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POTENTIALITIES OF THE WOODCOCK AS A GAME BIRD RESOURCE IN THE SOUTHEASTERN UNITED STATES¹

by

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ABSTRACT

The American woodcock is a neglected game bird in most southeastern states. Reasons for disregarding this species include: a belief that woodcock are sparse in areas other than Louisiana and southwestern Mississippi; little knowledge pertaining to woodcock habitat; the practice of only hunting woodcock incidentally to other game; and a consensus that quail dogs cannot be used for hunting woodcock. During field activities associated with a range-wide study of parasitism in woodcock, surprisingly high populations were revealed in South Carolina, Georgia, Florida, Alabama, Arkansas, and southeastern Mississippi. Woodcock habitat was characterized and suggestions were

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presented for alerting southeastern hunters to the presence and value of this game bird.

INTRODUCTION

The American woodcock (*Philohela minor* Gmelin) has long been acknowledged as a game bird resource of unique quality, high esthetic value, but with limited economic importance. In recent years however, increasing interest in the "timberdoodle" has been evidenced by increased annual harvests and accelerated federal and state research programs. Yet, the popularity of woodcock hunting has been primarily associated with enthusiasts of the northeastern and northcentral United States and adjacent provinces of Canada. In the southeastern states, only Louisiana hunters harvest woodcock comparable to some northern states.

Reliable data are not available for estimating continent-wide annual woodcock harvests. While some states utilize hunter questionnaires for determining annual kills, others ascertain only the number of woodcock hunters or do not conduct surveys of any type. Some data nevertheless are available whereby regional comparisons of hunting pressure can be made. The 1968-69 Bureau of Sport Fisheries and Wildlife Survey of Adult "Duck-Stamp" Purchasers who also Hunted Woodcock indicated that of 504,279 woodcock killed in the United States by these hunters, only 144,012 (28.6%) were taken in 14 southeastern states (Table 1). Excluding Louisiana, only 13.2 percent were harvested from this region.

A typical example of the minor role of woodcock hunting in the Southeast is reflected by the 1968-69 Wildlife Harvest Survey of the Georgia Game and Fish Commission. Only 7,354 woodcock hunters could be accounted for, with over four times that many crow hunters (Table 2). The same report recorded approximately 136,000 dove hunters and 135,000 quail hunters.

Several factors contribute to these limited harvests. Many southeastern hunters believe this game bird is scarce in areas other than the Louisiana and southwestern Mississippi wintering grounds. This belief is apparently justified in that some authors have quoted that as much as 80 percent of the continental woodcock population overwinters in Louisiana alone (Blanchard, 1966; Duffy, 1967, 1969; Dalrymple, 1970).

Another problem is that many southeastern hunters seeking woodcock as a primary game bird are unable to recognize suitable habitat. In addition, favorable habitat is often quite dense and difficult to negotiate; therefore, many hunters avoid good woodcock coverts.

An additional contributing factor is that few woodcock are hunted as primary targets in the Southeast. Most are harvested as a "bonus" by quail and rabbit hunters (Sheldon, 1967). This situation is similarly found in certain northcentral states. In Michigan, which has the largest annual kill in North America, the majority of the harvest is taken by ruffed grouse hunters (Blankenship, 1957). Although ruffed grouse and woodcock may frequent the same coverts in the North, generally marginal woodcock habitat overlaps marginal quail cover in the Southeast. Many quail hunters encountering occasional woodcock may be by-passing primary cover abundant with this species.

Other reasons contributing to limited woodcock harvests in this region include beliefs that woodcock can be successfully obtained without a dog; that quail dogs are ineffective for woodcock; or that once used for woodcock, quail dogs may be ruined for future quail hunting.

Associated with a range-wide study of parasitism in woodcock, investigations were undertaken to examine: (1) the availability of woodcock wintering in the Southeast; (2) the prevalence and characteristics of woodcock habitat in this region; and (3) the utilization of quail dogs for hunting this species.

TABLE 1
RESULTS OF THE BUREAU OF SPORT FISHERIES AND
WILDLIFE SURVEY OF ADULT "DUCK STAMP" PURCHASERS
WHO ALSO HUNTED WOODCOCK, 1968-69*

