

Final Results from Tennessee CP33 Program Monitoring for Bobwhites and Other Birds 2006-2008

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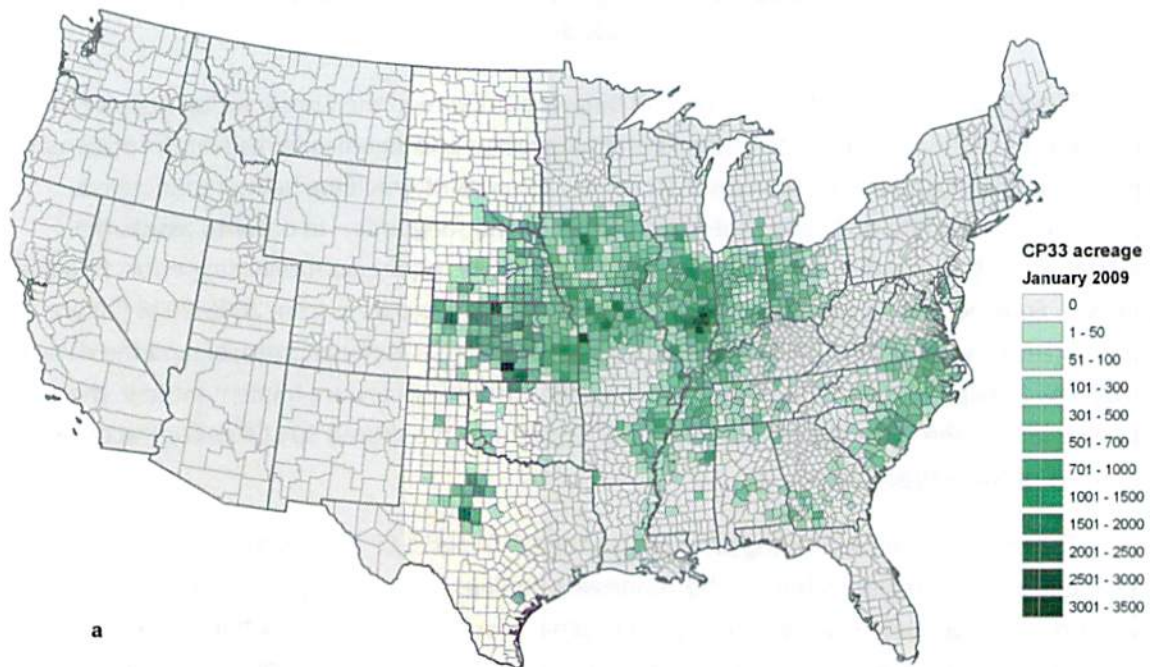
Final Results from Tennessee CP33 Program Monitoring for Bobwhites and Other Birds 2006-2008

The CP33 – Habitat Buffers for Upland Birds is a practice in the Conservation Reserve Program that establishes 30 – 120 foot wide buffers of native grasses and legumes/forbs (shrubs optional) on the edges of crop fields under a 10-year contract for the purpose of providing habitat to increase populations of bobwhite quail and other selected grassland songbirds. In order to assess the effectiveness of this practice, the USDA-Farm Service Agency required a monitoring effort to achieve this objective. Fourteen states participated in a 3-year monitoring program from 2006-2008 (Figure 1). State wildlife agencies were tasked with collecting data according to a national protocol, and the data were analyzed by Mississippi State University. Most buffers in Tennessee were implemented in the west and middle regions of the state (Figure 2). TWRA and its partners monitored 30+ CP33 contract sites during the 3 years of the project (Figure 3).

