

TENNESSEE WOODCOCK INVESTIGATIONS¹

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ABSTRACT

The woodcock could absorb some of the hunting pressure presently concentrated on quail, ruffed grouse, and perhaps rabbits, if Tennessee hunting season dates were modified to take advantage of the earlier peak migration period of this species. Data presented in this paper indicate that more woodcock should be moving through Tennessee starting in late October and continuing through November. Recent Tennessee work on woodcock is summarized and proposed studies are suggested.

INTRODUCTION

The American woodcock (*Philohela minor*) is a migratory shorebird that has adapted to the moist wooded uplands. Woodcock satisfies the sportsman's requirement as an excellent game bird, as it holds well to pointing dogs, is usually abundant in suitable habitat at migrational periods, and presents an elusive target (Goudy and Martin, 1966). In recent years woodcock hunting has shown substantial gains in number of participating hunters, man-hours of recreation afforded and total woodcock harvest. One objective of the short lived Migratory Birds Section of the Tennessee Game and Fish Commission was to summarize recent woodcock data for the state and to review literature regarding woodcock migrational dates and routes. Such data is herein presented and should be of interest to wildlife managers and sportsmen in middle-latitude states such as Kentucky, Virginia, West Virginia and others.

FALL MIGRATION DATES

Middle-latitude states, such as Tennessee, apparently could realize more recreational benefits from woodcock migration (Clark, 19708). In the Middle-Latitude States hunting opportunity is largely dependent upon migrating birds, and it is more difficult to select the most advantageous season. With longer seasons now available it is possible in some cases to further improve hunting opportunity by adjusting the season to the presence of birds.

Glasgow (1958) found that migratory woodcock begin to arrive in Louisiana in October and gradually increase in number till about November 20, after which there is a noticeable acceleration in the number arriving. Most woodcock have, therefore, passed through Tennessee before the state's woodcock seasons have normally opened (Table 1). The evidence that most woodcock have departed from the Northern States by early November and that many arrive on the wintering grounds between October and mid-December suggests that the Intermediate States, opening their season in mid-November or later, may be missing a substantial portion of the migrant woodcock available for hunting (Clark, 1970B).

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TABLE 1: Tennessee Woodcock Hunting Seasons & Bag Limits 1965-1970

Year	Date	Limit
1965	Nov. 22-Jan. 10	5
1966	Nov. 21-Jan. 9	5
1967	Nov. 20-Jan. 23	5
1968	Nov. 18-Jan. 21	5
1969	Nov. 17-Jan. 20	5
1970	Nov. 26-Jan. 29	5

Analysis of kill date distribution of wings in the U.S. Fish and Wildlife Service's wing collection survey, provides additional data concerning woodcock migration dates. E. R. Clark (personal communication, 1971) has arranged the wings from each state in ten day periods according to the date shot by the hunter. Although small, the Tennessee sample was the outstanding example of concentration of harvest in the early days of the late November 1968 and 1969 season. Nearly half of Tennessee's birds were collected during the first three days of the 1968 season and the first four days of the 1969 season. Legler (1967) found that 75 percent of the 73 woodcock wings sent in on the 1966 wing survey were obtained during the first seven days of the 1966 season. This information suggests that substantially more could have been harvested in early November and possibly even late October.

Tennessee's woodcock season is set too late when compared with distribution of woodcock harvest, arranged by ten day periods, in states to the north. Birds begin large scale migration from Minnesota, Wisconsin and Michigan during the last week of October. Similar migration in Indiana and Ohio begin the last of October and the first week of November. Liscinsky (1966) reported that the large migration of birds in Pennsylvania in recent years has occurred during the last week of October or the first week of November. In Kentucky, during the migrational period, woodcock are generally distributed throughout the state (Russell, 1958); peak fall abundance was observed in November. October showed the next largest numbers of migrating woodcock.

