Subsample at office - Fixed portions in 10% formalin - Frozen in separate whirl-pak/seal well	a) 1-2, 1 cm thick cross sections: Fixed b) Remaining tissue, divided into <u>two</u> separate whirl-paks: Frozen
Liver	Subsample at office - Fixed portions in 10% formalin - Frozen in separate whirl-pak/seal well	a) 1-2, 1 cm thick cross sections: Fixed b) Remaining tissue, divided into <u>three</u> separate whirl-paks: Frozen
Spleen	Subsample at office - Fixed portions in 10% formalin - Frozen in separate whirl-pak/seal well	a) 1-2, 1 cm thick cross sections: Fixed b) Remaining tissue, divided into <u>two</u> separate whirl-paks: Frozen
Lymph nodes	Subsample at office - Fixed portions in 10% formalin - Frozen in separate whirl-pak/seal well	a) 1-2, 1 cm thick cross sections: Fixed b) Remaining tissue: Frozen
Various intestine	Subsample at office - Fixed portions in 10% formalin - Frozen in separate whirl-pak/seal well	a) 1-2, 1 cm thick cross sections but only if fresh! Fixed b) Remaining tissue: Frozen
GI parasites	70% ETOH in well-sealed container	Room temperature
Rumen contents	Place in whirl-pak/seal well	Frozen
Feces	Place in whirl-pak/seal well	Frozen
Fetus and placenta	Place in a bone bag/seal well	Frozen
Ovaries	Intact ovaries fixed in 10% formalin	Fixed

SAMPLE	PROCESSING	STORAGE
Uterus	Subsample at office - Fixed portions in 10% formalin - Frozen in separate whirl-pak/seal well	a) If abnormal, 1-3, 1 cm thick cross sections: Fixed b) Palm size part: Frozen
Calf	Double heavy garbage bag/seal well	Frozen
Abscesses, cysts and tumors	Subsample at office - Fixed portions in 10% formalin - Frozen in separate whirl-pak/seal well	a) 1-2, 1 cm thick cross sections: Fixed b) Remaining tissue: Frozen
Winter ticks^g	Subsample at office - Half in 70% ETOH in well-sealed container (i.e. cryovial or similar) - Half frozen in separate cryovial <i>without</i> ETOH	a) Room temperature for sample with ETOH b) Frozen for sample without ETOH
Predator scat^h	Place in whirl-pak/seal well	Frozen
Predator DNA	Collect as per double swab protocol ⁱ	Room temperature
Predator hair	Non-manila paper envelope (air dry)	Room temperature

NOTES ON HANDLING, STORING, SHIPPING SAMPLES and TISSUES

Note: Most supplies are provided by the Wildlife Health Program. Contact us before you run out.

a) Frozen tissue samples must be stored and shipped at minimum -20°C. For long-term storage, only freeze tissue samples in whirl-paks (or similar). Do not use Ziplocs. Avoid freeze/thaw.

b) Fixed tissue samples in 10% Neutral Buffered Formalin. Fixed tissue must be stored at room temperature in a leak proof, puncture-proof container with a 10:1 formalin: tissue ratio. Fixed tissue must not be frozen. In addition, fixed tissue must not be shipped in the same box/cooler as frozen samples, as formalin fumes can kill live pathogens which limit the efficacy of tissue culture and other diagnostics.

c) Air dry samples at room temperature in an area protected from excessive heat (i.e. not near a stove, heater, or on a truck dashboard), light, and moisture. If samples or envelopes are wet when initially collected in the field, transfer to a fresh, dry envelope immediately on return to the lab and before leaving to air dry. Be sure to label the new envelope.

d) Hair and tissue samples stored at room temperature must always be protected from heat, light, and moisture. Envelopes can be stored in a cardboard box and sent to the WLH program lab. Please do NOT stockpile dry samples.

e) Subsampling usually requires collection of both fixed (in 10% formalin) and frozen samples.

f) Collecting fixed tissue in 10% formalin:

