

LAND UTILIZATION IN TENNESSEE

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The crop combination of this region is typical of any mixed-farming area in which both crops and live stock are important. Of the total cultivated land, 46 per cent is in corn, 18 per cent is in hay, 6 per cent is in wheat, 3 per cent is in cotton, and 2 per cent is in tobacco (Figs. 3 and 4). The ratio of corn acreage exceeds that of any other region, and that of hay is slightly more than the average of the state. Both of these crops, as well as wheat, are subsistent crops, notwithstanding the fact that they occupy the bulk of the cultivated acreage in a commercial farming region. Most of the corn and hay is fed to live stock on the farms where produced, and the farmers receive their income from the sale of cattle, hogs, sheep, and dairy products. In this respect, the region is not unlike the heart of the corn belt. No doubt, the high percentage of corn acreage is due, not only to a favorable climate, fertile soil, and fields whose surface range from level to steep slopes, but also to the fact that corn is the most desirable of all crops for finishing live stock for the market (Fig. 7, B). Corn-fed steers bring two to five cents per pound more than grass-fed steers, and corn-fed hogs bring one and one-half times as much as mast-fed hogs. Hay fits equally as well as corn into the crop combination, for it forms a considerable part of the winter feed of the farm animals, and with corn and wheat or oats, makes a good three-year rotation. The distribution of the commercial crops of cotton and tobacco are unlike those in the Forest-Mining-Subsistence Farming Region in that they are scattered over much of the region rather than lying mostly in the periphery. The tobacco acreage is localized considerably more by soil requirements than is the cotton acreage.

Owing to the relatively high percentage of urban population, market gardening ranks high in this region; consequently considerable acreage is planted in potatoes, tomatoes, beans, cabbage, sweet corn, and other vegetables grown in Tennessee. Obviously, the majority of the acreage utilized for market gardening is localized in the peri-urban zones of Nashville and the larger towns of the region. With the exception of the Valley of East Tennessee, more land is used for orchards in this region than in any other in the state. Maury, Davidson, and Lincoln counties lead in fruit production, with apples, peaches, pears, and plums occupying the bulk of the fruit acreage. A lower ratio of the crop land is utilized for truck farming than in any of the preceding regions described. The lack of interest in this in-

tensified form of agriculture is due partly to a higher percentage of urban population, and partly to the fact that most of the productive acreage whether in cultivation or in pasture provides the farmer with either a direct or indirect money crop.

Live stock play a more important part in this region than they do in any other region of the state (Fig. 4, *D*). The region has an average of 79 live stock units per square mile, a number 57 per cent greater than that in any other region and 81 per cent greater than the average of the state as a whole. The importance of the industry is closely related to the high acreage of native bluegrass pasture, and to a crop combination dominated by corn and hay as feed crops. (Fig. 7, *C*).

This region is also unique in the combination of farm animals, for it has only 1.2 times as many mules as horses, as compared to three times as many in the Cotton Region (Table 1). The relatively high percentage of horses is due partly to a preference of many people for horses as work animals and partly to a considerable number which are kept for breeding purposes. More striking than the ratio of mules to horses is the ratio of meat-producing animals to draft animals. The number of meat-producing animals is 3.8 times as great as the draft animals, a ratio more than double that in the Cotton Region. This ratio, however, is in harmony with the fact that cattle, hogs, sheep, and dairy products are the main source of farm revenue in this region; whereas cotton is the chief money crop in the Cotton Region. The Hereford, Shorthorn, and Aberdeen Angus are the most prevalent breeds of beef animals, and the Jersey is the leading dairy cow. The ratio of beef cattle has greatly decreased during the last two decades and the ratio of dairy cattle has correspondingly increased. The increased interest in dairying was a response of the farmers to the post-war urbanization movement, and was augmented by the building of creameries in virtually all the urban centers. The whole scheme, however, was made possible by the building of hard-surfaced highways and the advent of the motor car. At present, milk trucks gather fresh milk twice a day from all parts of the region during the summer months and once a day during the winter months. Hog production is greatest where corn production is highest. Much of the corn is "hogged down" which saves the cost of harvesting the corn and also that of feeding the hogs. This is the leading corn region in the state and much of it is sold in the form of pork.

