Understanding Moose Management and Hunting Pressure Across Wildlife Management Units in British Columbia

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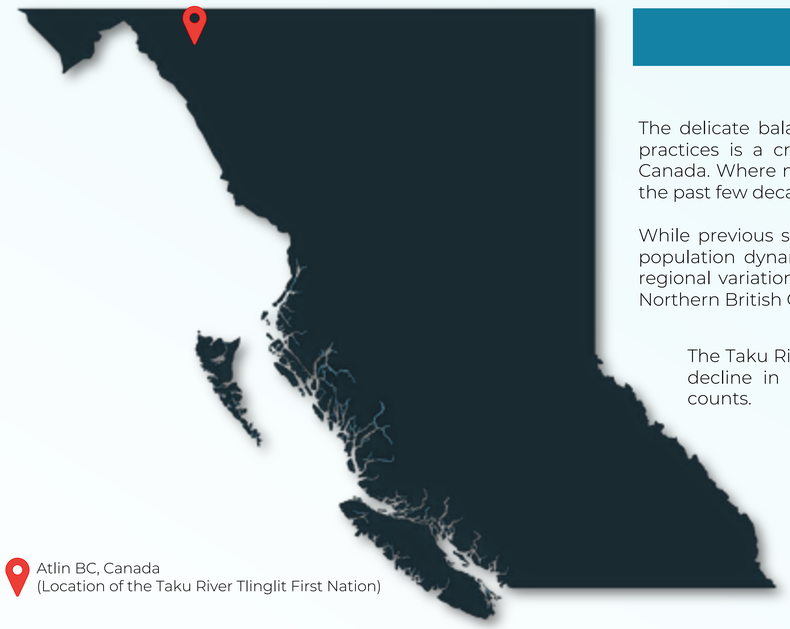

Atlin BC, Canada
(Location of the Taku River Tlinglit First Nation)

Introduction

The delicate balance between wildlife conservation and sustainable hunting practices is a critical concern, particularly in regions like British Columbia, Canada. Where moose populations have experienced significant declines over the past few decades.

While previous studies have shed light on various factors influencing moose population dynamics, there remains a crucial gap in understanding specific regional variations, particularly in areas like the Taku River Tlingit territory in Northern British Columbia .

The Taku River Tlingit First Nations has expressed concerns over a recent decline in moose populations, not adequately reflected in provincial counts.

Objectives/Hypothesis

In response to these concerns, this study will investigate the potential misrepresentation of hunting pressure on moose populations in British Columbia, particularly in the Atlin region which has limited accessibility and where management is conducted over larger areas. There is a particular focus on factors such as Wildlife Management Unit (WMU) size and latitude.

1. Examine how the size of accessible area within a wildlife management unit (WMU) and their geographical distribution influence the perceived hunting pressure on moose in British Columbia.

2. Assess whether current management practices adequately capture the localized variations in hunting pressure of the Taku River Tlingit territory.

Methodology

This study used a combination of data analysis and spatial mapping techniques to achieve its objectives.

1. Utilization of online resources such as the BC government iMapBC website to gather existing data on moose populations. Data included Harvest data (Big Game harvest Statistics 1976 to current), WMU boundaries, Digital Road atlas, River and lake atlas.

2. ArcGIS software was used to delineate WMU boundaries and quantify the accessibility of each area within the WMUs. This involved mapping hunting pressure, water bodies, and road distributions across British Columbia, facilitating the calculation of the accessible area within each WMU.

3. R Studio was used for statistical analysis to determine correlations between harvest, WMU size and latitude. Regression analysis assess the strength and significance of relationships.

Conclusion

We found a significant correlation between latitude and hunting pressure on moose populations in British Columbia. As latitude increases towards northern regions, there is a notable increase in the kill per unit accessible area, suggesting heightened hunting pressure.

This finding underscores the importance of considering geographical variations in hunting practices when managing wildlife populations, particularly in remote and less accessible areas. This insight is essential for addressing the concerns of First Nations communities and ensuring the sustainability of moose populations in British Columbia.