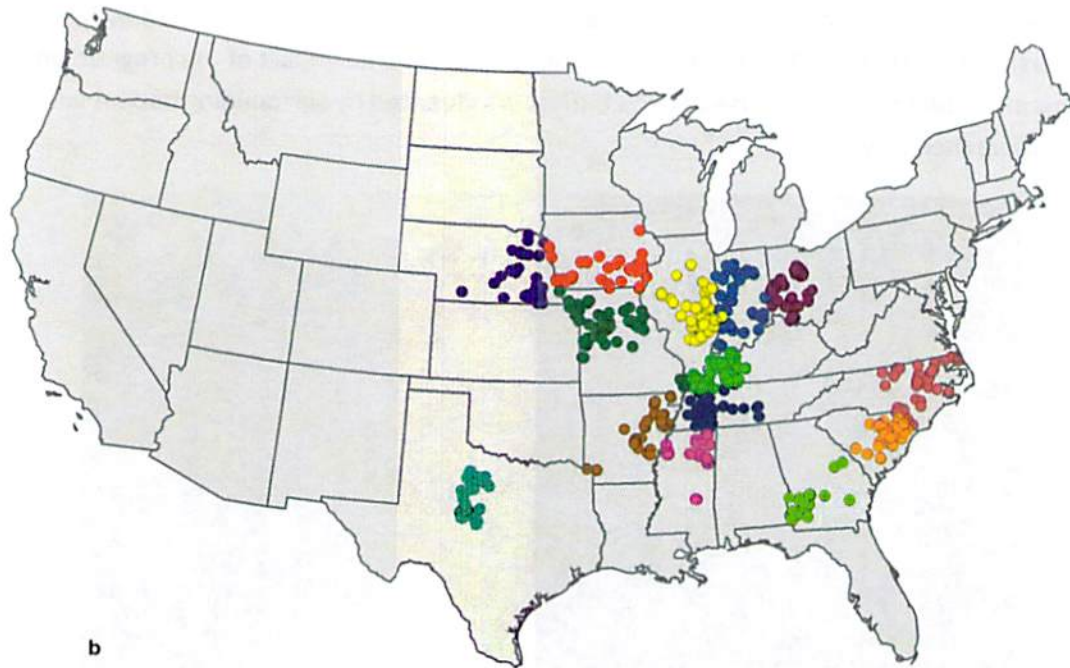
The initial 3-year monitoring program for the USDA NRCS CP33 program for bobwhite and grassland birds has been completed. The Tennessee findings from this report are briefly summarized in this report. The complete results for this project can be found at http://www.fwrc.msstate.edu-pubs-cp33nationalreport_3year.pdf.url. Additional detailed findings from examining landscapes with CP33 buffers in relationship to estimates of bobwhite and bird populations will be completed by Mississippi State University at a later time. These will help us understand the true impact of the program on populations in relation to how bird use of CP33 buffers is influenced by surrounding habitat and not just the CP33 buffers themselves.



Photo by Mark Gudlin



a



b

Figure 2. Nationwide distribution and density of CP33 buffers as of January 2009 (a) and location of CP33 monitoring sites. 2006-08.

Tennessee CP33 Acreage By County
November 2009

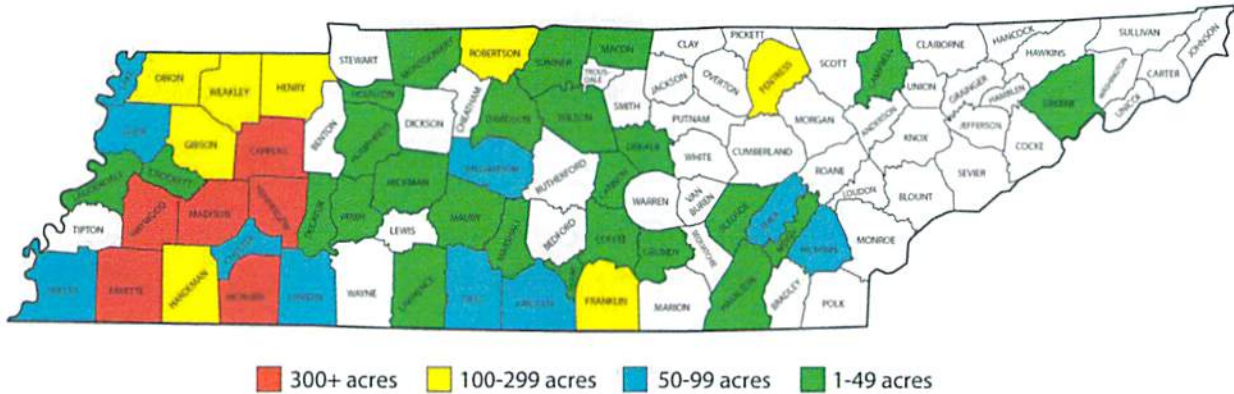


Figure 2. Distribution of CP33 acreage in Tennessee.

