

SPRING FOOD HABITS OF THE EASTERN WILD TURKEY
IN SOUTHWESTERN TENNESSEEFARROKH R. TABATABAI AND MICHAEL L. KENNEDY
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ABSTRACT

Food habits of the eastern wild turkey (*Meleagris gallopavo silvestris*) were studied in southwestern Tennessee by examining the contents of 87 gizzards collected during three spring sampling periods (1978-1980). Average percent volume (given first) and percent occurrence of major foods were: sugar hackberry (*Celtis laevigata*), 53.9, 77.2; bread wheat (*Triticum aestivum*), 8.5, 25.4; oak (*Quercus* spp.), 5.2, 26.7; bristle grass (*Setaria* spp.), 4.2, 18.1; flowering dogwood (*Cornus florida*), 3.3, 19.4; oxalis (*Oxalis* spp.), 2.9, 19.2. Sugar hackberry was found to be consumed in highest volumes and was most frequent in occurrence during each spring sampled.

INTRODUCTION

Due to its economic and historic importance, the eastern wild turkey (*Meleagris gallopavo silvestris*) has been the subject of many biologic investigations. Since an understanding of food habits is critical to management decisions relating to the species, studies of food habits have been conducted in several states (e.g., Webb, 1941; Dalke et al., 1942; Koziacky, 1942; Wheeler, 1948; Meanley, 1956; and Lewis, 1962). However, information concerning wild turkey food habits is lacking for many regions within its range, and, since food utilization tends to vary between geographic areas, food habits information gathered in one area may not be applicable to management programs in others.

To our knowledge, with the exception of Prestwich (1977), there have been no food habit studies of wild turkeys conducted in Tennessee. Since *M. g. silvestris* is an important game bird in the state, information leading to an understanding of its feeding strategies would be of value. The purpose of this study was to examine the spring food habits of *M. g. silvestris* in southwestern Tennessee. Investigations of this type should provide a preliminary base for the understanding of wild turkey in the state and provide general information useful in management of the species in Tennessee.

MATERIALS AND METHODS

The study was conducted on the Shelby Forest Wildlife Management Area in northwestern Shelby County, Tennessee. The study area encompassed 5222.7 ha and consisted of two distinct habitat types (bluffs and bottomlands). Bluffs were dominated by oaks (*Quercus* spp.), hickories (*Carya* spp.), American beech (*Fagus grandifolia*), maples (*Acer* spp.), and elms (*Ulmus* spp.). Understory shrubs common to this habitat were dogwoods (*Cornus* spp.), white sassafras (*Sassafras albidum*), red buckeye (*Aesculus pavia*), and common spicebush

(*Lindera benzoin*). Prevalent vines were grapes (*Vitis* spp.), Virginia creeper (*Parthenocissus quinquefolia*), and common poison ivy (*Toxicodendron radicans*). Bottomland habitat occurred in the Mississippi River flood plain and was dominated by hardwoods of oaks, hickories, sugar hackberry (*Celtis laevigata*), and eastern cottonwood (*Populus deltoides*). Common understory plants were box elder (*Acer negundo*), common poison ivy (shrub form and vine), grapes, Virginia creeper, and Alabama supplejack (*Berchemia scandens*). Common bald cypress (*Taxodium distichum*) and common buttonbush (*Cephalanthus occidentalis*) were abundant in bayous and sloughs. Japanese honeysuckle (*Lonicera japonica*) was prevalent on bluffs and bottomland. Scattered within the study area were small wildlife openings with bread wheat (*Triticum aestivum*).

During April 1978, 1979, and 1980, 87 turkey gizzards (84 male and 3 female) were collected from hunters at a checking station on the study area. Gizzards were frozen for later inspection. Examinations of food items were conducted at the Department of Biology, Memphis State University. Procedures for analyzing food content followed those of Davison (1940) and Martin et al. (1946). Food items of each gizzard were spread on a white tray, segregated, and identified. Food volumes were measured in a graduated cylinder by the water displacement technique and were recorded to the nearest 0.1 ml (Davison, 1940). Any food item present in less than 1% of the total food volume was recorded as a trace. Also recorded were the percentages of occurrences of food items in the gizzards. Food materials were identified following Symonds (1963), Martin and Barkley (1973), Schopmeyer (1974), and Radford et al. (1978). Scientific and common names are as given by Scott and Wasser (1980).