Martin, Williams, Newsom and Glasgow (1969) examined recoveries of Louisiana banded woodcock by "fifteen day" time periods within combined hunting seasons. Peak woodcock recoveries in states north of Kentucky were during the last half of October. After October, the kill in northern states rapidly declined. Few recoveries were reported from Kentucky and southern portions of Ohio, Indiana and Illinois. Possibly woodcock pass through this region rapidly or hunting seasons in these states are set too late to harvest many woodcock.

FALL MIGRATION ROUTES

Woodcock banding is the chief source of information about the bird's movement and migration. Major banding studies have been conducted in Louisiana, Michigan, Pennsylvania, Maine and Massachusetts. According to Liscinsky (1966), woodcock usually migrate at night, traveling either singly or in pairs and flying at low altitudes.

Sheldon (1967) has proposed that woodcock migrations follow three major routes; two of these, the Atlantic and Central routes, are associated with Tennessee. Sheldon believes that the Central route is traveled by more woodcock than any other travel zone. This route, which includes West Tennessee, generally terminates in Louisiana and birds within it come mainly from Michigan, Northwestern Pennsylvania and Western New York.

The Atlantic route, used chiefly by woodcock from New England and the Maritime Provinces, has a western branch which passes through Eastern-Middle and East Tennessee.

Banding studies in Louisiana (Martin, Williams, Newsom, and Glasgow, 1969) indicated strong migrational routes through Tennessee (Fig 1). Nearly 30 percent of the banded woodcock were recovered in Michigan. A much smaller percentage of birds were recovered in the Northwestern States. This Louisiana work reports the analysis of banding recoveries of woodcock banded on Louisiana wintering grounds between 1948 and 1969. Indirect recoveries of 284 birds reported shot were used to determine geographical distribution of hunting season kill.

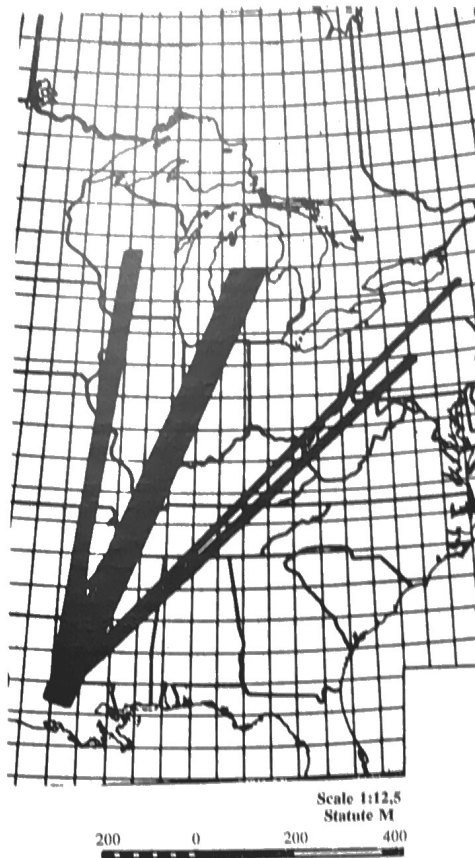


FIG. 1:

Boldness of lines indicate general magnitude of recoveries of Louisiana banded woodcock. Data Source: Martin, Williams, Newsom, Glasgow, 1969.

Louisiana banded birds were reported shot in 23 states, but Michigan, Louisiana and Wisconsin accounted for more than half of the recoveries. Comparatively few woodcock were shot in the Northwestern part of the United States. Most were harvested in the Lake States areas and in the South. The distribution of recoveries suggests that more than three fourths of the woodcock wintering in Louisiana are produced west of the Appalachian Mountains.

Very few Louisiana recoveries came from South-Atlantic coast

states. Sheldon (1967) indicated that 90 percent of the 100 recoveries from woodcock banded in Maine, Massachusetts and New Brunswick occurred in these Coastal States. He believes it is possible that birds wintering in Louisiana form a population distinctly apart from most woodcock produced in the northeast.

