

HABITAT SELECTION, MOVEMENT AND RANGE FIDELITY OF STONE'S SHEEP

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Abstract: Stone's sheep (*Ovis dalli stonei*) are generally assumed to be limited by the availability of suitable winter-spring forage and escape terrain, but there is little quantification of those needs. Their affiliation with mountainous environments is well documented but the relative influence of distance to mineral licks, habitat type, slope, aspect, elevation, curvature, and predation risk from bears and wolves is less understood. We used these variables within resource selection functions (RSFs) to quantify selection of seasonal habitats by Stone's sheep in northern British Columbia. GPS locations of 33 female Stone's sheep fitted with GPS collars were collected from December 2001 to October 2003 in the Besa River drainage. Predation risk was determined using RSFs from GPS locations of 15 grizzly bears and 5 wolf packs over the same time period in the same area. Stone's sheep showed a strong selection for topographic variables and habitats across all seasons with seasonally different selection for licks and predation risk. Movement patterns and range fidelity changed seasonally in relation to use of licks and spring green-up. This research improved habitat capability models for Stone's sheep and provided baseline information on seasonal habitat selection to address potential consequences of oil and gas development in the Besa-Prophet Pre-tenure Planning Area of the Muskwa-Kechika Management Area.

Key words: Stone's sheep, *Ovis dalli stonei*, seasonal habitat selection, predators, mineral licks, movement, range fidelity