RESULTS

A total of 38 food types was identified. Of these, food items making up 1% or more of the total food volume or foods found in 3% or more of the specimens examined were considered principal foods and are listed in Table 1. Items with volume or frequency values lower than these were considered insignificant and not included in the material presented here. Percent volume and percent occurrence of principal foods consumed during each of the sampling periods are presented in Table 1. Sugar hackberry was found to be consumed in highest volumes and had greatest occurrence in each of the sampling periods. However, the percent volume and percent occurrence of all food items varied somewhat from year to year.

DISCUSSION

Korschgen (1967) discussed feeding habits and foods of wild turkeys. Volumes and frequencies of food items found in the present study are comparable to those reported in other studies. The food supply for wild turkey, as for all game birds, varies greatly from season to season and year to year (Korschgen, 1967). Therefore, variety in diet is a necessity. Prestwich (1977) reported huckleberry (*Gaylussacia baccata*) as the most abundant spring food item found in turkey droppings in middle Tennessee. Results of the present study showed the food items taken by eastern wild turkey in southwestern Tennessee to be diversified and principal foods to vary somewhat over years but with sugar hackberry serving as an important item each spring. Despite the vast array of foods eaten, relatively few items stand out as consistent primary foods. Korschgen (1967) indicated that availability and palatability appear to be the governing factors when game birds have free choice. He suggested that palatability, for the most part, does not change. Availability of food is largely dependent upon production factors, many of which are not subject to control. If given free choice, wild turkeys may take certain food items over others. Kennamer and Arner (1967) indicated that, although sugar hackberry was found most abundantly in the forest litter of the Mississippi Delta, it was consumed by wild turkeys in smaller amounts than the less abundant hickory, animal matter, and common spicebush. Additionally, in the White River bottomlands of southeastern Arkansas, wild turkeys consumed a higher amount of sugar hackberry during years of poor mast production (Meanley, 1956). Results of the present study, in general, follow those of Meanley (1956). As mast (seeds) utilization increased in the second and third years, consumption of sugar hackberry decreased in relation to the first year (Table 1). A high percentage (volume) of sugar hackberry seeds indicated in any study should be viewed with caution. These seeds possess a hard coat; therefore, they may remain in the gizzard longer than softer foods. This may account for part of the volume obtained for sugar hackberry in the present study. However, the abundance in occurrence and volume of this item during the investigation indicated that it may have served as a primary food source during the study period.

In a summary of six studies, Korschgen (1967) reported a combined 1.3 percent volume of animal foods. These results are similar to the 1.1 percent recorded in the present study. The proportion of animal foods in the diet of wild turkeys varies by location, season, and age of the birds. However, insects usually make up the greatest portion of the animal material taken. Food summaries showing principal foods by season or year often fail to show the great importance of insects to turkeys during shorter periods (Korschgen, 1967).

Some green forbs were found to be important items during all sampling periods of the present study. These results are in agreement with those of other investigators (e.g., Webb, 1941; Kozicky, 1942; Meanley, 1956; and Lewis, 1962) and point out once more the importance of green forbs in wild turkey feeding strategies.

Acorns are generally reported as important spring mast for wild turkey (Webb, 1941; Kozicky, 1942; Mosby and Handley, 1943; Culbertson, 1948; Wheeler, 1948; Meanley, 1956; and others). Acorns from the many oak

species in the eastern United States comprise the most important staple food of *M. g. sylvestris* (Korschgen, 1967). Our study indicated acorns to be an important food source, but sugar hackberry occurred in greatest frequency and volume.

Quantitative information on food utilization of eastern wild turkeys in areas with similar habitat and information from the present study site during seasons other than spring are needed. It is difficult to draw conclusions regarding food preference of eastern wild turkeys in southwestern Tennessee. While the present study provides preliminary management information, we recommend additional studies in order to more completely understand the feeding strategies of this species in the state.

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