THE SEXUAL PROCLIVITIES OF NORTHERN BOBWHITES

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ABSTRACT

Mating systems and mating behavior are historically viewed as static characteristics of populations. 'Monogamy', 'polygamy', 'multiple clutch polygamy', 'polyandry', etc. imply most individuals express similar social and genetic mating patterns and characterize the behavior of most or all individuals in a given population. Mating systems of different populations of northern bobwhites (*Colinus virginianus*) have been described as monogamous, polygamous, multi-clutch polygamous, ambisexually polygamous, and polyandrous in contrast to the expectation that behavior, at the species level, fits defined categories. Prior studies of bobwhite breeding behavior, to arrive at these classifications, were based on observations of social interactions and did not incorporate genetic outcomes. Thus, it is challenging to discern whether social behaviors predict genetic outcomes and whether bobwhite mating behavior varies among populations or if behavior is flexible within populations. We used 3 years of field observations and variation at 14 microsatellite loci of 601 adult and 841 neonatal bobwhites to estimate rates of extra-pair paternity in bobwhite broods, evaluate the utility of social behavior as an indicator of genetic outcomes, and evaluate the fit of bobwhite social and genetic behavior to classic mating system theories. Extra-pair paternity occurred in >50% of bobwhite broods, whereas extra-pair matings resulted in few ($\bar{x} = 1.1$) extra-pair offspring per nest. Social interactions between female and male bobwhites generally predicted the father of most offspring in a brood, but social interactions did not predict extra-pair matings better than chance. The mating behavior of individual females changed within and between breeding seasons, suggesting individual reproductive decisions of females were flexible. The mating 'system' of bobwhites meets neither the predictions nor the assumptions of classic mating theories.

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