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COMPARISON OF DOG SURVEYS AND FALL COVEY SURVEYS IN ESTIMATING FALL POPULATION TRENDS OF NORTHERN BOBWHITE

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ABSTRACT

The use of fall covey surveys to monitor population trends for northern bobwhite (*Colinus virginianus*; hereafter bobwhite) have been widely used in bobwhite research. Estimates of relative abundance from this monitoring technique are often important in assessing population responses to management practices or annual variation. However, conducting covey call surveys is labor intensive and typically can only be conducted during a narrow time frame. The use of dogs as a research tool may offer an efficient alternative to monitor bobwhite population trends. While dogs have been used in research for many other gallinaceous species, their application for bobwhite has received minimal research. To compare traditional and novel (dog) methods for both relative population abundance and density estimation, we conducted covey call surveys (50 points) and dog transects (32 km) during the fall (Sep-Oct) season from 2012-2014 at Beaver River WMA, Beaver County, Oklahoma, USA. A total of 306 detections were observed through fall covey count surveys, while only 44 detections were observed through dog transect surveys. Fall covey surveys yielded indices of 1.45, 2.04, and 3.21 detections per point count during 2012, 2013, and 2014, respectively. Dog transects yielded 0.23, 0.34, and 0.67 detections per km during 2012, 2013, and 2014, respectively. A Pearson's correlation coefficient of 0.996 indicated high correlation between indices estimated between both survey methods. However, the low sample size for detections during dog surveys precluded any analysis that would yield bobwhite density estimates. Our results indicate that dog transects can be a method for estimating abundance indices for bobwhite. However, if estimates of bobwhite densities are of interest, then use of dog transect surveys are not recommended as only under high quail densities or with high observer efforts do enough detections accumulate for robust density estimation unless large effort is expended.

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Key words: bird dogs, *Colinus virginianus*, covey surveys, population index, quail density, survey techniques

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