

# Response of Non-game Species to White-tailed Deer Food Plots in Appalachian Hardwood Forests

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*Abstract:* Establishment of food plots is an increasingly important tool for managing white-tailed deer (*Odocoileus virginianus*) habitat in the eastern United States. However, little is known about their impacts on non-game species. During 2008 and 2009, we evaluated songbird and small mammal responses to food plots planted with perennial clovers (*Trifolium* spp.) on 20 northern sites (New York and Pennsylvania) and 20 southern sites (Georgia and Tennessee). We completed a total of 1400 breeding bird counts (BBC) on all sites and an additional 500 winter bird counts (WBC) on 10 sites in North Georgia. We compared songbird detections within the food plot, at the food plot edge, and 125 m into the adjacent forest. For the northern BBC, the number of songbirds detected and the species richness did not differ among the three treatments. For the southern BBC, species richness ( $P < 0.0001$ ) and abundance indices ( $P < 0.0001$ ) were greater at the food plot edges than within the plot or in the adjacent forest. During the WBC, species richness was greater ( $P = 0.0038$ ) along the edges, but abundance indices did not differ ( $P = 0.2552$ ). We surveyed small mammal relative abundance using snap traps over 15,000 trap nights on both the northern (May–July) and southern (May–June) food plots in the same treatments. In the northern sites, we recorded greater capture rates at the food plot edge and the adjacent forest ( $P < 0.0001$ ) and greater species richness ( $P < 0.0001$ ) than in the center of the food plot. However, on the southern sites we detected no difference in abundance ( $P = 0.144$ ) or richness ( $P = 0.4169$ ) across treatments. Food plots within closed canopy hardwood forests did not negatively impact the non-game wildlife species we surveyed, but rather the plot edges enhanced habitat conditions for several avian and small mammal species. The creation of food plots may provide habitat for some non-game species in hardwood landscapes where early successional habitat is limited.

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