Acknowledgements: Taku River Tlingit First Nation

Results

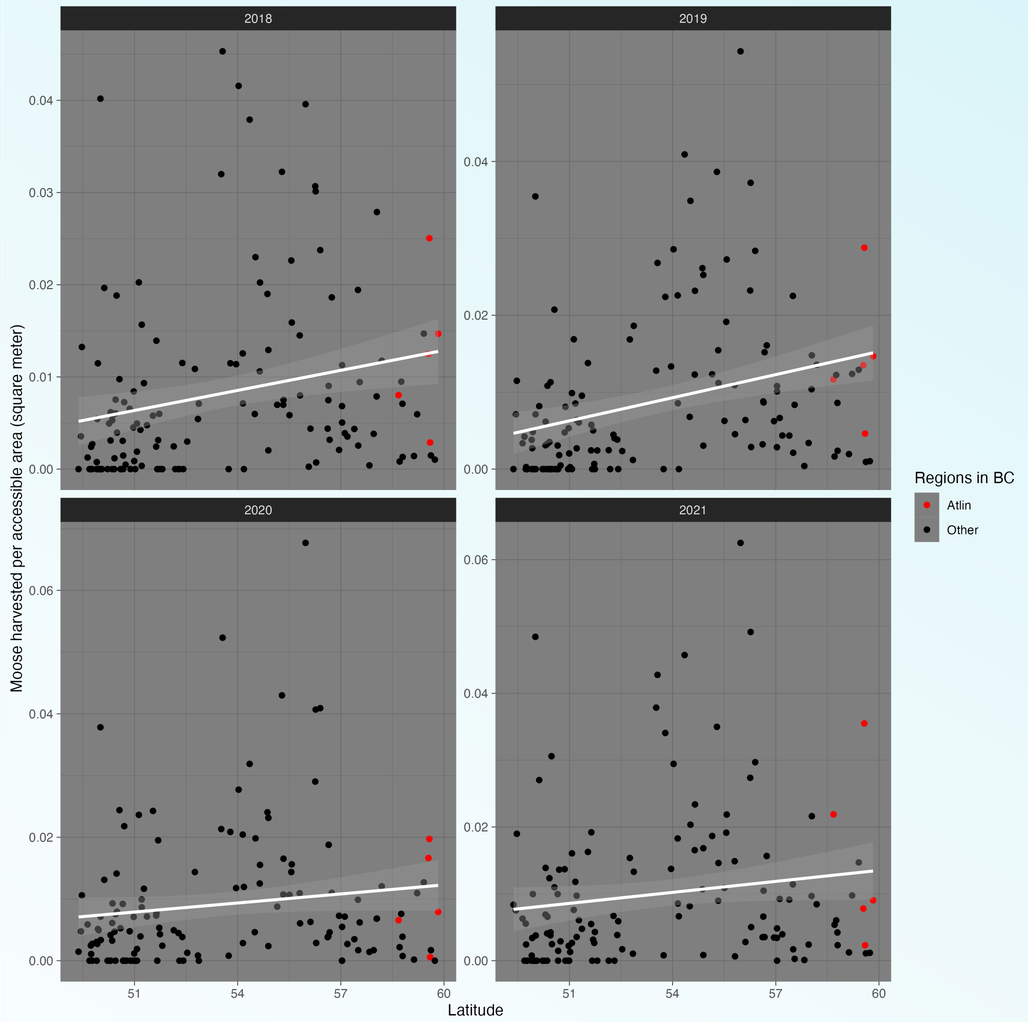

Figure 1. Scatter plot of the total kills per accessible area plotted against latitude across British Columbia, with emphasis on the Atlin area near the Taku River Tlingit territory. The four plots depict variations in hunting pressure across different regions.

The four graphs from years 2018 to 2021 illustrate a clear trend indicating an increase in hunting pressure, represented by total kills per accessible area, as latitude increases in British Columbia. The regression model conducted on the relationship between latitude (ycoord) and total kills per accessible area revealed a significant association (β = 6.938e-10, t = 4.952, p < 0.001). However, further analyses are needed to fully understand the complexities of hunting pressure across different regions of British Columbia.