Series 1961, No. 19

Issued March 1965

SOIL SURVEY

Franklin County Alabama

OUR SOIL ★ OUR STRENGTH

UNITED STATES DEPARTMENT OF AGRICULTURE
Soil Conservation Service
In cooperation with
ALABAMA AGRICULTURAL EXPERIMENT STATION
and
ALABAMA DEPARTMENT OF AGRICULTURE AND INDUSTRIES

HOW TO USE THE SOIL SURVEY REPORT

THIS SOIL SURVEY of Franklin County, Ala., will serve several groups of readers. It will help farmers in planning the kind of management that will protect their soils and provide good yields; assist engineers in selecting sites for roads, buildings, ponds, and other structures; aid foresters in managing woodlands; and add to our knowledge of soil science.

Locating Soils

Use the index to map sheets at the back of this report to locate areas on the large map. The index is a small map of the county on which numbered rectangles have been drawn to show where each sheet of the large map is located. When the correct sheet of the large map has been found, it will be seen that boundaries of the soils are outlined, and that there is a symbol for each kind of soil. All areas marked with the same symbol are the same kind of soil, wherever they occur on the map. The symbol is inside the area if there is enough room; otherwise, it is outside the area and a pointer shows where the symbol belongs.

Finding Information

This report contains sections that will interest different groups of readers, as well as some sections that may be of interest to all.

Farmers and those who work with farmers can learn about the soils in the section "Descriptions of the Soils" and then turn to the section "Use and Management of Soils." In this way, they first identify the soils on their farm and then learn how these soils can be managed and what yields can be expected. The "Guide to Mapping Units" at the back of the report will simplify use of the map and report. This guide lists each soil and land type mapped in the county, and the page where each is described. It also lists, for each soil and land type, the capability unit and woodland suitability group, and the pages where each of these is described.

Foresters and others interested in woodlands can refer to the subsection "Use of Soils as Woodland." In that subsection the soils in the county are grouped according to their suitability for trees, and factors affecting the management of woodland are explained.

Engineers will want to refer to the subsection "Engineering Properties of Soils." Tables in that subsection show characteristics of the soils that affect engineering.

Persons interested in science will find information about how the soils were formed and how they were classified in the section "Formation and Classification of Soils."

Students, teachers, and other users will find information about soils and their management in various parts of the report, depending on their particular interest.

Newcomers in Franklin County will be especially interested in the section "General Soil Map," where broad patterns of soils are described. They may also be interested in the section "General Nature of the Area," which gives additional information about the county.

* * * * *

Fieldwork for this survey was completed in 1961. Unless otherwise indicated, all statements in the report refer to conditions in the county at the time the survey was in progress. The soil survey of Franklin County was made as a part of the technical assistance furnished by the Soil Conservation Service to the Franklin County Soil Conservation District.

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SOIL SURVEY OF FRANKLIN COUNTY, ALABAMA

BY HOYT SHERARD, R. A. YOUNG, J. P. BRYANT, SAM J. SMITH, AND JAMES A. GIBBS, SOIL CONSERVATION SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE, IN COOPERATION WITH THE ALABAMA AGRICULTURAL EXPERIMENT STATION AND THE ALABAMA DEPARTMENT OF AGRICULTURE AND INDUSTRIES

FRANKLIN COUNTY is in northwestern Alabama, adjacent to the State of Mississippi (fig. 1). It has a total area of 644 square miles, or 412,160 acres. The county seat is Russellville.

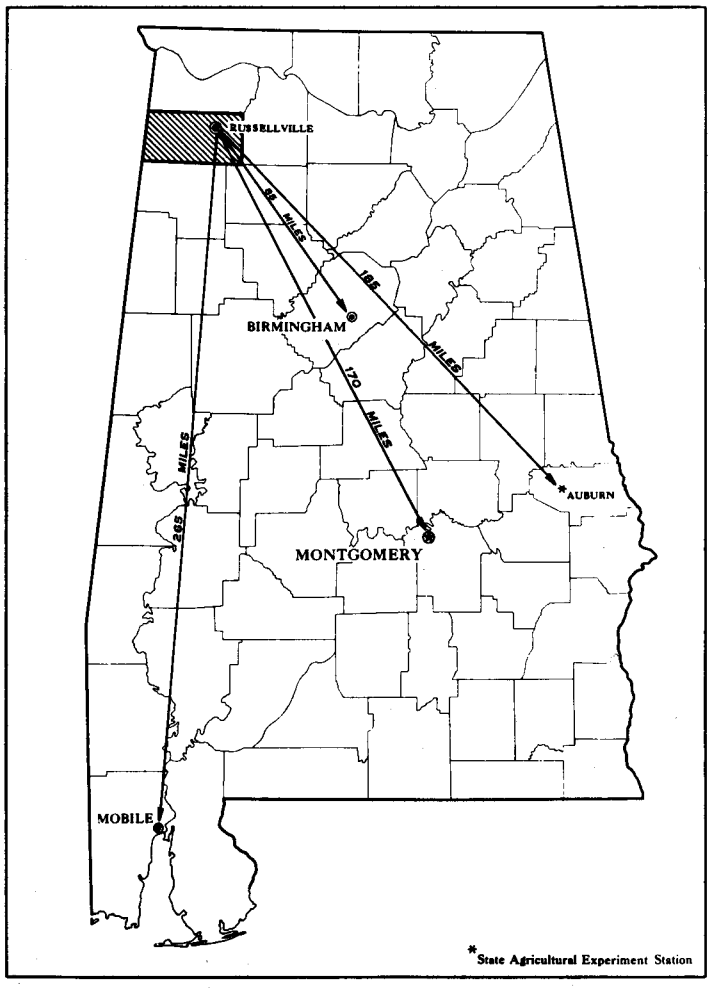

Figure 1.—**Location of Franklin County in Alabama.**

Agriculture is the chief occupation in the county. Cotton, corn, oats, wheat, soybeans, hay, poultry, and livestock are the main agricultural products and the principal source of farm income. Cotton and corn have been the chief cash crops, but the production of soybeans, dairy products, eggs, broilers, and beef cattle are becoming major enterprises. Most of the hay and small grain and some of the corn are used to feed livestock on farms.

How Soils Are Mapped and Classified

Soil scientists made this survey to learn what kinds of soils are in Franklin County, where they are located, and how they can be used.

They went into the county knowing they likely would find many soils they had already seen, and perhaps some they had not. As they traveled over the county, they observed steepness, length, and shape of slopes; size and speed of streams; kinds of native plants or crops; kinds of rock; and many facts about the soils. They dug many holes to examine soil profiles. A profile is the sequence of natural layers, or horizons, in a soil; it extends from the surface down into the parent material that has not been changed much by leaching or by roots of plants.

The soil scientists made comparisons among the profiles they studied, and they compared these profiles with those in counties nearby and in places more distant. They classified and named the soils according to nationwide, uniform procedures. To use this report efficiently, it is necessary to know the kinds of groupings most used in a local soil classification.

Soils that have profiles almost alike make up a soil series. Except for different texture in the surface layer, all the soils of one series have major horizons that are similar in thickness, arrangement, and other important characteristics. Each soil series is named for a town or other geographic feature near the place where a soil of that series was first observed and mapped. Savannah and Decatur, for example, are the names of two soil series. All the soils in the United States having the same series name are essentially alike in those characteristics that go with their behavior in the natural, untouched landscape. Soils of one series can differ somewhat in texture of the surface soil and in slope, stoniness, or some other characteristic that affects use of the soils by man.

Many soil series contain soils that differ in texture of their surface layer. According to such differences in texture, separations called soil types are made. Within a series, all the soils having a surface layer of the same texture belong to one soil type. Savannah loam and Savannah very fine sandy loam are two soil types in the Savannah series. The difference in texture of their surface layers is apparent from their names.

Some soil types vary so much in slope, degree of erosion, number and size of stones, or in some other feature affecting their use, that practical suggestions about their

management could not be made if they were shown on the soil map as one unit. Such soil types are divided into phases. The name of a soil phase indicates a feature that affects management. For example, Savannah very fine sandy loam, 2 to 6 percent slopes, is one of several phases of Savannah very fine sandy loam, a soil type that ranges from nearly level to strongly sloping.

After a guide for classifying and naming the soils had been worked out, the soil scientists drew the boundaries of the individual soils on aerial photographs. These photographs show woodlands, buildings, field borders, trees, and other details that greatly help in drawing boundaries accurately. The soil map in the back of this report was prepared from the aerial photographs.

The areas shown on a soil map are called mapping units. On most maps detailed enough to be useful in planning management of farms and fields, a mapping unit is nearly equivalent to a soil type or a phase of a soil type. It is not exactly equivalent, because it is not practical to show on such a map all the small, scattered bits of soil of some other kind that have been seen within an area that is dominantly of a recognized soil type or soil phase.

In preparing some detailed maps, soil scientists may show two or more soils as one mapping unit if slope or some other characteristic that affects management is so important that it outweighs the effects of the other soil characteristics. Cuthbert and Ruston soils, 10 to 15 percent slopes, is such a mapping unit and is called an undifferentiated soil group. Mapping these soils as separate units is unnecessary because they occur in areas that are so rough and broken that relief has a greater influence on management than do other soil characteristics.

Also, on most soil maps, areas are shown that are so rocky, so shallow, or so frequently worked by wind, water, and mining operations that they scarcely can be called soils. These areas are shown on a soil map like other mapping units, but they are given descriptive names, such as Gullied land or Rock land, limestone, and are called land types rather than soils.

While a soil survey is in progress, samples of soils are taken, as needed, for laboratory measurements and for engineering tests. Laboratory data from the same kinds of soils in other places are assembled. Data on yields of crops under defined practices are assembled from farm records and from field or plot experiments on the same kinds of soils. Yields under defined management are estimated for all the soils.

But only part of a soil survey is done when the soils have been named, described, and delineated on the map, and the laboratory data and yield data have been assembled. The mass of detailed information then needs to be organized in a way that it is readily useful to different groups of readers, among them farmers, ranchers, managers of woodland, agricultural technicians, engineers, and homeowners. Grouping soils that are similar in suitability for each specified use is the method of organization commonly used in the soil survey reports. Based on the yield and practice tables and other data, the soil scientists set up trial groups, and test them by further study and by consultation with farmers, agronomists, engineers, and others. Then, the scientists adjust the the groups according to the results of their studies and consultation. Thus, the groups that are finally evolved reflect up-to-date knowledge of the soils and their behavior under present methods of use and management.

General Soil Map

After studying the soils in a locality and the way they are arranged, a soil scientist can make a general map that shows the main patterns of soils, called soil associations. Such a map is the colored general soil map in the back of this report. Each association, as a rule, contains a few major soils and several minor soils, in a pattern that is characteristic though not strictly uniform.

The soils within any one association are likely to differ in many properties; for example, slope, depth, stoniness, or natural drainage. Thus, the general soil map does not show the kind of soil in any particular place, but patterns of soils, in each of which are several different kinds of soils.

Each soil association is named for the major soil series in it, but as already noted, soils of other series may also be present. The major soils of one soil association may also be present in another association, but in a different pattern.

The general map is useful to people who want a general idea of the soils, who want to compare different parts of the county, or who want to learn the possible location of good-sized areas suitable for a certain kind of farming or other land use. The seven soil associations in Franklin County are described in the following pages.

1. Savannah-Linker-Albertville association: Moderately well drained and well drained soils of the uplands on slopes of 0 to 15 percent

This soil association is on narrow, rolling ridgetops that are dissected by many small intermittent streams. It occurs in the southeastern part of the county. The major soils are the Savannah, Linker, and Albertville.

Savannah soils are on the broader ridgetops. These soils developed in stratified sandy loam and sandy clay loam Coastal Plain material. They are moderately well drained and have a very fine sandy loam surface layer and a yellowish-brown loam subsoil. A fragipan (dense, brittle layer) is at a depth of 18 to 30 inches.

The Linker and Albertville soils have developed in residuum from weathered sandstone and shale. Their depth to bedrock ranges from 20 to 72 inches. These soils are well drained and generally are more rolling than the Savannah soils. The Linker soils have a yellowish-red fine sandy clay loam subsoil, and the Albertville soils have a yellowish-brown, firm silty clay subsoil.

The Savannah soils make up about 43 percent of this association; the Linker soils, 28 percent; and the Albertville soils, 22 percent. Minor soils, which make up the rest, are those in the Ruston, Ora, and Ramsey series.

Nearly all of the acreage in this soil association is within the outer boundary of the William B. Bankhead National Forest, but most of the land is privately owned. Most of the farms are small, well managed, and moderately productive, and are operated full time by their owners. The farms are mostly of the general type, but a few are dairy and beef-cattle farms. Cotton and corn are the main crops. Broiler production is extensive.

About 85 percent of the association has been cleared and is used for crops and pasture. About 90 percent of the total acreage is suitable for cultivation, but the soils are subject to moderate erosion if they are cropped and are not protected. The remaining 10 percent is best suited to permanent pasture or trees.

2. Savannah-Ruston-Saffell association: Moderately well drained and well drained soils of the Coastal Plain uplands on slopes of 0 to 10 percent

This soil association is on broad, undulating and rolling ridgetops that are dissected by small, intermittent streams. It makes up about 17 percent of the county. Most of the acreage is in the Phil Campbell, Hodges, and Red Bay communities. All the soils developed in beds of sand, silt, and gravel of the upper Coastal Plain.

Dominant in the association are the Savannah, Ruston, and Saffell soils. The Savannah soils occupy the broader, more gently sloping ridgetops. They are moderately well drained and have a grayish-brown very fine sandy loam surface layer and a yellowish-brown loam subsoil. A fragipan occurs at a depth of 18 to 30 inches.

The Saffell soils are well drained. Their surface layer is gravelly fine sandy loam, and their subsoil is yellowish-brown, friable gravelly sandy clay loam. Generally, 15 to 75 percent of the soil mass is gravel.

The Ruston soils are well drained and have a fine sandy loam surface layer and a yellowish-red, friable very fine sandy clay loam subsoil.

In addition, there are small areas of Cuthbert, Greenville, Guin, and Ora soils on the uplands and of Bibb soils on the stream bottoms.

The soils of this association are among the most intensively farmed in the county. Most farms are operated by their owners and are small, generally well managed, and fairly productive. Farming is a full-time enterprise on about 70 percent of the farms and a part-time operation on the rest. General farming is most common, but there are a few dairy and beef-cattle farms. Cotton, corn, and hay are the main crops. Broiler production is extensive, especially in the eastern part of the soil association.

Approximately 80 percent of this association has been cleared and is used for crops and pasture. About 70 percent of the total acreage is suitable for cultivation, but the erosion hazard is moderate to severe. The remaining acreage is best suited to permanent pasture or trees.

3. Decatur-Talbott association: Well-drained red soils of the limestone valleys on slopes of 2 to 15 percent

This soil association occupies undulating and rolling areas in limestone valleys that have been dissected by intermittent and permanent streams with shallow channels. The association is in a rather narrow strip that extends from Isbell to Newburg.

With the extensive Decatur and Talbott soils are small acreages of the Huntington, Dunning, Lindside, and Colbert soils. The soils in this association are silt loam, silty clay loam, or silty clay, and most of them have developed in residuum from limestone.

The Decatur soils are deep and well drained; their subsoil is dark-red silty clay or clay. They are some of the most productive soils in the county. Talbott soils are deep and moderately well drained. Their subsoil is red, plastic silty clay or clay.

Most of the farms in this soil association are larger than the average size for the county. They are well managed and productive. About two-thirds of the farms are operated by their owners. They are chiefly general farms, but a few are dairy and beef-cattle farms. Cotton, corn, and hay are the main crops.

About 90 percent of the association has been cleared and is used for crops and pasture. Approximately 65 percent of the acreage is suited to row crops, but the erosion hazard is moderate to severe. The rest of the acreage is best suited to permanent pasture or trees.

4. Colbert association: Moderately well drained to somewhat poorly drained soils derived mostly from clayey limestone on slopes of 0 to 15 percent

This association occupies broad, nearly level to sloping areas in limestone valleys that are cut by intermittent and permanent streams with shallow channels. It is in a continuous area in the northeastern part of the county. The soils are silt loam, silty clay loam, or silty clay. Most of them developed in residuum that weathered chiefly from limestone containing a large amount of clay but partly from calcareous shale.

The Colbert soils are dominant and make up about 70 percent of the association. These soils have a mottled yellowish-brown, plastic clay subsoil. The remaining 30 percent consists of Lindside, Dowellton, Melvin, Hollywood, Captina, and Talbott soils.

Most of the farms in this soil association are small and are operated by their owners. Management is generally good, but productivity is moderately low. General farming is most prevalent, though beef-cattle and dairy farms are common. The chief crops are cotton, corn, and hay. Broilers are raised on a few farms.

About 60 percent of the acreage has been cleared and is used for crops and pasture. The rest is in woodland, its best use. Roughly 70 percent of the association is fairly well suited to row crops, hay, and pasture, but erosion is a severe hazard, and cultivation is hindered by the clayey texture.

5. Rock land, limestone-Rock land, sandstone, association: Mostly shallow rock lands on slopes of 2 to 35 percent

This association is on broad, dominantly steep uplands that are dissected by steep-walled drains. It is mainly in the southeastern part of the county. In much of the area, rock crops out in many places and broken fragments are common on the surface.

Rock land, limestone—one of the two dominant land types in this association—consists mainly of soil material, fragments of limestone that range from 6 inches to several feet across, and outcrops of limestone bedrock. The soil material is between boulders and outcrops and is a few inches to more than 3 feet deep.

Rock land, sandstone—the other dominant land type—consists chiefly of sandy soil material, fragments of sandstone 6 inches to several feet across, and outcrops of sandstone. Between the fragments and outcrops, the soil material is a few inches to 3 feet or more in depth.

Ramsey and Albertville soils occupy small areas in the association.

About 90 percent of this association is forested. Approximately one-half of the acreage is within the boundary of the William B. Bankhead National Forest, but most of the land is privately owned. Limestone quarries near Isbell yield high-grade building stone, crushed stone for roads, and agricultural lime.

6. Guin-Cuthbert-Ruston association: Excessively drained to moderately well drained, deep and moderately deep, gravelly and sandy soils on slopes of 10 to 40 percent

This association is on highly dissected Coastal Plain uplands. It is characterized by a series of narrow, sloping,

winding ridgetops with steep side slopes that terminate in narrow, winding valleys and drainageways. The association occupies a large part of the western two-thirds of the county. The soils in this area developed in beds of fine sand, silt, and gravel of the Coastal Plain.

Guin, Cuthbert, and Ruston are the major soils in the association. The Guin soils are deep, are excessively drained, and have a surface layer of strong-brown gravelly sandy loam. In most places the soil material is 40 to 90 percent gravel.

The Cuthbert soils are moderately well drained. Their surface layer is dark grayish-brown fine sandy loam, and their subsoil is strong-brown to yellowish-red, firm silty clay to clay. The Ruston soils are deep, are well drained, and have a grayish-brown fine sandy loam surface layer and a yellowish-red, friable very fine sandy clay loam subsoil.

Most of this association is forested. A small acreage is used for general farms and for a few small dairy and beef-cattle farms. The farms are operated by their owners. Also in the association are gravel pits and large excavations and pits where iron ore has been mined.

Most of the association is best used as woodland. Some of the soils on ridgetops are suited to cultivated crops but are subject to very severe erosion.

7. Bibb-Ochlockonee-Iuka association: Poorly drained to well-drained soils of flood plains on slopes of 0 to 2 percent

This soil association consists of narrow to fairly broad, irregularly shaped flood plains along the lower reaches of Bear, Cedar, and Little Bear Creeks in the western part of the county. These areas are nearly level basins surrounded by steep slopes that extend to the higher uplands. The soils developed in general and local alluvium that came from higher soils of the Coastal Plain and has been influenced by sandstone and shale.

Soils of the Bibb, Ochlockonee, and Iuka series are dominant in the association. The poorly drained Bibb soils are mottled with gray and grayish brown at depths of less than 6 inches. The well-drained Ochlockonee soils have a surface layer of dark grayish-brown to dark-brown fine sandy loam. The moderately well drained Iuka soils have a grayish-brown fine sandy loam surface layer and are mottled with brown and gray at a depth of 18 to 36 inches. Small areas of Prentiss and Tilden soils are on the stream terraces.