Number of Monitored CP33 Contracts by County

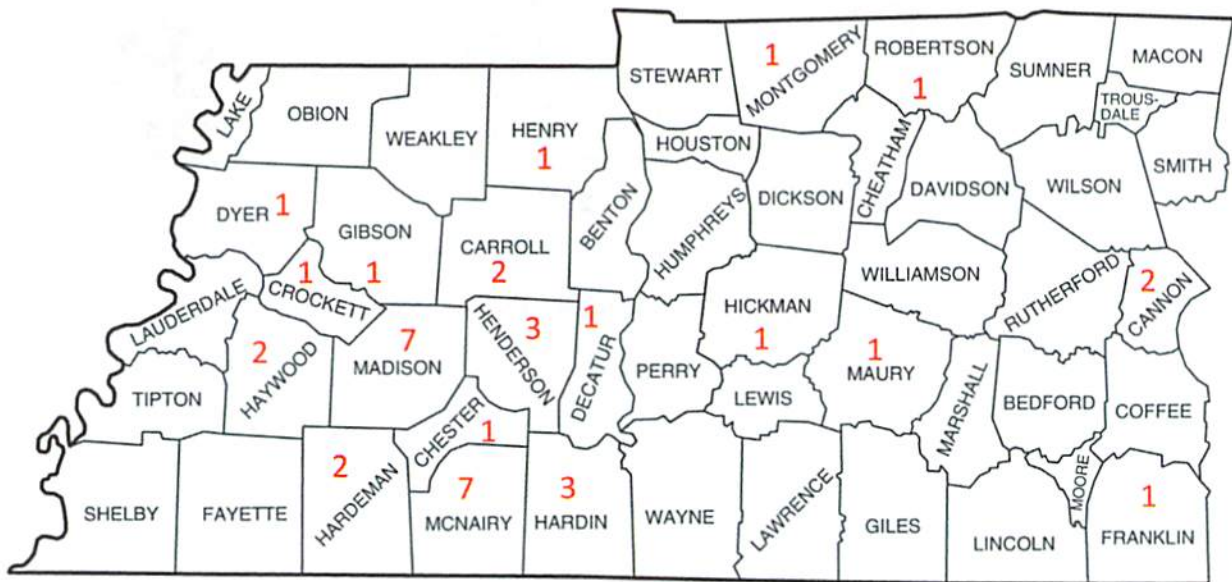


Figure 3. Distribution of CP33 contracts monitored during 2006-2008.

Results

Bobwhites— In Tennessee, censuses were conducted in spring and fall on 40 pairs of CP33 and control fields and results for both periods differ. Computed breeding season densities were approximately 20% higher on CP33 fields than on control fields, and fall covey densities were 3 to 4 times higher on CP33 fields. Computed breeding season on both CP33 and control fields decreased slightly during the 3-year period and were 1.05-1.31 males/acre in CP33 fields and 0.86-1.16 males/acre in control fields. Fall

covey densities were 0.10-0.13 coveys/acre in CP33 and 0.03-0.05 coveys/acre in control fields. Fall densities decreased slightly during the 3-year period. In addition to the influence of habitat, annual quail densities may also be influenced by annual weather patterns that affect reproductive success.

The response by bobwhites varied widely by state. Response by bobwhites in Tennessee was somewhere in the average range compared to other states (see Figures 4-7).