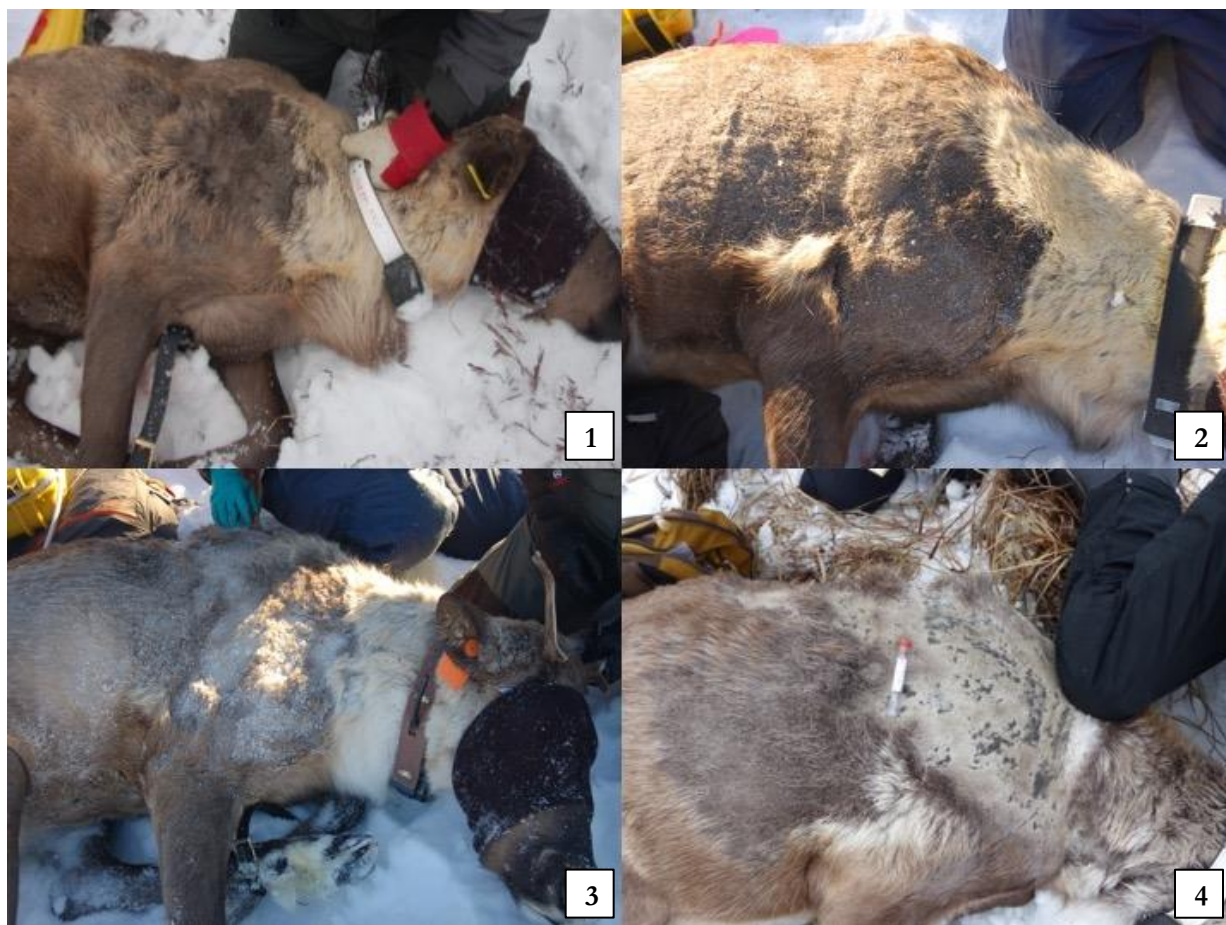
- **Tissues must be fixed as soon as possible after collection to preserve for microscopic exams.**
- **To ensure proper penetration of formalin, tissue samples must be ≤ 1 cm thick.**
- To reduce artefact, always trim tissues to size using a sharp knife or scalpel on a plastic cutting board. Handle tissues carefully. Use forceps and do not crush or squeeze. Handle from the edge.
- If lesions are found, collect and fix several sections of the abnormal area. Include the edge of where abnormal meets normal tissue.
- **All tissue to be fixed must be placed into a leak-proof, puncture-proof, container(s) with a 10:1 ratio of formalin: tissue.**

