

## Predation Risk Hypothesis and sexual segregation in Alpine ibex

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Sexual segregation is widespread in ungulates and this is a puzzling topic which has stimulated many studies and hypotheses. In Alpine ibex (*Capra ibex ibex*) sexual dimorphism is very accentuated. Several authors investigated sexual segregation in Alpine ibex examining different hypothesis; no one tried to test the predation risk hypothesis and so we assessed it. We collected marked ibex localizations each month in the Gran Paradiso National Park from January 2000 to December 2004. We measured the distance of each localization from the nearest refuge area (rocky slopes) and from the nearest inconvenience source (tracks and roads). Our assumption was that sex and age played a leading role in spatial segregation. Females stayed nearer to slopes (GLM:  $F = 401.8$ ,  $p < 0.0001$ ) and more distant from tracks (GLM:  $F = 488.5$ ,  $p < 0.0001$ ) than males excluding the rut period. Besides, the presence of the kid influenced female spatial behaviour: the mothers used more safety areas (GLM:  $F = 16.0$ ,  $p < 0.001$ ) and they stayed less in the areas near the tracks (GLM:  $F = 8.2$ ,  $p = 0.004$ ) compared to the females without kid. On the contrary, pregnant females were not different to not pregnant females in spring. Age influenced spatial behaviour only in males, but not in females. Young males (until 5 years old) stayed closer to rocks than adult ones (from 6 to 11 years old) and adult males were nearer to rocks than old males (>11 years old) (GLM:  $F = 55.6$ ,  $p < 0.0001$ ). On the contrary, old males were closer to tracks than adult males and these last ones were closer to tracks than young males (GLM:  $F = 56.9$ ,  $p < 0.0001$ ).