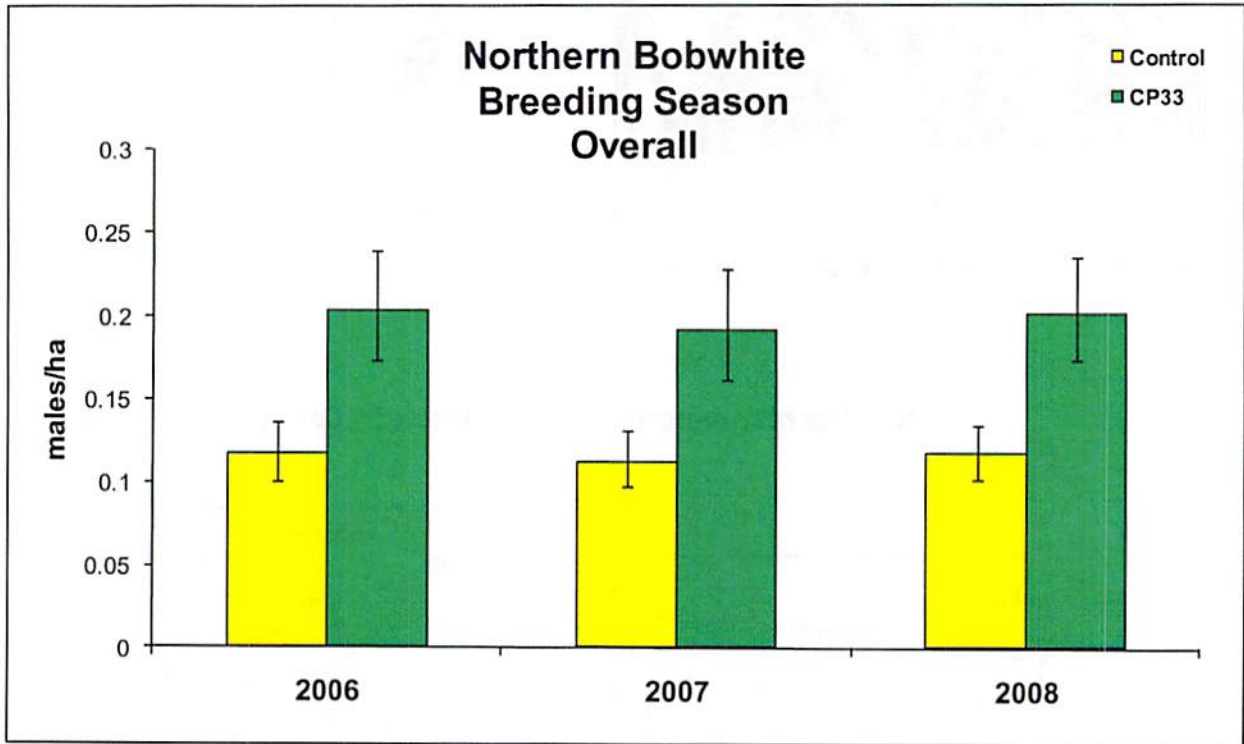


Figure 4. Nationwide bobwhite density (males/ha) during the breeding season, 2006-08.

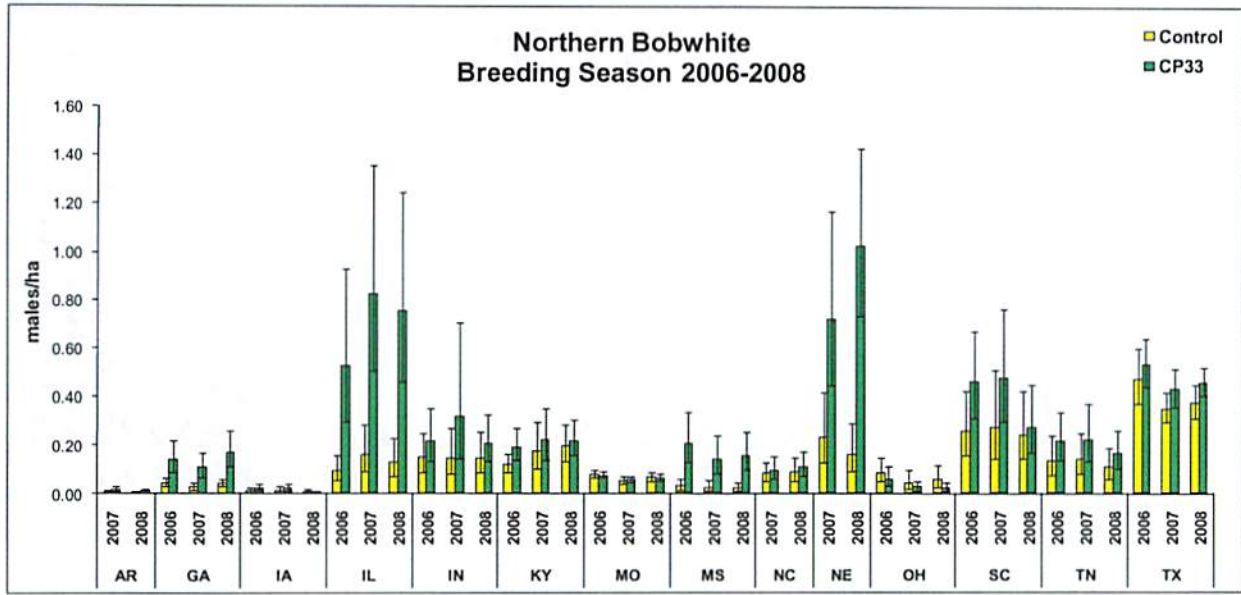


Figure 5. Breeding season bobwhite density (males/ha) by state, 2006-08.