Most of the farms in this soil association are operated full time by their owners and are small, well managed, and moderately productive. Corn, soybeans, hay, and cotton are the chief crops. General farming is prevalent, but there are a few beef-cattle and dairy farms.

The soils of this association are well suited or moderately well suited to cultivated crops. Flooding is a hazard, however, and artificial drainage is needed in many places. Consequently, crop suitability is reduced and yields are uncertain. The soils are well suited to pasture.

Use and Management of Soils[1]

This section has six main parts. The first describes the system of land capability classification used by the Soil Conservation Service. In the second part, the soils of the county are placed in capability units and the use and management of these units are explained. The third part is a table that lists estimated yields of the principal crops at two levels of management. Then there are parts on the use of soils as woodland, the use of soils for wildlife, and the engineering properties of soils.

[1] O. D. FINCHER, conservation agronomist, Soil Conservation Service, helped to write this section.

Capability Groups of Soils

The capability classification is a grouping of soils that shows, in a general way, how suitable the soils are for most kinds of farming. It is a practical grouping based on limitations of the soils, the risk of damage when they are used, and the way they respond to treatment.

In this system all the kinds of soil are grouped at three levels, the capability class, subclass, and unit. Eight capability classes are in the broadest grouping and are designated by Roman numerals I through VIII. In class I are the soils that have few limitations, the widest range of use, and the least risk of damage when they are used. The soils in the other classes have progressively greater natural limitations. In class VIII are soils and landforms so rough, shallow, or otherwise limited that they do not produce worthwhile yields of crops, forage, or wood products.

The subclasses indicate major kinds of limitations within the classes. Within most of the classes there can be up to four subclasses. The subclass is indicated by adding a small letter, *e*, *w*, *s*, or *c*, to the class numeral, for example, IIe. The letter *e* shows that the main limitation is risk of erosion unless close-growing plant cover is maintained; *w* means that water in or on the soil will interfere with plant growth or cultivation (in some soils the wetness can be partly corrected by artifical drainage); *s* shows that the soil is limited mainly because it is shallow, droughty, or stony; and *c*, used in only some parts of the country, indicates that the chief limitation is climate that is too cold or too dry.

In class I there are no subclasses, because the soils of this class have few or no limitations. Class V can contain, at the most, only subclasses *w*, *s*, and *c*, because the soils in it have little or no erosion hazard but have other limitations that limit their use largely to pasture, range, woodland, or wildlife.

Within the subclasses are the capability units, which are groups of soils enough alike to be suited to the same crops and pasture plants, to require similar management, and to have similar productivity and other responses to management. Thus, the capability unit is a convenient grouping for making many statements about management of soils. In Alabama, capability units are identified according to a statewide system of numbering, for example, IIe–15 or IIIe–44. These numbers are not consecutive in Franklin County, because not all of the capability units used in Alabama apply to the soils in this county.

Soils are classified in capability classes, subclasses, and units according to the degree and kind of their permanent limitations; but without consideration of major and generally expensive landforming that would change the slope, depth, or other characteristics of the soil; and without consideration of possible but unlikely major reclamation projects.

The eight classes in the capability system, and the subclasses and units in this county, are described in the list that follows.

Class I. Soils that have few limitations that restrict their use.

Capability unit I–12.—Deep, well-drained soils on stream terraces in the Coastal Plain; slopes of 0 to 2 percent.

Capability unit I–43.—Deep, well-drained soils on local alluvium in limestone valleys; slopes of 0 to 2 percent.

Class II. Soils that have some limitations that reduce the choice of plants or require moderate conservation practices.

Subclass IIe. Soils subject to moderate erosion if they are not protected.

Capability unit IIe–12.—Slightly eroded and eroded, deep, well-drained soils that are on uplands and stream terraces, are gravelly in some places and have a fine sandy loam to sandy clay subsoil; slopes of 2 to 6 percent.

Capability unit IIe–15.—Slightly eroded and eroded, moderately deep, moderately well drained soils that are on uplands and stream terraces and have a fragipan in the lower subsoil; slopes of 2 to 6 percent.

Capability unit IIe–41.—Eroded, deep, well-drained soils on uplands of the limestone valleys; slopes of 2 to 6 percent.

Capability unit IIe–44.—Eroded, deep or moderately deep, well-drained soils that are on upland plateaus and are over sandstone and shale; slopes of 2 to 6 percent.

Subclass IIw. Soils that have moderate limitations because of excess water.

Capability unit IIw–12.—Deep, well drained and moderately well drained soils on alluvium in the Coastal Plain; slopes of 0 to 2 percent.

Capability unit IIw–15.—Moderately well drained, moderately deep soils with a firm, compact lower subsoil that restricts drainage; slopes of 0 to 2 percent.

Capability unit IIw–41.—Moderately well drained soils that are on flood plains in limestone valleys and are subject to occasional overflow; slopes of 0 to 2 percent.

Class III. Soils that have severe limitations that reduce the choice of plants, or require special conservation practices, or both.

Subclass IIIe. Soils that are subject to severe erosion if they are cultivated and not protected.

Capability unit IIIe–12.—Slightly eroded and eroded, deep, well-drained soils that are on uplands of the Coastal Plain, are gravelly in some places, and have a brown to yellowish-red sandy subsoil; slopes of 6 to 10 percent.

Capability unit IIIe–15.—Slightly eroded and eroded, moderately deep, moderately well drained soils that have a fragipan in the lower subsoil; slopes of 6 to 10 percent.

Capability unit IIIe–44.—Slightly eroded and eroded, deep or moderately deep soils that are on upland plateaus and are over sandstone and shale; slopes of 6 to 10 percent.

Capability unit IIIe–46.—Eroded, moderately deep, moderately well drained soils that have a lower subsoil of plastic clay and are over limestone; slopes of 2 to 6 percent.

Capability unit IIIe–48.—Eroded soils that have a plastic clay subsoil and are over limestone and shale; slopes of 2 to 6 percent.

Capability unit IIIe–111.—Severely eroded, deep, well-drained soils that are on Coastal Plain uplands and have a red, friable clay loam subsoil; slopes of 2 to 6 percent.

Capability unit IIIe–441.—Severely eroded, red soils that are on uplands in limestone valleys and are deep and well drained; slopes of 2 to 6 percent.

Subclass IIIw. Soils that have severe limitations because of excess water.

Capability unit IIIw–41.—Poorly drained, deep soils on first bottoms in limestone valleys; slopes of 0 to 2 percent.

Capability unit IIIw–42.—Somewhat poorly drained and poorly drained, moderately deep to shallow soils that have a compact, plastic clay or silty clay subsoil; slopes of 0 to 2 percent.

Capability unit IIIw–43.—Somewhat poorly drained to moderately well drained, dark-colored, plastic clays that are moderately deep and are over limestone; slopes of 0 to 2 percent.

Class IV. Soils that have very severe limitations that restrict the choice of plants, require very careful management, or both.

Subclass IVe. Soils subject to severe erosion if they are cultivated and are not protected.

Capability unit IVe–11.—Eroded and severely eroded, deep, well-drained loamy soils on uplands; slopes of 6 to 15 percent.

Capability unit IVe–48.—Eroded, moderately deep, moderately well drained or somewhat poorly drained soils that have a plastic clay or silty clay subsoil and are over limestone and shale; slopes of 6 to 10 percent.

Capability unit IVe–115.—Severely eroded, moderately deep, moderately well drained soils that are on Coastal Plain uplands and have a fragipan in the lower subsoil; slopes of 6 to 10 percent.

Capability unit IVe–441.—Severely eroded, red soils that are on uplands in limestone valleys and are deep and well drained; slopes of 6 to 10 percent.

Capability unit IVe–448.—Severely eroded, moderately deep, moderately well drained or somewhat poorly drained soils that have a clayey or loamy surface layer, a plastic clay subsoil, and are over limestone and shale; slopes of 2 to 6 percent.

Subclass IVw. Soils that have very severe limitations to cultivation because of excess water.

Capability unit IVw–11.—Poorly drained, deep, nearly level soils on flood plains of the Coastal Plain.

Class V. Soils not likely to erode that have other limitations, impractical to remove without major reclamation, that limit their use largely to pasture or range, woodland, or wildlife food and cover. No soils in Franklin County are in class V.

Class VI. Soils that have severe limitations that make them generally unsuitable for cultivation and that limit their use largely to pasture or range, woodland, or wildlife food and cover.

Subclass VIe. Soils severely limited, chiefly by risk of erosion if protective cover is not maintained.

Capability unit VIe–19.—Mostly moderately deep, moderately well drained soils that are on Coastal Plain uplands and have a firm silty clay subsoil; some areas are deep, are well drained, and have a loamy subsoil; slopes of 6 to 15 percent.

Capability unit VIe–48.—Eroded and severely eroded, moderately deep, moderately well drained or somewhat poorly drained soils that have a clay subsoil and are over limestone and shale; slopes of 10 to 15 percent.

Capability unit VIe–49.—Slightly eroded, shallow, well-drained to excessively drained soils of the uplands; slopes of 10 to 15 percent.

Capability unit VIe–111.—Severely eroded, deep, well-drained soils on uplands of the Coastal Plain; slopes of 10 to 15 percent.

Capability unit VIe–441.—Severely eroded, red soils that are on uplands in limestone valleys and are deep and well drained; slopes of 10 to 15 percent.

Subclass VIs. Soils generally unsuitable for cultivation and limited for other uses by their low available moisture capacity, stoniness, shallowness, or other soil features.

Capability unit VIs–11.—Gravelly, deep, excessively drained soils on the Coastal Plain; slopes of 10 to 15 percent.

Capability unit VIs–43.—Shallow, dark-colored, plastic clay soils that are over limestone and are somewhat poorly drained to moderately well drained; slopes of 0 to 2 percent.

Class VII. Soils that have very severe limitations that make them unsuitable for cultivation without major reclamation, and that restrict their use largely to grazing, woodland, or wildlife.

Subclass VIIe. Soils very severely limited, chiefly by risk of erosion if protective cover is not maintained.

Capability unit VIIe–19.—Slightly eroded and severely eroded, moderately deep and deep, generally moderately well drained soils that are on Coastal Plain uplands and have a firm silty clay subsoil in most places; some soils have a loamy subsoil and are well drained; slopes of 6 to 25 percent.

Capability unit VIIe–441.—Severely eroded gullied land; slopes of 6 to 40 percent.

Subclass VIIs. Soils very severely limited by low available moisture capacity, stoniness, shallowness, or other soil features.

Capability unit VIIs–11.—Steep, gravelly soils that are on the Coastal Plain and are deep and excessively drained; slopes of 15 to 40 percent.

Capability unit VIIs–48.—Land without a continuous mantle of soil; slopes of 0 to 35 percent.

Class VIII. Soils and landforms that, without major reclamation, have limitations that preclude their use for commercial production of plants and that restrict their use to recreation, wildlife, water supply, or esthetic purposes. No soils in Franklin County are in class VIII.

Management by Capability Units

In this subsection each capability unit is described and the soils in it are listed. In addition, suggestions are given for the use and management of the soils in each unit.

The soils in each unit have many similarities. Distinctive characteristics that affect the use and management of particular soils are given with the descriptions of the units. The need of the soils in each unit for lime and plant nutrients depends on past cropping and fertilizing practices. Therefore, lime and fertilizer should be applied according to soil tests, which can be made by the Soil Testing Laboratory at Auburn, Alabama.

Recommendations on crop varieties and pasture mixtures can be obtained from publications of the Alabama Agricultural Experiment Station. The Agricultural Extension Service and the Soil Conservation Service can help interpret the recommendations for the soils on individual farms. They also can give technical assistance on land preparation, cropping systems, terracing, drainage, pasture management, forestry, wildlife, and other farm problems.

CAPABILITY UNIT I–12

Cahaba fine sandy loam, 0 to 2 percent slopes, is the only soil in this capability unit. It developed in old alluvium on nearly level stream terraces and is deep, well drained, strongly acid, and friable. This soil is permeable to water, air, and roots to a depth of several feet. Natural fertility and the content of organic matter are low. The available moisture capacity is moderate.

About 95 percent of the acreage is cultivated. The soil is well suited to cotton, corn, soybeans, small grain, grain sorghum, and truck crops. It is also well suited to most grasses and to alfalfa, sericea lespedeza, and most other legumes.

Under good management, continuous row crops produce high yields. Plowing under winter cover crops and all crop residue helps to maintain good soil structure. Large applications of fertilizers are needed, and crops respond well to them. Most crops need additions of lime.

This soil is easily tilled and responds well to good management. It can be worked within a wide range of moisture content. Runoff and erosion can be reduced by using a good cropping system and by managing crop residue well.

CAPABILITY UNIT I–43

Huntington silt loam, local alluvium, is the only soil in this capability unit. This soil is deep, well drained, friable, and slightly acid to medium acid. It developed in local alluvium that washed mainly from soils derived from high-grade limestone, and it generally occurs in depressions at the heads of and along small drainageways and draws. It is subject to ponding for a short time during heavy or prolonged rains. The soil has weak structure but is permeable to water, air, and roots. The available moisture capacity is high. Both floods and runoff from adjacent slopes cause damage to small plants at times.

About 95 percent of the acreage is cultivated. Crops suitable on this soil are corn, cotton, grain sorghum, soybeans, small grain, and truck crops. Also suitable are fescue, alfalfa, white clover, sericea lespedeza, and most other grasses and legumes.

Continuous row crops produce high yields if each crop is followed by a winter cover crop and all residue is returned to the soil. This soil needs moderate additions of fertilizer, and crops respond well to these additions. Legumes and many other crops respond well to the addition of lime. Good tilth can be maintained by large additions of organic matter. The moisture content is generally favorable for tillage. Runoff and erosion are not serious problems.

CAPABILITY UNIT IIe-12

In this capability unit are deep, well-drained, friable fine sandy loams, loams, and gravelly fine sandy loams that developed on uplands and stream terraces. Slopes range from 2 to 6 percent. These soils are strongly acid. Their subsoil ranges from fine sandy loam to sandy clay. These soils have good structure, and they are permeable to water, air, and roots to a depth of several feet. Natural fertility and the supply of organic matter are low. Infiltration is medium to rapid, and the available moisture capacity is moderate. Runoff causes a moderate erosion hazard. The soils are—

Cahaba fine sandy loam, 2 to 6 percent slopes.
Greenville loam, 2 to 6 percent slopes, eroded.
Linker fine sandy loam, 2 to 6 percent slopes, eroded.
Ruston fine sandy loam, 2 to 6 percent slopes, eroded.
Saffell gravelly fine sandy loam, 2 to 6 percent slopes.

About 75 percent of the acreage is cultivated. The soils are suited to cotton, corn, small grain, soybeans, grain sorghum, truck crops, and most grasses and legumes. A good cropping system consists of 2 years of a grass-legume mixture followed by 2 years of row crops. Adequate but less suitable is 1 year of button clover or another reseeding legume that is allowed to seed and is followed by 2 years of row crops. After a crop is harvested, shred all residue and leave it on the surface. Crops on these soils need large amounts of a complete fertilizer for satisfactory yields; alfalfa and button clover need boron. The response to fertilizer is good.

The tilth of these soils is generally good, and it can be maintained by proper management. The soils can be tilled throughout a wide range of moisture content. Practices that reduce erosion are contour tillage, stripcropping, terracing, grassing of waterways, using a good cropping system, and properly using all crop residue.

CAPABILITY UNIT IIe-15

In this capability unit are moderately deep, moderately well drained, friable soils that occupy stream terraces, foot slopes, and uplands. Slopes range from 2 to 6 percent. These soils have a subsoil of loam, silty clay loam, or fine sandy loam that contains, at a depth of 18 to 30 inches, a fragipan that retards the movement of moisture and air and the penetration of roots. The surface layer and upper subsoil are moderately permeable and are generally well drained, but they become waterlogged in wet periods. The lower subsoil is compact and slowly permeable and, in places, is finer textured than the upper subsoil. Mottles in the lower subsoil indicate poor drainage. The available moisture capacity is moderate to low. Surface runoff causes a moderate hazard of further erosion. These soils are low in natural fertility and organic-matter content and are medium acid to very strongly acid. The soils are—

Cane loam, 2 to 6 percent slopes, eroded.
Captina silt loam, 2 to 6 percent slopes.
Ora fine sandy loam, 2 to 6 percent slopes, eroded.
Ora fine sandy loam, heavy substratum, 2 to 6 percent slopes, eroded.
Prentiss fine sandy loam, 2 to 6 percent slopes.
Savannah very fine sandy loam, 2 to 6 percent slopes.
Savannah very fine sandy loam, 2 to 6 percent slopes, eroded.
Tilden fine sandy loam, 2 to 6 percent slopes.

Approximately 70 percent of the total acreage in this capability unit is cultivated. Suitable crops are cotton, corn, small grain, soybeans, grain sorghum, truck crops, and many grasses and legumes (fig. 2). A good cropping system consists of 2 years of sod crops followed by 2 years of row crops, but one consisting of 2 years of small grain followed by 2 years of row crops is adequate. Continuous row crops are satisfactory if they are followed by winter legumes. Shredding residue and leaving it on the surface supplies organic matter and helps to control erosion.

Figure 2.—**Pasture of Kentucky 31 fescue and white clover on Savannah very fine sandy loam, 2 to 6 percent slopes, eroded. One acre of this pasture provides grazing for 1 cow for an estimated 130 days each year.**

These soils need large additions of fertilizer, lime, and organic matter, and they respond well to these amendments. Structure is fairly good and can be maintained without difficulty. Tillage can be performed best within a somewhat narrow range of moisture content. Practices that reduce runoff and erosion are contour tillage, stripcropping or terracing, grassing waterways, using field borders, using a good cropping system, and properly using crop residue. Some areas are suitable for sprinkler irrigation.

CAPABILITY UNIT IIe-41

Decatur silt loam, 2 to 6 percent slopes, eroded, is the only soil in this capability unit. This well-drained, friable soil occurs on slopes of 2 to 6 percent on the uplands in limestone valleys. It developed from the residuum of high-grade limestone and has a deep root zone that is underlain by bedrock at a depth of more than 5 feet. The subsoil is friable to firm silty clay or clay. This soil is medium in natural fertility and in content of organic

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matter and is medium acid to strongly acid. Infiltration is medium, permeability is moderate, and the available moisture capacity is moderate to high. Runoff causes a moderate hazard of further erosion.

About 90 percent of the acreage is cultivated. This soil is suited to cotton (fig. 3), corn, small grain, grain sorghum, soybeans, truck crops, and most legumes and grasses. It produces good yields of alfalfa and button clover.

***Figure 3.*—Cotton on Decatur silt loam, 2 to 6 percent slopes, eroded. Yield of lint is estimated at 750 pounds per acre.**

A good cropping system consists of 3 years of fescue mixed with white clover, or another sod crop, followed by 3 years of row crops. An acceptable cropping system is 2 years of a small grain and 2 years of a row crop that is followed each year by a legume seeded in the fall. This soil can be row cropped year after year if it is protected by winter legumes.

Large amounts of fertilizer and organic matter are required for high yields of all crops and pasture. Additions of lime increase the quantity and quality of legumes and of many field crops and grasses. Alfalfa and button clover need boron. Good tilth can be maintained without difficulty. The moisture content is usually favorable for tillage.

Practices needed to reduce runoff and control erosion are contour tillage, stripcropping, seeding waterways, using a good cropping system, and properly using crop residue. This soil is suitable for sprinkler irrigation.

CAPABILITY UNIT IIe-44

Albertville fine sandy loam, 2 to 6 percent slopes, eroded, is the only soil in this capability unit. This deep or moderately deep, well-drained soil is on uplands where it was derived chiefly from thinly interbedded sandstone and shale. Depth to bedrock is generally greater than 30 inches. The surface soil is a friable fine sandy loam 4 to 6 inches thick, and the subsoil is friable to firm silty clay loam to clay.