	Number Hunters	Total Woodcock Kill
Southeastern States		
Alabama	1,571	4,116
Arkansas	911	3,187
Florida	1,605	6,099
Georgia	1,429	6,230
Kentucky	292	689
Louisiana	9,929	77,347
Maryland & D. C.	2,744	9,412
Mississippi	847	6,327
North Carolina	2,179	10,350
South Carolina	2,448	8,960
Tennessee	570	2,804
Texas	892	2,854
Virginia	1,209	4,425
West Virginia	314	1,212
	26,940	144,012
Northern and Central States		
Connecticut	7,448	26,366
Delaware	1,162	3,916
Illinois	1,372	2,181
Indiana	1,442	4,023
Kansas	472	642
Maine	5,521	38,040
Massachusetts	8,038	29,901
Michigan	18,044	43,125
Minnesota	3,828	8,115
Missouri	776	1,661
New Hampshire	2,612	15,489
New Jersey	5,927	25,249
New York	22,397	78,166
Ohio	3,622	15,756
Oklahoma	383	590
Pennsylvania	12,304	31,867
Rhode Island	482	2,116
Vermont	1,577	4,558
Wisconsin	12,394	28,506
	109,801	360,267
TOTALS	136,741	504,279

*Table adapted from data acquired from Duncan MacDonald, Migratory Bird Populations Station, Bureau of Sport Fisheries and Wildlife, Laurel, Maryland (Personal Communication, 1970).

TABLE 2
RESULTS OF 1968-69 GEORGIA HUNTER QUESTIONNAIRES.
COMBINATION AND HUNTING ONLY LICENSE HOLDERS*

Species	Number of Hunters
Deer	153,643
Squirrel	144,152
Dove	136,203
Quail	135,222
Rabbit	111,630
Raccoon	33,523
Crow	29,417
Duck	26,938
Opossum	20,541
Fox	15,974
Turkey	12,269
Bobcat	10,474
Woodcock	7,354

*Adapted from Table 7. Payne, R. L., R. P. Daws, and P. E. Lanier. 1969. Wildlife harvest surveys. In Survey and Analysis Division Activities, Annual Progress Report. Georgia Game and Fish Commission, Atlanta, Georgia.

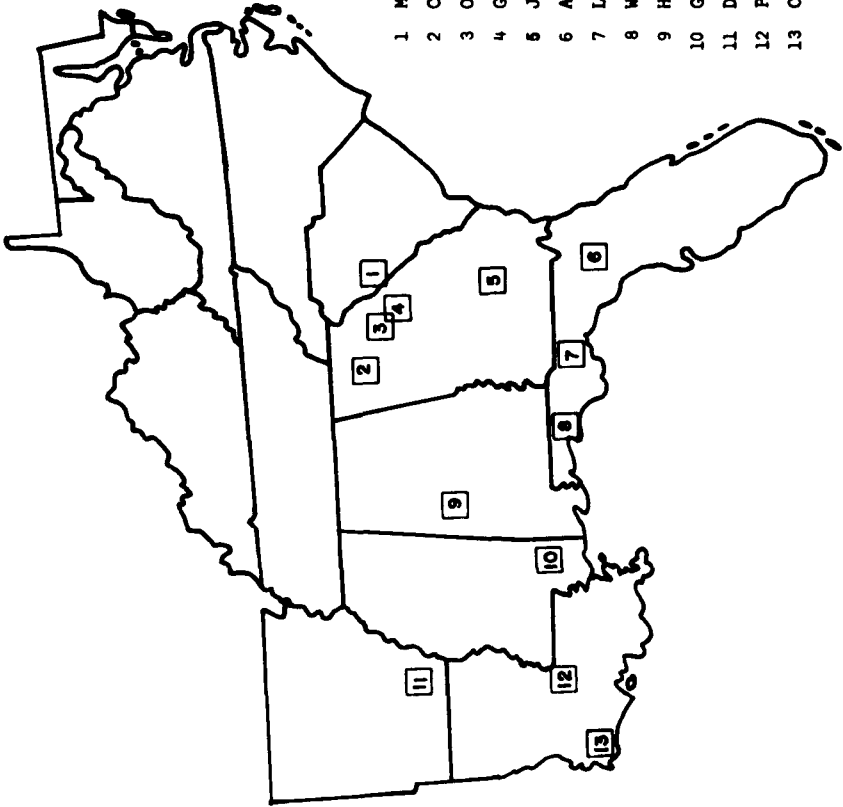
METHODS

Woodcock were collected from 13 general study areas in the Southeast (Figure 1). These areas were selected with the cooperation and assistance of state game and fish biologists, U. S. Fish and Wildlife Service personnel, and private individuals. Several factors were considered in the selection of study areas. These included: the specific requirements of the parasite research program; the potential for woodcock habitation in an area; and sufficient hunter access to allow woodcock to be collected with relative ease. Upon reaching most general study areas, the recognition of favorable woodcock habitat was the principle criterion used in the selection of actual collection sites.

