

Social Structure of Male Bighorn Sheep and the Consequences of Associations

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Abstract: Male bighorn sheep (*Ovis canadensis*) live in dynamic, usually single sex, social groups throughout the majority of the year. In these groups they interact continuously with each other in a variety of interactions clearly observable as clashes, kicks, and play, or so subtle that observations are not possible. When interactions are difficult to observe directly, time spent in proximity to one another while laying or grazing may provide an alternative for describing relationships. We analyzed the social structure of our study population to include group composition between and within groups, interactions between individuals, and relatedness of individuals. We described patterns of spatial associations between pairs of individuals and attempted to determine the consequences of these spatial patterns (benefits to the participants). With this approach we also may see if social factors along with individual characteristics such as body size, horn size, and age give a better predictor of ram hierarchy and therefore, how social structure and associations contribute to individual reproductive success.

BIENN. SYMP. NORTH. WILD SHEEP AND GOAT COUNC. 15: 2006

Key words: bighorn sheep, individual characteristics, *Ovis canadensis*, reproductive success, social structure, spatial associations.

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