Infiltration and permeability are slow in this soil, and the available moisture capacity is moderate to low. Surface runoff is medium and causes a moderate erosion hazard. The soil is low in fertility and organic-matter content and is strongly acid to very strongly acid.

Approximately 50 percent of the acreage is cultivated. rops suitable for this soil are corn, cotton, small grain, sorghum, soybeans, truck crops, and most grasses and legumes. A good cropping system consists of 2 or 3 years of a sod crop followed by 2 years of row crops, but 1 year of small grain followed by 1 year of a row crop is satisfactory. After a crop is harvested, shred the residue and leave it on the surface.

The soil needs large additions of fertilizer and organic matter for high yields of crops and pasture. Lime is needed by legumes, and most other crops respond to it.

Practices that reduce runoff and erosion are contour tillage, terracing, grassing of waterways, using a good cropping system, and properly using all crop residue.

CAPABILITY UNIT IIw-12

In this capability unit are deep, friable, moderately well drained and well drained soils on first bottoms and in upland depressions. Slopes range from 0 to 2 percent. These soils developed in general and local alluvium that washed from soils developed from Coastal Plain sediments. They are strongly acid to very strongly acid. The surface layer is generally fine sandy loam, 6 to 8 inches thick, that is underlain by friable fine sandy loam or loam. Some of the soils generally have mottles at a depth of 18 to 30 inches. All are permeable to water, air, and roots to a moderate depth. Natural fertility and the organic-matter content are medium. Surface runoff is slow, and the available moisture capacity is moderate to high. Flooding occurs in some areas after heavy or prolonged rain but seldom lasts for more than 1 or 2 days. The soils in this capability unit are—

Iuka fine sandy loam.
Iuka fine sandy loam, local alluvium.
Ochlockonee fine sandy loam.

Approximately 65 percent of the acreage in this capability unit is cultivated. The most suitable crops are corn (fig. 4), cotton, soybeans (fig. 5), grain sorghum, small grain, some truck crops, and most grasses and legumes, especially fescue and white clover. A suitable cropping system consists of 2 years of a sod crop followed by 2 years

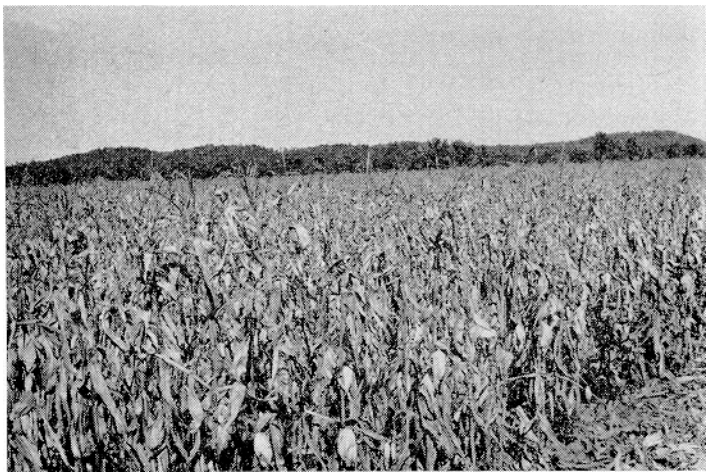

***Figure 4.*—In foreground corn on Ochlockonee fine sandy loam. Yield is estimated at 75 bushels per acre. In background is Guin gravelly sandy loam, 15 to 40 percent slopes.**

Figure 5.—**Soybeans on Iuka fine sandy loam. This field will yield an estimated 25 bushels per acre. In background, at right, is Guin gravelly sandy loam, 15 to 40 percent slopes.**

of row crops. Row crops can be grown continuously if a large amount of crop residue is returned to the soil each year, but their yields are generally lower than those of crops grown in a rotation that includes sod.

Large amounts of fertilizer and organic material are needed for high production. Most legumes and many other crops respond well to additions of lime. Good tilth can be maintained by using sod crops in the cropping system.

Excess moisture interferes with tillage and other field operations at times. Surface drainage is needed in some areas to remove excess water. Runoff is not a serious problem.

CAPABILITY UNIT IIw-15

In this capability unit are friable, moderately deep, moderately well drained soils that occur on slopes of 0 to 2 percent on uplands and stream terraces. These soils have a fragipan, 18 to 30 inches below the surface, that retards the movement of water and air and the penetration of roots. The surface layer is fine sandy loam or very fine sandy loam 6 to 8 inches thick, and the subsoil is friable very fine sandy loam or loam. Infiltration is medium in these soils, and runoff is slow. Permeability is moderate in the surface layer and the upper subsoil but is slow to very slow in the fragipan. The available moisture capacity is moderate to low. These soils warm up slowly in spring and are somewhat droughty in dry periods. They are strongly acid or very strongly acid and are low in organic-matter content and natural fertility. The soils are—

Prentiss fine sandy loam, 0 to 2 percent slopes.
Savannah very fine sandy loam, 0 to 2 percent slopes.

About 75 percent of the total acreage in this capability unit is cultivated. Crops suitable for these soils are corn, cotton, soybeans, small grain, grain sorghum, some truck crops, and most grasses and legumes. A good cropping system consists of 2 years of a sod crop followed by 2 years of row crops. Continuous row cropping is satisfactory if a large amount of residue is returned to the soil each year, but yields of row crops are higher if the cropping system includes sod or winter legumes.

Large applications of fertilizer increase the yields of crops and pasture. Legumes and most other crops need added amounts of lime. Because the fragipan limits the moisture available in the root zone, plants are likely to be affected during periods of little or no rain. Tillage can be performed best within a narrow range of moisture content.

CAPABILITY UNIT IIw-41

In this capability unit are deep, friable, moderately well drained soils that occur on first bottoms and in depressions at the heads of and along small drainageways and draws. Slopes range from 0 to 2 percent. These soils developed in local and general alluvium that washed chiefly from soils derived from high-grade limestone. The surface layer is generally silt loam 5 to 8 inches thick. It is underlain by friable silt loam or light silty clay loam that is mottled with gray and brown, generally at a depth of 18 to 30 inches. These soils have weak structure but are permeable to water, air, and roots. The available moisture capacity is high. Surface runoff is slow. After heavy or prolonged rains, areas in depressions are subject to ponding for a short period, and areas on first bottoms are flooded at times, but seldom for longer than 1 or 2 days. These soils are medium in natural fertility and organic-matter content and are slightly acid to strongly acid. The soils are—

Lindside silt loam.
Lindside silt loam, local alluvium.

Approximately 65 percent of the acreage of this capability unit is cultivated. The soils are well suited to corn, cotton, soybeans, grain sorghum, small grain, some truck crops, and most grasses and legumes. Fescue and white clover are especially suitable. A suitable cropping system consists of 2 years of a sod crop followed by 2 years of row crops. Row crops can be grown continuously if a large amount of crop residue is returned to the soil each year.

Large amounts of fertilizer and organic matter are needed for high production. Most legumes and many other crops respond well to additions of lime. Good tilth can be maintained by using crop residue properly and by including sod in the cropping system.

Excess moisture interferes with tillage and other field operations, and drainage ditches are needed in some areas. Runoff is not a serious problem.

CAPABILITY UNIT IIIe-12

The soils in this capability unit are strongly acid, friable fine sandy loams and gravelly fine sandy loams that occupy upland slopes of 6 to 10 percent and are deep and well drained. Their subsoil is friable and ranges from fine sandy loam to fine sandy clay loam. These soils have good structure, and they are permeable to water, air, and roots to a depth of several feet. Natural fertility and the organic-matter content are low. Infiltration is medium, the available moisture capacity is moderate, and runoff is moderate to low. The soils are—

Linker fine sandy loam, 6 to 10 percent slopes.
Linker fine sandy loam, 6 to 10 percent slopes, eroded.
Ruston fine sandy loam, 6 to 10 percent slopes.
Ruston fine sandy loam, 6 to 10 percent slopes, eroded.
Saffell gravelly fine sandy loam, 6 to 10 percent slopes.
Saffell gravelly fine sandy loam, 6 to 10 percent slopes, eroded.

Approximately 70 percent of the acreage in this capability unit is cultivated. The crops suitable for these soils are cotton, corn, small grain, soybeans, sorghums, truck crops, most grasses, and sericea lespedeza and most other legumes. These crops can be grown in one of the following cropping systems: (a) 4 years fescue and ball clover or white clover, or another grass-legume sod crop, followed by 2 years of row crops; (b) 3 years of sod followed by 2 years of row crops, the residue of which is properly used; or, (c) 2 years of a sod crop followed by 1 year of a row crop.

These soils need lime and large amounts of a complete fertilizer and crop residue. They respond well to these amendments. Tilth is generally good and can be maintained by using a good cropping system. The range in moisture content suitable for tillage is generally wide. The gravel in some of these soils interferes with tillage.

Runoff and erosion can be reduced most effectively by using a cropping system that includes perennial sod. Practices generally needed to control runoff in cultivated areas are contour tillage, terracing, seeding waterways, stripcropping, and using field borders.

CAPABILITY UNIT IIIe-15

In this capability unit are moderately deep, moderately well drained soils that have a fragipan and occur on uplands and foot slopes. Slopes range from 6 to 10 percent. These soils have a surface layer of fine sandy loam, very fine sandy loam, or loam. Some of the soils have been moderately eroded and are cut by shallow gullies in some areas. Normally, the surface layer and the upper subsoil are well drained and are permeable to water, air, and roots, but they become temporarily waterlogged in prolonged wet periods. The lower subsoil, or fragipan, is slowly permeable, for it is firm, compact, and generally finer textured than the upper subsoil. It is also mottled, which indicates poor drainage. The structure in these soils is fairly good. The available moisture capacity is moderate to low, and crop yields are likely to be reduced during dry periods because the fragipan limits the amount of water available. Runoff is a severe hazard. The soils in this capability unit are—

Cane loam, 6 to 10 percent slopes, eroded.
Ora fine sandy loam, 6 to 10 percent slopes.
Ora fine sandy loam, 6 to 10 percent slopes, eroded.
Savannah very fine sandy loam, 6 to 10 percent slopes.
Savannah very fine sandy loam, 6 to 10 percent slopes, eroded.

About 40 percent of the acreage of this capability unit is cultivated. Suitable crops are cotton, corn, small grain, sorghums, soybeans, some truck crops, and many legumes and grasses. The following are good cropping systems: (a) 2 years of fescue and ball clover or white clover, or another grass-legume sod crop, followed by 2 years of row crops; (b) 3 years of a sod crop followed by 2 years of row crops, the residue of which is properly used; and (c) 2 years of sod crops followed by 1 year of a row crop.

These soils need large amounts of a complete fertilizer and crop residue, and they respond well to them. Lime is needed for highest yields of most crops. Tilth is fairly good in these soils but is difficult to maintain unless sod is used in the cropping system. Tillage can be performed only within a somewhat narrow range of moisture content.

The most effective way to control erosion on cropland is to include perennial grasses and legumes in the cropping system and to use crop residue properly. Additional practices generally needed in cultivated areas are contour tillage, stripcropping or terracing, grassing waterways, and using field borders.

CAPABILITY UNIT IIIe-44

This capability unit consists of moderately deep or deep, well-drained soils on upland slopes of 6 to 10 percent. These soils have a moderately thick root zone. Their subsoil is friable to firm silty clay loam to clay. Tilth is generally good in slightly eroded areas and is fair to poor in eroded areas. Infiltration is medium to slow, permeability is moderate to slow, and the available moisture capacity is moderate to low. Surface runoff is medium to rapid, and the erosion hazard is severe. The soils are low in fertility and organic-matter content and are strongly acid to very strongly acid. The soils are—

Albertville fine sandy loam, 6 to 10 percent slopes.
Albertville fine sandy loam, 6 to 10 percent slopes, eroded.

Only about 20 percent of the acreage in this capability unit is cultivated. The soils are suited to cotton, corn, small grain, sorghums, soybeans, and most grasses and legumes, especially bermudagrass and sericea lespedeza. A good cropping system is 4 years of perennial grasses and legumes followed by 2 years of row crops. These soils are well suited to permanent pasture.

Large amounts of fertilizer and organic matter are required for maximum yields. Most crops need lime. To reduce runoff and erosion in cultivated areas, contour tillage, terraces, grassed waterways, and field borders are needed.

CAPABILITY UNIT IIIe-46

Talbott silt loam, 2 to 6 percent slopes, eroded, is the only soil in this capability unit. It is a moderately well drained, strongly acid soil that occurs on uplands in the limestone valleys and has a subsoil of plastic heavy silty clay or clay. Mottles of yellowish brown, light brownish gray, and yellowish red are common at a depth of 15 to 30 inches. Bedrock is at a depth of 2 to 6 feet. Natural fertility and the supply of organic matter are medium. Infiltration and permeability are slow, the available moisture capacity is moderate to low, and the hazard of further erosion is severe.

About 50 percent of the acreage is cultivated. Suitable crops are cotton, corn, small grain, grain sorghum, soybeans, and many grasses and legumes. These can be grown safely in a cropping system that consists of 4 years of a sod crop followed by 2 years of row crops, or of 2 years of a sod crop followed by 1 year of a row crop.

This soil responds well to additions of fertilizer, lime, and organic matter. Alfalfa needs additions of boron. Tillage can be performed within only a narrow range of moisture content, and good tilth is difficult to maintain. Using sod crops is the most effective way to reduce runoff and erosion. Practices that control runoff in cultivated areas are contour tillage, terracing, seeding waterways, stripcropping, and using field borders.

CAPABILITY UNIT IIIe-48

Colbert silt loam, 2 to 6 percent slopes, eroded, is the only soil in this capability unit. It occurs on uplands in the limestone valleys, is moderately deep, and is somewhat poorly drained or moderately well drained. It has a moderately thin surface layer of silt loam and a subsoil of

mottled, plastic heavy silty clay or clay. The surface layer and the upper subsoil are strongly acid, but in some areas the lower subsoil is only slightly acid or neutral. Although structure is strong, the soil is very slowly permeable to water, air, and roots. It is low in natural fertility and contains little organic matter. Runoff is medium, infiltration is slow to very slow, the available moisture capacity is low, and the hazard of further erosion is severe.

Approximately 50 percent of the acreage is cultivated. Suitable crops are corn, cotton, small grain, grain sorghum, soybeans, and most grasses and legumes. These can be grown safely in a cropping system that consists of 4 years of a sod crop followed by 2 years of row crops. Other suitable cropping systems are (a) 2 years of a sod crop followed by 2 years of small grain; and (b) 2 years of a sod crop followed by 1 year of a row crop.

This soil needs large additions of fertilizer, lime, and organic matter. The response to these amendments is good. Tillage is moderately difficult and can be performed within only a narrow range of moisture content. Good tilth is difficult to maintain because the plow layer is sticky.

Using sod crops in the cropping system is the most effective way to reduce runoff and erosion. Contour tillage, stripcropping, and planting waterways to sod help to reduce runoff.

CAPABILITY UNIT IIIe-111

Greenville loam, 2 to 6 percent slopes, severely eroded, is the only soil in this capability unit. It is a deep, well-drained, friable soil that has a subsoil of fine sandy clay loam to clay loam. Shallow gullies are common in many areas. This soil has good to fair structure and is moderately permeable to water, air, and roots to a depth of several feet. It is medium acid to strongly acid. The available moisture capacity is moderate, and natural fertility and content of organic matter are low. Runoff causes a moderate to severe hazard of erosion.

About 40 percent of the acreage is cultivated. The crops suitable for this soil are cotton, corn, soybeans, grain sorghum, small grain, and most grasses and legumes. An adequate cropping system consists of 4 years of a sod crop followed by 2 years of row crops. Returning all crop residue to the soil improves structure and reduces runoff and erosion. This soil responds well to additions of fertilizer, lime, and organic matter. It can be tilled within only a medium to narrow range of moisture content. Good tilth is moderately difficult to maintain.

The most effective way to reduce runoff is to maintain a good cover of sod. In cultivated areas, practices needed on all slopes are stripcropping, using a good cropping system, and properly using crop residue. Generally needed on the steeper slopes are contour tillage, terracing, grassing the waterways, and using field borders.

CAPABILITY UNIT IIIe-441

Decatur silty clay loam, 2 to 6 percent slopes, severely eroded, is the only soil in this capability unit. It is deep, friable, well drained, and medium acid to strongly acid. Shallow gullies are common in some areas. When this soil dries after heavy rains, a firm crust forms on the surface and hinders the establishment of some crops. The soil is generally in fair to poor tilth but is moderately permeable to roots and water. The available moisture capacity is moderate. Natural fertility is moderate, but the supply of organic matter is low. Rapid runoff causes a severe hazard of further erosion.

About three-fourths of the acreage of this soil is cultivated. Suitable crops are cotton, corn, small grain, soybeans, sorghums, some truck crops, and many grasses and legumes. These can be safely grown in a cropping system that consists of 4 years of a grass-legume mixture followed by 2 years of row crops, or in one consisting of 2 years of a sod crop followed by 1 year of a row crop. The soil is well suited to permanent pasture.

This soil needs large additions of fertilizer and responds well to them. Lime is needed for good yields of grasses, legumes, and most other crops. Because the soil has a clayey surface layer, good tilth is difficult to maintain. Tillage can be performed within only a narrow range of moisture content.

Using perennial grasses and legumes is the most effective way to control runoff. Contour tillage, stripcropping, and sodding of waterways are needed for areas in row crops.

CAPABILITY UNIT IIIw-41

In this capability unit are deep, poorly drained, friable soils on flood plains in the limestone valleys. Slopes range from 0 to 2 percent. These soils are medium acid to strongly acid. The surface layer is faintly to distinctly mottled silty clay or silt loam that is generally underlain by distinctly mottled layers. These soils have a high water table, especially in wet periods. After prolonged rains, some areas are flooded for as long as 1 or 2 days. Soil structure ranges from weak to strong. Permeability is moderate to very slow, and available moisture capacity is moderate to high. The soils are low to high in organic-matter content and are high to medium in natural fertility. They are—

Dunning silty clay.
Melvin silt loam.

Approximately 25 percent of the total acreage in this capability unit is cultivated. The soils are best suited to perennial grasses and legumes. Most artificially drained areas are suited to corn and soybeans. A good cropping system consists of 3 years or more of sod crops that are followed by 2 years of row crops. Row crops can be grown continuously if all residue is returned to the soil. An excellent mixture for permanent pasture is fescue and white clover.

Large additions of fertilizer, lime, and organic matter are needed if these soils are cropped. Excess water interferes with tillage at times but can be removed by drainage ditches.

CAPABILITY UNIT IIIw-42

In this capability unit are moderately deep to shallow, somewhat poorly drained and poorly drained soils on uplands and stream terraces in the limestone valleys. Slopes range from 0 to 2 percent. These soils have a thin surface layer of silt loam or silty clay. Their subsoil is faintly to coarsely mottled heavy silty clay or clay that retards the movement of water and air and the growth of roots. Bedrock occurs at a depth of 1 to 6 feet. These soils are low in natural fertility, contain little organic matter, and are medium acid to strongly acid. They have slow to very slow runoff and permeability and become waterlogged during prolonged wet periods. Lack of

drainage is a greater hazard than erosion. The soils are—

Colbert silt loam, 0 to 2 percent slopes.
Dowellton silty clay, 0 to 2 percent slopes.
Tupelo silt loam, 0 to 2 percent slopes.

About 25 percent of the acreage in this capability unit is cultivated. The crops suitable for these soils are grain sorghum, soybeans, small grain, dallisgrass, fescue, white clover, Caley peas, and annual lespedeza. Some corn and cotton are grown, but yields are generally low. A suitable cropping system is 2 years of sod crops and 2 years of row crops, or is 1 year of a reseeding legume that is allowed to seed and 2 years of row crops. Continuous row crops can be grown safely if all residue is left on the surface. These soils are well suited to permanent pasture.

Large additions of fertilizer, lime, and organic matter are needed for all crops grown on these soils. Tillage and other field operations are restricted when the soils are wet and sticky. Some areas need ditches to drain excess water and to reduce flooding during rainy periods.

