# The Effect of Habitat Manipulation on Insect Diversity and Bobwhite Quail Populations in a Cotton Production System

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Bobwhite quail populations in Georgia have decreased dramatically in the last 40 years. Farms where over 100 documented coveys resided in the early 1960's now have less than 10 today. The southern coastal plain is composed of rolling land of mixed woods and small fields providing excellent habitat for quail development. But in some cases, even under conditions of excellent habitat quail populations continued to decline. Only recently have researchers identified the necessary link between suitable habitat and food availability, especially insects. Insects compose a very high percentage of the daily diet of newly hatched quail chicks. Absence of insects even in the most suitable of habitat all but ensures an environment for a population decline. It is the combination of cover from predators, the availability of an insect-rich source for chicks, and a sustainable range of fauna that may hold the answer to quail reestablishment. No other system is less suitable for quail than one with intensive cotton production. Cotton traditionally requires multiple insecticide applications. Often these insecticide applications are detrimental to the birds, and reduce the availability of insects for foraging chicks. Wolf Creek Farm is an diversified farming operation located in Turner County, Georgia. The farm is comprised of 2200 acres of cotton, peanut, corn and timberland. The farm was known to contain over 100 coveys of quail in 1960. In 1998, the first year of the project, only 6 coveys could be found on the farm. The Wolf Creek Project is an attempt to reestablish quail in an intensive farming system containing cotton. The project involves manipulation of field boarders, planting of food plots, selection of alternative farming practices(conservation tillage), use of insect resistant cotton varieties (Bt. cotton), selective use o f soil insecticides and herbicides for pest control, weed refugia for food and protection, controlled burning, fire ant control and predator elimination. In the last two years over 80 plots have been planted for quail establishment on Wolf Creek. Insect populations are also being compared between each of the different plots and correlated to quail success.