- With the exception of intestines and CWD samples (obex and RPLNs), which should be placed in their own containers, different tissues can be fixed in the same container.
- Please record the types of fixed tissues on the container's label and also in a separate Excel file.
- **REMEMBER: FORMALIN IS TOXIC. DO NOT BREATHE IT AND USE ONLY WHERE THERE IS GOOD VENTILATION. ALWAYS WEAR GLOVES AND EYE PROTECTION.**

g) Winter tick - tick associated hair loss scoring in caribou

HAIR LOSS CATEGORY	PATTERN
None (No Picture)	No hair loss or breakage
Mild (Picture 1)	Few small to medium sized patches of broken hair or hair loss
Moderate (Picture 2)	Several or large patches broken hair or hair loss - NO EXPOSED SKIN
Severe (Picture 3)	Several or large patches broken hair or hair loss <u>with</u> 1-2 small areas exposed skin
Extreme (Picture 4)	Several or large patches broken hair or hair loss <u>with</u> large or > 2 areas of exposed skin

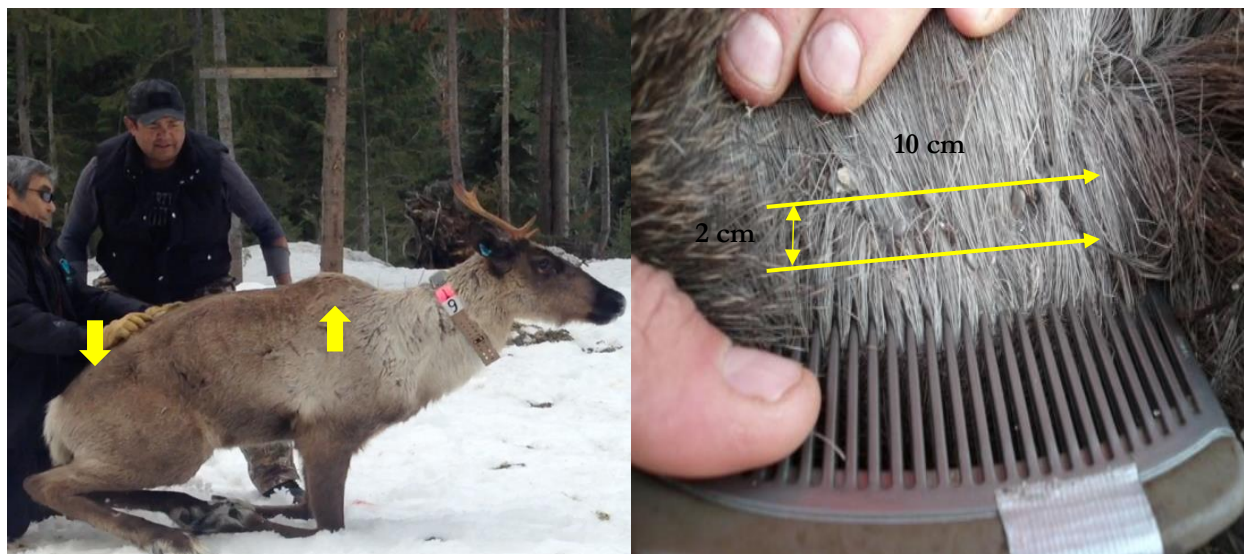
*Note degree of tick associated hair loss observed in caribou is not always correlated with infestation burden.



* Photos and hair loss classification score: D. Culling, Diversified Environmental Services Inc., Fort St. John, BC.

