

# METHODS FOR CAPTURING, MARKING, AND ESTIMATING SURVIVAL OF NORTHERN BOBWHITE CHICKS

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## ABSTRACT

Lack of techniques to capture, mark, and observe chicks from hatch to fall has hindered our ability to understand this critical life stage of northern bobwhite (*Colinus virginianus*) and other galliforms. We present 2 methods for capturing wild, free-ranging northern bobwhite chicks associated with a radiomarked adult and demonstrate application of capture-recapture estimators. Both capture techniques involve monitoring radiomarked adults, locating nests, determining date of hatch, and then locating roosting adults with broods prior to sunrise during the pre-flight period (1–12 days post-hatch). The first technique involves erecting a temporary circular fence around the roosting radio-marked bird and brood, securing the edges with dirt, and systematically clearing all vegetation and ground debris until chicks are captured. The second technique involves placing a temporary fence in a “V” formation with a small mesh funnel trap placed at the apex. Birds are then “corralled” into the funnel trap. We used both methods during the breeding seasons of 1997–99. Overall, we captured 762 chicks from 137 broods. Of 131 capture attempts using the ring method, 18.3% (n = 24) were complete failures, 13.7% (n = 18) resulted in partial capture, whereas 68% (n = 89) resulted in complete capture. Using the funnel method, 22.2% (n = 2) of attempts were complete failures, 22.2% (n = 2) resulted in partial captures, and 55.6% (n = 5) resulted in complete brood capture. Captured chicks can be permanently and uniquely marked using monel patagial wing bands. We demonstrate application of capture-recapture models in program MARK to estimate chick survival from hatch to recruitment in the fall population (Oct 1).

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