

Age- And Sex-Specific Local Survival In Unhunted Mountain Goats.

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Abstract: We examined the survival of marked yearling and adult mountain goats of both sexes at Caw Ridge, Alberta, from 1989 to 2001. We monitored 94 females and 78 males. Resighting rate was 100%, because no marked goat not seen one year was ever resighted in the study area. Survival to 2 years was 72% for yearling males and 84% for yearling females. Age-specific adult survival patterns varied substantially according to sex. Many males died or emigrated as 2- and 3-year-olds: only 39% of yearling males were still present as 4-year-olds. Survival of males aged 4 - 7 years was about 95%, similar to that of females of the same age, except for an unexplained drop to 75% survival for 5-year-old males. From 8 years of age onward, males experienced very high mortality. Age-specific survival rates suggest that less than 10% of yearling males would survive to 10 years of age on Caw Ridge. Over half of the yearling females would survive to 10 years. The local survival of 2-year-old females was 89.5%, but at least 2 emigrated. Survival of females aged 2 to 7 years averaged 94%, but declined to 75% for females aged 10-15 years. The oldest goats monitored were a 15-year-old male and three 16-year-old females. Our results provide evidence of survival senescence in both sexes, and suggest that in unhunted populations adult sex ratio is heavily biased towards females because of the high rate of disappearance of young males, and possibly the rapid senescence of older males. If local survival in our study population is typical of mountain goats, harvesting programs that target males should envisage a yearly harvest of 1% of the estimated population.