

Together for Wildlife - Interior Universities Research Coalition Student Research Grant Final Report

Student Name: Westin Creyke

Principal Investigator: Heather Bryan

Project Title: Physiological responses of the Dome Mountain Sheep Population to vehicle activity on the Jade Boulder Road

What has been achieved over the duration of this grant award period?

The majority of the fieldwork has been completed for the project, which involves sampling two populations of Stone's sheep at five times of the year. The sampling periods correspond with times when the sheep are on their winter range, northerly migration route, summer range, southerly migration route, and breeding grounds. Three (winter range, northerly migration, summer range) of five sampling sessions have been completed with the remaining sampling sessions scheduled to occur in late September (southerly migration) and late early November (pre-breeding) of 2023. Pellet and vegetation samples have been collected from ewes in the Dome Mountain Sheep population and an undisturbed control population. Sampling sessions were successful with sample sizes ranging from 26 samples to 70 samples per sampling session. Fecal samples will be analyzed for glucocorticoid and thyroid hormones and vegetation samples will be analyzed for nutritional quality in the coming year.

As described further below, a number of outreach activities have been completed, including a presentation to students in the Dease Lake High School. In addition to the presentation, the first field session occurred during the school year so high school students from school district 87 were able to participate in fieldwork. A number of important administrative activities were completed for the project, including a safety plan. In terms of progress towards my degree requirements, I will be completing my fifth and final course this (fall 2023) semester. My thesis proposal and research ethics board application for the second chapter are underway. We have decided to use a qualitative approach using Indigenous Knowledge to investigate the long-term effects of human disturbance on Stone's sheep population dynamics, distribution, and behaviour. We have added another partner: the Wild Sheep Society of BC (WSSBC). Funding from WSSBC will strengthen our study design by enabling us to complete additional sampling sessions from the control population.

How does this work contribute to the overall project objectives? (i.e., to completion of your thesis)

The work is necessary to complete my thesis. The fieldwork has provided me with samples for laboratory analyses which will provide data for statistical analyses. The administrative work is required to complete fieldwork, to write and defend a thesis, and to write publications.

How have you communicated about this project and work?

- Within the academic community?
 - With project partners including non-academic and community members?
 - With government staff?
1. The project has been shared with the academic community at UNBC through conversations, class presentations, and as part of a poster session as part of the Natural Resources and Environmental Studies Institute at UNBC.
 2. The student is continually in contact with the Tahltan Central Government (TCG) regarding this project. Informal meetings occur with the TCG Wildlife Department to plan fieldwork and provide updates. Information about the project was communicated to the Tahltan Nation in one of TCG's quarterly newsletters as well as in the Tahltan annual general assembly (presented by the Wildlife Department). The Wild Sheep Society of BC (WSSBC) has been updated about the project via email after each fieldwork session. The WSSBC updates their members about the project via posts from their social media accounts and will include an article about the project in one of their upcoming newsletters.
 3. Details about the project have not yet been shared with government staff except via reporting requirements for the T4W award.

How have you fulfilled the commitments of your knowledge management plan?

Our knowledge management plan includes the sharing of data and project updates with the TCG and the development of a data sharing agreement between the TCG and UNBC. So far, we have presented information about the project to the Tahltan Nation at the Tahltan annual general assembly and through community engagement sessions (both presented by the TCG wildlife department). We had hoped to share information at the annual northern roundtable meeting, but the meeting was canceled in 2022. A data sharing agreement between the TCG and UNBC has not yet been arranged as fieldwork is still underway for the project and data have not yet been produced (see next section for storage of field notes).

Where will the data and/or information collected from this project be stored?

The data and information collected from this project will be stored on the student's personal computer and backed up on UNBC's secure server and on a hard drive. Additionally, the data will be shared with the TCG using SharePoint files. Data use (e.g., for publications) and sharing with parties outside the TCG will be subject to the data sharing agreement between UNBC and TCG. Currently, the only data produced by the project are notes from fieldwork sessions which are stored in hard copy, on the student's computer, and on UNBC's secure server.

Please provide links to any publicly available information on or from your project:

TCG fish and wildlife newsletter (pages 27 & 28): <https://tahltan.org/2023-fish-wildlife-newsletter/>
Follow WSSBC Instagram and Facebook pages to see their posts.
An article about the project will be posted soon on the WSSBC website.

Budget Reporting

Budget Item	Details	Proposed Amount	Actual Amount	Comments
Helicopter transportation to and from field sites	TCG in-kind	30,000	36,551.03	2 more trips remaining, we have received more funding from WSSBC for this
Wildlife guardian salary	TCG in-kind	4800	4800	Covered by TCG during fieldwork
Mileage for travel from Prince George to Dease Lake	TCG in-kind	9884	2500	2 more trips remaining
Fecal cortisol analyses	9000 TCG in-kind, 9000 UNBC in-kind	18,000	18,000	Not yet completed, we have received more funding from WSSBC for this
Forage Quality Analyses	9000 TCG in-kind, 9000 UNBC in-kind	18,000	18,000	Not yet completed, we have received more funding from WSSBC for this
Stipend for Westin Creyke (year 1)	Awarded from T4W	25,000	25,000	Very much appreciated