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James A. Martin

*Mississippi State*

Jason Burkhart

*University of Georgia*

Reggie E. Thackston

*Georgia Department of Natural Resources*

John P. Carroll

*University of Georgia*

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# IMPACTS OF BERMUDAGRASS ON NORTHERN BOBWHITE CHICKS: MOBILITY AND HEAT EXPOSURE

James A. Martin<sup>1</sup>

College of Forest Resources, Mississippi State University, Mississippi State, MS 39762, USA

Jason Burkhart

Warnell School of Forestry and Natural Resources, University of Georgia, Athens, GA 30602, USA

Reggie E. Thackston

Georgia Department of Natural Resources, Wildlife Resources Division, Forsyth, GA 31029, USA

John P. Carroll

Warnell School of Forestry and Natural Resources, University of Georgia, Athens, GA 30602, USA

## ABSTRACT

Conservation programs to benefit northern bobwhites (*Colinus virginianus*) and other agriculturally-related wildlife species often target crop-field margins for management. The Bobwhite Quail Initiative in Georgia is a program where 3- to 18-m strips are disked and left fallow for 3-year cycles. However, several exotic grasses, such as bermudagrass (*Cynodon dactylon*), encroach in field margins, reducing their usefulness for avian species. We hypothesized that dense mats of bermudagrass would be a physical barrier to bobwhite chicks and also serve as a heat trap reducing habitat quality. We conducted two experiments to assess these factors. First, we used human-imprinted bobwhite chicks, 5 and 10 days of age, to assess mobility through vegetation with 3 levels (none, moderate, and high) of bermudagrass invasion. There was a significant impact of bermudagrass density on mobility of 5-day old chicks ( $P = 0.002$ ), but no effect on 10-day old chicks ( $P = 0.38$ ). Second, we placed temperature recorders at ground level in plots in field margins that had >75% cover of bermudagrass and those with >75% coverage of forbs. The mean temperature of bermudagrass plots was greater than in forb plots ( $P = 0.03$ ). The percentage of time above the 40 °C critical threshold temperature for bobwhites was greatest in bermudagrass plots ( $P = 0.03$ ) and ranged over 33–38% of daytime hours, but only 6–26% for forb plots. Our data suggests that bermudagrass degrades the quality of field margins and control of exotic invasive grasses is warranted to improve their efficacy.

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**Key words:** bermudagrass, *Colinus virginianus*, *Cynodon dactylon*, northern bobwhites

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<sup>1</sup> E-mail: [jmartin@cfr.msstate.edu](mailto:jmartin@cfr.msstate.edu)