

REPRODUCTIVE SUCCESS OF BIGHORN SHEEP IN THE PENINSULAR RANGES OF CALIFORNIA

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Abstract: Poor recruitment associated with infectious disease has been proposed as the primary cause of markedly decreased numbers of desert bighorn sheep (*Ovis canadensis*) in the Peninsular Ranges in southern California. We examined the reproductive success of individually marked ewes in 4 subpopulations in this range during 1993-1995. Annual recruitment, a product of lamb production and survival, was found to fluctuate greatly among subpopulations and years. Lamb production ranged from 50% to 100% per subpopulation with a mean of 80.3% for all subpopulations and years combined. Lamb survival to 3 months of age ranged from 40% to 100%, while survival to 6 months of age ranged from 10% to 75%. Three of the 4 subpopulations had at least one year of high recruitment, in which >55% of ewes raised a lamb to 6 months of age. These years of good recruitment did not occur at the same time, however, suggesting that the subpopulations were influenced by separate limiting factors. Ewe age and the timing of lamb births were investigated as factors possibly influencing reproductive success. No significant differences in reproductive success were found among ewes in different age classes. New lambs were first observed from February through August, and there were no significant differences in lambing periods among subpopulations. The majority (74.5%) of lambs were born in March and April, and lambs born during these two months exhibited significantly better survival ($P < 0.001$) than lambs born during later months. Our data suggest that there may be a positive relationship between a ewe's reproductive success in a given year and her success in producing a lamb in the following year. Although certain subpopulations in the Peninsular Ranges may be experiencing chronic low recruitment, we concluded that lamb production and recruitment were not limiting population growth throughout the range during the time period of this study.