Ammann (1969) reported that woodcock banded in Michigan were recovered in Louisiana (five birds), Alabama (four birds), Georgia (two birds), and Texas (one bird). Figure 2 shows this trend.

Pennsylvania associated woodcock band recoveries have been mapped by Liscinsky, 1966. His data represent recoveries from 1939 to 1960 and show a strong migration route over Middle and Plateau Tennessee.

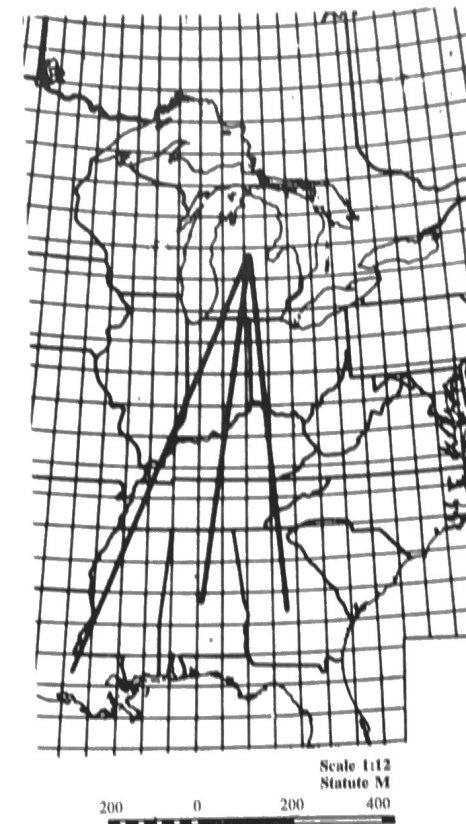


FIG. 2:

Recoveries of Michigan banded woodcock. Five birds were recovered in Louisiana, four birds in Alabama, two birds in Georgia and one bird was recovered in Texas (not plotted on map.) Data Source: Ammann, 1969.

TENNESSEE DATA

Specific woodcock harvest surveys have not been conducted in Tennessee even though woodcock are killed incidentally while hunting quail, grouse, and rabbits. Legler (1967) states "although woodcock are not considered important game birds in Tennessee, it is quite likely that 10,000 are harvested annually by hunters primarily in pursuit of rabbits, quail, and ruffed

grouse." Based on woodcock wings submitted during the annual quail wing survey, estimates of woodcock harvests for the state are presented in Table 2.

TABLE 2: Tennessee Estimated Woodcock Harvest 1966-1970¹

Year	Estimated Woodcock Harvest
1966	9,840
1967	9,532
1968	6,150
1969	9,225
1970	3,075

¹ Example method of estimating woodcock harvest using 1966 data. Basic data obtained from state's quail wing survey.

1. Number of quail wing survey cooperators = 358
2. Number of quail wing survey cooperators returning woodcock wings = 29
3. Percent of quail wing cooperators returning woodcock wings = 8%
4. Approximate total number of quail hunters in state (Anon. 1970) = 123,000
5. Assume: 8% of the total number of quail hunters killed one (1) woodcock during the 1966 season.
6. Then: 1966 woodcock harvest would have been 123,000 x .08 or 9,840.
7. So: 1966 Harvest = 9,840 woodcock

Sheldon (1967) estimated Tennessee's woodcock kill, based on "most recent reports," as approximately 500 birds killed per year. This estimate is undoubtedly low.

Since 1966 the Game and Fish Commission has cooperated with the U.S. Fish and Wildlife Service by collecting and supplying to them: 1) names and addresses of people killing woodcock in Tennessee and 2) woodcock wings received in the annual Quail Wing Survey. The wings are used by the service in their annual wing collection survey in which they determine age and sex ratios and other data on the harvested component of the fall woodcock population. Names of woodcock wing contributors collected since 1966 are listed by Gore (1971).

