**Economic Analysis of Caribou Conservation in British Columbia**

By

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**LITERATURE REVIEW**

British Columbia (BC) holds the majority, about 98%, of caribou population in the world which is underlined as the environmental flagship in this area (Ministry of Environment, Lands, Parks, 1999). Caribous even though imply passive value to the national economy, they also have a major role in cultural value of indigenous community. Maher et al. (2020) mention that caribous bearing cultural values to society will have incremental effect on the economic well-being, yet its value is being ignored in the calculation. This statement is supported by Yun et al. (2017) who state that economic decision making should be broadened to include ecological values in the calculation for better sustainable resource management.

Nevertheless, this species is in the brink of extinction despite existing efforts of protection policies. Matlman et al. (2024) has proven that BC is failing the task of conserving caribous with current management strategies. Hauer et al. (2018) emphasize that there is a gap in planning and implementing the plan to fruition due to the time needed for forest restoration. Hence, Hauler et al. (2018) and Maher et al. (2020) suggest other method of conservation including maternity pens and predator suppression. Hauer et al. (2018) strongly believe this will drive the restoration two times faster than the regular regeneration rate. Maher et al. (2020) prove that the expenses associated with habitat protection and restoration make up a significantly larger share of the overall costs compared to direct wolf control efforts*.* The question is how much BC government should invest to create an economic balance and enough speed to overcome the declining rate of caribous.

The other main elements in BC caribou restoration project are forestry and climate change. Smyth et al. (2020) are confident that harvesting has greater negative impact on wildlife, especially on caribous. Maltman et al. (2024) observe that many sources prove the correlation between forestry disturbance and caribou population. Also, Matlman et al. (2024) and Maher et al. (2020) agree that the main food source of caribou, lichen, dramatically declines due to “the expansion of linear disturbance”. With the forestry industry directly interfering with mountain caribou habitat, there is a need for reevaluating how forestry companies perform their harvesting on BC landscape and caribou old forest.

Combining the linear fragment disturbance effect with the negative relationship between timber yield and caribou population, a caribou-considerated harvesting technique must be applied to restore their habitat. Rubbert et al. (2016) perform a test of four harvesting scenarios in Alberta, namely relaxed or non-controlled, mosaic, heuristic and non-harvesting. Results claim that nonharvesting is the best recovery for caribous. Despite differences in geography, soil components, and caribou herds, this project, targeting in BC province, will provide an analytical study for caribou population and forestry harvesting to properly coexist.

The main objective of the project is applying the economics of conservation to evaluate BC caribou conservation policies, and how forestry industry and caribou habitat can coexist. This research project will contribute to fill the gap of evaluating BC investment in caribou conservation and make the necessary suggestions to further improve the way BC should direct their cash flow for economic efficiency and sustainability in mountain caribou conservation.

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