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# BREEDING SEASON SURVIVAL AND NESTING OF NORTHERN BOBWHITE ON NATIVE PRAIRIE VERSUS TRADITIONALLY MANAGED CONSERVATION AREAS IN SOUTHWESTERN MISSOURI

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## ABSTRACT

Northern bobwhite (*Colinus virginianus*) management on Missouri Conservation Area lands has traditionally focused on providing an interspersed of grass, crop, old field and woody cover to enhance edge habitat often juxtaposed with disked idle areas and food plots. This traditional approach, or the Intensive Management Model (IMM), is often implemented with the goal of providing all essential habitat components within a 40-acre area. While this model can produce useable quail habitat in agriculture-dominated landscapes it may not be the most effective or efficient approach to producing quail in grassland-dominated landscapes found in southwest Missouri. Conservation area managers for the Missouri Department of Conservation (MDC) have historically implemented IMM in these grass-dominated landscapes; however in a few areas managers have begun using historical ecological processes, such as fire with grazing, or the Extensive Management Model (EMM) in conjunction with IMM or as the primary means for producing the patchy habitat mosaic preferred by bobwhite quail. In 2015, MDC began a 5 year study radio marking 60 individuals per area on 4 areas (2 IMM and 2 EMM) to compare the utility of these two models and the habitat conditions they create on breeding season vital rates (survival and production). Over the first 2 years of this study, EMM areas had higher breeding season survival (0.414 compared to 0.275) and nesting success (0.437 compared to 0.355) relative to IMM areas. Additionally, covey break-up and nest initiation were in general earlier, and clutch sizes were larger on areas managed with EMM than on areas managed with IMM.

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**Key words:** breeding season, *Colinus virginianus*, grazing, northern bobwhite, Missouri, reproduction, survival

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