

Some aspects of behavioural ecology of Alpine ibex (*Capra ibex ibex*) in Gran Paradiso National Park

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We aimed to investigate some aspects of Alpine ibex (*Capra ibex ibex*) behavioural ecology in the Gran Paradiso National Park: mating system, space use and female costs of pregnancy and weaning. Data were collected on a total sample of 64 males and 25 females equipped with radiocollars and auricular tags from 2000 to 2004. Study area was situated in Valsavarenche valley (Gran Paradiso National Park, Italy). To analyse the reproductive behaviour we made observations (Focal Animal Sampling) of marked males using binoculars and scopes. Reproductive strategies were analysed and the influence of male interactions on reproductive behaviour was found. During the reproductive period snow falls were important conditions. With high snow cover (2000 rut period) males courted less (number of events of courtship/time of observation) (*Wilcoxon Test: p = 0.012, 2000-2001; p = 0.033, 2000-2002*), dynamic courtships were avoided and the intensity of courtship (number of the low stretch displays/time of courtship) decreased (*Wilcoxon Test: p = 0.017, 2000-2001; p = 0.008, 2000-2002*) than in the rut periods characterized by the scarce or absent snow cover (2001 and 2002 rut periods). Moreover after a rut period characterized by a high snow cover, female reproductive success was limited and the number of kids born was smaller than after a snow free rut period (*Wilcoxon Test: p = 0.018, 2001-2002*). To investigate the spatial behaviour we determined localizations by direct observations and using radiotracking techniques. The mobility of both sexes was limited by snow, in fact with thick snow cover home range sizes were smaller (*Wilcoxon Test: p = 0.028, males; p=0.02 females*). Another climatic factor, the temperature, modified female use of space during summer. Females moved over larger ranges at higher altitudes with the hottest summer. We analysed the influence of pregnancy and weaning on female spatial behaviour: summer home ranges sizes of females with kid were significantly smaller than females without kid (*Mann-Whitney U-test: p=0.018*). Also behavioural differences between females with or without kid were detected. The mothers stayed more time in alert (*Mann-Whitney U-test: p=0.003*) and they spent less time in self grooming (*Mann-Whitney U-test: p=0.001*). Moreover female involved in weaning spent more time walking during feeding (*Mann-Whitney U-test: p=0.041*).