The general fertility of the soil and a diversified system of agriculture in this region have given rise to a people who have developed a spirit of progress and an atmosphere of independence not present in any other part of the state. A higher tax rate on the highly productive soils of this region made it possible to have better roads, schools, and churches, and to have them sooner than in other areas

with less productive soils. Unique among the schools are several private ones whose origin date back to the days of slavery and large plantations. Although most of the large plantations have been subdivided into smaller farms, many of the old plantation homes are still standing, but are now the property of the second and third offspring of the builder. These homes are large, roomy, and massive in appearance. While they vary in size and structure, all have many common features. The veranda, supported by huge columns, is always present. Entrance is through a large hall on each side of which are spacious rooms with large fireplaces, and from which a winding stairway leads to the second story. Leading back from the main structure is a one-story projection which contains from one to three rooms. Some of these which were built before the Civil War had unattached kitchens. These old residences are well provided with porches—places much utilized by the occupants during their leisure time in the long summer season. Although these homes were properly preserved and cared for have a rather expensive appearance, they did not cost their builders large sums of money. They were, in most cases, constructed of hardwood lumber and covered with red cedar shingles made from trees which grew on the same plantation. Much of the work was done by the planters' own slaves or tenants. The newer homes of the region are strikingly different both in structure and in materials. They are largely of the bungalow type, often brick veneered and covered with composition or metal roofing. The change in building materials reflects the passing of the fine forests of former time. A change from wood to metal is also noted in the farm fences. A few of the old fences are made from chestnut rails, whereas virtually all the newer fences are made of woven wire fastened to locust or red cedar posts which still grow on the limestone glades of the region.

Other land, a part of which is farm land, is utilized for mining phosphate rock. For a number of years Tennessee has ranked as the second leading phosphate producing state in the Union. Approximately two and one-third million dollars worth of this product was mined in 1935, most of which came from this region.¹³ The present production comes mostly from Maury and Giles counties. The three commercial classes of phosphate rock mined are brown, blue, and white rock, each of which was formed during a different geologic age. By far the most important of these varieties is the brown rock which resembles brown sandstone. From a small area in the vicinity of Mt. Pleasant in Maury County comes more than 90 per cent of all brown phosphate rock mined in the state. The deposits range in thickness from three to fifteen feet, and are covered with a thin overburden. Mining is done by open pit steam shovel methods. Seams of blue phosphate rock ranging in thickness from one to five feet occur along Swan and Leatherwood creeks in Maury, Giles, and

¹³K. E. Born, *Summary of the Resources of Tennessee*. Nashville: Division of Geology, 1936. pp. 78-80.

Hickman counties. The blue rock has not been worked as extensively as the brown, partly because it outcrops on steep slopes and requires a more expensive mining method of drift mining. Owing to its very low percentage of phosphate content, virtually all the white rock mined comes from Perry and Decatur counties, which lie outside this region. Part of the manufactured phosphate is shipped out of the state in bulk, and part is mixed with sulphuric acid from the Ducktown copper region and other elements in local fertilizer plants. Wherever phosphate rock is mined by the open pit method, the surface of the land is left more irregular than a battlefield which has suffered heavy artillery fire.

The fact that three out of every eight gainful workers in this region are not engaged in agricultural work indicates that urban population is relatively high, and that urban acreage is greater and more important in the economic life of the people. Nashville has 154,000 people and Murfreesboro and Columbia have about 8,000 each. Lebanon and Shelbyville have about 5,000 each, Fayetteville and Franklin about 4,000 each, and Pulaski and Lewisburg about 3,000 each. Nashville is the capital and, consequently, the political center of the state. It is also the main collecting and distributing point for the entire Central Basin. In short, Nashville's growth, both past and future, is closely related to agriculture, commerce, and politics. The site of the city was selected at the southernmost point of the great bend of the Cumberland River near the northwest corner of the Basin. Prior to the development of hard-surfaced highways, and especially railroads, the city depended on this river for the shipping of much of its inbound and outbound freight (Fig. 7, *D*.)