The distribution of 138 woodcock wings received via the states' quail wing survey for the years 1966 through 1970 are plotted in figure 3. Nearly half of the wings were from the Middle Tennessee region. The most striking feature of this distribution is the paucity of wings from the far western counties. According to Louisiana and Michigan banding data, (Figs. 1 and 2), West Tennessee counties should be among the state's most productive harvest areas.

Tennessee woodcock seasons and bag limits, 1965 through 1970, are presented in Table 1. That Tennessee's woodcock seasons have begun in late November is apparent.

DISCUSSION AND CONCLUSIONS

Apparently substantial flights of woodcock occur through Tennessee. If hunting season dates were modified and woodcock promoted as game, this species could absorb some hunting pressure occurring on quail, grouse, and perhaps rabbits. Tennessee's woodcock season should be more successful if opened several weeks earlier. Two major questions exist, however, and must be answered before the Commission can actively promote woodcock hunting. These questions are: 1) When, specifically, is the peak migration of woodcock through Tennessee? This information is needed for proper season selection. 2) What specific types of habitat or cover do woodcock use during their stay in Tennessee? This information is needed in order to educate or inform the hunter.

Procedures for determining peak migration dates could be: 1) establishment of a woodcock wing collection survey whereby wings could be arranged by date of kill to establish peak kill trend, 2) observations by game biologists of several likely woodcock habitat areas in each district and recording weekly woodcock populations, and 3) officer hunter bag checks.

The pinpointing of major harvest areas (counties or regions) and preferred habitat types could be accomplished by: 1) a woodcock wing survey whereby location and habitat questions could be printed on wing envelopes, 2) observations by game biologists as described above while making population counts and their recording of vegetation type, density, age, etc., soil type, etc., and 3) officer hunter bag checks.

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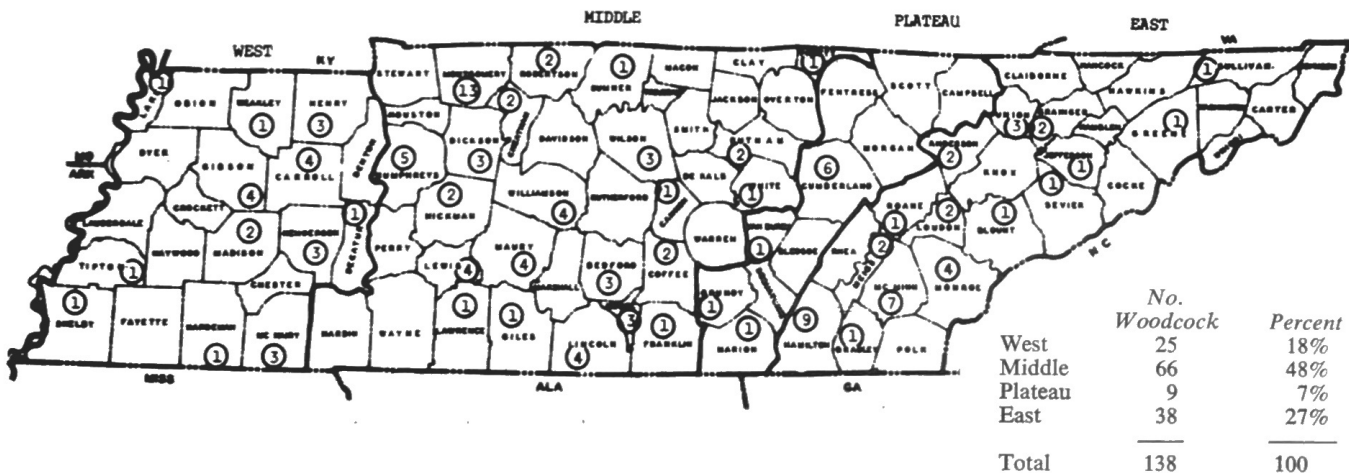


FIG. 3: Five Year Woodcock Harvest Distribution (1966 through 1970). Data taken from woodcock wings submitted during the statewide quail wing survey.