CAPABILITY UNIT IIIw-43

Only one soil—Hollywood silty clay—is in this capability unit. It is a dark-colored, slightly acid to mildly alkaline soil that lies in upland depressions and on low benches at the base of slopes. It is somewhat poorly drained to moderately well drained and is plastic and sticky when wet. The surface layer of silty clay or clay is underlain by a layer of black, sticky, plastic clay. These layers are moderately permeable to roots but are slowly permeable to water and air. Distinctly mottled clay occurs at a depth of 16 to 30 inches. Runoff and infiltration are slow to very slow. Because this soil is waterlogged during wet periods, lack of good drainage is a greater hazard than erosion. Some crops are difficult to establish because the soil surface crusts when it dries after a rain. Tilth is generally poor. Natural fertility and the content of organic matter are moderately high.

About 75 percent of this soil is cultivated. The soil is well suited to corn, grain sorghum, soybeans, small grain, fescue, dallisgrass, annual lespedeza, and white clover. These can be grown safely in any of the following cropping systems: (a) 2 years of sod crops followed by 2 years of row crops; (b) 1 year of a reseeding legume that is allowed to seed and is followed by 2 years of row crops; or (c) continuous row crops, the residue of which is properly used. The soil is well suited to pasture.

This soil needs large additions of phosphate and potash and moderate additions of organic matter and nitrogen. Little or no lime is needed for most crops. Tilth is difficult to improve because the surface layer is clayey. Tillage and other field operations can be performed only within a narrow range of moisture content. In many areas ditches are needed to drain excess water and to reduce flooding.

CAPABILITY UNIT IVe-11

In this capability unit are deep, well-drained, strongly acid soils that are eroded or severely eroded. These soils occupy upland slopes of 6 to 15 percent. The original surface layer and some of the subsoil have been lost through erosion in most areas. A few shallow gullies and an occasional deep one have formed. The subsoil is friable loam, fine sandy clay loam, or clay loam. Infiltration is medium to slow, surface runoff is moderately rapid, and the erosion hazard is severe. Permeability and available moisture capacity are moderate. Natural fertility and content of organic matter are low. The soils are—

Greenville loam, 6 to 10 percent slopes, severely eroded.
Linker fine sandy loam, 10 to 15 percent slopes, eroded.
Ruston fine sandy loam, 6 to 10 percent slopes, severely eroded.
Ruston fine sandy loam, 10 to 15 percent slopes, eroded.

About 30 percent of the total acreage in this capability unit is cultivated. Suitable crops are cotton, corn, grain sorghum, soybeans, small grain, truck crops, and most grasses and legumes. A good cropping system consists of 4 years of sod crops followed by 2 years of row crops. One that is less satisfactory but adequate is 2 years of sod crops followed by 1 year of row crops. After crops are harvested, all residue should be left on the surface of the soil.

Large additions of a complete fertilizer and of crop residue are needed for satisfactory yields. Most plants respond to an application of lime. Good tilth is somewhat difficult to maintain in severely eroded areas.

Contour tillage, sodded waterways, and field borders are required to reduce runoff and erosion on these soils. In addition, either terracing or stripcropping is needed.

CAPABILITY UNIT IVe-48

In this capability unit are moderately well drained or somewhat poorly drained, eroded soils on uplands in the limestone valleys. The slopes range from 6 to 10 percent. These soils have a surface layer of friable silt loam and a subsoil of plastic heavy silty clay or clay. Distinct, coarse mottles are common at a depth of 15 to 30 inches. The depth to bedrock ranges from 1 to 5 feet. The surface layer and the upper subsoil are strongly acid, but in places the lower subsoil is only slightly acid or neutral. Infiltration and permeability are slow, the available moisture capacity is moderate to low, and further erosion is a serious hazard. Natural fertility and content of organic matter are low. The soils are—

Colbert silt loam, 6 to 10 percent slopes, eroded.
Talbott silt loam, 6 to 10 percent slopes, eroded.

Approximately 40 percent of the acreage in this capability unit is cultivated. It is best, however, to keep these soils in permanent pasture. Among the adapted crops are fescue, bermudagrass, sericea lespedeza, white clover, crimson clover, grain sorghum, soybeans, and small grain. Row crops can be grown safely in a cropping system that consists of 6 years of perennial sod followed by 2 years of row crops, or one consisting of 3 years of sod crops followed by 1 year of a row crop.

For all crops, these soils need large additions of fertilizer and organic matter each year and lime as indicated by soil tests. Tillage can be performed within only a very narrow range of moisture content. Good tilth is difficult to maintain.

Using perennial sod crops in a cropping system is the most effective way to reduce runoff and control erosion in cultivated areas. Additional practices needed are contour tillage, grassing of waterways, and stripcropping in which a cultivated crop is alternated with a sod crop.

CAPABILITY UNIT IVe-115

The only soil in this capability unit is Savannah loam, 6 to 10 percent slopes, severely eroded. This soil has a fragipan and is moderately deep and moderately well

drained. It occupies upland slopes of 6 to 10 percent. Shallow gullies are common, and a few deep ones have formed in some areas. The surface layer and the upper subsoil are moderately permeable to water, air, and roots. Because the lower subsoil is firm, compact, and slowly permeable, some areas are temporarily waterlogged in wet periods. The available moisture capacity is moderate to low. Runoff causes a severe hazard of further erosion.

About 30 percent of the acreage of this soil is cultivated. Suitable crops are cotton, corn, soybeans, sorghum, and small grain. Grasses and legumes suitable are fescue, bermudagrass, bahiagrass, sericea lespedeza, ball clover, and crimson clover. A good cropping system consists of 4 years of perennial sod followed by 1 year of row crops. A satisfactory cropping system is 3 years of sod crops followed by 2 years of small grain. Permanent pasture of grasses or legumes is well suited.

This soil needs large additions of fertilizer, lime, and organic matter for high yields of crops. Lack of available moisture is a hazard to crops during dry periods. Good tilth is difficult to maintain. In cultivated areas, contour tillage, terraces, grassed waterways, and field borders are needed to reduce runoff and control erosion.

CAPABILITY UNIT IVe-441

Decatur silty clay loam, 6 to 10 percent slopes, severely eroded, is the only soil in this capability unit. It is a deep, well-drained, medium acid to strongly acid soil on uplands in the limestone valleys. It has a silty clay loam surface layer and a silty clay or clay subsoil. Structure is good, and permeability to water, air, and roots is moderate. Because of the clayey surface layer, tilth is fair to poor. This soil has moderate to slow infiltration and is moderate in available moisture capacity, natural fertility, and organic-matter content. Rapid runoff causes a severe hazard of further erosion.

About 60 percent of this soil is cultivated. Suitable crops are cotton, corn, soybeans, sorghum, and small grain. This soil is best used for permanent pasture, however, and is well suited to fescue, bahiagrass, bermudagrass, sericea lespedeza, ball clover, white clover, crimson clover, and alfalfa. If row crops are grown, a suitable cropping system consists of 6 years of perennial sod followed by 2 years of row crops, or 3 years of perennial sod followed by 1 year of a row crop.

This soil needs large additions of fertilizer and organic matter each year. Lime is also needed for satisfactory yields. Some crops are difficult to establish on this soil because the surface crusts when it dries after a heavy rain. Improving the tilth of the soil also is difficult. Tillage can be performed within only a narrow range of moisture content.

If this soil is cropped, erosion can be reduced by (a) performing all farming operations on the contour; (b) using alternate strips of a sod crop; and (c) planting natural depressions to a sod crop.

CAPABILITY UNIT IVe-448

The soils in this capability unit are moderately deep, moderately well drained or somewhat poorly drained, and severely eroded. These soils occur in the limestone valleys on upland slopes of 2 to 6 percent. They have a surface layer of silty clay or silty clay loam and a subsoil of distinctly mottled, sticky, plastic clay. Bedrock is 1 to 5 feet below the surface. Shallow gullies are common, and a few deep gullies have formed in some areas. These soils are slow in infiltration and permeability and have a low available moisture capacity. The surface layer and the upper subsoil are strongly acid, but the lower subsoil is only slightly acid or neutral in some places. Tilth is poor; natural fertility and content of organic matter are low to very low. The hazard of further erosion is very severe. The soils in this unit are—

Colbert silty clay loam, 2 to 6 percent slopes, severely eroded.
Talbott silty clay, 2 to 6 percent slopes, severely eroded.

Approximately 35 percent of the total acreage is cultivated. Crops suitable for these soils are small grain, fescue, bermudagrass, sericea lespedeza, white clover, and crimson clover. Row crops are scarcely suitable but can be grown in a cropping system that consists of 6 years of sod crops followed by 1 or 2 years of row crops.

For all crops, these soils need large additions of fertilizer, lime, and organic matter. Some crops are difficult to establish at times because a firm crust forms on the soils when they dry after a heavy rain, and the crust affects germination of seeds and survival of plants. Essential for the control of erosion are maintaining a cover of perennial grasses and legumes most of the time and properly using crop residue.

CAPABILITY UNIT IVw-11

Only one soil—Bibb loam—is in this capability unit. It is a deep, poorly drained, friable soil that is on first bottoms and has slopes of 0 to 2 percent. It is faintly to coarsely mottled throughout the profile. Drained areas are moderate in infiltration and permeability. The available moisture capacity is moderate. This soil has a high water table, especially in prolonged wet periods. Also, during long periods of rain, flooding is likely but generally lasts for only 1 or 2 days. The soil is low to medium in natural fertility and organic-matter content and is strongly acid.

About 25 percent of this soil is cultivated. The most suitable crops are corn, soybeans, fescue, and white clover. Corn can be grown safely year after year if crop residue is used properly. Because of frequent flooding, however, it is best to keep this soil in permanent sod.

This soil needs large additions of fertilizer, lime, and organic matter if it is cropped. Prolonged wetness interferes with tillage. Ditches are needed to drain excess water.

CAPABILITY UNIT VIe-19

In this capability unit are well drained and moderately well drained, strongly acid soils on uplands. Slopes range from 6 to 15 percent. These soils have a surface layer of fine sandy loam or sandy loam. The soils are—

Cuthbert fine sandy loam, 6 to 10 percent slopes.
Cuthbert fine sandy loam, 10 to 15 percent slopes.
Cuthbert and Ruston soils, 10 to 15 percent slopes.

The subsoil in the Cuthbert soils is firm, compact, faintly to distinctly mottled fine sandy loam to clay; in the Ruston soil it is friable fine sandy loam to clay loam. All of these soils are low in natural fertility, have a low content of organic matter, and are moderately to highly susceptible to erosion. Infiltration and permeability are slow in the Cuthbert soils and rapid in the Ruston soil.

About 90 percent of the acreage is forested or idle, and the rest is in crops or pasture. The best use of these soils is forest. Some areas are suited to sericea lespedeza,

bermudagrass, and other perennial sod crops, and to reseeding crimson clover and similar winter annuals. Large additions of fertilizer, lime, and organic matter are needed for all crops. The response to good management is fair to poor. Good tilth is very difficult to maintain. Crops that require little or no tillage are best for these soils. Erosion is a serious hazard but can be reduced by maintaining a permanent cover of growing plants. In areas to be planted to sod crops, cultivate on the contour and keep waterways in close-growing vegetation.

CAPABILITY UNIT VIe-48

In this capability unit are moderately well drained and somewhat poorly drained soils that occupy upland slopes of 6 to 15 percent in the limestone valleys. These soils are eroded or severely eroded. They have a silt loam to silty clay surface layer and a plastic, sticky silty clay or clay subsoil that has common, distinct mottles, generally 12 to 20 inches below the surface. Depth to bedrock is 1 to 5 feet. These soils are strongly acid in the surface layer and in the upper subsoil but in many places are only slightly acid or neutral in the lower subsoil. They are generally in poor tilth. Natural fertility and content of organic matter are low. Infiltration and permeability are slow to very slow, the available moisture capacity is low, and the hazard of further erosion is severe. The soils are—

Colbert silt loam, 10 to 15 percent slopes, eroded.
Colbert silty clay loam, 6 to 10 percent slopes, severely eroded.
Talbott silty clay, 6 to 10 percent slopes, severely eroded.

About 90 percent of the acreage is in forest and idle cropland. The remaining 10 percent is used for pasture and row crops. Suitable for these soils are grasses and sericea lespedeza, annual lespedeza, and other legumes. Although permanent sod or trees are best on these soils, small areas may be planted to a row crop after they have been in permanent sod for 3 years or more.

For all crops, these soils need large additions of fertilizer, lime, and organic matter. Sod crops respond well to these amendments. Tillage is difficult and should be kept at a minimum. Runoff is a serious hazard, but it can be reduced by maintaining a cover of vegetation. Areas of sod crops or row crops require contour tillage, terraces, and waterways protected by growing plants.

CAPABILITY UNIT VIe-49

In this capability unit are shallow, well-drained and excessively drained soils of the uplands. These soils have a thin or very thin root zone; they are 6 to 30 inches deep over bedrock. They have a surface layer of friable or very friable fine sandy loam and a subsoil of friable to firm fine sandy loam to silty clay loam. These soils are low in natural fertility, have a low content of organic matter, and are strongly acid to very strongly acid. Infiltration is medium to slow, permeability is slow to rapid, and the available moisture capacity is low. Medium to rapid surface runoff causes a moderate to severe hazard of erosion. The soils in this capability unit are—

Albertville fine sandy loam, shallow, 10 to 15 percent slopes.
Ramsey fine sandy loam, 10 to 15 percent slopes.

About 85 percent of the acreage is in forest and idle cropland; the rest is used chiefly for pasture. These soils are best suited to forest. Some areas are suited to bermudagrass, sericea lespedeza, and similar perennials, and to crimson clover or other reseeding winter annuals.

These soils need large additions of fertilizer, lime, and organic matter if they are used for sod crops. Tillage should be kept to a minimum. Erosion is a serious hazard but can be controlled by maintaining perennial sod. In areas planted to sod crops, till and plant on the contour and keep waterways in growing plants.

CAPABILITY UNIT VIe-111

In this capability unit are medium-textured, severely eroded, strongly acid soils that occur on uplands and are deep and well drained. Slopes range from 10 to 15 percent. Shallow gullies are few to common, and an occasional deep one has formed in some areas. Infiltration is medium to slow, and permeability and available moisture capacity are moderate to low. Runoff causes a serious hazard of further erosion. Natural fertility and organic-matter content are low. The soils are—

Greenville loam, 10 to 15 percent slopes, severely eroded.
Ruston fine sandy loam, 10 to 15 percent slopes, severely eroded.

About 90 percent of the acreage is in forest and idle cropland, and the rest is pastured or row cropped. The best use for these soils is forest. Some areas are suited to sericea lespedeza, bermudagrass, and similar perennials, and to crimson clover and other reseeding winter annuals.

These soils need large additions of fertilizer, lime, and organic matter. Sod crops respond well to these amendments. Because slopes are steep, tillage is difficult or impractical. Runoff can be controlled by a good ground cover. In areas planted to sod crops, till on the contour and grass the waterways.

CAPABILITY UNIT VIe-441

Decatur silty clay loam, 10 to 15 percent slopes, severely eroded, is the only soil in this capability unit. It is a deep, well-drained, medium acid to strongly acid soil on uplands in the limestone valleys. Slopes range from 10 to 15 percent. A few shallow gullies and an occasional deep one have formed in some areas. The soil is moderately permeable to roots, air, and water. Tilth is generally poor. The clayey surface layer commonly bakes, and a firm crust forms on it that makes a good stand of some crops difficult to obtain. Moderate to rapid runoff causes a serious hazard of further erosion. Natural fertility and organic-matter content are moderate.

About 90 percent of the acreage is in forest and idle cropland; only a small part is cultivated. Suitable for this soil are trees, several grasses, and sericea lespedeza, annual lespedeza, and other legumes. Most areas should be kept in sod crops or trees. Some areas may be planted to sericea lespedeza or small grain.

This soil needs moderately large additions of fertilizer, lime, and organic matter. The response to good management is fair to good. Improving tilth is very difficult. Runoff is a serious hazard, but it can be reduced by planting sod crops.

CAPABILITY UNIT VIs-11

Guin gravelly sandy loam, 10 to 15 percent slopes, eroded, is the only soil in this capability unit. It occurs on upland slopes of 10 to 15 percent and is deep, excessively drained, and strongly acid or very strongly acid. It is generally very gravelly; the soil mass ranges from 40 to 90 percent gravel. Natural fertility and organic-matter content are low. Infiltration is medium, perme-

ability is rapid, and the available moisture capacity is medium to low. Because surface runoff is medium to rapid, further erosion and severe gullying are likely.

About 90 percent of this soil is in forest and idle cropland, and the rest is in pasture and crops. This soil is best suited to trees. Some areas are suited to bermudagrass, sericea lespedeza, and similar perennials and to crimson clover and other reseeding winter annuals.

Large additions of fertilizer, lime, and organic matter are needed for all crops. Tillage is difficult and should be kept to a minimum. Runoff is a serious hazard, but it can be reduced by maintaining a sod cover. If the soil is in sod crops, contour tillage, terraces, and grassed waterways may be needed.

CAPABILITY UNIT VIs-43

Hollywood silty clay, shallow, is the only soil in this capability unit. This soil is on slopes of 0 to 2 percent in the limestone valleys. It is a dark-colored soil that is somewhat poorly drained to moderately well drained and is plastic and sticky when wet. Its surface layer is generally silty clay but ranges from silty clay loam to clay and is underlain by a silty clay or clay subsoil. Bedrock is at a depth of 10 to 20 inches. Runoff and infiltration are slow to very slow. The surface layer and the upper part of the substratum are moderately permeable to roots and are slowly permeable to air and water. The soil becomes waterlogged during wet periods, and lack of adequate drainage is a greater hazard than erosion. Natural fertility and content of organic matter are moderately high.

About 60 percent of this soil is in forest or is idle cropland, and the rest is used for pasture and crops. The best use for this soil is pasture. Suitable forage plants are fescue, dallisgrass, annual lespedeza, and white clover.

The soil needs large additions of phosphate, potash, and organic matter and moderate additions of nitrogen. Little or no lime is needed for most crops. Good tilth is difficult to maintain because the surface layer is sticky and clayey. Tillage and other field operations can be performed within only a narrow range of moisture content. In many areas ditches are needed to drain excess water and to reduce flooding.

CAPABILITY UNIT VIIe-19

In this capability unit are slightly eroded and severely eroded, strongly acid to very strongly acid soils on upland slopes of 6 to 25 percent. These soils have a surface layer that ranges from sandy loam to sandy clay loam. The soils are—

Cuthbert sandy clay loam, 6 to 10 percent slopes, severely eroded.
Cuthbert sandy clay loam, 10 to 25 percent slopes, severely eroded.
Cuthbert and Ruston soils, 15 to 25 percent slopes.

The subsoil in the Cuthbert soils is fine sandy clay loam to clay that is firm, compact, and faintly to distinctly mottled. The subsoil in the Ruston soil is friable fine sandy clay loam to clay loam. These soils are slow to rapid in permeability and are low to moderate in available moisture capacity. Runoff is generally rapid, and the hazard of further erosion is very severe.

Nearly all of the acreage in this capability unit is in forest. The rest is cultivated, pastured, or idle. These soils should be kept permanently in vegetation, preferably trees. If they must be used for crops, they need large additions of fertilizer, lime, and organic matter. Their response to these amendments is fair to good. Tillage is very difficult and is generally impractical. Runoff is generally rapid, but it can be reduced by a good ground cover. Contour tillage and mulching may be needed in areas planted to sod crops.

CAPABILITY UNIT VIIe-441

Only Gullied land is in this capability unit. This land is so severely eroded that in most places the original soil profiles have been destroyed. These areas are now chiefly in gullies that range from 1 to 15 feet or more in depth. The slopes are 6 to 40 percent. Some of the larger areas were formerly areas of Guin and Cuthbert soils.

This land is low in natural fertility, has a low content of organic matter, and is generally in poor tilth. It is moderate to slow in permeability and is low to moderate in available moisture capacity. Runoff is generally rapid or very rapid, and the hazard of further erosion is very severe.

Practically all Gullied land is in forest or is idle cropland. Some of the smoother areas may be leveled by heavy equipment and planted to hardy sod crops. The steeper areas should be kept permanently in vegetation, preferably trees. Large amounts of fertilizer, lime, and organic matter are needed if sod crops are grown.

