

## **Rutting Behaviours of Male Mountain Goats in Relation to Age**

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**Abstract:** Age generally correlates with body mass, size, and secondary sexual characters, and is a major determinant of mating success in most wild ungulates. However, in mountain goats (*Oreamnos americanus*) little information is available on how age may influence reproductive effort of males and access to females. We conducted behavioural observations to investigate the effects of age on male activity budgets using marked individuals from the population of Caw Ridge, Alberta. Data were collected during summer (May to September 1995 to 2005) and the rut (November 2004 to 2005), and compared according to male age. All age classes allocated most of their time to foraging and resting activities during summer. During the rut adult males ( $\geq 3$  yr) increased time spent in sexual behaviours, particularly mate guarding, at the expense of foraging and resting. Unlike other ungulate species, yearling goats did not participate in the rut and had a similar time-budget as in summer. Two-year olds performed sexual behaviours but did not gain access to oestrus females. All matings occurred during the second half of November and involved males aged  $\geq 4$  yr. A highly linear dominance hierarchy among males may partly explain the higher mating success of prime-aged males ( $\geq 6$  yr). Alternative mating tactics such as coursing (as previously described in bighorn sheep, *Ovis canadensis*), also were observed in mountain goats and differed according to age. Genetic analyses confirmed that age at first reproduction in male mountain goats from Caw Ridge is not reached before the age of 3 yr.

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