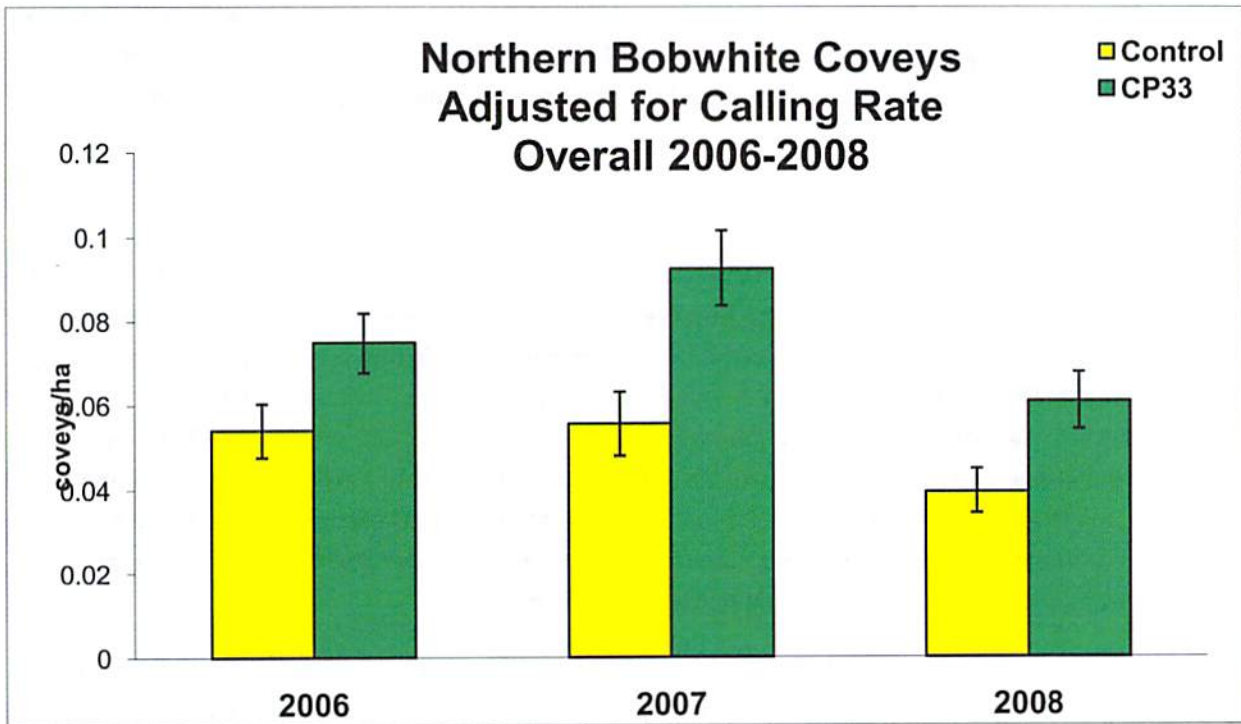


Figure 6. Nationwide fall bobwhite density (coveys/ha), 2006-08.

