

# Guide and Outfitter Knowledge and Sampling to Enhance Caribou Health Surveillance in British Columbia

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## BACKGROUND

### Northern Mountain Population of Woodland Caribou

- 23 herds in northwestern British Columbia<sup>1</sup>
- Data limited/outdated on health, population status, and trends
- Designated species of *Special Concern* by federal Species at Risk Act<sup>2</sup>
- Poor capacity for recovery following population declines<sup>1</sup>
- Culturally, economically, and ecologically important to local First Nations, guided and resident hunting industries, and Canadians in general, who have expressed considerable concern over recent population declines



There is insufficient information on the health, status, and trends of Northern Mountain caribou to effectively inform adaptive management

### A Community-Based Approach

- Barriers associated with remoteness and inaccessibility of these caribou impede effective wildlife health surveillance<sup>3</sup>
- Guides and outfitters hold valuable local knowledge pertaining to caribou health in this region + unique access to biological samples from hunted caribou
- Research was initiated and is strongly supported by the Tahltan Guide and Outfitter Association (TGOA) and Tahltan First Nation, promising active community engagement towards a locally based surveillance framework

## RESEARCH QUESTION

How can guide and outfitter knowledge and sampling contribute to a community-based caribou health monitoring framework?

## OBJECTIVES

1. Determine caribou health status via **hunter-based sampling**
2. Explore caribou health status & trends via guide/outfitter **local knowledge**
3. Assess effectiveness of this model & determine local capacity required for ongoing wildlife health surveillance

## METHODS

### Hunter-based caribou sampling<sup>4,5</sup>:

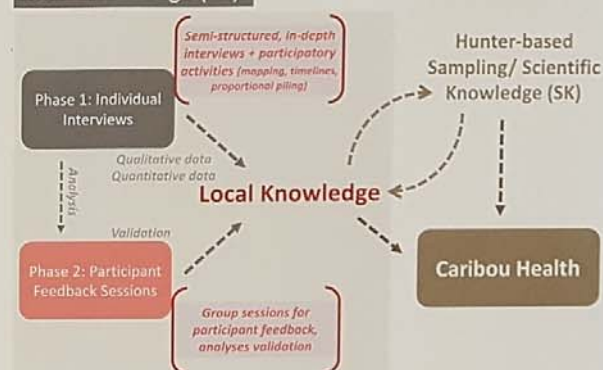


2016/2017 kit return : 41 caribou kits  
→ Highest kit return of any BC wildlife health sampling program

Sample	Caribou health indices
Jaw <sup>a</sup>	Morphometrics, age, stress
Metatarsus <sup>b</sup>	Morphometrics, body condition, Besnoitia, Onchocerca
Blood (filter paper) <sup>c</sup>	Virology, bacteriology, parasitology
Liver, kidney, muscle <sup>d</sup>	Contaminants, trace minerals, genetics
Feces <sup>e</sup>	Lungworms, GI parasites, stress
Hair/hide <sup>f</sup>	Ectoparasites, stress
Back fat measurement <sup>g</sup>	Body condition

## METHODS (CONT'D)

### Local knowledge (LK):



### Sampling Strategy<sup>6,7</sup> and Qualitative Data Analysis<sup>6,8</sup>

- Purposive sampling of TGOA-identified 'caribou experts'
- Snowball sampling to enhance sampling pool
- Continue sampling to thematic saturation
- Thematic content analysis, descriptive statistics

**Overall Conceptual Framework:** Sampling program and interviews will be adaptive, with constant reciprocal feedback between methods and results generated. In this way, LK and SK components will *co-evolve*, and ultimately *co-inform* Northern Mountain caribou health

## EXPECTED RESULTS & FUTURE DIRECTIONS

- Establish current health status of hunted mountain caribou
- Document guide and outfitter local ecological knowledge of caribou health status and trends
- Build capacity for ongoing, community-driven wildlife health surveillance in partnership with the TGOA and Tahltan Nation
- Develop framework applicable to other species and regions

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