

## Project Profile

<b>Project Name:</b>	Feasibility of Direct Management Options to Recover Boreal Caribou Populations in Core Habitat Areas
<b>Project Number:</b>	BCIP-2016-01
<b>Proponent:</b>	Wildlife Infometrics Inc.
<b>Funding Envelope:</b>	Boreal Caribou
<b>Timeframe:</b>	May 17, 2015 to February 28, 2016

### Project objectives

The objectives of the project are to:

- Modify and extend an existing age-structured caribou population model currently designed to assess demographic outcomes resulting from direct management interventions applied to a given population. In particular, this modification will allow assessment of the effectiveness of temporal combinations of different interventions to be applied as the population responds to previous interventions.
- Explore the possible space of “most feasible combinations” of interventions for boreal caribou populations in the core areas of NE B.C., given their current and projected demographic parameters.
- Based on the model explorations, summarize some operational guidelines for determining the effectiveness of particular management interventions as recovery tools for boreal caribou populations. This involves elaborating and representing the key driving factors (logistics, costs and demographic benefits) in a decision model.

### Project description

Significant investments in intensive management interventions and actions at the population-level are being tested in some caribou ranges with the intent to initiate population growth trends needed to meet their respective recovery planning targets. Each of these management actions (i.e. predator management, maternal penning/release programs, direct population augmentation, and potentially captive breeding) affect different aspects of caribou demography. Each also has logistical constraints on large-scale implementation at the population-level as well as potentially impractical operational costs. These management actions have yet to be applied in boreal caribou range and because of some demographic and behavioural characteristics of boreal caribou populations, it is unclear how the effectiveness of these various options can be assessed and compared as the population size changes through time. The overall goal of this work is to help develop operational guidelines for choosing logistically feasible and cost-effective interventions for recovering boreal caribou populations in NE BC.

## **Project approach**

The project will be carried out using the following basic approach:

1. calculation of demographic constraints acting on particular interventions using an age-structured model, using parameters estimates for the different NE boreal caribou herds. Alternative scenarios of interventions, as developed through a workshop and in consultation with practitioners will be modelled.
2. Develop a BBN-based decision model that estimates net utility of different combinations of demographic “gains” and cost structures.
3. Develop operational guidelines for designing management action strategies that feasibly achieve recovery goals for NE boreal populations.

## **Project deliverables**

The deliverables from this project include the following:

1. Operational decision guidance document outlining the trade-offs and benefits of different management interventions.
2. Draft manuscript for submissions for peer-reviewed publication. Manuscript will outline the modelling methods, scenario design and parameters and decision model.