

## **Bite Rates In Bighorn Sheep: Effects Of Season, Age, Sex And Reproductive Status**

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*Abstract:* We investigated the effects of vegetation biomass, crude protein content of consumed forage, age, sex and reproductive status on bite rates in Rocky Mountain bighorn sheep. We expected higher bite rates and vigilance in lactating females with young and higher bite rates in young growing individuals, than in non-reproducing females or rams. Lactating ewes had higher bite rates than yeld ewes and than subadult or adult rams. Subadult rams had higher bite rates than adult rams or yeld ewes. On recently burned grassland in spring, however, rams had a higher bite rate than adult females, while the contrary was true on control plots and on the burned plots in autumn. Bite rates declined for both ewes and rams from April to September and varied from year to year. While rams of different ages had significantly different bite rates, there was no effect of age on bite rates for ewes. There was no correlation between bite rates and available total biomass or biomass of live vegetation, or the numbers of steps taken while foraging for either ewes or rams. Adult rams had a lower vigilance rate than adult ewes, and vigilance decreased with increasing bite rates for all sheep. Bite rates in bighorn sheep vary greatly according to age, season and vegetation structure. An increase in bite rates during the forage growing season may compensate for higher energy demands during lactation and growth. There is a potential trade-off between foraging and vigilance as vigilance decreased with increasing bite rates.