



### Study specifics

**Region:** Northern Tutchone

**Study area:** 6,700 km<sup>2</sup>

**DNA stations:** 138 (7 km x 7 km)

**Timing:** mid-June to mid-August 2020

**Population estimate:**

**Grizzly bears:** 5.94 bears / 1,000 km<sup>2</sup>

**Black bears:** 25.1 bears / 1,000 km<sup>2</sup>

**Project Partners:**

First Nation of Na-Cho Nyäk Dun

## Population survey of black bears and grizzly bears in the Beaver River watershed, Yukon

### Project Objectives

This project was designed to develop science-based bear population estimates and assess factors related to black bears and grizzly bear density in the Beaver River planning area.

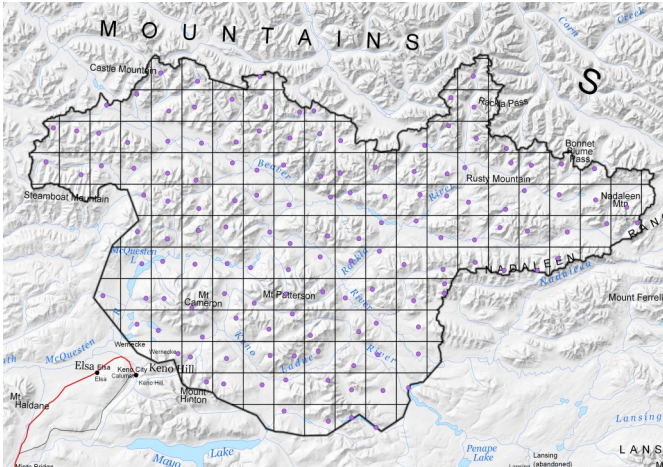
### Project Overview

We conducted a DNA capture–recapture population survey of black bears and grizzly bears in the Beaver River watershed using non-invasive hair snagging techniques. We set up 138 hair snag structures over the 6,700 km<sup>2</sup> study area and revisited each site four times to collect hair. We used individual identifications taken from hair samples and mark–recapture analysis to estimate overall abundance of both black bears and grizzly bears. We also used modeling to explore what factors may be influencing the distribution of both bear species in the study area.



## Study area

The black line defines the study area. The boundary followed the Beaver River watershed.



## Methods

Hair snag stations were in a tripod shape and built from lumber with upper posts wrapped in barbed wire. Liquid lure was used to attract bears to sites without providing a reward.

We collected hair samples, and obtained genetic identifications for 1,079 hair samples.

We then used capture–recapture modeling to estimate the density of black bears and grizzly bears in the study area, and a modelling process to better understand what influenced bear densities.

## Results

We estimated the population density for grizzly bears to be 5.94 bears / 1,000 km<sup>2</sup>; the estimated population density for black bears was 25.1 bears / 1,000 km<sup>2</sup>.

The estimated sex ratio was even for both species with the proportion of females estimated to be 49.1 % for grizzly bears and 50.6 % for black bears.

For both species, models with elevation as a predictor were more supported than landcover models. Models predicted highest densities for grizzly bears in areas above 1,300 m with densities then decreasing in upper high altitude barren areas. Black bears densities were highest at low elevation and decreased gradually as elevation increased.

We did not find evidence that disturbance from quartz claims influenced bear densities. However, the actual level of human activity and disturbance associated with claims is unknown so the association with density is difficult to assess.

Our results suggest that grizzly bears and black bears inhabit areas of different elevations, but there is not complete separation as some black bears are still found within moderate elevation areas that grizzly bears inhabit.

Information gathered will be used as baseline for assessing impacts of future development.

### For more information, please contact

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