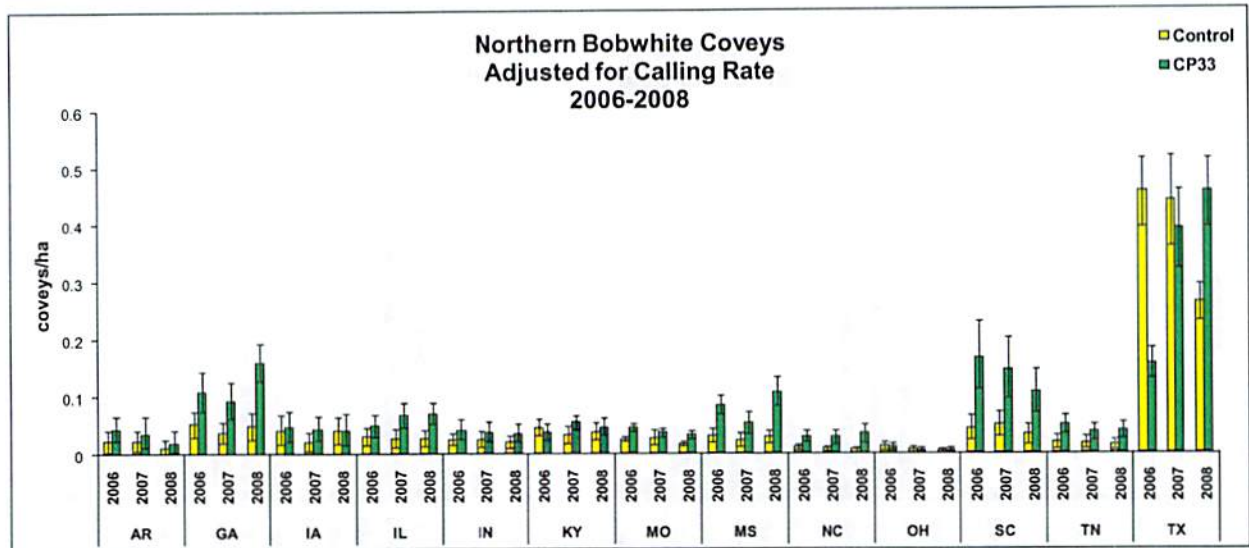


Figure 7. Fall bobwhite density (coveys/ha) by state, 2006-08.

Other birds—Censuses of other bird species representing typical grassland or woodland edge species were made only during the spring. Trends for many of these species were highly variable with the most abundant species being field sparrows which declined during the 3 year period on control sites and increased on CP33 sites (Figure 8). The pattern for eastern meadowlark (Figure 9) and indigo bunting (Figure 10) was similar.

Discussion

Overall, while the broader results of the CP33 monitoring indicated gains in bobwhite populations, the results in Tennessee were less significant. However, the census results alone do not reflect the true response to habitat development without the landscape level analysis that is yet to be completed by Mississippi State University. In large part, a 3-year study is not sufficient to develop a trend in populations but the modest increases in numbers of bobwhite are encouraging. The CP33 mid-contract management study now underway will provide additional results to help fully determine the impact of this program. In this continuation of CP33 monitoring, all 14 states that participated in the first 3-year study are continuing the monitoring, but due to limitations in manpower and funding only the spring breeding counts will be conducted (no fall bobwhite covey counts).

Interpreting the data for other bird species is far more difficult in that each of the three species with good data are different in their primary habitat needs. The habitat for the field sparrow more closely resembles the habitat of bobwhites more than any of the other bird species counted. Eastern meadowlarks nest in grassy habitat that is much shorter than most CP33 buffers; grazed pastures and hayfields are often used and they can nest successfully where there is some fescue. Indigo buntings are a species of woodland edge or open woodland/savanna. Each of these habitats has something in common with bobwhites but the overlap is not complete. In most cases the meadowlark will overlap with bobwhites only in places where there are grazed or hayed grasslands with grazed grasslands being more favorable to bobwhites than hayed. Indigo buntings will overlaps most with bobwhites in areas

savanna or open woodland sites that have sufficient trees for song perches and nesting. Optimum field sparrow habitat is primarily early successional woodland (grass, forbs, and shrubs or small trees) or late successional grassland (mid size and tall grasses with bare ground, forbs, and shrubs or small trees). These are also, along with savannas and open woodlands, the optimum habitat of bobwhites.