Tick burden assessment

- Part the hair along the upper edge of the shoulder blade with a comb or ruler.
- Count the number of ticks observed along a single 10 cm x 2 cm transect.
- Part the hair along the rump.
- Count the number of ticks observed along a single 10 cm x 2 cm transect.
- If there is significant hair loss on the shoulder perform the assessment only on the rump.



- Collect a representative sample (e.g. various life stages, engorged, not engorged) of ticks.
- Record WLH ID, date of collection, management unit, and host (i.e. caribou)

For Identification Purposes:

- Store **half of the ticks** in a cryovial with alcohol (ethanol, 70-95%), with collection information on an external label written in pencil (or ink that is not affected by alcohol (indelible). Be sure to use enough ethanol in the cryovial, especially for engorged ticks, which will dilute the alcohol content (minimum 10:1 ratio; ethanol: ticks).
- Ensure the cryovials are well-sealed to prevent evaporation.
- Keep at room temperature, protected from heat and light.

For DNA Isolation and/or Pathogen Detection:

- Store **the other half of the ticks** frozen (-20C), **without ethanol** in a cryovial with collection data recorded on the outside of the cryovial as above.
- Keep in -20C freezer and ship to Wildlife Health Lab in Nanaimo, ensuring they stay frozen.

Frozen ticks and ticks in alcohol must be stored and shipped separately.

h) CAUTION: THERE IS A ZOOONOTIC DISEASE RISK FROM PREDATOR SCAT - *Echinococcus* spp. tapeworms from wolf, coyote, and fox feces.

- Always wear gloves and coveralls when doing necropsies and if collecting scat.
- Collect carnivore feces with a stick or disposable utensil.
- Do not contaminate clothing, field or laboratory equipment, helicopters, trucks etc.

- Predator DNA is best obtained from the outside of scat samples. To maintain accuracy, do not crush scat (i.e. try to maintain the sample's original shape) and collect in whirl-pak(s) significantly larger than the sample itself.

i) PREDATOR DNA SWAB PROTOCOL

This protocol can be used when the predator species is unclear (i.e. predator hair and/or scat were not available to collect for DNA analysis).

Equipment needed for double swab protocol:

- Sharp knife and scalpel (with multiple, disposable blades) or disposable scalpels
- Nitrile gloves
- Sterile swabs - successful identification may be decreased depending on type of swab used. Prefer individually packaged, fine tipped, cotton or poly swabs with plastic handle.
- Paper envelopes
- Whirl-paks
- Silica desiccant
- Sharpie
- Stapler and staples
- Small ethanol tubes for swab collection
- Large ethanol tube for sterilizing knife
- Kleenex/paper towel
- Lighter
- ** 95% ETOH is recommended as the best wetting agent for collecting swabs. Other wetting agents (i.e. denatured alcohol, isopropyl alcohol) or sterile water can be used if 95% ETOH is not available however, there is potential for decreased success.

If carcass present:

- Put on new nitrile gloves.
- Carefully examine the carcass for killing wounds as identified by the presence of haemorrhage.
- Take pictures of the wound (wide angle and close-up perspectives) without disturbing the wound site.
- Dip swab in the **SMALL** ethanol tube.
- Swab wound (~10 seconds).
- Place swab in non-Manila envelope and snap off shaft.
- Staple envelope shut and label envelope with Wildlife Health ID and swab number using a sharpie (e.g. xx-xxxx - **1A**).
- Place envelope in a whirl-pak with silica desiccant.
- Fill out Predator Identification Data Form. Attach a copy of this form to the Caribou Mortality Site Data Form
- Repeat process on the same wound with a second swab (Identified as xx-xxxx - **1B**)
- Change gloves.
- Identify other killing wounds or feeding wounds ^{defined below} (Identified as xx-xxxx - **2A**, xx-xxxx - **2B**, etc.) and repeat the double swab process.

If only bones and/or collar present:

- Perform the double swab procedure on any remains (including the collar) that appear to have been chewed on by predators.