At present, Nashville has large wholesale and jobbing houses for the distribution of groceries, hardware, dry goods, fruits, vegetables, and other commodities consumed in the region. It has stock yards from which live stock produced in the region are shipped to distant markets. Labor, capital, raw materials, and markets are factors which have favored manufacturing in the city. The manufacturing plants, in the main, are the type which utilize raw materials from the surrounding fields and forests. For many years the making of flour from soft wheat was important, but the decline in wheat acreage during the last two decades has made the blending of flour more important than the milling of wheat. The importance of the city as a meat packing center is closely related to the live stock industry of the region, and the fertilizer industry owes its existence to the phosphate rock mined in Maury and adjoining counties. Local clays are used in the brick kilns of the city, and the mixed forests supply raw materials for the many sawmills, planing mills, and other woodworking industries. Because of the choice hardwood in the region, Nashville has established the reputation of being one of the great hardwood floor producers of the world. Among the miscellaneous factories are those for making shoes, clothing, food products, rayon, and stoves.

Owing to its many schools and colleges, Nashville has been called the "Athens of the South." Among the educational institutions of higher learning for whites are George Peabody College for Teachers, Vanderbilt University, Ward-Belmont School for Girls, Scarritt College for religious workers, and St. Bernard and St. Cecilia Academies. Fisk University, Meharry Medical College, and the State Agricultural and Industrial College, all for colored students, are located in Nashville. Closely associated with the educational interest in Nashville is the fact that the city is one of the most important publishing and printing centers of the South, and is said to print more religious literature than other city in the world.

Located on the highest and most imposing hill in the city is the capitol building, surrounded on the south and west by the War Memorial Building and other state buildings. Lying immediately outside this zone and between the state buildings and the central business core of the city is the hotel zone strategically located so as to accommodate both shoppers who come to market and business men who come from all parts of the state to transact official business in the state buildings. The recreational grounds of Nashville are composed of more than twenty parks and playgrounds scattered over the city.

Murfreesboro, the county seat of Rutherford County, is the second largest urban center, for it is in a fine agricultural county. The five cotton gins in Murfreesboro bespeak the importance of cotton notwithstanding the fact that the county lies outside the principal cotton producing lands of Tennessee. In Murfreesboro are factories for making hosiery, flour, meal, and live stock feed and a large creamery for the production of butter, cheese, and evaporated milk. The wood-working mills depend, in part, on red cedar, which thrives on the limestone glades in this region. From the cedar are made such useful articles as cedar churns, buckets, tubs, and pencils. Institutional lands of importance to the entire region are those occupied by the State Teachers College and Tennessee College for Women.

Columbia is the county seat of Maury County, probably the richest county in the region. The importance of Columbia as a trading center is the result of the relatively high purchasing power of the people, which in turn is closely related to the high yields of crops and live stock produced by the fertile soil. Columbia has long been one of the principal mule markets of the state. That the industrial plants depend on products from the field and forest is exemplified by the cooperative creamery, phosphate mills, and tobacco warehouses.

Shelbyville, Lebanon, Fayetteville, Franklin, and Pulaski are all county-seat towns and agricultural markets. Each is located in a fine farming region and is a collecting and distributing point for producers' and consumers' goods of the farm. The industries of these towns, like Murfreesboro and Columbia, depend on farm products and the forests for raw materials.

As in the other regions, it is not known what percentage of the total land area of the region is utilized for transportation purposes, but a glance at a highway map of the state shows that the amount is above the average. The highways of Middle Tennessee form a highly symmetrical radial pattern with Nashville at the apex. The roads of this region are relatively straight notwithstanding the hill and dome type of topography. The railroad mileage is not commensurate with the highway mileage. As a railroad center Nashville is not even the equivalent of Jackson, for it is served only by the Louisville and Nashville; Nashville, Chattanooga and St. Louis; and the Tennessee Central roads. The limitation of Nashville as a railroad center is probably due in no small degree to commodities carried by water on the Cumberland River, especially prior to 1900.