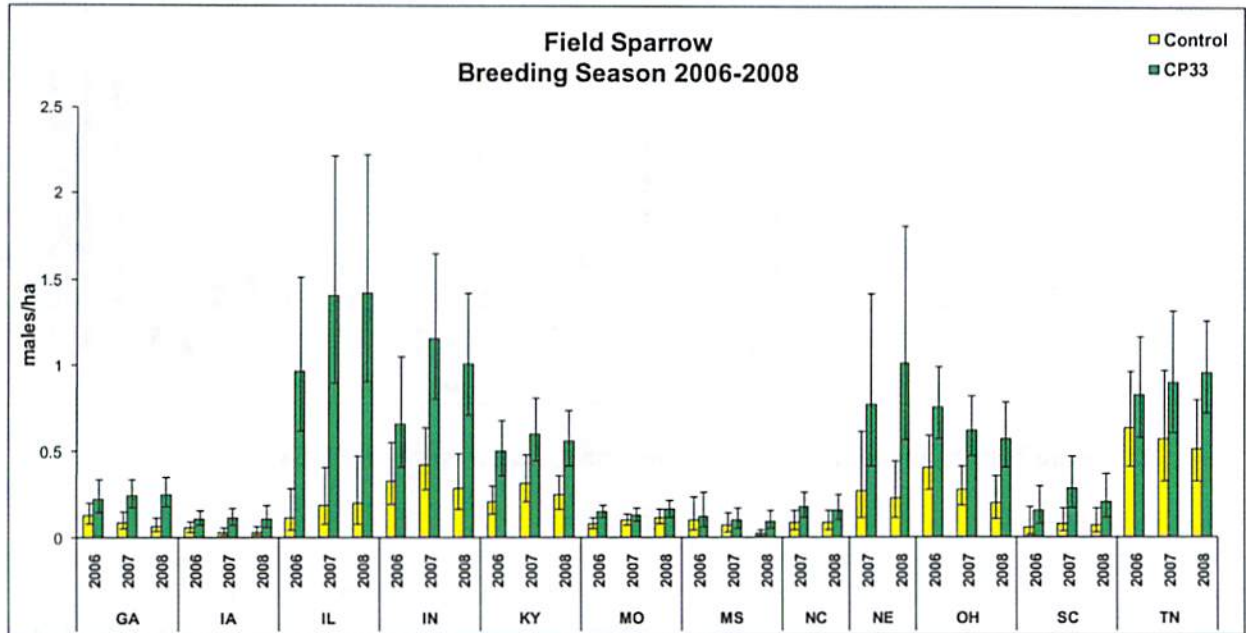


Figure 8. Field sparrow breeding season density (males/ha) by state, 2006-08.

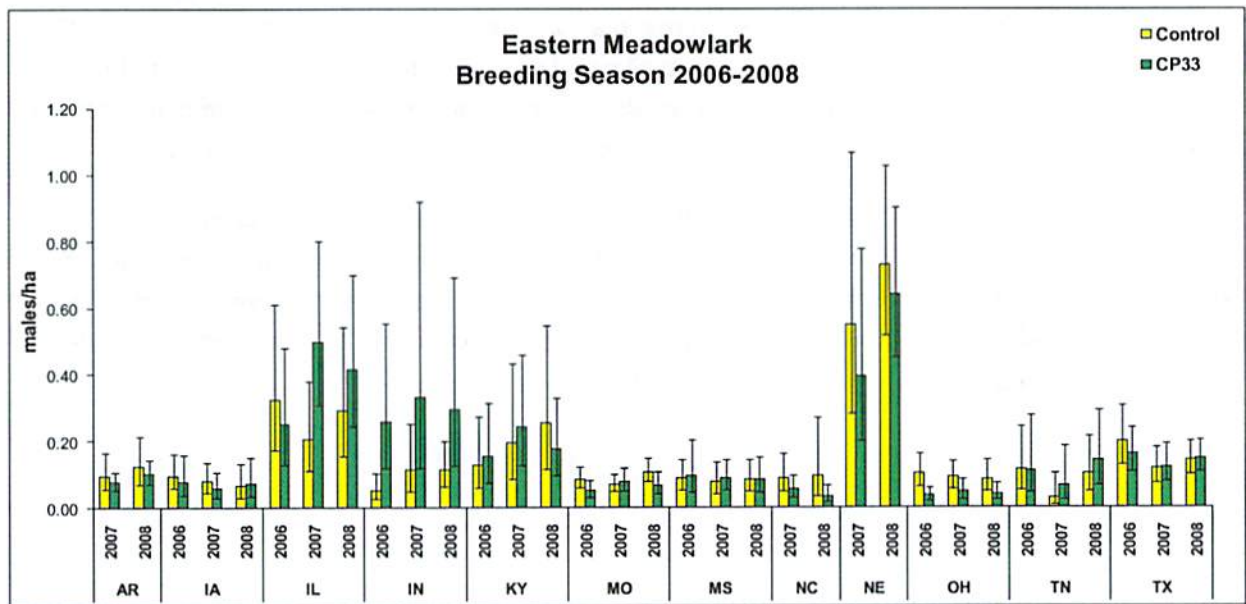


Figure 9. Eastern meadowlark breeding season density (males/ha) by state, 2006-08.

