

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

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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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