With two exceptions, all woodcock were collected in diurnal cover by shotgun. Birds from George County, Mississippi, and Pointe Coupee Parish, Louisiana, were collected from nocturnal fields by nightlight and net. With exclusion of the Louisiana collections, data on number of hunters, hours hunted, number of woodcock flushed, number of woodcock killed, and general habitat characteristics were recorded for each area. A thorough account of woodcock availability and general habitat requirements in Louisiana has been recorded by Glasgow (1958).

RESULTS AND DISCUSSION

Woodcock were encountered in each general study area. In several instances, 30-40 woodcock were flushed in 1-2 hours of hunting (Table 3). Late in the hunting season, signs of recent habitation, i.e., probe holes and droppings, were apparent in some collection sites although birds were not flushed. Many promising sites were not hunted after quotas (10-12 birds) for the parasite study had been fulfilled.



LEGEND

- 1 McCormick County, S.C.
- 2 Cherokee County, Ga.
- 3 Oglethorpe County, Ga.
- 4 Greene County, Ga.
- 5 Jeff Davis County, Ga.
- 6 Alachua County, Fla.
- 7 Leon County, Fla.
- 8 Walton County, Fla.
- 9 Hale County, Ala.
- 10 George County, Miss.
- 11 Drew County, Ark.
- 12 Pointe Coupee Parish, La.
- 13 Cameron Parish, La.

Figure 1. Map of American woodcock study areas.

TABLE 3
 APPROXIMATE FLUSHING RATES ASSOCIATED WITH WOODCOCK COLLECTIONS IN THE SOUTHEAST,
 1969-70

Area	Date	Number of Hunters	Hours Hunted	Number of Birds Flushed	Number of Birds Collected
Georgia					
Cherokee Co.	11-20-69	4	1-2	30-35	16
Cherokee Co.	11-22-69	6	2-3	15-20	12
Oglethorpe Co.	12-3-69	5	1-2	35-40	14
Oglethorpe Co.	12-18-69	6	1	15-20	5
Greene Co.	12-18-69	6	1-2	10-15	6
Jeff Davis Co.	12-30-69	3	8	25-30	11
South Carolina					
McCormick Co.	12-16-69	5	4-5	25-30	14
Arkansas					
Drew Co.*	1-5-70	6	2	10	10
Louisiana					
Pointe Coupee Par.**	1-8-70	-	-	-	-
Cameron Par.+	1-9-70	-	-	-	-
Mississippi					
George Co.**	1-12-70	2	1	25-30	20
Alabama					
Hale Co.	1-13-70	4	4	25-30	11
Florida					
Walton Co.	1-15-70	5	3-4	35-40	11
Alachua Co.	1-28-70	3	11-12	15-20	10
Leon Co.	1-29-70	3	3	15-20	10

*Snow cover of 3-4 inches.

**Woodcock collected by nightlight and net.

+Flushing rates not available.

Woodcock generally were more concentrated in Piedmont collection sites than in the Coastal Plain. The authors suspect that because favorable habitat is more plentiful below the fall line, woodcock were more dispersed. Along the Choctawhatchee River in Walton County, Florida, however, 35-40 birds were flushed in approximately 3 hours.

Woodcock habitat was found abundantly within each general study area. In the Piedmont, woodcock utilized flood plains adjacent to streams and rivers. These bottomlands consisted of fertile alluvial soils with moist sandy soils along the banks. Forest overstory generally consisted of bottomland hardwoods, merging with mixed hardwood-pine stands on the drier slopes and hillsides. Principle understory species were swamp privet (*Forestiera acuminata*), honeysuckle (*Lonicera* spp.), greenbriar (*Smilax* spp.), blackberry (*Rubus* spp.), willow (*Salix* spp.), and switch cane (*Arundinaria tecta*). Additional ground cover was provided by fallen trees and debris deposited by flooding. Forested bottomlands devoid of brush or other ground cover were apparently poor habitat, but occasionally birds were flushed from areas where only isolated cover could be found. In South Carolina, several birds were flushed from beneath shrubs and plant debris on sand bars extending into water. Good woodcock habitat often was found on both sides of streams and rivers. In some cases fields utilized by woodcock for nocturnal cover were located nearby.

In the Coastal Plain, woodcock usually were found on flood plains, around the edges of swamps and "bays", or on other terrain adjacent to streams and rivers. Fertile alluvial soils and moist sandy soils were predominant. Principle overstory species were live oak (*Quercus virginiana*), water oak (*Q. nigra*), black gum (*Nyssa sylvatica*), and bald or pond cypress (*Taxodium distichum*) draped in Spanish moss (*Tillandsia usneoides*). Pines covered most slopes and hillsides. Shrubs observed included greenbriar, switch cane, buttonbush (*Cephalanthus occidentalis*), and briar thickets. Plant debris was common. In Alachua County, Florida, woodcock were flushed along creeks in thickets of saw palmetto (*Serenoa repens*), gallberry (*Ilex* sp.), grape (*Vitis* spp.) and greenbriar. In Leon County, Florida, woodcock frequented brushy islands in cypress and black gum "bays".