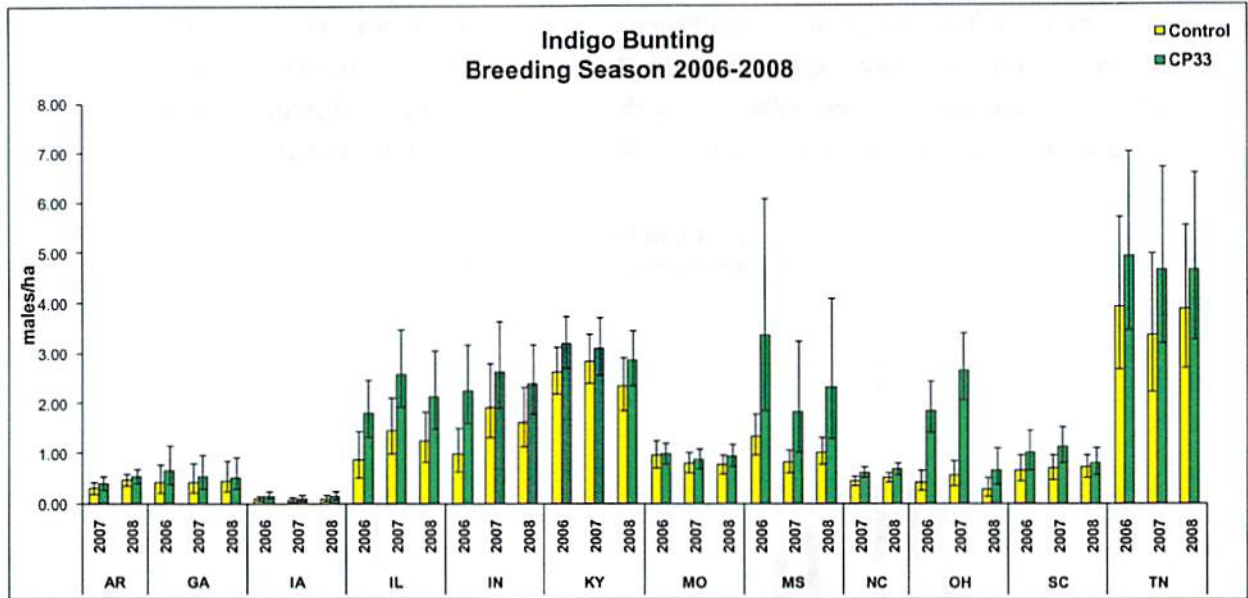


Figure 10. Indigo bunting breeding season density (males/ha) by state, 2006-08.

Remaining Questions

We still need to understand how habitats across a larger landscape influence bobwhite and bird response to CP33 buffers. This will be addressed in future analyses by Mississippi State University. We also need to know what effect, if any; mid-contract management practices will have on improving the quality of buffer habitat. This will be addressed by Mississippi State in the ongoing three-year study that started in spring 2009. The remaining question that may or may not be addressed is “how much CP33 is needed on a landscape to make a difference in quail populations”? Quail populations have to be thought of in two ways: densities that maintain quail long-term (viable populations) and densities that can sustain hunting. Recovering bobwhites in Tennessee involves both of these density levels.

While native grass buffers alone are not the solution to declining bobwhite and grassland bird populations, this practice can provide a much needed habitat component on working farms that can also provide an economic benefit to the producer. A better understanding of the influence of the CP33 practice can provide a key on how to better implement this practice on the farming landscape in the future to benefit bobwhites and other grassland wildlife.

The Tennessee Wildlife Resources Agency would like to acknowledge and extend its appreciation to the many CP33 and control field landowners and farm operators whose cooperation made this study possible, and to the personnel from the Tennessee Wildlife Resources Agency, USDA-Natural Resources Conservation Service, Quail Unlimited, UT Extension Service, and University of Tennessee - Martin that served as observers and gathered the data summarized in this report. Support for this project was provided by Kristine Evans and Wes Burger at Mississippi State University with funding from a Multistate Conservation Grant MS M-1-T, with funds from the Wildlife and Sport Fish Restoration Program and jointly managed by the Association of Fish and Wildlife Agencies and the U.S. Fish and Wildlife Service. TWRA received a total of \$43,368.75 from this grant to help offset expenses incurred in the collection of monitoring data from 2006-2008. Bird photos were provided by Mississippi State University. Graphs were supplied by Kristine Evans.

