

**BENEFITS OF A CONSERVATION BUFFER-BASED CONSERVATION
MANAGEMENT SYSTEM FOR NORTHERN BOBWHITE AND GRASSLAND
SONGBIRDS IN AN INTENSIVE PRODUCTION AGRICULTURAL LANDSCAPE IN
THE LOWER MISSISSIPPI ALLUVIAL VALLEY**

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INTRODUCTION

This project evaluates grassland songbird and Northern Bobwhite response to a buffer-based conservation management system (CMS) in an agricultural matrix in the Mississippi Alluvial Valley (MAV). Specific habitat practices being examined include CP-21 filter strips of NWSG (30 m) and NWSG/shrub mixture (15 m), CP-33 field borders (10 m), and CP-22 riparian forest buffers in the early-successional growth stage. These practices are advocated through the National Conservation Buffer Initiative (NCBI). Furthermore, we are comparing these practices with large block Conservation Reserve Program (CRP) habitat that is currently in the early-successional growth stage.

The combination of these habitat practices will offer unique insight on the efficacy of each specific habitat treatment as well as the collective benefits of a CMS to the avian community. Such an examination has not yet been executed for these habitats in the MAV, despite increased landowner interest in such habitat enrollment. The physiographic location of this study is of further interest, as the landscape has been severely fragmented for agricultural production. We will also evaluate the influence of width on conservation buffer habitat to determine threshold widths appropriate for an effective balance of landowner economy with wildlife needs.

OBJECTIVES

1. Determine reproductive success and productivity of grassland birds relative to habitat treatment and buffer width.

2. Estimate avian density and richness relative to habitat practices and buffer widths during the breeding season.
3. Evaluate the collective effect of all habitat treatments as well as specific treatment effects on local abundance of Northern Bobwhite.
4. Determine return rates, nest-site fidelity and fecundity for Dickcissel and Grasshopper Sparrows in large block and buffer habitats.
5. Assess Northern Bobwhite spatial habitat use across landscape scale and statistically model preferences for established habitats.

PROGRESS TO DATE

All habitat treatments were established by the spring of 2004 to permit sufficient vegetative emergence prior to data collection. To address the study objectives outlined above, we first divided all treatments into plots of equal size and then drew random samples for the study. Sample sizes were equal ($n=20$) for all treatments except that there were only 11 plots of CP21 NWSG/shrub available. Data collection began in early May 2005 and included extensive nest searching and monitoring efforts, line-transect surveys, Northern Bobwhite call counts, and color banding of individual Dickcissels and Grasshopper Sparrows.

We found 395 nests this season of six species (Red-winged Blackbird, Eastern Meadowlark, Dickcissel, Grasshopper Sparrow, Mourning Dove and Northern Bobwhite) in 2005. All habitat treatments were searched thoroughly twice each month during May, June, and July. Line-transects were conducted once each month this past summer. Northern Bobwhite call counts were conducted on 100 stations in a 10x10 grid in mid-June.

The only problem thus far encountered in the study was that some plots were mowed for aesthetic value. Fortunately this occurred just prior to initiation of nest searching efforts, and as a result we have increased communication with the farm manager to hopefully prevent such an occurrence in the future.

PRESENTATIONS

Conover, Ross R., Stephen J. Dinsmore, and L. Wes Burger, Jr.. Songbird and Northern Bobwhite Use of Early-Successional Habitat in an Agricultural Matrix. Southeast Quail Study Group. Gilbertsville, KY, August 14-17, 2005.

PUBLICATIONS

None to date.

PARTICIPATING AGENCIES AND LANDOWNERS

Duncan Williams, Landowner. Duncan has generously provided our field crew unlimited access to his 6,500 acre farm.

Trey Cooke, Delta Wildlife, provided equipment and labor for field border establishment.

NRCS INVOLVEMENT

Kevin Nelms, Area Biologist, provided landowner contacts, background information and practice history.

Blake Lanier, Soil Conservationist, provided landowner contacts.

Glynda Clardy, State Wildlife Biologist, provided project review.