

A Study of Bighorn Sheep Diet Composition and Home Range on the Pine Ridge Region of Northwest Nebraska

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Abstract: The Fort Robinson Nebraska Rocky Mountain bighorn sheep (*Ovis canadensis*) Herd was established in 1981 and has slowly expanded its range overtime to encompass the majority of the Fort property. As the herd expanded its range, its population also increased to roughly 120 individuals, but went through a die off in the winter of 2004-2005, though it is currently on the rebound. The objective of this study is to determine if this is a sedentary herd and if diet or competition with other herbivores is a limiting factor affecting this herds overall health. In January and February of 2007, 19 ewes and 5 rams were captured via net gunning and marked with VHF collars. Each individual will be observed one or more times a week for two calendar years. During these observations, bite count and fecal samples will be taken (10 per month and 10 per week, respectively) to determine the diet composition. Any observations of direct or indirect competition with livestock (cattle, bison, donkeys, and horses) or other wildlife (pronghorn, mule deer, or elk) will be documented. The home range will be established by comparing three home range modeling techniques (modified convex polygon method, fixed kernel method, and adapted kernel method) to determine the model that best represents the observed locations.

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