

# TECHNICAL GAME SESSION

## MOURNING DOVE MANAGEMENT IN EASTERN UNITED STATES

By W. H. KIEL, JR.

*U. S. Bureau of Sport Fisheries and Wildlife  
Patuxent Research Refuge*

Laurel, Maryland

Management of the mourning dove (*Zenaidura macroura*) is a responsibility vested in the Bureau of Sport Fisheries and Wildlife under migratory bird treaties with Canada and Mexico. The primary responsibility of the Bureau is to safeguard the resource. In addition, goals of mourning dove management are to maintain a population that will sustain an annual harvest by hunting and will provide traditional opportunities for enjoyment of the resource by non-hunters.

Suggestions for a mourning dove management program in the Southeast were presented at the meeting of the Southeastern Association of Game and Fish Commissioners in 1953 by Leonard E. Foote (Foote, 1953). At that time the Cooperative Mourning Dove Study of the southeastern States had provided data that indicated the need for continued and intensified research in certain fields important to dove management (Southeastern Association, 1957). In January, 1957, Foote revised the suggestions for a mourning dove management program in the light of studies that had been continued on a reduced scale after the conclusion of the Cooperative Mourning Dove Study (Foote, 1957). Also in 1957, the Dove Committee of the Southeastern Section of the Wildlife Society presented a report on current status and problems of mourning dove investigations in the southeastern States (Peters, *et al*, 1957). This concise report showed that research and management projects had been curtailed after the conclusion of the Cooperative Mourning Dove Study in 1953, and that no southeastern State was employing a biologist for full-time study of the mourning dove. All States, however, continued to participate in the annual call-count survey of the breeding population. The Dove Committee report recommended an expansion of mourning dove investigations by the Bureau of Sport Fisheries and Wildlife in partnership with the States and research institutions.

In these reports and suggestions for management, there was general agreement on some high priority projects in the mourning dove program. These projects and their current status will be discussed.

### NESTLING BANDING

This project will provide data for studies of the relationship of production and harvest areas and for studies of mortality. Through the cooperation of State, Federal, and private banders, the banding goals should be attained in 1960. A progress report has been published based on an analysis of bandings for the 1953-57 period (Kiel, 1959). This report outlines three tentative mourning dove management units. The eastern unit contains all States east of the Mississippi River plus Louisiana. Based on weighted band recoveries, 95 per cent of the harvested production of this unit was shot within the unit or in Mexico and Central America and 94 percent of the hunting kill was provided by doves produced inside the unit. The importance of local production to the dove hunting kill of a State was emphasized by the fact that for the eastern unit, 65 per cent of the hunting kill was composed of doves banded and shot in the same State. These conclusions are tentative because they are based on insufficient band recoveries in many instances and on weighting procedures that need to be evaluated through further research.

A study of mortality through analysis of banding data unfortunately was postponed by a fire that damaged IBM records in the Bird Banding Office. The Bureau of Sport Fisheries and Wildlife is now reconstructing these band-

ing records. A primary aim of the study of mourning dove mortality is to assess the importance of hunting as a factor in annual mortality.

### REORGANIZATION OF THE CALL-COUNT SURVEY

Since 1953, a call-count survey has been conducted annually to detect trends in the breeding population of mourning doves. As in the nestling-banding program, this is a cooperative effort of State and Bureau personnel. In 1959, data were obtained from 677 routes that also were censused in 1958 and could be used for comparative purposes. There was a small decrease (2 per cent) in the breeding-population index for the eastern management unit from the 1958 level. The 1959 index was practically the same as it was in 1957, however, and was 32 per cent higher than in 1953. This increase in the index to the breeding population of the eastern management unit occurred over a 7-year period during which the bag limit was increased from 8 doves per day and 8 in possession to 10 doves per day and 20 in possession. The hunting season generally was lengthened from 30 half-days to 65 half-days during this same period.

Since we now are using population indexes derived from the results of the call-count survey not only for detecting major trends in the mourning dove population but also for determining population levels on a State or management-unit basis, there is need for greater precision in the census method. A system of call-count routes should be designed to sample ecologic or land-use types that have dove populations that differ in density and distribution patterns. Foote, Peters, and Finkner (1958), reporting on studies conducted in 1957, found that better precision would have resulted on randomly selected call-count routes in seven southeastern States if sampling had been stratified by major ecologic types rather than by States. Progress is being made in redesigning the call-count survey on a national scale chiefly through the work of Leonard E. Foote of the Wildlife Management Institute, who is working on this project under a contract with the Bureau of Sport Fisheries and Wildlife.

