

WILDLIFE INFOMETRICS INC.

PROGRESS REPORT

**Omineca Northern Caribou Project
Biological Samples Summary
1999-2003**

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ABSTRACT

From 1998 to 2003 researchers with the Omineca Northern Caribou Project collected biological samples from animal captures and from animal mortality investigations. Records of these samples were compiled into a “master biological samples database”. Each sample was assigned a unique identification number and a label with this number on it was attached to the sample.

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INTRODUCTION

Since 1998, the Omineca Northern Caribou Project (ONCP) has been involved in the radio collaring and tracking of caribou, moose and wolves in order to better understand the relationships between these species. All the radio collars are designed to emit a special signal when the animal is dead (i.e. usually if the collar hasn't moved for at least 8 hours) and further vital information can be obtained by investigating these mortality sites. The collection of various biological samples is common to both the capturing of animals for radio collaring and the investigation of collared animals' deaths. Analyses of these samples help to assess the lives and deaths of these animals.

METHODS

By compiling all the capture records and all the mortality site investigation data together, a master biological sample database was produced. Each sample collected was assigned its own unique identification number and labelled appropriately. The database provides records of samples being sent for analysis and the results of those analyses.

RESULTS

The database produced 1529 records for samples collected (Table 1). Of these, 1175 samples had labels attached and 354 were not labelled. A variety of reasons could result in a sample not being labelled including: mistakes on the data form indicating a sample was collected when it actually wasn't; samples lost since they were collected; samples discarded as a result of improper storage or accidental spoilage; and samples collected but later determined to be unusable as a result of poor quality or quantity.

At mortality site investigations, teeth, bone marrow, hair and skin samples were collected. Ungulate incisors can be sectioned to determine the age of the animal, bone marrow can be examined to determine an animals' general health at the time of its death and hair and skin samples can provide DNA. Many of the hair and skin samples have already been sent to Keri Zittlau at the University of Alberta. Predator scats were also collected at kill sites. While the majority of these scats are from wolves, samples were also collected from bear, wolverine, and (one) fox. In 2002 Doug Heard from the Ministry of Water Land and Air Protection requested ungulate muscle tissue samples for his stable isotope work. Since then these samples were collected at mortality sites whenever sufficient remains allowed. 32 tissue samples were collected but only 13 samples were labelled and sent to Doug. Many of the samples were accidentally thawed and destroyed in the summer of 2003 when one of the freezers used to store them broke down.

When animals are captured to attach radio transmitters, blood skin and hair samples are collected. Each blood sample collected is split into two portions, the first to be sent for pregnancy analysis (female animals) and the second to be sent to Helen Schwantje the provincial wildlife veterinarian for her use. 108 labels were not attached to samples.

Many of these blood samples had already been sent for pregnancy determination several years ago. Also, some blood samples were rendered unusable when accidentally frozen before the serum was separated from the red blood cells. 90 blood samples were sent for pregnancy analysis and 144 samples were sent to Helen Schwantje. Again, hair and skin are collected to provide DNA.

Table 1. Breakdown of labelling results.

sample type	total records	total labelled	not labelled	Notes
teeth	87	74	13	54 ungulate incisors for ageing
predator scat	154	142	12	mostly wolf but also some bear, wolverine and 1 fox
tissue	32	13	19	many samples destroyed when freezer broke down
blood	342	234	108	many unlabelled blood samples already sent away
hair	433	365	68	many unlabelled hair samples already sent away
skin	370	252	118	many unlabelled skin samples already sent away
bone marrow	111	95	16	47 complete leg bones
totals	1529	1175	354	

Summary of samples with potential for analysis:

Teeth: (incisors usable for aging): 54

Predator Scat: 142

Hair samples: 365

Skin samples: 252

Bone marrow (still in bone): 47

Bone marrow (removed from bone): 34