



Rughetti M., Toïgo C., von Hardenberg A., Rocchia E. & Festa-Bianchet M. (2011) Effects of an exceptionally snowy winter on chamois survival. *Acta Theriologica*, 56: 329-333.

Although weather-induced mass mortalities of wild ungulates have been reported, no study has quantified how these episodes may affect the survival of prime-aged adults. Long-term studies of marked ungulates have instead consistently found very weak or no effects of weather on the survival of this age class, particularly for females. We report on the effects of the exceptionally snowy winter of 2008–2009 on three populations of chamois in the western Alps: two in Italy, one in France. In the Alpi Marittime Natural Park in Italy, mortality of prime-aged females (aged 2–9 years) was 43%, about five times higher than reported by previous studies of chamois. Just across the continental divide in the adjacent Mercantour National Park (PNM) in France, however, prime-aged female mortality was only 6%. Senescent females suffered very high mortality in both populations (100% and 56%). In the Gran Paradiso National Park in Italy and in the Alpi Marittime Natural Park, adult male mortality rate was respectively of 81% and 44%, whereas in the PNM, it was only 10%. A recent reduction in population density in the French population, or lower absolute snowfall than in Italy, may explain the difference in survival. Survival of males and prime-aged females can be affected by exceptional weather events, possibly in combination with high population density. Adult chamois of both sexes appeared to show elevated mortality in response to harsh winter conditions. Our results underline the importance of considering sex and age classes in evaluating the impacts of population density in wild ungulates.

<http://rd.springer.com/article/10.1007/s13364-011-0040-2>