In addition to improving the sampling design of the call-count survey, we also need to evaluate variables in the call-count technique. We should know with greater reliability what a calling dove represents in terms of actual breeding birds and dove production in the major habitat types of the breeding range. If the call-count index represents a variable fraction of the actual population in different habitat types of the dove breeding range, area comparisons cannot be made accurately unless the biases are understood and are corrected. Some of the factors in the call-count technique that need to be evaluated are (1) the relationship of roadside and non-roadside populations, (2) the influence of habitat type on the distance dove calls can be heard, (3) variation between broad regions of the country in the time of the peak or plateau of dove calling activity, (4) the relationship between dove density and calling frequency, and (5) production differences between habitat types.

Studies designed to evaluate and to improve the call-count technique seem well adapted as research projects for graduate students. Currently, little progress is being made in initiating such studies. A reorganization of the call-count survey on a national scale will not attain its potential value unless variables in the census technique are evaluated.

### SURVEY OF HUNTING KILL

Not all States conduct surveys of the hunting kill of game species. There is a definite need for a national survey of hunting kill of mourning doves. Hunting regulations are the major management tool, but we have no good measure of the effect of changes in regulations on the hunting kill. Three agencies, the Wildlife Management Institute, the Welder Wildlife Foundation, and the Bureau of Sport Fisheries and Wildlife, now are supporting a study by the Institute of Statistics, North Carolina State College to evaluate various methods being used for determining hunting kill and to recommend a sampling design for a national survey of hunting kill of mourning doves.

These are the principal projects in mourning dove management in which the Bureau is engaged. States also are concerned with management of the mourn-

ing dove, because a high percentage of their hunting kill is composed of locally reared or "home grown" doves.

The recent appointment of a Dove Committee by the International Association of Game, Fish, and Conservation Commissioners should be an important step in stimulating research leading toward a sound management program for mourning doves.

#### SUMMARY

Management of the mourning dove is a responsibility of the Bureau of Sport Fisheries and Wildlife. Suggestions for a management program have been published by Foote (1953, 1957) and others. Research and management projects were curtailed after the conclusion of the Cooperative Mourning Dove Study in 1953.

Progress and needs for three projects are discussed: nestling banding, reorganization of the call-count survey, and survey of hunting kill.

#### LITERATURE CITED

- Foote, L. E. 1953. Suggestions for a mourning dove management program. Presented at Southeastern Assoc. Game and Fish Comm. meeting, Oct., 1953. 11 pp.
- \_\_\_\_\_. 1957. Suggestions for a mourning dove management program. (Privately printed, Marietta, Ga.) January, 1957. 14 pp.
- \_\_\_\_\_, H. S. Peters, and A. L. Finkner. 1958. Design tests for mourning dove call-count sampling in seven southeastern states. *Jour. Wildl. Mgt.* 22(4):402-408.
- Kiel, W. H., Jr. 1959. Mourning dove management units—a progress report. U. S. D. I. Fish and Wildlife Service Spec. Scientific Rept.—Wildlife No. 42. 24 pp.
- Peters, H. S., L. E. Foote, J. W. Hammond, J. E. Keeler, J. D. Newsom, and F. A. Winston. 1957. Current status and problems of mourning dove investigations in the southeastern states. Presented to Southeastern Section, Wildlife Society, Mobile, Ala. Oct., 1957. 4 pp.
- Southeastern Association of Game and Fish Commissioners. 1957. Mourning dove investigations, 1948-1956. Southeastern Assoc. Game and Fish Commissioners (Columbia, S. C.), Tech. Bull. No. 1. 166 pp.

## CHOCOLOCCO DEER RANGE ANALYSIS AND MANAGEMENT IMPLICATIONS \*

By WILLIAM H. ADAMS, JR.

*Senior Biologist, Tennessee Game and Fish Commission*  
Madisonville, Tennessee

The productivity and management implications of a deer range were studied on the 40,000-acre Choccolocco Wildlife Management Area of the Talladega National Forest located in Cleburne County in northeastern Alabama (Figure 1). Field investigations were initiated in September, 1956, and completed in May, 1959. The results were submitted in partial fulfillment of degree requirements at the Alabama Polytechnic Institute.

During the course of this study, a technique for rapid evaluation of existing conditions on the Choccolocco deer range was developed and tested. The design and purpose of this technique should make it applicable to most other southeastern deer ranges. In addition, information gathered during the study indicated that our present deer populations can be managed best by determining the *trend* of prevailing range conditions. It is these two aspects of the Choccolocco study that will be presented at this time.

\* A contribution of the Alabama Cooperative Wildlife Research Unit, the Auburn University, the Alabama Department of Conservation, the Wildlife Management Institute and the U. S. Fish and Wildlife Service, Bureau of Sport Fisheries and Wildlife, cooperating.