

Bighorn Sheep Survival In Badlands National Park 1997-2000: Can Routine Sampling Help Predict Survival?

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Between fall 1996 and spring 1999, a total of 32 sheep were captured, radio-collared, and monitored at Badlands National Park (BADL). Routine sampling at the time of all captures included the collection of blood and fecal samples, and tonsillar and nasal swabs. Complete blood counts, serum chemistry panels, trace element screens, and serologic testing for diseases were completed along with isolation of bacteria and parasites of importance in bighorn sheep. Fifteen individuals subsequently died within two years of capture, thirteen within the first year. Although nothing noteworthy was identified in the sampling test results at the time, could any of these results considered together help predict the observed survival? In order to answer this question, the test and screen results will be used as covariates along with other individual factors in an Anderson and Gill modified Cox proportional hazards regression model and applied to the survival data. Although the sample size is limited and the number of covariates potentially large, it is hoped that the analysis will be able to identify factors available through routine sampling that influence survival of bighorn sheep at BADL. The identification of these factors may allow wildlife biologists and resource managers to make more proactive management decisions regarding bighorn sheep populations in the face of potential epizootic outbreaks of disease.