

Breeding Success of Male White-tailed Deer: Implications for Management

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Abstract: The breeding structure of white-tailed deer has been described as dominance based. In age-structured populations relatively few dominant males were thought to do most of the breeding. However, recent studies have documented the successful breeding of all age classes. It has been suggested that the breeding success of young males is the result of exclusively mating with young females, while older males concentration their efforts on mature females. We tested this idea by capturing 337 male white-tailed deer from an age-structured population (>50% of the males ≥ 3.5 years old) in south Texas and sampling litters of offspring. Genetic paternity was assigned to offspring using 17 microsatellite loci to determine the role of male and female age on the distribution of breeding success among age classes. Breeding success per age class was relatively proportional to their occurrence in the population as mature males (≥ 3.5 yrs old) successfully sired 63% of all offspring, while yearling males sired 17%, and 2.5-year-old males sired 20%. Our results indicate that yearling males successfully mated with females of all ages. The mean age of female mates was 5.1, 4.8, and 5.0 for 1.5, 2.5, and 3.5+ males, respectively. There was no correlation between male and female age as young and old males successfully sired offspring with females of all ages. The formation of tending bonds limits the availability of mature males to monopolize breeding rights. Thus a large number of males are actively breeding which will greatly reduce the likelihood of any culling or selective harvest programs to alter the genetic makeup of a free-ranging white-tailed deer population.

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