CAPABILITY UNIT VIIs-11

Guin gravelly sandy loam, 15 to 40 percent slopes, is the only soil in this capability unit. This soil occurs on upland slopes and is deep, excessively drained, and strongly acid to very strongly acid. In most places 50 to 85 percent of the soil mass consists of pebbles ¼ to 3 inches across. This soil is low in natural fertility and has a low content of organic matter. Infiltration and permeability are rapid, and the available moisture capacity is very low. The medium to rapid surface runoff causes a moderate to severe hazard of erosion and makes gullying very likely.

Nearly all of this soil is in forest. Some of the smoother areas may be suited to hardy sod crops, but most areas should be kept permanently in vegetation, preferably trees (fig. 6).

***Figure 6.*—Well-managed forest consisting chiefly of 50-year-old loblolly pine on Guin gravelly sandy loam, 15 to 40 percent slopes.**

For sod crops, this soil needs fertilizer, lime, and organic matter in very large amounts. Tillage is very difficult or impractical in most areas. Runoff is generally rapid, but it can be reduced by a good cover of growing plants. Contour tillage and mulching may be needed if sod crops are planted.

CAPABILITY UNIT VIIs-48

In this capability unit are four miscellaneous land types that differ widely in soil characteristics and relief (figs. 7 and 8). Slopes range from 0 to 35 percent. The land types are—

Mine pits and dumps.
Rock land, limestone.
Rock land, sandstone.
Slickens.

Figure 7.—**Mine pits and dumps that remain after strip mining of iron ore on an area of Guin soils. In this county there are about 5,000 acres of similar land.**

Practically all of the acreage is forested or idle. Some of the smoother, less rocky or stony areas are cultivated or in pasture, but their total acreage is small. These land types should be kept permanently in vegetation, preferably trees. Some areas may be excellent for wildlife, and a few may be suited to hardy perennial sod crops.

If sod crops are planted, these land types generally require large additions of fertilizer and organic matter and moderate additions of lime. Tillage is very hazardous and is impractical. Runoff from some areas is rapid, but it can be controlled by a good ground cover. Contour tillage and mulching may be needed in areas planted to sod crops.

Estimated Yields

The estimated average acre yields that can be expected from principal crops grown on soils of Franklin County, Alabama, under two levels of management, are given in table 1. Yields in columns A are those obtained, on the average, under ordinary management, or management provided by most farmers. Yields in columns B are those expected under improved management, or management provided by some of the leading farmers.

The figures in columns A are based largely on observations made by members of the soil survey party; on

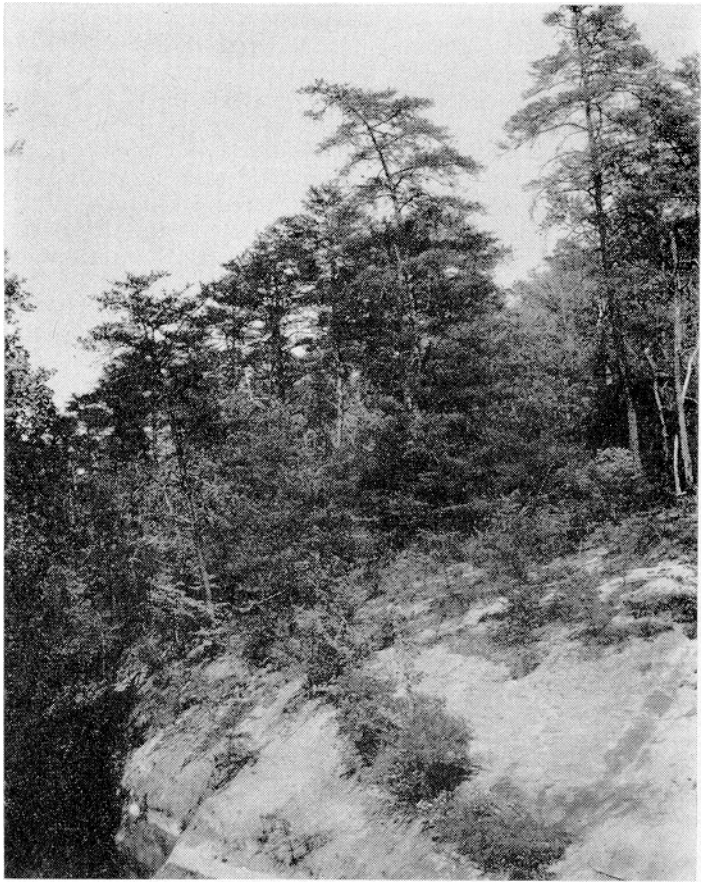

Figure 8.—**A good stand of Virginia pine on Rock land, sandstone.**

information obtained by interviewing farmers and other agricultural workers who have had experience with the soils and crops of the area; and on comparisons with yield tables for nearby counties that have similar soils.

The requirements of improved management vary according to the soils, but the following practices are considered necessary to obtain the yields in columns B: (1) Proper choice and rotation of crops as discussed in the subsection "Management by Capability Units"; (2) applying commercial fertilizers, lime, and manure according to needs indicated by soil tests; (3) using proper tillage methods; (4) returning all plant residue to the soils; (5) controlling water through contour tillage, terracing, grassing of waterways, use of field borders, and proper drainage; (6) controlling weeds, insects, and plant diseases; (7) regulating grazing of pasture; and (8) maintaining or improving the workability of the soil.

The yields in columns B are based largely upon estimates made by men who have had experience with soils and crops of the county. The known deficiencies of the soils were considered in judging how much yields might increase if these deficiencies were corrected within practical limits. These limits cannot be precisely defined, nor can response to good management be accurately predicted. By comparing yields in columns B with those in columns A, however, one may gain some idea of the response a soil will make to good management. On practically all soils in the county, more intensive management will increase crop yields.

TABLE 1.—*Estimated average yields per acre of the principal crops under two levels of management*

[Yields in columns A are those obtained under common management; those in columns B are yields to be expected under improved management. Dashed lines indicate that crop is not commonly grown on the soil and is poorly suited to it]

Soil	Capability unit	Corn		Cotton (lint)		Wheat		Soybeans		Sericea lespedeza		Pasture	
		A	B	A	B	A	B	A	B	A	B	A	B
		Bu.	*Bu.*	*Lbs.*	*Lbs.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Tons*	*Tons*	*Cow-acre-days* [1]	*Cow-acre-days* [1]
Albertville fine sandy loam, 2 to 6 percent slopes, eroded	IIe-44	30	60	425	650	12	20	10	20	1.5	3.0	80	160
Albertville fine sandy loam, 6 to 10 percent slopes	IIIe-44	28	45	320	550	10	18	10	20	1.0	2.0	75	140
Albertville fine sandy loam, 6 to 10 percent slopes, eroded	IIIe-44	28	45	320	550	10	18	10	20	1.0	2.0	75	140
Albertville fine sandy loam, shallow, 10 to 15 percent slopes	VIe-49	------	------	------	------	------	------	------	------	1.0	1.4	40	90
Bibb loam	IVw-11	20	60	------	------	------	------	15	35	------	------	80	130
Cahaba fine sandy loam, 0 to 2 percent slopes	I-12	40	75	500	750	18	25	15	30	2.5	3.5	120	200
Cahaba fine sandy loam, 2 to 6 percent slopes	IIe-12	35	65	500	700	15	25	15	30	2.0	3.0	90	180
Cane loam, 2 to 6 percent slopes, eroded	IIe-15	30	60	400	600	15	25	15	25	2.0	3.0	105	175
Cane loam, 6 to 10 percent slopes, eroded	IIIe-15	25	50	375	500	12	20	15	20	2.0	2.8	90	160
Captina silt loam, 2 to 6 percent slopes	IIe-15	30	60	400	600	15	25	15	25	2.0	3.0	105	175
Colbert silt loam, 0 to 2 percent slopes	IIIw-42	15	30	160	350	12	22	10	20	1.0	2.0	75	120
Colbert silt loam, 2 to 6 percent slopes, eroded	IIIe-48	15	35	200	350	10	20	10	20	1.0	2.0	70	120
Colbert silt loam, 6 to 10 percent slopes, eroded	IVe-48	10	25	140	300	------	14	------	14	.8	1.5	50	90
Colbert silt loam, 10 to 15 percent slopes, eroded	VIe-48	------	------	------	------	------	------	------	------	.7	1.0	45	80
Colbert silty clay loam, 2 to 6 percent slopes, severely eroded	IVe-448	10	25	150	300	------	15	------	15	.8	1.5	50	90
Colbert silty clay loam, 6 to 10 percent slopes, severely eroded	VIe-48	------	------	------	------	------	------	------	------	.5	1.0	40	80
Cuthbert fine sandy loam, 6 to 10 percent slopes	VIe-19	------	------	------	------	------	------	------	------	1.0	1.7	50	90
Cuthbert fine sandy loam, 10 to 15 percent slopes	VIe-19	------	------	------	------	------	------	------	------	1.0	1.5	40	80
Cuthbert sandy clay loam, 6 to 10 percent slopes, severely eroded	VIIe-19	------	------	------	------	------	------	------	------	.8	1.5	40	80
Cuthbert sandy clay loam, 10 to 25 percent slopes, severely eroded	VIIe-19	------	------	------	------	------	------	------	------	------	------	30	70
Cuthbert and Ruston soils, 10 to 15 percent slopes	VIe-19	------	------	------	------	------	------	------	------	------	------	30	70
Cuthbert and Ruston soils, 15 to 25 percent slopes	VIIe-19	------	------	------	------	------	------	------	------	------	------	------	------
Decatur silt loam, 2 to 6 percent slopes, eroded	IIe-41	40	65	500	900	20	30	20	30	2.0	3.0	120	200
Decatur silty clay loam, 2 to 6 percent slopes, severely eroded	IIIe-441	30	45	400	750	10	20	10	20	1.2	2.5	80	180
Decatur silty clay loam, 6 to 10 percent slopes, severely eroded	IVe-441	25	40	350	600	10	20	10	20	1.2	2.5	70	140
Decatur silty clay loam, 10 to 15 percent slopes, severely eroded	VIe-441	------	------	------	------	------	------	------	------	1.0	2.0	60	100
Dowellton silty clay, 0 to 2 percent slopes	IIIw-42	10	20	160	250	10	20	10	20	1.0	2.0	75	120
Dunning silty clay	IIIw-41	25	50	------	------	------	------	20	25	------	------	120	200
Greenville loam, 2 to 6 percent slopes, eroded	IIe-12	40	65	500	750	15	25	15	25	2.0	3.0	100	185
Greenville loam, 2 to 6 percent slopes, severely eroded	IIIe-111	30	45	350	600	10	20	10	20	1.2	2.5	75	140
Greenville loam, 6 to 10 percent slopes, severely eroded	IVe-11	25	40	300	500	10	20	10	15	1.2	2.5	70	120
Greenville loam, 10 to 15 percent slopes, severely eroded	VIe-111	------	------	------	------	------	------	------	------	1.0	1.5	60	100

See footnote at end of table.

TABLE 1.—*Estimated average yields per acre of the principal crops under two levels of management*—Continued

Soil	Capability unit	Corn		Cotton (lint)		Wheat		Soybeans		Sericea lespedeza		Pasture	
		A	B	A	B	A	B	A	B	A	B	A	B
		Bu.	*Bu.*	*Lbs.*	*Lbs.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Tons*	*Tons*	*Cow-acre-days* [1]	*Cow-acre-days* [1]
Guin gravelly sandy loam, 10 to 15 percent slopes, eroded	VIs-11	------	------	------	------	------	------	------	------	1. 0	1. 5	60	100
Guin gravelly sandy loam, 15 to 40 percent slopes	VIIs-11	------	------	------	------	------	------	------	------	------	------	40	60
Gullied land	VIIe-441	------	------	------	------	------	------	------	------	. 5	1. 0	30	70
Hollywood silty clay	IIIw-43	30	60	------	------	15	30	20	25	------	------	110	200
Hollywood silty clay, shallow	VIs-43	------	------	------	------	------	------	------	------	------	------	50	80
Huntington silt loam, local alluvium	I-43	50	95	500	900	20	30	20	35	2. 0	3. 2	140	225
Iuka fine sandy loam	IIw-12	40	80	250	600	20	30	20	35	2. 0	3. 0	120	200
Iuka fine sandy loam, local alluvium	IIw-12	40	80	400	600	20	30	20	35	2. 0	3. 0	120	200
Lindside silt loam	IIw-41	45	90	300	600	20	30	20	35	2. 0	3. 0	140	225
Lindside silt loam, local alluvium	IIw-41	45	90	450	800	20	30	20	35	2. 0	3. 0	140	225
Linker fine sandy loam, 2 to 6 percent slopes, eroded	IIe-12	30	70	425	800	15	30	15	30	2. 0	3. 0	90	170
Linker fine sandy loam, 6 to 10 percent slopes	IIIe-12	30	60	400	700	15	25	15	25	2. 0	2. 7	80	160
Linker fine sandy loam, 6 to 10 percent slopes, eroded	IIIe-12	25	60	400	700	15	25	15	25	2. 0	2. 7	80	160
Linker fine sandy loam, 10 to 15 percent slopes, eroded	IVe-11	20	50	350	500	12	20	12	20	1. 5	2. 0	60	135
Melvin silt loam	IIIw-41	30	55	------	------	------	------	15	25	------	------	110	220
Mine pits and dumps	VIIs-48	------	------	------	------	------	------	------	------	------	------	------	------
Ochlockonee fine sandy loam	IIw-12	45	90	400	700	15	25	20	35	2. 5	3. 2	130	225
Ora fine sandy loam, 2 to 6 percent slopes, eroded	IIe-15	30	45	300	500	15	25	15	20	2. 0	2. 5	75	130
Ora fine sandy loam, 6 to 10 percent slopes	IIIe-15	25	40	275	400	12	18	13	17	1. 5	2. 5	65	120
Ora fine sandy loam, 6 to 10 percent slopes, eroded	IIIe-15	25	40	275	400	12	18	13	17	1. 5	2. 5	65	120
Ora fine sandy loam, heavy substratum, 2 to 6 percent slopes, eroded	IIe-15	30	45	300	500	15	25	15	20	2. 0	2. 5	75	130
Prentiss fine sandy loam, 0 to 2 percent slopes	IIw-15	27	50	300	400	18	25	15	25	2. 0	2. 5	80	130
Prentiss fine sandy loam, 2 to 6 percent slopes	IIe-15	25	45	300	500	15	25	15	25	2. 0	2. 5	75	130
Ramsey fine sandy loam, 10 to 15 percent slopes	VIe-49	------	------	------	------	------	------	------	------	------	------	35	100
Rock land, limestone	VIIs-48	------	------	------	------	------	------	------	------	------	------	------	------
Rock land, sandstone	VIIs-48	------	------	------	------	------	------	------	------	------	------	------	------
Ruston fine sandy loam, 2 to 6 percent slopes, eroded	IIe-12	35	60	450	650	15	25	15	25	1. 8	3. 2	90	170
Ruston fine sandy loam, 6 to 10 percent slopes	IIIe-12	30	50	350	500	15	25	15	25	1. 5	3. 0	80	160
Ruston fine sandy loam, 6 to 10 percent slopes, eroded	IIIe-12	30	50	350	500	15	25	15	25	1. 5	3. 0	80	160
Ruston fine sandy loam, 6 to 10 percent slopes, severely eroded	IVe-11	25	40	300	500	10	20	10	15	1. 2	2. 5	70	120
Ruston fine sandy loam, 10 to 15 percent slopes, eroded	IVe-11	25	35	250	400	10	15	10	15	1. 2	2. 5	80	140
Ruston fine sandy loam, 10 to 15 percent slopes, severely eroded	VIe-111	------	------	------	------	------	------	------	------	1. 0	1. 5	60	100
Saffell gravelly fine sandy loam, 2 to 6 percent slopes	IIe-12	30	55	400	600	15	25	15	25	1. 8	3. 2	80	160
Saffell gravelly fine sandy loam, 6 to 10 percent slopes	IIIe-12	25	45	300	450	12	20	12	20	1. 5	3. 0	70	150
Saffell gravelly fine sandy loam, 6 to 10 percent slopes, eroded	IIIe-12	25	45	300	450	12	20	12	20	1. 5	3. 0	70	150
Savannah loam, 6 to 10 percent slopes, severely eroded	IVe-115	15	30	200	300	8	15	8	15	1. 0	1. 8	50	100
Savannah very fine sandy loam, 0 to 2 percent slopes	IIw-15	30	50	350	450	18	25	15	25	2. 0	2. 5	80	130
Savannah very fine sandy loam, 2 to 6 percent slopes	IIe-15	30	45	300	500	15	25	15	20	2. 0	2. 5	75	130

See footnote at end of table.

TABLE 1.—*Estimated average yields per acre of the principal crops under two levels of management*—Continued

Soil	Capability unit	Corn		Cotton (lint)		Wheat		Soybeans		Sericea lespedeza		Pasture	
		A	B	A	B	A	B	A	B	A	B	A	B
		Bu.	*Bu.*	*Lbs.*	*Lbs.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Tons*	*Tons*	*Cow-acre-days* [1]	*Cow-acre-days* [1]
Savannah very fine sandy loam, 2 to 6 percent slopes, eroded	IIe-15	30	45	300	500	15	25	15	20	2.0	2.5	75	130
Savannah very fine sandy loam, 6 to 10 percent slopes	IIIe-15	25	40	275	400	12	18	13	17	1.5	2.5	65	120
Savannah very fine sandy loam, 6 to 10 percent slopes, eroded	IIIe-15	25	40	275	400	12	18	13	17	1.5	2.5	65	120
Slickens	VIIs-48	------	------	------	------	------	------	------	------	------	------	------	60
Talbott silt loam, 2 to 6 percent slopes, eroded	IIIe-46	20	40	300	500	16	32	15	25	1.5	2.5	80	150
Talbott silt loam, 6 to 10 percent slopes, eroded	IVe-48	15	30	200	350	13	18	12	15	1.0	2.0	60	110
Talbott silty clay, 2 to 6 percent slopes, severely eroded	IVe-448	15	35	200	325	8	12	8	12	.5	1.5	80	110
Talbott silty clay, 6 to 10 percent slopes, severely eroded	VIe-48	------	------	------	------	------	------	------	------	.5	1.0	40	75
Tilden fine sandy loam, 2 to 6 percent slopes	IIe-15	25	45	300	500	15	25	15	25	2.0	2.5	75	130
Tupelo silt loam, 0 to 2 percent slopes	IIIw-42	15	30	160	350	12	22	10	20	1.0	2.0	75	120

[1] Number of days that 1 cow can be grazed on 1 acre during 1 year without injury to the pasture.

Use of Soils as Woodland[2]

The early settlers found a forest of deciduous hardwoods and scattered pines covering most of Franklin County. On the uplands were oak, hickory, chestnut, walnut, maple, gum, dogwood, redbud, and pine. Redcedar grew in the limestone valleys. The main trees on the bottom lands were ash, maple, gum, willow, oak, yellow-poplar, elm, and pine.

Practically all of the original trees have been removed, and the present forest consists of second- and third-growth stands of hardwoods, pines, and redcedar. All of the chestnut trees were killed by the chestnut blight in about 1930. Approximately 65 percent of the county is now forested, though most of the acreage is well suited to trees.

The growing interest in woodland management among farmers and foresters of the county is shown by the acreage that has been restocked with desirable trees, chiefly loblolly pine. In the past 5 years, pine has been planted on more than 8,000 acres of open areas and has been interplanted on about 100,000 acres of thin or understocked stands. During the same period, other woodland improvements have been made on about 17,000 acres.

The wood-using industries in this county are small, but there are good markets for wood products in nearby counties. Processing of pulpwood is becoming important in the county.

[2] M. A. PETERS, woodland conservationist, Soil Conservation Service, helped to write this subsection.

Woodland suitability groups

To assist people who manage woodland, the soils of the county have been placed in 18 woodland suitability groups. Each group is made up of soils that are suitable for about the same kinds of trees, require about the same management, and have about the same potential productivity.