THE FOREST-MINING-GRAZING REGION

The Forest-Mining-Grazing Region is composed of approximately ten counties totaling about 11 per cent of the entire area of the state, and coincides rather closely with the physiographic province known as the Cumberland Plateau. The population is only about 26 per square mile for the region as a whole—a density lower than that in any other part of the state with the exception of a narrow strip lying along the North Carolina boundary (Fig. 1, *A*). As the name and population density of the region indicate, it is one in which the majority of the land is utilized for purposes other than agriculture. The saxicultural, nemoricultural, and pastoral activities are a direct response to the numerous seams of high-grade bituminous coal, an extensive open forest area with a carpet of grass, an elevation approximately 1,000 feet higher than the surrounding area, a light and sandy soil of low fertility, and a growing season of only 150 to 180 days. The ratio of Negroes is only two per cent as compared to 18 per cent for the state as a whole. The low percentage of Negroes in the region reflects a type of soil whose fertility is not adequate to support both land owners and tenants. The fact that only 47 per cent of all gainful workers are engaged in agriculture further indicates a soil of low productivity, for there is no urban center in the region with a population which exceeds 2,500 except La Follette and it exceeds this number by only about 100 people.

The amount of land in farms in this region is about 26 per cent of the total area, a percentage less than half the average of the state as a whole and one less than a third that of farm land in the Corn-Hay-Tobacco Belt. The amount of land in cultivation is only nine per cent, a ratio less than a third that of the state as a whole and one less than a fourth that of the Cotton Region. These phenomenal differences in land utilization are in harmony with the variation in the natural environment. The land used for cultivation represents the choice parcels throughout the region, of which by far the most im-

portant is the long narrow strip which forms the floor of the Sequatchie Valley. This valley is from two to four miles wide, about 60 miles long, and resembles a huge gutter carved lengthwise into the southern half of the plateau. That the floor of this valley lies about 1,000 feet below the level of the plateau is due to a fold of nonresistant limestone rock which has broken down under moisture and eroded away. Accordingly, the soils are the outgrowth of the crumbling of the calcareous rock, and are among the most productive ones in the state. In this streak of landscape are many fields of fine grain and hay and herds of high-grade live stock.

Of the farm land in this region, 31 per cent is in cultivation, 22 per cent is in pasture, 41 per cent is in woods, and 6 per cent is utilized for other purposes. The most phenomenal difference in the allocation of farm land in this region is the very high percentage of land in woods (Fig. 3, B). This fact is appreciated still more when it is recalled that 74 per cent of all land is of the non-farm type, most of which is forest covered. From an agricultural point of view, a considerable portion of the land is submarginal and most of the remainder is marginal. Much of the farm land has an extremely low carrying capacity, for it is land being rested from cultivation, and on which live stock graze not on tame grasses but on native vegetation, much of which is non-nutritious weeds and bushes.

The crop combination is very simple for only two crops are important from an acreage point of view. Corn occupies about 40 per cent and hay about 25 per cent of the cultivated land. Although both of these are subsistence crops, they are not adequate to supply the needs of the sparse population of the region. The total production of corn and hay is due not only to a relatively small acreage but also to a low yield per acre owing to the low fertility of the soil. Crops are grown, in the main, on relatively small plots of land, and are shifted to newly cleared land after a few years of cultivation (Fig. 8, C).

The light sandy soils and mountain climate are well suited to the growing of fruits and vegetables. The lack of transportation facilities and the general isolation of the region, however, have retarded the development of these products in the past. Good highways are now being built in and through the region, and considerably more acreage will, in all probability, be used for growing these products in the future. The growing of the white potato has already gained considerable prominence because it can be sold on the early northern markets at a fancy price.

(To be continued)