

# Together for Wildlife

## Together for Wildlife HCTF Conservation Scholarship Recipient 2025



Westin Creyke

Westin Creyke is an MSc student at the University of Northern British Columbia studying under the supervision of Dr. Heather Bryan. His research uses a mixed methods approach to assess the responses of Stone's sheep to anthropogenic disturbance.

Thinhorn sheep are sensitive to disturbances such as aerial traffic. Little is known, however, about the effects of roads and road traffic on thinhorn sheep. Roads can influence wildlife in many ways, including by altering their movements, behaviour, and physiology. Stone's sheep have a restricted range, and some populations are migratory, which could make them particularly susceptible to disturbances due to road activity.

The first chapter of our study uses a quantitative approach and focuses on a migratory population of Stone's sheep that moves from their winter range to their summer range in the spring and back in autumn. The migration route of the population spans two mountain ranges and is intersected by an active resource road. Previous work has shown that the study population has elevated levels of physiological stress during migration. This project aims to quantify the spatial and temporal extent of the effects of vehicle traffic on physiological stress in Stone's sheep. To achieve this goal, we are collecting fecal samples from sheep at different times of the year. Our sampling sessions correspond with four seasonal life history periods for the sheep, including the time when they are on their winter range, northerly migration route, summer range, and southerly migration route. After collection, we will analyze the fecal samples for physiological stress bioindicators, specifically cortisol and triiodothyronine. We anticipate that this research will contribute to better understanding the effects of roads on thinhorn physiology and may influence land-use planning and vehicle traffic regulations.

The second chapter of our study uses a qualitative approach to assess the responses of Stone's sheep to anthropogenic disturbance over time. In this chapter, we borrow interview data collected by the Tahltan Central Government (TCG) for an ongoing project aimed at documenting current Tahltan and local knowledge of sheep in Tahltan territory. We plan to compare these data with more data from the TCG that was collected in the 1980s for a project now known as the Tahltan Ancestral Study (TAS). The TAS involved map-based interviews with 80 Tahltan elders, most of whom had been born in the first two decades of the twentieth century. Using both these interview datasets, we hope to gain an understanding of how anthropogenic disturbance influences Stone's sheep health, behaviour, and population dynamics over extended periods.

This project is being carried out in the Wildlife and Ecosystems Bioindicators Lab at the University of Northern British Columbia (UNBC) in partnership with the TCG and the Wild Sheep Society of BC (WSSBC). We have also partnered with school district 87 (SD87) to provide local high school students with experience in field work in ecological research.



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