Population Estimates and Age-Specific Survival of Deer in South Texas

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Accurately estimating the size of white-tailed deer populations is important to wildlife managers because they help guide management objectives and harvest strategies. Helicopter surveys typically used in South Texas tend to underestimate the number of individuals in a population. We wanted to compare helicopter survey data to estimates of population size using mark-recapture data from 5 ranches participating in the South Texas Buck Capture Project. Additionally, we will examine age-specific survival of deer on these ranches.

Traditional survival analysis performed using both radio-collared individuals or marked individuals that are resighted during helicopter surveys limit the ability of the researcher to determine age-specific survival because of small sample sizes stemming from the expense of radio collars and helicopter flights. We predict deer survival will be positively correlated with deer age and condition. However, harvest strategies such as culling of smaller antlered deer within an age class may create an interaction between antler size and age such that survival for larger-antlered bucks is greater than smaller-antlered individuals within each age class.

In the future, white-tailed deer survival and population estimates will be examined with rainfall data to determine the predictive power of precipitation on fluctuations in population size and survival. We will also investigate the interaction between deer age, antler size, and survival under harvest regimes commonly used in South Texas.

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