

Use of Highway Corridors by Stone's Sheep Ewes

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Abstract: Although the Sulphur/8 Mile (S8M) Stone's Sheep Project study area in northern British Columbia is largely unroaded backcountry, it includes a portion of the Alaska Highway, a major transportation route with traffic volumes estimated at 1,200–1,300 vehicles per day. Stone's sheep (*Ovis dalli stonei*) are commonly observed on the highway and mortality due to vehicles has been recorded. The full impact of highway-related mortalities on Stone's sheep demographics is unknown but likely underestimated. Wild sheep using highway corridors may be more vulnerable to vehicle collisions than other large mammals because of their gregarious nature, strong affinity for salts, and apparent reluctance to leave licking sites even in the presence of vehicles or other disturbance. Further, vehicle collisions with wild sheep are less likely to be reported than those with larger mammals because they often cause little or no vehicle damage and therefore do not result in insurance claims. To better understand risk of Stone's sheep mortality associated with use of highway corridors and identify opportunities for mitigation, we used GPS radiocollar data from Stone's sheep ewes monitored between 2005 and 2009 to determine location, frequency, timing and duration of highway use. We also analyzed movement patterns between seasonal ranges and highway corridors to identify patterns of highway use versus highway crossings. Remote cameras established in 2009 were used to estimate frequency of Stone's sheep occurrence at one common crossing point on the Alaska Highway. Data obtained from the BC Ministry of Transportation and the Insurance Corporation of BC were used to identify frequency and timing of reported vehicle collisions with wild sheep. These data are intended to inform management plans to reduce highway-related mortality of Stone's sheep.

KEY WORDS Stone's sheep, British Columbia, seasonal movements, highway corridors, mortality, management strategies, *Ovis dalli stonei*.

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