Listed in table 2, and later described in the text, are the 18 woodland suitability groups of the county. These groups are arranged, in both the table and the text, according to the kind of material from which the soils in the groups were formed. The first 8 groups consist of soils that formed in Coastal Plain sediments. The last 10 groups include soils derived from limestone, sandstone, and shale.

For each suitability group, the potential productivity of loblolly, shortleaf, and Virginia pines is expressed as a site index in table 2. The site index for a given soil is the height, in feet, that a specified kind of tree growing on that soil will reach in 50 years. Each site index listed in table 2 is an average for all the soils in the woodland suitability group. Site indexes are not shown for hardwoods, but these trees are important commercially on soils in many of the woodland groups.

Also in table 2 for each woodland suitability group are ratings for hazards and limitations that affect management. The hazards and limitations rated are seedling mortality, plant competition, equipment limitations, erosion hazard, and windthrow hazard. These ratings are expressed in relative terms—slight, moderate, or severe—and are explained in the following paragraphs.

TABLE 2.—*Woodland suitability groups of soils, their potential productivity,*

[Dashed lines indicate that tree is not

SOILS FROM COASTAL

Group and description	Map symbols	Protential productivity (site index at 50 years) [1]		
		Loblolly pine	Shortleaf pine	Virginia pine
Group 1: Deep, well-drained to poorly drained soils on flood plains and in swales.	Bb; Is, Iu; Oc	79		
Group 2A: Moderately deep and deep, well drained and moderately well drained soils on uplands and stream terraces.	CaA, CaB; GrB2; PrA; SnA	57 to 67	47 to 58	52 to 64
Group 2B: Deep, well-drained, sloping soils on uplands	GrB3, GrC3; RuB2, RuC, RuC2; SaB, SaC, SaC2.	57 to 67	47 to 58	52 to 64
Group 2C: Moderately deep, moderately well drained, sloping soils that are on uplands and stream terraces and have a firm subsoil.	CsC; OrB2, OrC, OrC2, OsB2; PrB; SnB, SnB2, SnC, SnC2; TdB.	57 to 67	47 to 58	52 to 64
Group 2D: Strongly sloping and moderately steep, moderately deep and deep soils that are moderately well drained and well drained.	CsD, CtC3, CuD; GrD3; RuC3, RuD2, RuD3; ShC3.	57 to 67	47 to 58	52 to 64
Group 2E: Steep, moderately deep and deep soils that are well drained and moderately well drained.	CtE3, CuE	57 to 67	47 to 58	52 to 64
Group 2F: Steep, gravelly soils	GuD2, GuF	57 to 67	47 to 58	52 to 64
Group 3 Miscellaneous land types that are limited in use	Gw; Mp; Ss	(2)	(2)	(2)

SOILS FROM LIMESTONE,

Group 1A: Moderately deep, well drained and moderately well drained soils on stream terraces.	CmB2, CmC2; CnB	82		
Group 1B: Deep, well-drained to poorly drained soils on flood plains and swales.	Hu; Ld, Le; Me	82		
Group 2: Moderately deep, sloping soils on upland plateaus	AbB2, AbC, AbC2	72 to 86	66 to 72	(2)
Group 3A: Nearly level to moderately steep, shallow to deep soils that are well drained to poorly drained.	AsD; CoA, CoB2, CrB3; DaB2; DoA; LkB2, LkC, LkC2, LkD2; TaB2, TaC2, TbB3.	60 to 76	53 to 71	47 to 85
Group 3B: Mostly strongly sloping and moderately steep, moderately deep and deep soils that are well drained to somewhat poorly drained.	CoC2, CoD2, CrC3; DcB3, DcC3, DcD3; TbC3.	60 to 76	53 to 71	47 to 85
Group 3C: Somewhat poorly drained soils on stream terraces	TuA	60 to 76	53 to 71	47 to 85

See footnotes at end of table.

and ratings for major limitations and hazards affecting management

generally suited to the soils in the group]

PLAIN SEDIMENTS

Hazards and limitations					Remarks
Seedling mortality	Plant competition	Equipment limitations	Erosion hazard	Windthrow hazard	
Severe to slight	Severe	Severe	Slight	Slight	
Slight	Moderate	Slight	Slight	Slight or moderate	Shortleaf pine is affected by littleleaf disease.
Slight	Moderate	Slight	Moderate	Slight	Shortleaf pine is affected by littleleaf disease.
Slight	Moderate	Slight	Moderate	Moderate	Shortleaf pine is affected by littleleaf disease.
Slight	Moderate	Slight or moderate	Severe	Slight or moderate	Shortleaf pine is affected by littleleaf disease.
Slight	Moderate	Moderate or severe.	Moderate or severe.	Moderate or slight	Shortleaf pine is affected by littleleaf disease.
Moderate	Slight	Slight to severe	Moderate	Slight	Shortleaf pine is affected by littleleaf disease.
Slight to severe	Slight	Severe	Severe to slight	Slight	Characteristics vary so widely that each site should be examined carefully to determine its suitability for trees.

SANDSTONE, AND SHALE

Slight	Moderate	Moderate	Slight	Moderate	
Slight to severe	Severe	Severe	Slight	Slight	
Slight	Moderate	Slight or moderate	Moderate or severe.	Moderate	Shortleaf pine is affected by littleleaf disease.
Slight	Moderate	Slight or moderate	Moderate or severe.	Moderate	Shortleaf pine is affected by littleleaf disease.
Slight	Moderate	Slight	Severe	Moderate	Shortleaf pine is affected by littleleaf disease.
Moderate	Moderate	Moderate	Slight	Moderate	Shortleaf pine is affected by littleleaf disease.

TABLE 2.—*Woodland suitability groups of soils, their potential productivity,*

SOILS FROM LIMESTONE

Group and description	Map symbols	Protential productivity (site index at 50 years) [1]		
		Loblolly pine	Shortleaf pine	Virginia pine
Group 3D: Moderately steep, shallow or very shallow soils that are excessively drained.	RaD	60 to 76	53 to 71	47 to 85
Group 4: Nearly level, dark-colored soils that are somewhat poorly drained.	Du; Ho, Hs			
Group 5: Land that is limited in use because of outcrops, boulders, and fragments of sandstone.	Rs	(2)	(2)	(2)
Group 6: Land that is limited in use because of outcrops, boulders, and fragments of limestone.	Ro			

[1] Average height of dominant trees in stand at 50 years of age.

Seedling mortality refers to the mortality of naturally occurring or planted tree seedlings as influenced by the kinds of soil or topography when plant competition is not a limiting factor. The rating is slight if mortality is expected to be between 0 and 25 percent; moderate if between 25 and 50 percent; and severe if more than 50 percent. If seedling mortality is severe, adequate restocking will require much replanting, special seedbed preparation, and superior planting methods.

Plant competition, or brush encroachment, is the invasion or growth of undesirable plants when openings are made in the canopy. Competition is slight when competing plants do not prevent the natural regeneration or the early growth of desirable species, or do not interfere with the growth of planted seedlings. Competition is moderate if competing plants delay natural or artificial regeneration but do not prevent the growth of a fully stocked, normal stand. Competition is severe if competing plants prevent adequate natural restocking or natural regeneration, unless the site is intensively prepared and maintained by weeding or other practices.

Equipment limitations differ according to slope range, soil wetness, and other factors that restrict or prohibit the use of equipment commonly used in tending and harvesting trees. Equipment limitations are slight if the kind of equipment and its season of use are not restricted. Limitations are moderate if the kind of operation of equipment is limited by one or more of the following: slope, stones, or obstructions; seasonal wetness; physical soil characteristics; and possible injury to tree roots, soil structure, or soil stability. Limitations are severe if special equipment is needed, and its use is severely restricted by one or more of the factors listed for "moderate," and by safety in operation.

Erosion hazard refers to potential soil erosion that may occur where soil is managed according to usual practices. Erosion is slight if the problems of erosion control are not important. It is moderate if some attention must be given to prevent unnecessary soil erosion. The erosion hazard is severe if intensive treatment and the operation of specialized equipment must be planned to minimize soil erosion.

Windthrow hazard is the danger of trees being blown over by the wind. It varies according to shallowness, stoniness, droughtiness, wetness, and other soil characteristics; kinds of trees; and thinning, cutting, leaving protective borders, and other forestry practices used to minimize tree losses. Windthrow hazard is slight if normally no trees are blown down by the wind. It is moderate if some trees are expected to blow down when the soil is excessively wet and the wind is high. Windthrow hazard is severe if many trees are expected to blow down when the soils are excessively wet and the wind is moderate or high.

Woodland suitability groups of soils from Coastal Plain sediments

The following woodland suitability groups are made up of soils that developed in beds of sand, silt, clay, and gravel of the Coastal Plain.

WOODLAND SUITABILITY GROUP 1

In this group are deep, friable, medium-textured soils of the Coastal Plain that are well drained to poorly drained. These soils are on slopes of 0 to 2 percent. They have moderate permeability and moderate to high available moisture capacity. The soils are—

Bibb loam.
Iuka fine sandy loam.
Iuka fine sandy loam, local alluvium.
Ochlockonee fine sandy loam.

All these soils except Iuka fine sandy loam, local alluvium, are on first bottoms that are likely to be flooded occasionally. Iuka fine sandy loam, local alluvium, is in

and ratings for major limitations and hazards affecting management—Continued

SANDSTONE, AND SHALE—Continued

Hazards and limitations					Remarks
Seedling mortality	Plant competition	Equipment limitations	Erosion hazard	Windthrow hazard	
Moderate	Moderate	Severe	Severe	Moderate	Shortleaf pine is affected by littleleaf disease.
Slight to severe	Moderate	Severe	Slight	Slight to severe	Well suited to redcedar.
Slight to severe	Moderate	Severe	Moderate or severe.	Moderate	Characteristics vary so widely that each site should be examined to determine its suitability for trees.
Slight to severe	Moderate	Severe	Moderate or severe.	Moderate	Well suited to redcedar.

[2] Site indexes not available.

swales, in upland depressions, and at the heads of and along narrow drainageways.

Loblolly pine is the best suited commercial pine on these soils. Shortleaf and Virginia pines in many places do not occur. Well-suited commercial hardwoods are yellow-poplar, sweetgum, red and white oaks, beech, maple, and hickory.

Seedling mortality is severe in areas that are subject to flooding, but it is only slight on Iuka fine sandy loam, local alluvium. Because the supply of moisture is generally good, competition from undesirable plants is severe. Especially in winter and early in spring, these soils are wet and equipment limitations are severe. The hazards of erosion and windthrow are slight.

WOODLAND SUITABILITY GROUP 2A

In this group are moderately deep and deep, moderately well drained and well drained soils on stream terraces and uplands in the Coastal Plain. These soils are on slopes of 0 to 6 percent. Permeability is generally moderate to rapid, and the available moisture capacity is moderate to low. The soils are—

Cahaba fine sandy loam, 0 to 2 percent slopes.
Cahaba fine sandy loam, 2 to 6 percent slopes.
Greenville loam, 2 to 6 percent slopes, eroded.
Prentiss fine sandy loam, 0 to 2 percent slopes.
Savannah very fine sandy loam, 0 to 2 percent slopes.

The commercial pines best suited to these soils, in the order of priority, are loblolly pine, shortleaf pine, and Virginia pine. Well-suited commercial hardwoods are red and white oaks, sweetgum, yellow-poplar, and hickory. On the soils of this group, the hardwoods are less valuable than the pines.

Competition from undesirable plants is moderate on these soils. If plant competition is controlled, seedling mortality is slight. The erosion hazard and the limitations to the use of equipment are slight. The hazard of windthrow is slight on the deep Cahaba and Greenville soils and is moderate on the Prentiss and Savannah soils, which have a fragipan.

WOODLAND SUITABILITY GROUP 2B

In this group are deep, well-drained soils on uplands of the Coastal Plain. Slopes range from 2 to 10 percent. Permeability is moderate to rapid, and the available moisture capacity is moderate to low. The soils are—

Greenville loam, 2 to 6 percent slopes, severely eroded.
Greenville loam, 6 to 10 percent slopes, severely eroded.
Ruston fine sandy loam, 2 to 6 percent slopes, eroded.
Ruston fine sandy loam, 6 to 10 percent slopes.
Ruston fine sandy loam, 6 to 10 percent slopes, eroded.
Saffell gravelly fine sandy loam, 2 to 6 percent slopes.
Saffell gravelly fine sandy loam, 6 to 10 percent slopes.
Saffell gravelly fine sandy loam, 6 to 10 percent slopes, eroded.

The commercial pines best suited to the soils in this group, in the order of priority, are loblolly pine, shortleaf pine, and Virginia pine. Also well suited but less valuable commercially than the pines are a number of hardwoods, including red and white oaks, sweetgum, blackgum, maple, yellow-poplar, and hickory.

Seedling mortality, limitations to the use of equipment, and the hazard of windthrow are slight on these soils. Plant competition and the risk of erosion are moderate.

WOODLAND SUITABILITY GROUP 2C

In this group are moderately deep, moderately well drained soils on uplands and stream terraces of the Coastal Plain. Slopes range from 2 to 10 percent. The soils are—

Cuthbert fine sandy loam, 6 to 10 percent slopes.
Ora fine sandy loam, 2 to 6 percent slopes, eroded.
Ora fine sandy loam, 6 to 10 percent slopes.
Ora fine sandy loam, 6 to 10 percent slopes, eroded.
Ora fine sandy loam, heavy substratum, 2 to 6 percent slopes, eroded.

Prentiss fine sandy loam, 2 to 6 percent slopes.
Savannah very fine sandy loam, 2 to 6 percent slopes.
Savannah very fine sandy loam, 2 to 6 percent slopes, eroded.
Savannah very fine sandy loam, 6 to 10 percent slopes.
Savannah very fine sandy loam, 6 to 10 percent slopes, eroded.
Tilden fine sandy loam, 2 to 6 percent slopes.

All of these soils have a fragipan, 18 to 30 inches deep, except the Cuthbert soil, which has a subsoil of heavy clay. Permeability is moderate above the fragipan or the firm subsoil and is slow in it. The available moisture capacity is low to moderate.

The commercial pines best suited to these soils, in the order of priority, are loblolly pine, shortleaf pine, and Virginia pine. Also well suited but less valuable are a number of commercial hardwoods, including red and white oaks, sweetgum, blackgum, maple, and hickory.

Seedling mortality and limitations to the use of equipment are slight. Plant competition and the hazards of erosion and windthrow are moderate.

WOODLAND SUITABILITY GROUP 2D

This group consists of moderately deep and deep, slightly eroded to severely eroded soils that occur on uplands of the Coastal Plain and are moderately well drained and well drained. These soils are on slopes of 6 to 15 percent. They are—

Cuthbert fine sandy loam, 10 to 15 percent slopes.
Cuthbert sandy clay loam, 6 to 10 percent slopes, severely eroded.
Cuthbert and Ruston soils, 10 to 15 percent slopes.
Greenville loam, 10 to 15 percent slopes, severely eroded.
Ruston fine sandy loam, 6 to 10 percent slopes, severely eroded.
Ruston fine sandy loam, 10 to 15 percent slopes, eroded.
Ruston fine sandy loam, 10 to 15 percent slopes, severely eroded.
Savannah loam, 6 to 10 percent slopes, severely eroded.

The Savannah soil has a fragipan at a depth of 18 to 30 inches. Permeability is moderate to rapid in the Greenville and Ruston soils and is slow in the Cuthbert and Savannah soils. The available moisture capacity is moderate to low in all the soils except the Cuthbert, where it is low.

The most suitable commercial pines, in the order of their priority, are loblolly pine, shortleaf pine, and Virginia pine. Commercial hardwoods that are suitable but less valuable are red and white oaks, sweetgum, blackgum, maple, and hickory.

Seedling mortality is slight on the soils of this group, plant competition is moderate, and the equipment limitations are slight to moderate. The hazard of further erosion is severe because of previous erosion and strong slopes. The hazard of windthrow is slight on the deep Greenville and Ruston soils and is moderate on the Cuthbert and Savannah soils.

WOODLAND SUITABILITY GROUP 2E

In this group are deep and moderately deep, well drained and moderately well drained soils on uplands of the Coastal Plain. These soils occur on slopes of 10 to 25 percent. The soils are—

Cuthbert sandy clay loam, 10 to 25 percent slopes, severely eroded.
Cuthbert and Ruston soils, 15 to 25 percent slopes.

Except for the severely eroded Cuthbert soil, which has a thin root zone in most places, the root zone of these soils is thick. Permeability is slow in most of the soils, but it is moderate to rapid in the Ruston soil. The available moisture capacity is low in the Cuthbert soils and moderate in the Ruston soil.

The best suited commercial pines, in the order of their priority, are loblolly pine, shortleaf pine, and Virginia pine. Well-suited hardwoods are red and white oaks, hickory, yellow-poplar, and sweetgum. The pines are more valuable commercially than the hardwoods.

Competition from undesirable plants is moderate on these soils. If plant competition is controlled, seedling mortality is slight. Limitations to the use of equipment are moderate during dry periods and are severe after prolonged rains. The erosion hazard is moderate on the Ruston soil and is severe on the Cuthbert soils. The hazard of windthrow is only slight on the deeper Ruston soil but is moderate on the shallower Cuthbert soils.

WOODLAND SUITABILITY GROUP 2F

In this group are gravelly soils on slopes of 10 to 40 percent. These soils are rapid in permeability and generally are very low in available moisture capacity. The soils are—

Guin gravelly sandy loam, 10 to 15 percent slopes, eroded.
Guin gravelly sandy loam, 15 to 40 percent slopes.

Loblolly pine, shortleaf pine, and Virginia pine, in that order of priority, are the commercial pines best suited to the soils of this group. Also suited but less valuable are red and white oaks, yellow-poplar, blackgum, sweetgum, maple, ash, and hickory.

Plant competition and the hazard of windthrow are slight on these soils. Seedling mortality and the erosion hazard are moderate. The limitations to the use of equipment are only slight on the milder slopes but are severe on the steep slopes.

WOODLAND SUITABILITY GROUP 3

In this group are three miscellaneous land types that are so varied in characteristics that each site must be examined to determine its limitations and capacity for growing trees. They are—

Gullied land.
Mine pits and dumps.
Slickens.

The site indexes for trees growing on these land types have not been determined.

Seedling mortality ranges from slight to severe. Plant competition and windthrow hazard are slight. The use of equipment is severely restricted, and the erosion hazard is slight to severe.

Woodland suitability groups of soils from limestone, sandstone, and shale

The following woodland suitability groups are made up of soils that formed in materials weathered from sedimentary rocks, chiefly limestone, sandstone, and shale.

WOODLAND SUITABILITY GROUP 1A

In this group are moderately deep, well drained and moderately well drained soils that occupy stream terraces on slopes of 2 to 10 percent. These soils developed in alluvium derived from limestone and sandstone. They have a fragipan at a depth of 18 to 30 inches. Perme-

ability is slow, and the available moisture capacity is moderate to low. The soils are—

Cane loam, 2 to 6 percent slopes, eroded.
Cane loam, 6 to 10 percent slopes, eroded.
Captina silt loam, 2 to 6 percent slopes.

The most suitable commercial pine for these soils is loblolly pine. Shortleaf and Virginia pines do not occur in many places. Suitable commercial hardwoods are red and white oaks, sweetgum, maple, and yellow-poplar.

As a rule, seedling mortality is slight because the soils in this group generally have a favorable supply of moisture. Plant competition is only moderate, however, because fertility is generally low. The hazard of erosion is slight, and the limitations to the use of equipment are moderate. Because of the fragipan in these soils, windthrow is a moderate hazard.

WOODLAND SUITABILITY GROUP 1B

In this group are deep, friable, fine-textured soils that are well drained to poorly drained. Slopes range from 0 to 2 percent. These soils are—

Huntington silt loam, local alluvium.
Lindside silt loam.
Lindside silt loam, local alluvium.
Melvin silt loam.

The local alluvium phases of Huntington and Lindside soils are in swales, in upland depressions, and at the heads of and along narrow drainageways. The other soils are on first bottoms and are subject to occasional or frequent flooding. Permeability is moderate, and the available moisture capacity is moderate to high.

