

Brivio F., Grignolio S., Brambilla A., Apollonio M. (2014) Intra-sexual variability in feeding behaviour of a mountain ungulate: size matters, Behavioral Ecology and Sociobiology, 68:1649– 1660.

Abstract

Many studies comparing the behaviour of individuals of different genders or species showed that animal body mass and forage quality/quantity are key elements of the foraging ecology of herbivores. Since body mass could also influence the animal's sensitivity to predation risk, its vigilance behaviour should consequently be affected. Alpine ibex (Capra ibex) is characterised by a strong dimorphism among males of different ages, thus representing an ideal case study for testing the Jarman-Bell principle, avoiding possibly misleading effects resulting from the comparison between different species or genders. We analysed the fine-scale foraging behaviour of male ibex in order to assess the effect of body mass and the effects of vegetation quality/quantity on both foraging and vigilance behaviour. Our results showed that smaller males were more selective than larger ones, on account of their lower capability of digesting plant. Smaller males scanned the environment more frequently than larger ones. Male ibex grazed more selectively in sites with high quality forage and their bite rate increased as forage biomass decreased. Vigilance frequency increased with increasing forage biomass as, under these circumstances, ibex are able to prolong anti-predator vigilance while chewing bites that have already been cropped. Our findings highlight the effects of body mass per se on both foraging and antipredator behaviours in herbivores, thus supporting the Jarman-Bell principle. Foraging can arguably be considered a very flexible behaviour with high evolutionary relevance as it enables herbivores to optimally adjust their total energy intake under varying conditions of food resources. BEHAVIORAL ECOLOGY AND SOCIOBIOLOGY: Volume 68 (2014), pages 1649-1660, DOI 10.1007/s00265-014-1773-0

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