Habitat Comparisons of Historically Stable and Less Stable Bighorn Sheep Populations

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Management of Rocky Mountain bighorn sheep (*Ovis canadensis canadensis*) focuses on 1) population demographics, 2) immunological state, and 3) habitat characteristics. Demographic targets have been identified for successful populations. Habitats suitable for bighorn sheep have also been identified, and bighorn sheep population response to immunological stressors has been documented. Research has identified domestic sheep (*Ovis aries*) as a potential source of pneumophilic bacteria to bighorn sheep although not all bighorn die-offs are attributed to such contact. Limited research has documented how habitat differences between stable and less stable bighorn populations influence their success. Understanding these habitat differences may help explain how habitat contributes to bighorn

population stability. This study attempts to evaluate differences in spatial, vegetative, and geographic habitat characteristics of summer and winter ranges between historically stable and less stable bighorn sheep populations that occupy rangeland and open forest habitats in Montana in the presence of domestic sheep. Habitat variables will be evaluated for two summers on summer and winter ranges of two bighorn sheep populations in Montana in both their entire seasonal ranges and areas identified as foraging habitat. Land cover, slope, aspect, elevation, solar radiation index, and distance to escape terrain will be quantified in each habitat using a Geographic Information System (GIS). Field sampling will determine shrub canopy cover, frequency of graminoids and forbs, and horizontal visibility of each habitat. Habitat characteristics of historically stable and less stable populations will be compared. Preliminary results were presented.