The commercial pine best suited to these soils is loblolly pine. Shortleaf and Virginia pines do not grow in many places. Well-suited commercial hardwoods are sweetgum, yellow-poplar, red and white oaks, beech, and hickory.

Seedling mortality is slight on the local alluvium soils because the moisture supply is generally good. On the soils that are flooded at times, seedling mortality is severe. Since all the soils have a favorable moisture content, competition from undesirable plants is severe. The use of equipment is severely limited by flooding and excess water, especially in winter and early in spring. The risk of erosion on these nearly level soils is slight. The hazard of windthrow is slight because the root zone is deep and permeable.

WOODLAND SUITABILITY GROUP 2

In this group are moderately deep, well-drained soils that occur on uplands and are underlain by sandstone and shale. These soils occupy slopes of 2 to 10 percent. They are slow in permeability and are moderate to low in available moisture capacity. The soils are—

Albertville fine sandy loam, 2 to 6 percent slopes, eroded.
Albertville fine sandy loam, 6 to 10 percent slopes.
Albertville fine sandy loam, 6 to 10 percent slopes, eroded.

The commercial pines best suited to these soils, in the order of their priority, are loblolly pine and shortleaf pine. The relative suitability of Virginia pine has not been determined. Well-suited commercial hardwoods are yellow-poplar, white and red oaks, hickory, blackgum, and sweetgum.

Seedling mortality is slight on these soils, and plant competition is moderate. The limitations to the use of equipment range from slight when the soils are dry to moderate when they are wet. Because the subsoil is clayey, the erosion hazard is moderate to severe. The windthrow hazard is moderate because the growth of tree roots has been restricted by the moderately deep root zone.

WOODLAND SUITABILITY GROUP 3A

In this group are shallow to deep, well-drained to poorly drained soils that developed in material derived from limestone, sandstone, and shale. These soils are on slopes of 0 to 15 percent. They are moderate to slow in permeability. The soils are—

Albertville fine sandy loam, shallow, 10 to 15 percent slopes.
Colbert silt loam, 0 to 2 percent slopes.
Colbert silt loam, 2 to 6 percent slopes, eroded.
Colbert silty clay loam, 2 to 6 percent slopes, severely eroded.
Decatur silt loam, 2 to 6 percent slopes, eroded.
Dowellton silty clay, 0 to 2 percent slopes.
Linker fine sandy loam, 2 to 6 percent slopes, eroded.
Linker fine sandy loam, 6 to 10 percent slopes.
Linker fine sandy loam, 6 to 10 percent slopes, eroded.
Linker fine sandy loam, 10 to 15 percent slopes, eroded.
Talbott silt loam, 2 to 6 percent slopes, eroded.
Talbott silt loam, 6 to 10 percent slopes, eroded.
Talbott silty clay, 2 to 6 percent slopes, severely eroded.

The available moisture capacity ranges from low in the shallow Albertville, Colbert, and Dowellton soils to moderate in the Decatur, Linker, and Talbott soils.

The most suitable commercial pines, in the order of priority, are loblolly pine, shortleaf pine, and Virginia pine. Hardwoods that are suitable but less valuable commercially are yellow-poplar, white and red oaks, hickory, blackgum, and sweetgum.

Seedling mortality is slight on these soils because the supply of moisture is generally favorable. As a rule, however, the soils are low in fertility, and plant competition is only moderate. Limitations to the use of equipment are slight or moderate. The hazard of further erosion is moderate on most of the soils, but it is severe on the Albertville soil because of shallowness and strong slopes. All of the soils are moderately susceptible to windthrow.

WOODLAND SUITABILITY GROUP 3B

In this group are moderately deep and deep, eroded and severely eroded soils that occur on uplands and are well drained to somewhat poorly drained. These soils are on slopes of 2 to 15 percent. Permeability is moderate to slow. The available moisture capacity is low in the Colbert soils and is moderate in the other soils. In the group are—

Colbert silt loam, 6 to 10 percent slopes, eroded.
Colbert silt loam, 10 to 15 percent slopes, eroded.
Colbert silty clay loam, 6 to 10 percent slopes, severely eroded.
Decatur silty clay loam, 2 to 6 percent slopes, severely eroded.
Decatur silty clay loam, 6 to 10 percent slopes, severely eroded.
Decatur silty clay loam, 10 to 15 percent slopes, severely eroded.
Talbott silty clay, 6 to 10 percent slopes, severely eroded.

In the order of their priority, the commercial pines best suited to these soils are loblolly pine, shortleaf pine, and Virginia pine. Commercial hardwoods that are well suited but less valuable are sweetgum, yellow-poplar, white and red oaks, hickory, and blackgum.

As a rule, these soils have a good supply of moisture and only slight seedling mortality. Competition from undesirable plants is moderate because fertility is generally low. Limitations to the use of equipment are slight. The soils are highly susceptible to further erosion and are moderately susceptible to windthrow.

WOODLAND SUITABILITY GROUP 3C

Tupelo silt loam, 0 to 2 percent slopes, is the only soil in this group. This soil is on stream terraces in the limestone valleys and is moderately deep and somewhat poorly drained. It is slow to very slow in permeability and is low in available moisture capacity.

The most suitable commercial pines, in order of priority, are loblolly pine, shortleaf pine, and Virginia pine. Commercial hardwoods that are suitable but less important than the pines are blackgum, sweetgum, red and white oaks, hickory, and maple.

Because the moisture supply in this soil is inadequate at times, seedling mortality is moderate. Plant competition is moderate because of low fertility. Limitations to the use of equipment and the hazard of windthrow are moderate. The erosion hazard is slight.

WOODLAND SUITABILITY GROUP 3D

Ramsey fine sandy loam, 10 to 15 percent slopes, is the only soil in this group. This sandy soil is shallow and excessively drained. Consequently, the available moisture capacity is generally low. Permeability is rapid.

The most suitable commercial pines, in the order of priority, are loblolly pine, shortleaf pine, and Virginia pine. Also suitable but less important commercially are yellow-poplar, red and white oaks, hickory, ash, and sweetgum.

Seedling mortality and competition from undesirable plants are moderate. Because the soil is steep and is rocky in places, the erosion hazard and the limitations to the use of equipment are severe. The hazard of windthrow is moderate.

WOODLAND SUITABILITY GROUP 4

In this group are nearly level, dark-colored, somewhat poorly drained soils that developed in material weathered from limestone. They are—

Dunning silty clay.
Hollywood silty clay.
Hollywood silty clay, shallow.

These soils are not suited to pines but are well suited to redcedar. Site indexes have not been determined.

Seedling mortality and the hazard of windthrow range from slight to severe. Competition from undesirable plants is moderate. The use of equipment is severely limited, and the erosion hazard is slight.

WOODLAND SUITABILITY GROUP 5

Rock land, sandstone—the only mapping unit in this group—is so variable in characteristics that its suitability and use for trees should be determined at each site. Seedling mortality ranges from slight to severe. Competition from undesirable plants is moderate. Limitations to the use of equipment are severe. The erosion hazard is moderate or severe. There is a moderate windthrow hazard.

WOODLAND SUITABILITY GROUP 6

The only mapping unit in this group is Rock land, limestone. It resembles the Colbert soils in some ways but contains many outcrops and fragments of limestone. Slopes range from 0 to 35 percent.

This land type is well suited to redcedar but is not suited to pines. Site indexes have not been determined. Seedling mortality ranges from slight to severe. Plant competition and the hazard of windthrow are moderate. The use of equipment is severely restricted, and erosion is a moderate or severe hazard.

Management of woodland in pine

The size of trees and the density of a stand have much to do with the management needed on woodland. Suggested in the following paragraphs are practices for managing pine in stands of the seedling, the post or pulpwood, and the sawtimber size classes.

Seedlings.—Well-stocked and understocked stands of seedlings should be protected by firebreaks and should not be grazed. Stands can be improved by removing undesirable trees and by planting seedlings in understocked areas.

Posts and pulpwood.—Firebreaks should be constructed to protect well-stocked and understocked stands of trees at post and pulpwood size. Grazing on these stands should be regulated and undesirable trees removed. The well-stocked stands require intermediate cutting. The understocked stands need intermediate cutting only where the trees are in dense clumps containing salable posts or pulpwood; in other areas they should be planted to trees.

Sawtimber.—Constructing firebreaks and regulating grazing are means of protecting well-stocked and understocked stands of sawtimber. These stands also require harvest cutting and the removal of undesirable trees. The well-stocked areas of sawtimber need intermediate cutting, and the understocked areas should be planted to trees or allowed to seed naturally. Prepare a site before planting trees or before an area seeds naturally.

Open areas.—Construct firebreaks and do not permit cattle to graze in open areas that are planted to trees. Prepare a site before trees are planted or before the areas seed naturally.

Yield data

Figures 9 and 10, based on published research (*12*, *7*),[3] show how site index ratings can be converted readily to obtain probable yields of different kinds of pines. Figure 9 is for shortleaf and loblolly pines and expresses yield as board feet. Figure 10 is for Virginia pine and expresses yield as cubic feet.

Use of Soils for Wildlife[4]

Rabbit, gray squirrel, bobwhite, and mourning dove are the most common game throughout Franklin County, but many deer and wild turkey live in the southeastern and the northwestern parts. Opossum, fox, raccoon, skunk, bobcat, and weasel are the most common fur-bearing and predatory animals. Nongame birds are abundant in all the towns and farming areas. Many of the more than 250 farm ponds built in the county have been stocked with fish.

The wildlife in the county, and management favorable for habitats, can be conveniently discussed according to the soils in three broad areas—ridgetops, steep slopes, and flood plains.

Ridgetops.—These are the relatively smooth, nearly level to strongly sloping areas that lie above the steeper slopes and stream valleys. They make up about one-third of the county and are chiefly in the eastern half.

[3] Italic numbers in parentheses refer to Literature Cited, p. 80.
[4] DALE H. ARNER, biologist, Soil Conservation Service, helped to write this subsection.

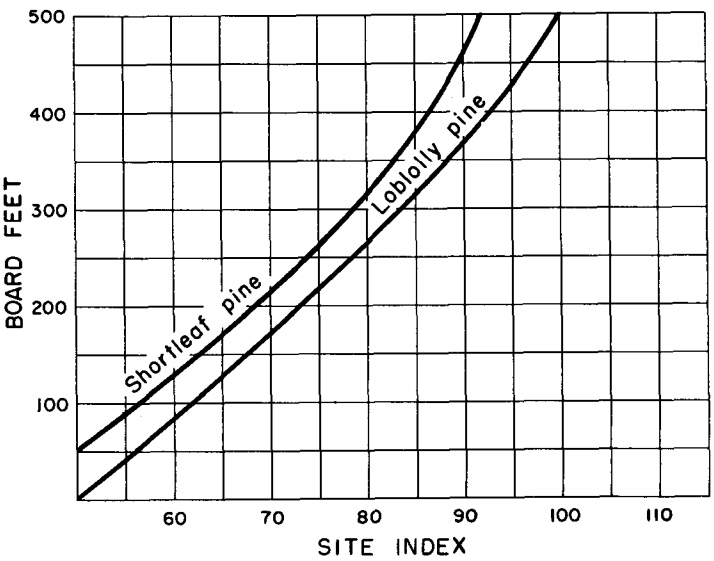

Figure 9.—**Average yearly growth in board feet per acre for second-growth shortleaf pine and loblolly pine, at 60 years of age, in well-stocked, unmanaged stands. (Adapted from United States Department of Agriculture Miscellaneous Publication No. 50 (*12*).)**

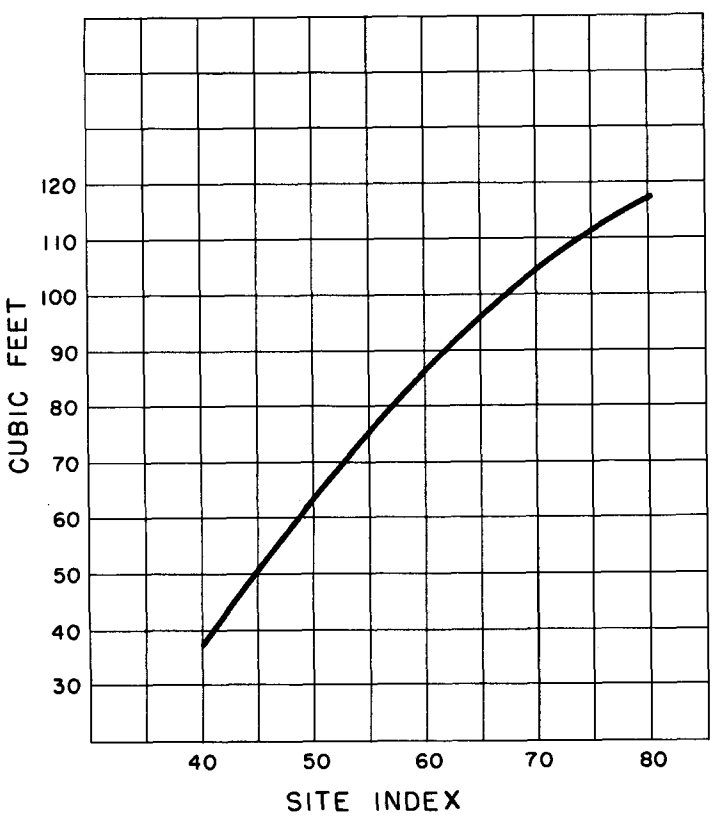

Figure 10.—**Average yearly growth in cubic feet per acre for well-stocked, unmanaged stands of Virginia pine. (Interpreted from North Carolina Agricultural Experiment Station Technical Bulletin No. 100 (*7*).)**

Dominant on the ridgetops are soils of the Savannah, Ruston, Albertville, Colbert, and Decatur series. Most of the acreage has been cleared and is used for general crops, including cotton, corn, small grain, hay, and pasture. The rest is in small, scattered stands of young pines and second-growth hardwoods. The most common game are bobwhite, mourning dove, and rabbit.

The ridgetops are favorable for bobwhite because the farms are generally small and several kinds of crops are grown in fields that are interspersed with areas of cover. Many small fields planted to corn are close to wooded cover, and this combination of food and cover is well suited to bobwhite. These birds can be increased in number throughout the ridgetops by using practices that improve habitats.

In pasture areas, establish strips of annual lespedeza along brushy fence rows or next to woodlots or brier thickets. Prepare strips for planting by lightly disking the soil late in winter or early in spring. If grazing is reduced late in summer so that about 4 inches of stubble remains, an acre of such plantings normally produces enough seed to feed a covey of bobwhite during the winter. Additional food can be provided on idle land by disking the soil lightly in winter, a practice that encourages the growth of volunteer stands of beggarweed, partridgepea, or annual lespedeza.

Plant lespedeza bicolor, an excellent food plant for bobwhite, in quarter-acre plots that are spaced not more than one-quarter mile apart. Fence each plot to protect the planting from livestock.

Plant reseeding cowpeas in corn or following small grain. If planted in the outer two or three rows of corn, cowpeas generally reseed each year after the last cultivation of the corn.

Little needs to be done to increase the number of rabbits, since fields in winter pasture and the clumps of trees nearby generally provide ample food and cover during winter, the critical season for rabbits.

Steep slopes.—More than half of the county is made up of steep soils and miscellaneous land types. Dominant in these areas are the Guin and Cuthbert soils; Rock land, sandstone; and Rock land, limestone. The slopes are generally too steep for cultivation, and only a small acreage is cropped or pastured. They are mostly in small, second-growth hardwoods. A few large trees grow in coves, on benches, and on other more fertile sites. Among the most common trees are hickory, black walnut, oak, dogwood, beech, maple, and poplar. Shagbark hickory grows most commonly on Rock land, limestone, and generally indicates the presence of that land type.

Gray squirrel is the most widely hunted game animal on the steep slopes. Deer and turkey have been released by the Alabama Conservation Department in the Bankhead National Forest and in the Freedom Hills area. Under a program of good management and controlled hunting, deer and turkey are increasing and are extending their range.

Forests that are best for squirrels contain many individual trees of hickory, black walnut, and oak. Retaining trees of this kind that have a large crown helps to maintain a large number of squirrels. The number of nuts or acorns produced by different trees depends on the kind of tree and the size of the crown. Shagbark hickory is very productive of nuts that are eagerly sought by squirrels. The crop of nuts produced by two shagbark hickory trees, growing in the open and having a trunk diameter of 16 inches or more, is commonly equal

to the crop of acorns produced by 60 oak trees, growing in a closed forest and having a trunk diameter of 8 to 10 inches.

Deer obtain much of their food from acorns and from the young buds and twigs of greenbrier, maple, poplar, American beautyberry, and wild hydrangea. A large amount of food for wild turkey is provided by native plants, especially in fall and winter, and includes acorns and beechnuts; fruits of dogwood and wild grapes; and seeds of panicgrass, crabgrass, and nimblewill.

Farmers interested in attracting turkey and deer can supplement this native supply of food by planting their idle land in chufa flatsedge or winter grasses and legumes like ryegrass, clover, wheat, and oats.

Flood plains.—These nearly level areas make up less than one-tenth of the county and are mainly along the larger streams in the western part. The major soils are in the Bibb, Ochlockonee, and Iuka series. About half of the acreage is in hardwood forest, and the rest is about equally divided into cropland and pasture.

Deer and turkey range and feed on the flood plains. Bobwhite are abundant in areas of cropland, and squirrel in the wooded parts.

Bobwhite can be increased in number by using practices like those described for the ridgetops. Plants that occur naturally produce enough food to sustain the present population of deer and turkey.

More information on the management of wildlife can be obtained from a local representative of the Soil Conservation Service, the Extension Service, or the Alabama Conservation Department.

Management of farm ponds for fish.—The satisfactory production of fish in farm ponds depends on the following: (1) conservation practices on the watershed to keep soil from washing into the pond; (2) diversion of excess water around ponds that have a large watershed; (3) clearing the pond basin of trees and brush; (4) following the recommendations of the Alabama Conservation Department for stocking, fertilizing, and managing the pond.

Engineering Properties of Soils

This soil survey report of Franklin County, Alabama, contains information that can be used by engineers to—

1. Make soil and land-use studies that will aid in selecting and developing industrial, business, residental, and recreational sites.
2. Make preliminary estimates of runoff and erosion for use in designing drainage structures and in planning dams and other structures for soil and water conservation.
3. Make preliminary evaluations of soil and ground conditions that will aid in selecting locations for highways, pipelines, and airports, and in planning detailed investigations of the selected locations.
4. Locate gravel, sand, and stone for use in construction.
5. Correlate performance of engineering structures with soil mapping units and thus develop information that will be useful in designing and maintaining the structures.
6. Determine the suitability of soil mapping units for cross-country movements of vehicles and construction equipment.
7. Supplement information obtained from other published maps, reports, and aerial photographs for the purpose of making soil maps and reports that can be used readily by engineers.
8. Develop other preliminary estimates pertinent to structures in a particular area.

The soil map and the descriptive report are somewhat generalized and should be used only in planning more detailed field surveys to determine the condition of the soil in place at the site of the proposed engineering construction.

This section contains 3 tables. Table 3 gives laboratory test data for soils in six extensive series in the county; table 4 describes, for each soil in the county, some soil characteristics that are significant in engineering; and table 5 estimates the suitability of the soils in each series for various engineering uses and lists soil features that affect engineering.

Some of the terms used by the soil scientist may be unfamiliar to the engineer, and some words—for example, soil, clay, silt, sand, aggregate, and granular—have special meanings in soil science. Most of these terms as well as other special terms that are used in the soil survey report, are defined in the Glossary at the back of this report.

Engineering classification systems

Two systems of classifying soils are in general use among engineers, and both are used in this report. These classification systems are explained in the PCA Soil Primer (*5*).

Most highway engineers classify soil materials according to the system approved by the American Association of State Highway Officials (*2*). In this system, soil materials are classified in seven principal groups. The groups range from A–1, which consists of gravelly soils of high bearing capacity, to A–7, which consists of clay soils having low strength when wet. In each group the relative engineering value of the soil material is indicated by a group index number. Group index numbers range from 0 for the best material to 20 for the poorest. The group index numbers for several of the soils of Franklin County are shown, in parentheses following the soil group symbol, in the next to last column in table 3. The estimated AASHO classification for all of the soils of the county is given in table 4.

