

Non-Consumptive Effects of Hunting on Stone's Sheep Behaviour in the Spatsizi Plateau Wilderness Park, BC

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ABSTRACT: Most of the global population of Stone's sheep (*Ovis dalli stonei*) lives within northern British Columbia, placing exceptional stewardship responsibilities in the hands of wildlife managers who manage this species for multiple values. Research has yet to focus on the non-consumptive effects (predator influence on prey trait and decision making; NCEs) of hunting on their behaviour. Because many behavioural NCEs carry potential fitness consequences, addressing this knowledge gap is necessary to develop cumulative effects management strategies of Stone's sheep populations in the future. We believe that hunting pressure, as proxied by the number of sheep hunting permits issued, will have effects on Stone's sheep behaviour, where responses will increase with increased hunting intensity. We aim to (1) identify effects of hunting activities on Stone's sheep behaviour and (2) evaluate the sensitivity of these effects to changes in hunting pressure. Using GPS telemetry data collected from sheep and hunters, remote camera-trap imaging, habitat selection modelling, and movement and group size analysis, we will compare sheep behaviour throughout seasonal changes in hunting activity. In addition, we also plan to manipulate hunting intensity during our study period by reducing authorized sheep hunting permits in our second focal year. Our research seeks to improve Stone's sheep management by adding a more comprehensive understanding of the effects of harvest regulations on wildlife behaviour and fitness and may have broader implications in reducing potentially negative non-consumptive effects of hunting on sheep populations.

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