Sheldon (1967) states, "The fascination of hunting woodcock is lost if it is not a man-dog team effort. Dogs must be used to find woodcock consistently." Dogs utilized to collect woodcock during the study were trained on quail. During initial collections, wide-ranging dogs were found to be ineffective. Woodcock usually flushed prematurely, especially in marginal habitat, whenever prolonged time was necessary to find a dog on point. When hunted closely in primary habitat, these dogs proved to be very effective. A light bell attached to each dog's collar greatly aided in following their progress and the location of points. The authors suspect that most quail dogs can easily be adapted to woodcock hunting without ill effects on future quail hunting. Following this project the dogs were returned to quail hunting with very successful results. Although some quail dogs will not retrieve woodcock, most will find downed birds, and lost woodcock should not occur more frequently than lost quail.

CONCLUSIONS AND SUGGESTIONS

Numerous woodcock encountered from only the few areas sampled in this study would indicate that many birds overwinter in southeastern states other than Louisiana. Additional investigation probably will prove the Louisiana percentage of wintering birds to be much smaller, or the continental woodcock population much higher, than presently estimated.

The importance of the woodcock as a game bird resource in the southeastern United States could be greatly enhanced by enactment of joint federal-state awareness programs. This type of information and education endeavor should

concentrate on alerting southeastern sportsmen to the availability of this fascinating and valuable resource. Associated programs could be enacted through well prepared articles for magazines, newspapers, etc.; talks to hunt clubs and other sportsment groups; and directives to state game biologists and other personnel for encouraging the pleasure and sport of woodcock hunting in the region.

Joint federal-state banding programs are currently in progress in numerous northern states and Louisiana, with additional studies recently initiated in Mississippi and Alabama. The undertaking of banding programs in the remaining southeastern states would greatly augment more effective management of woodcock in this region.

Woodcock primarily winter in the Southeast from early December through late January. The woodcock hunting seasons presently established in most southeastern states encompass this period. However, the hunting seasons in some states, especially those in which huntable populations are primarily flight birds, are presently arranged to coincide with those of other small game for the sake of simplifying regulations (W. H. Goudy, personal communication). But as more woodcock migration data become available, serious considerations should be given to possible alterations of the presently established hunting seasons.

Sheldon (1967) aptly states, "Woodcock hunting can become almost an addiction. Once fully tasted, it gets into the blood, and no amount of hunting of other kinds can ever quite purge it. It offers recreation as unique as the bird itself." Accelerated enthusiasm on the part of both federal and state agencies will inevitably expand this form of recreation which is so close at hand but presently unknown to many southeastern sportsmen.

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ROOSTING OF YOUNG TURKEY BROODS DURING SUMMER IN FLORIDA

by

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ABSTRACT

During spring and summer in 1969 and 1970 approximately 200 observations were made of wild turkey (*Meleagris gallopavo*) brood roosting sites, most of which were found by radio-telemetry. The age that broods began to roost in trees varied from 12 to 19 days for the 14 broods. Most of the ground roosts were located under forest canopies in sparse ground cover. Brood hens normally did not defecate in their ground roosts.

After tree roosting began, broods utilized cypress (*Taxodium ascendens* and *T. distichum*) and pine (*Pinus palustris* and *P. elliottii*) more than all other trees combined. The first night off the ground was typically spent on a horizontal limb 2 to 3 inches in diameter about 22 feet above the ground. Within three days they began to roost higher in the trees, but roost limb diameters were about the same size. Most of the roost trees were over water. Broods did not attempt to seek concealment in spanish moss (*Tillandsia usneoides*) or thick foliage while roosting in trees although this cover was readily available to them.

Broods utilized a different site for roosting each night, but there was a tendency for the roosts to be clustered in favorite roosting areas. Four broods traveled an average of .27 miles between successive nightly roost sites. One brood moved an average of .24 miles farther each night than the other three broods.

INTRODUCTION

There is little doubt that suitable roosting places are an essential part of wild turkey range. A good understanding of the roosting habits of turkeys is prerequisite for effectively judging the quality of turkey range or manipulating it.

Two recent studies (Beoker and Scott, 1969; Hoffman, 1968) deal with roosting habits of the Merriam's turkey (*M. g. merriami*). Both summer and winter roosts are described. The data are presumably from adult and older juvenile turkeys.

Although it might be expected that family broods, certainly flightless young broods, have different roosting habitat requirements than adults, we

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