Bienn. Symp. North. Wild Sheep
and Goat Counc. 14:191

A SIGHTABILITY MODEL FOR HELICOPTER SURVEYS OF BIGHORN SHEEP IN HELLS CANYON

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Abstract: We developed a model to correct for visibility bias of bighorns during helicopter surveys in Hells Canyon. Data on observation of radio-collared sheep collected during December and March 1999-2001 aerial surveys in 7 Hells Canyon bighorn herds was modeled using logistic regression. 204 of 235 groups (87%) containing radio-collared sheep were observed. Factors significantly contributing to group observability were the number of ewes in the group, presence of timber or shrub cover, and whether the sheep were moving. To develop a more robust model with wider applicability, we also modeled the combined Hells Canyon and Owyhee Canyonlands (Journal of Wildlife Management 59:832-840) data set. Preliminary analysis and likelihood ratio tests indicated that the data sets should not be combined and that the study areas should be modeled separately.