Considerations: Avoid cross-contaminating wounds

- Small amounts of DNA can easily be transferred between wounds.
- Do not touch multiple wounds with the same gloves during wound identification.

Identification of wounds

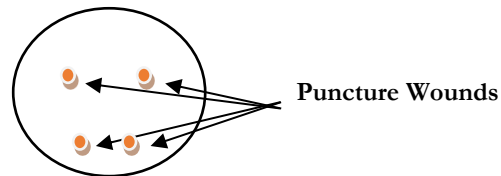
- Carefully skin the animal trying to preserve puncture marks and determining areas of hemorrhage.
- Sterilize knife after examining each wound - wipe knife with new Kleenex or paper towel - dip knife blade in the **LARGE** ethanol filled tube, carefully, burn ethanol off blade using lighter.

Bite description

- **Killing wound** is a wound that caused death or that occurred before death as indicated by hemorrhage.
- **Feeding wound** is any other wound on a carcass such as bites or chewing with no hemorrhaging or an area of the carcass that has been consumed.

Swabbing Technique

- **AVOID DRENCHING THE SWAB IN BLOOD.**
- **For killing wound** - swab entire area around puncture wounds.
- **For feeding wound** - concentrate swabbing on areas that appear to have been bitten or chewed



Predator Identification Data Form

Attach Copy to Caribou Mortality Site Data Form

Date (DD/MM/YYYY): _____

Summary: Predator species 1: _____ species 2: _____ species 3: _____
 Unknown

WLH ID (for the mortality): _____

Swab No.	1					
Check boxes as swabs are completed.			A	B	Wound type (Circle) Killing Feeding Other _____	Wound Location and Description Pictures <input type="checkbox"/>
Swab No.	2				Wound type (Circle) Kill Feed Other _____	Wound Location and Description Pictures <input type="checkbox"/>
Check boxes as swabs are completed.			A	B		
Swab No.	3				Wound type (Circle) Kill Feed Other _____	Wound Location and Description Pictures <input type="checkbox"/>
Check boxes as swabs are completed.			A	B		
Swab No.	4				Wound type (Circle) Kill Feed Other _____	Wound Location and Description Pictures <input type="checkbox"/>
Check boxes as swabs are completed.			A	B		

ALL SAMPLES MUST BE RETURNED TO:

Wildlife Health Program

Attention: Dr. H. Schwantje

Ministry of Forests, Lands, Natural Resource Operations and Rural Development

2080 Labieux Road

Nanaimo BC, V9T 6J9

Phone Numbers:

Helen: (250) 751-3234

Lab: (250) 751-7246

Cait: (250) 751-3219

Shipping:

- Frozen samples **MUST** remain frozen during transport or their use is compromised.
- Appropriate insulated shipping containers and icepacks and can be purchased at low cost from ULINE.ca or contact the Wildlife Health Program.
- **Formalin/fixated samples must be shipped separately from frozen samples.** If tissues are appropriately trimmed and have been fixed for > 36 hours, excess formalin can be drained off prior to shipping (leave samples covered by a piece of paper towel wetted with a small amount of formalin).
- When shipping tissue samples in formalin ensure they are in leak-proof, puncture-proof containers and double bagged with ample absorbent material (paper towel etc.) in case of leaks.
- **Please notify** the Wildlife Health Lab in Nanaimo **BEFORE samples are shipped**
Shari Willmott, (250) 751-7246 Shari.Willmott@gov.bc.ca
Maeve Winchester, (250) 751-7246 Maeve.Winchester@gov.bc.ca
Cait Nelson, (250) 751-3219 Cait.Nelson@gov.bc.ca
or Helen Schwantje, (250) 751-3234 Helen.Schwantje@gov.bc.ca
- **Try to ship samples on Monday or Tuesday, never past Wednesday.**

For health-related questions that arise during caribou necropsies

Or

Any questions related to caribou sample collection, handling, processing and storage

Contact:

Dr. Helen Schwantje 250-751-3234 or cell 250-361-7619