Todagin South Slope Provincial Park and Cassiar Stone's Sheep Ecosystem Restoration & Forage Nutritional Assessments

Photo: Krystal Kriss

Generating a better understanding of Thinhorn Sheep habitat condition

The population of Thinhorn sheep in British Columbia (BC) includes two subspecies, Stone's sheep (*Ovis dalli stonei*) and Dall's sheep (*Ovis dalli dalli*). Populations of the two subspecies has been shaped by past glaciation events that played a major role in influencing gene flow within each subspecies and across landscape scales. Recent genetic research has shown that BC hosts almost the entire global population of Stone's sheep, elevating the already significant obligation of the Province to ensure effective, proactive and sustainable management, to a level of global stewardship responsibility. Because thinhorn sheep inhabit steep, rugged and remote mountainous terrain in the northern third of BC, delivering projects focused on better understanding the specific relationships between population and individual fitness, and overall habitat health are logistically challenging. Despite this, Provincial staff supported by the Society for Ecosystem Restoration in Northern BC (SERNbc), the Wild Sheep Society of BC (with contributed funding from the Abbotsford Fish & Game Club) and local First Nations are co-delivering projects on Todagin Mountain and in the Cassiar range.

Todagin South Slope Provincial Park and the Todagin Wildlife Management Area was treated with prescribed fire as part of a larger initiative undertaken by the Skeena Region Wildlife Branch, from 1986 to 1991. The Todagin project had two objectives: 1) to reduce shrub encroachment and promote forage for Stone's sheep on the south-facing winter range, lambing areas and natal range; and 2) to re-establish the integrity of important grassland ecosystems that were being negatively impacted by shrub and young forest ingrowth. Now, nearly 36 years later, coniferous and deciduous shrubs and trees are colonizing the grassland areas and mid to upper slopes that overlap important sheep habitats, and there is a general sentiment among Skeena Region staff, Wildlife Branch, BC Parks, Conservation stakeholders, and the Tahltan Nation, that a new intervention needs to occur. The current project will re-assess previous vegetation plots and classify ecosystem communities, and will also provide information on the current nutritional qualities of available forage.

Forage sampling was conducted during the week of July 4th and despite the drier weather in the southern portion of BC over the past year, the NW had a snowy winter and a wet cool spring and as such, green-up seemed delayed by approximately 2-3 weeks. This presented some challenges in terms of finding enough forage quantity for sample analyses, so sampling plans were re-vamped in the field to include a broader range of plots in both the alpine and mid-/upper slope areas. In addition, much of the area historically covered in grass complexes was now dominated by tree and shrub layers, also requiring slight changes to the sampling approach. Collections did get completed and those samples are now being analyzed for forage nutrition and micro/macro mineral content.

WILD SHEEP SOCIETY OF BRITISH COLUMBIA

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Cassiar Stone's Sheep Forage Nutritional Assessment & Mineral Lick Analyses are a pair of projects coming out of previous Stone's sheep research in the Cassiar population unit. Findings from that past work supported completion of student MSc's at the University of Alberta & the University of Calgary. As well, lessons learned and research outcomes from these projects are already being adapted into other research and management efforts across wild sheep range in Canada and the US. That research was supported by many Conservation stakeholders including the Wild Sheep Society of BC and the Abbotsford Fish & Game Club, and the local Dease River First Nation. The goal of these next-step projects will help us better understand how habitat affects the Cassiar sheep population, and because similar projects examining the nutritional qualities of both forage and mineral licks are occurring in the Todagin, Jade-Boulder and Peace Region sheep populations, cumulatively they should provide wildlife managers with an even greater understanding of habitat-related aspects that may be affecting reproductive rates, recruitment and ultimately population resilience at both local and provincial scales. This work would also support developing a habitat condition baseline against which to measure any subsequent interventions such as prescribed fire or habitat fertilization.

Similar to the Todagin project, forage sampling was completed during the week of July 4th and green-up in the Cassiar area was similar to that of the Todagin, seeming 2-3 weeks late in some areas. Because the focus of this work is more holistic in nature (i.e., seeking to understand a baseline of summer forage nutritional values in areas that provide sheep winter range habitat), sample site selection was less restrictive. Each site was well documented in terms of species composition and included a series of photographs. Forage samples are now being analyzed and include forage nutrition and micro/macro mineral content.

Understanding migration and movements, as well as visitation rates and micro/macro mineral concentrations in the licks used by the Cassiar sheep, will also contribute to our understanding of their fitness, key landscape corridors necessary for habitat protection and based on other studies recently completed out of the University of Montana, will potentially provide more insight to help wildlife managers understand the potential implications of nutritional imbalances or deficiencies that may be affecting pregnancy rates and lactation. Collared Cassiar sheep visited at least one of 5 mineral lick areas during the 3 years their movements were being monitored, with some ewes visiting multiple lick sites, so sampling and analyses from this range of sites should be really informative; at the very least, our understanding of important migration routes and habitat features such as the mineral lick locations is greatly improved as a result of the initial project investments.

These new projects are supported by:

BACKCOUNTRY BC AND BEYOND

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