Stone's sheep lambing habitat selection in the Cassiar Mountains, British Columbia

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ABSTRACT: Parturient wild sheep are known to use steep, rugged terrain at high elevations during parturition events to avoid predation on newborn lambs. Lambing habitat selection studies in North America have largely focused on *bighorn sheep* (*Ovis Canadensis*), and this is the first study of its kind on Stone's sheep (*Ovis dalli stonei*), a subspecies of thinhorn sheep residing predominately in British Columbia. Our study focuses on a Stone's sheep population in the Cassiar Mountains, a relatively remote area with varying levels of landscape disturbance. Recent increases in human activity, including mining, snowmobiling, ATV use and highway traffic could threaten recruitment, creating a need for identifying critical lambing habitat. We equipped ewes in 2018 (n = 8) and 2019 (n = 10) with GPS radio-collars collecting relocations every 2hrs (2018) and every 1hr (2019). Ewes confirmed pregnant (n = 17) were outfitted with a vaginal implant transmitter. We estimated parturition events using step lengths from GPS relocations and information obtained from the vaginal implant transmitters. We found that timing and synchronicity of parturition events varied annually. We used resource selection functions to identify significant variables influencing habitat selection during the periods of parturition and lactation. Understanding lambing habitat selection will help wildlife managers to identify and conserve critical habitats for Stone's sheep recruitment in the Cassiar Mountains.

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