Some engineers prefer to use the Unified soil classification system (*14*). This system is based on the identification of soils according to their texture and plasticity and their performance as engineering construction materials. The last column in table 3 shows the Unified classification of the samples tested, and table 4 gives the estimated Unified classification of all the soils in Franklin County.

Soil test data

To help evaluate the soils for engineering purposes, soil samples from six extensive soil series were tested by the Alabama State Highway Department. The results of these tests are given in table 3.

Each soil listed in table 3 was sampled in three locations and, as a result, the test data show some variations in physical characteristics. However, the data probably do not show the entire range of characteristics within each soil series. All samples were obtained at a depth of less than 6 feet. The information, therefore, may not be

adequate for estimating the characteristics of soil material in rolling or steep areas where deep cuts are made.

The data given in table 3 were obtained by mechanical analyses and by testing the soils to determine liquid limits and plastic limits. Mechanical analyses were made by combined sieve and hydrometer methods.

The tests to determine liquid limit and plastic limit measure the effect of water on the consistence of the soil material. As the moisture content of a clayey soil increases from a very dry state, the material changes from a semisolid to a plastic state. As the moisture content is further increased, the material changes from a plastic to a liquid state. The plastic limit is the moisture content at which the soil material passes from a semisolid to a plastic state. The liquid limit is the moisture content at which the material passes from a plastic to a liquid state.

Table 3 also gives compaction (moisture-density) data for the tested soils. If a soil material is compacted at a successively higher moisture content, assuming that the compactive effort remains constant, the density of the compacted material increases until the optimum moisture content is reached. After that, the density decreases with increase in moisture content. The highest dry density obtained in the compaction test is termed "maximum dry density." Data showing moisture density are important in earthwork for, as a rule, optimum stability is obtained if the soil is compacted to about the maximum dry density when it contains approximately the optimum amount of moisture.

Estimated engineering properties

Brief descriptions of the soils mapped in Franklin County and estimates of their physical properties that are significant in engineering are given in table 4. Each important layer is classified according to the system used by the United States Department of Agriculture and according to the AASHO and the Unified classification systems.

The percentage of particles passing the No. 200, 10, and 4 sieves was estimated on the basis of field observations and laboratory test data obtained from soils in this county and from similar soils in other counties.

Permeability refers to the estimated rate of movement of water through the undisturbed soil material. It depends mainly on the soil texture and structure (*9*).

The available water is approximately the amount of water in a soil when it is wet to field capacity, or when the percolation downward has practically stopped. It is the amount of water, in inches, that is needed to wet 1 foot of air-dried soil.

Reaction of the soils was obtained from field tests.

Dispersion refers to the degree to which and the rate at which the soil aggregates disintegrate when saturated with water.

The shrink-swell potential indicates how much a soil changes in volume when its moisture content changes. In general, soils classified as CH and A–7 have a high shrink-swell potential. Soils that have a low shrink-swell potential are clean sands and gravel, which are structureless (single grain); soils that have a small amount of nonplastic or slightly plastic fines; and most other nonplastic or slightly plastic soil materials.

Engineering interpretations

Table 5 shows estimates of the suitability of the soils in each series for various engineering uses. Also given in this table are features and problems that affect the use of the soils for septic tanks and for soil and water conservation work.

In rating the soils according to their suitability for winter grading, the resistance of the soil material to frost action was considered. In Franklin County, however, rain is a greater problem in soil engineering than is frost action. In an average year there are 39 days that have rainfall of 0.5 inch or more but only 6 days that have a temperature of 20 degrees or less. For this reason, the ratings are based largely on drainage and on the problems of working the soil materials when they are wet.

The suitability of a soil for grading in winter or in wet weather depends largely on the texture of the soil, its natural content of water, and the depth to the water table. Rated not suitable are very plastic clays that have a high water table and soils that contain a large amount of organic matter. Moderately plastic clays with a high water table, as well as some silty soils, are rated poor because they are difficult to handle, to dry, and to compact.

In the western part of the county a large amount of soil material is suitable for road subgrade and for surfacing unpaved roads. The suitability of a soil for road subgrade and for road fill depends largely on texture and natural content of water. Highly plastic soils are rated not suitable or poor for road subgrade and poor or fair for road fill, depending on their water content and other properties that affect their handling, drying, and compacting. Soils shallow over bedrock are generally rated poor because they provide only a small amount of material.

Also in table 5, soils are rated as a source of topsoil. The ratings are based on the suitability of the soil for seeding and sodding on the slopes of embankments, on highway cuts, and in ditches. Soils used for topsoil should be fertile and free of stones and large pebbles.

Descriptions of the Soils

This section describes the soil series (groups of soils) and single soils (mapping units) of Franklin County. The acreage and proportionate extent of each mapping unit are given in table 6, p. 46.

The procedure in this section is to describe first the soil series, and then the mapping units in that series. Thus, to get full information on any one mapping unit, it is necessary to read the description of that unit and also the description of the soil series to which it belongs. As mentioned in the section "How Soils Are Mapped and Classified," not all mapping units are members of a soil series. Gullied land and Slickens do not belong to a soil series but, nevertheless, are listed in alphabetical order along with the soil series.

Following the name of each mapping unit, there is a symbol in parentheses. This symbol identifies the mapping unit on the detailed soil map. Listed at the end of each description of a mapping unit are the capability unit and the woodland suitability group in which the mapping unit has been placed. The page on which each capability unit and each woodland suitability group is

TABLE 3.—*Engineering test data*[1] *for soil samples*

Soil name and location	Parent material	Alabama report No.	Depth	Horizon	Moisture density [2]	
					Maximum dry density	Optimum moisture
			Inches		*Pounds per cubic foot*	*Percent*
Colbert silt loam:						
NW¼NE¼ sec. 10, T. 6 S., R. 10 W. (Modal).	Argillaceous limestone.	4487	0–4	Ap	108	17
		4485	7–16	B2	87	30
		4442	20–43	C1	97	23
SE¼SW¼ sec. 23, T. 6 S., R. 11 W. (Thick B horizon).	Argillaceous limestone.	4464	0–6	A	105	15
		4438	10–21	B2	108	18
		4452	28–72+	C	102	20
SW¼NE¼ sec. 19, T. 6 S., R. 10 W. (Thin B horizon).	Argillaceous limestone.	4475	0–3	Ap	110	17
		4453	5–9	B2	102	21
		4448	9–58	C	91	23
Cuthbert fine sandy loam:						
SE¼SE¼ sec. 17, T. 8 S., R. 14 W. (Modal).	Coastal Plain sediments.	4484	0–3	A	112	14
		4488	6–14	B2	99	27
		4469	18–47	C	102	21
NE¼SW¼ sec. 29, T. 8 S., R. 14 W. (Thick B horizon).	Coastal Plain sediments.	4461	0–6	A	117	14
		4479	9–26	B2	102	23
		4489	34–72+	C	96	27
SW¼SW¼ sec. 28, T. 7 S., R. 15 W. (More red and sandy than modal).	Coastal Plain sediments.	4454	0–5	A	108	15
		4481	7–18	B2	99	24
		4478	22–72+	C	109	17
Decatur silt loam:						
NW¼SE¼ sec. 11, T. 7 S., R. 11 W. (Modal).	Limestone.	4463	0–3	A	104	17
		4471	8–51	B2	100	24
		4470	60–75	C	96	25
SE¼SW¼ sec. 11, T. 7 S., R. 11 W. (Thin B horizon).	Limestone.	4444	0–4	Ap	99	21
		4486	7–30	B2	98	18
		4451	37–72+	C	90	30
SE¼NW¼ sec. 28, T. 6 S., R. 11 W. (Plastic C horizon).	Limestone.	4436	0–5	Ap	108	16
		4466	10–48	B2	99	26
		4480	60–96	C	92	28
Guin gravelly sandy loam:						
SE¼SW¼ sec. 1, T. 6 S., R. 12 W. (Modal).	Coastal Plain sediments.	4456	0–6	A	106	15
		4458	6–96	C	121	12
SW¼NE¼ sec. 16, T. 6 S., R. 12 W. (Finer textured profile).	Coastal Plain sediments.	4455	0–10	A	109	13
		4476	10–84	C	116	15
NE¼SW¼ sec. 26, T. 6 S., R. 12 W. (Sandier profile).	Coastal Plain sediments.	4483	0–7	A	121	12
		4457	7–72	C	118	13
Ochlockonee fine sandy loam:						
NE¼NW¼ sec. 7, T. 8 S., R. 12 W. (Modal).	Alluvium.	4446	0–7	Ap	105	14
		4462	7–28	C1	101	19
		4447	38–72+	D	109	13
SW¼NW¼ sec. 29, T. 7 S., R. 14 W. (Sandy C1 horizon).	Alluvium.	4445	0–10	Ap	111	14
		4465	22–38	C1	109	13
		4482	38–72+	C2	100	21
NW¼SE¼ sec. 8, T. 7 S., R. 15 W. (Silty profile).	Alluvium.	4440	0–10	Ap	107	14
		4477	10–32	C1	114	14
		4472	32–72+	C2	113	13
Savannah very fine sandy loam:						
NE¼SE¼ sec. 23, T. 8 S., R. 12 W. (Modal).	Coastal Plain sediments.	4441	0–6	Ap	112	13
		4450	9–19	B2	109	16
		4449	22–37	B3m	119	14
		4439	37–72+	C	110	17

See footnotes at end of table.

taken from 18 soil profiles, Franklin County, Ala.

Mechanical analysis[3]												Liquid limit	Plasticity index	Classification	
Percentage passing sieve—											Percentage smaller than 0.005 mm.			AASHO[4]	Unified[5]
3 in.	2 in.	1½ in.	1 in.	¾ in.	⅜ in.	No. 4 (4.7 mm.)	No. 10 (2.0 mm.)	No. 40 (0.42 mm.)	No. 60 (0.25 mm.)	No. 200 (0.74 mm.)					
------	------	------	------	100	98	97	95	83	79	72	42	30	10	A-4(7)	CL.
------	------	------	------	------	100	99	96	90	88	84	66	55	35	A-7-6(19)	CH.
------	------	------	------	------	100	99	84	82	81	79	68	78	53	A-7-6(20)	CH.
------	------	------	100	98	98	97	94	85	78	69	35	20	1	A-4(7)	ML.
------	------	100	99	------	------	96	92	86	82	77	54	39	20	A-6(12)	CL.
------	------	------	------	------	------	100	92	88	85	80	62	53	27	A-7-6(17)	CH.
------	------	------	------	100	99	98	95	88	77	63	41	29	14	A-6(7)	CL.
------	------	------	------	------	100	99	97	92	84	76	60	51	33	A-7-6(18)	MH.
------	------	------	------	------	------	------	100	96	93	88	75	78	56	A-7-6(20)	CH.
------	------	------	------	100	96	89	79	73	71	49	22	22	1	A-4(3)	SM.
------	------	------	------	------	------	100	98	96	96	84	59	52	30	A-7-6(18)	CH.
------	------	------	------	------	------	------	100	99	99	80	58	52	30	A-7-6(19)	CH.
------	------	100	97	96	90	81	73	68	63	26	14	18	0	A-2-4(0)	SM.
------	------	------	------	100	99	95	92	89	87	65	56	46	24	A-7-6(13)	CL.
------	------	------	------	100	98	88	88	87	85	74	64	58	34	A-7-6(19)	CH.
------	------	------	100	96	88	77	70	67	65	28	11	22	2	A-2-4(0)	SM.
------	------	------	------	------	------	------	100	99	98	61	53	56	31	A-7-6(15)	CH.
------	------	------	------	------	100	99	98	95	93	38	29	38	16	A-6(2)	SC.
------	------	------	------	------	100	99	98	95	92	78	44	31	9	A-4(8)	ML-CL.
------	------	------	------	------	------	------	100	97	95	89	71	58	36	A-7-6(20)	CH.
------	------	------	------	------	------	100	98	93	92	80	63	50	21	A-7-6(14)	ML-CL.
------	------	------	------	------	------	100	96	92	90	76	43	33	9	A-4(8)	ML-CL.
------	------	------	------	------	------	100	99	95	94	84	62	46	27	A-7-6(16)	CL.
------	------	------	------	------	------	100	99	94	93	85	71	62	36	A-7-6(20)	CH.
------	------	------	------	------	100	97	94	87	77	62	34	27	9	A-4(5)	CL.
------	------	------	------	------	100	99	96	91	83	74	62	55	33	A-7-6(19)	CH.
------	------	------	------	100	99	98	96	89	83	75	70	59	33	A-7-6(20)	CH.
------	------	------	100	98	94	87	84	72	58	49	30	24	6	A-4(3)	SM-SC.
------	------	100	91	84	73	61	51	42	31	26	19	20	5	A-2-4(0)	GM-GC.
------	------	100	92	89	79	71	64	55	43	38	24	23	3	A-4(1)	SM.
------	100	96	90	83	76	67	55	42	34	31	23	28	11	A-2-6(0)	SC.
100	97	96	91	88	72	62	54	48	36	27	15	18	3	A-2-4(0)	GM.
------	------	100	81	73	54	42	36	23	10	6	4	[6]NP	[6]NP	A-1-a(0)	GP-GM.
------	------	------	------	------	------	100	99	96	85	50	24	19	1	A-4(3)	SM.
------	------	------	------	------	------	------	100	99	97	76	40	26	5	A-4(8)	ML-CL.
------	------	------	------	------	------	------	100	98	65	13	5	[6]NP	[6]NP	A-2-4(0)	SM.
------	------	------	------	------	------	100	99	98	87	69	36	21	3	A-4(7)	ML.
------	------	------	------	------	------	------	------	100	91	18	8	[6]NP	[6]NP	A-2-4(0)	SM.
------	------	------	------	------	------	------	------	100	99	78	43	31	9	A-4(8)	MC-CL.
------	------	------	------	------	------	------	------	100	99	80	52	25	5	A-4(8)	ML-CL.
------	------	------	------	------	------	------	------	100	98	56	28	22	5	A-4(4)	ML-CL.
------	------	------	------	------	------	------	------	100	99	39	18	16	0	A-4(1)	SM.
------	------	------	------	------	------	100	99	91	79	72	40	26	7	A-4(7)	ML-CL.
------	------	------	------	------	------	------	100	92	83	78	54	37	18	A-6(11)	CL.
------	------	------	------	------	100	99	99	88	74	66	43	28	10	A-4(6)	CL.
------	------	------	------	------	100	99	97	87	73	65	46	41	21	A-7-6(11)	CL.

725-010—64——3

TABLE 3.—*Engineering test data*[1] *for soil samples*

Soil name and location	Parent material	Alabama report No.	Depth	Horizon	Moisture density[2]	
					Maximum dry density	Optimum moisture
			Inches		*Pounds per cubic foot*	*Percent*
NW¼NE¼ sec. 14, T. 8 S., R. 10 W. (Brown profile).	Coastal Plain sediments.	4473	0–5	Ap	113	14
		4467	7–22	B2	110	17
		4468	22–36	B3m	118	12
		4437	36–72+	C	119	15
NE¼SE¼ sec. 18, T. 7 S., R. 15 W. (No B1 horizon).	Coastal Plain sediments.	4460	0–6	Ap	116	13
		4459	6–18	B2	104	18
		4443	18–27	B3m	107	17
		4474	27–72+	C	113	16

[1] Tests performed by the Alabama State Highway Department in accordance with standard procedures of the American Association of State Highway Officials (ASSHO).

[2] Based on method described in Moisture-Density Relations of Soils Using 5.5-lb. Rammer and 12-in. Drop, AASHO Designation T 99–57, Method A (*2*).

[3] Mechanical analyses according to the AASHO Designation T 88 (*2*). Results by this procedure frequently may differ somewhat from results that would have been obtained by the soil survey procedure of the Soil Conservation Service (SCS). In the AASHO procedure the fine material is analyzed by the hydrometer method and the various grain-size fractions are calculated on the basis of all the material, including that coarser than 2 millimeters in diameter. In the SCS soil survey procedure, the fine material is analyzed by the pipette method and the material coarser than 2 millimeters in diameter is excluded from calculations of grain-size fractions. The mechanical analyses used in this table are not suitable for use in naming textural classes for soils.

TABLE 4.—*Brief description of soils and*

[Dashed lines indicate that properties are variable and were not estimated or, for

Map symbol	Soil	Depth to seasonally high water table	Depth to bedrock	Brief description of site and soil	Depth from surface (typical profile)	Classification
						USDA texture
		Feet	*Feet*		*Inches*	
AbB2	Albertville fine sandy loam, 2 to 6 percent slopes, eroded.	10+	3–6	About ½ foot of fine sandy loam over 1½ feet of silty clay or silty clay loam over 3 feet of clay; shale and interbedded sandstone at a depth of 3 to 8 feet.	0–5	Fine sandy loam.
AbC	Albertville fine sandy loam, 6 to 10 percent slopes.				5–26	Silty clay loam.
AbC2	Albertville fine sandy loam, 6 to 10 percent slopes, eroded.				26–72	Clay
AsD	Albertville fine sandy loam, shallow, 10 to 15 percent slopes.	10+	1–3	About ½ foot of fine sandy loam over 1 foot of silty clay or clay over 1 foot of clay; shale and interbedded sandstone at a depth of 10 to 36 inches.	0–8	Fine sandy loam.
					8–17	Silty clay loam.
					17–30	Clay
Bb	Bibb loam.	0–1	10+	About 3 feet of loam or silt loam over 2 feet of silt loam or silty clay loam that is stratified in places with thin layers of sandy loam, silt loam, and silty clay loam; frequently flooded; high water table most of the year.	0–35	Silt loam
					35–54+	Silty clay loam.

taken from 18 soil profiles, Franklin County, Ala.—Continued

Mechanical analysis[3]												Liquid limit	Plasticity index	Classification	
Percentage passing sieve—											Percentage smaller than 0.005 mm.			AASHO[4]	Unified[5]
3 in.	2 in.	1¾ in	1 in.	½ in.	⅜ in.	No. 4 (4.7 mm.)	No. 10 (2.0 mm.)	No. 40 (0.72 mm.)	No. 60 (0.25 mm.)	No. 200 (0.74 mm.)					
------	------	------	------	------	------	------	100	93	78	65	39	22	4	A-4(6)	ML-CL.
------	------	------	------	------	------	------	100	92	82	71	46	34	15	A-6(9)	CL.
------	------	------	------	------	------	------	100	88	74	60	39	29	12	A-6(6)	CL.
------	------	------	------	------	------	100	99	92	75	57	40	28	11	A-6(5)	CL.
------	------	------	------	------	------	100	99	90	82	68	26	20	3	A-4(7)	ML.
------	------	------	------	------	------	------	100	96	93	87	56	31	9	A-4(8)	ML-CL.
------	------	------	------	------	100	98	91	86	82	74	39	31	9	A-4(8)	ML-CL.
------	------	------	------	------	100	99	97	92	86	75	49	35	14	A-6(10)	CL.

[4] Based on methods described in Classification of Soils and Soil-Aggregate Mixtures for Highway Construction Purposes, AASHO Designation: M 145-49 (*2*).
[5] Based on the Unified Soil Classification system. Technical Memorandum No. 3-357, v. 1, Waterways Experiment Station, Corps of Engineers. March 1953 (*14*).
[6] Nonplastic.

their estimated physical properties

undifferentiated soil groups, are given elsewhere in the table for the component soils]

Classification—Continued		Percentage passing sieve—			Permeability	Structure	Available water	Reaction	Dispersion	Shrink-swell potential
Unified	AASHO	No. 4 (4.7 mm.)	No. 10 (2.0 mm.)	No. 200 (0.074 mm.)						
					Inches per hour		*Inches per foot of depth*	*pH*		
ML or CL	A-4	92-100	85-95	75-85	0. 8-1. 5	Granular	0. 7-1. 2	5. 1-5. 5	High	Low.
MH	A-7	95-100	90-100	85-95	0. 4-1. 0	Blocky	0. 9-1. 7	4. 5-5. 0	Moderate	Moderate.
MH	A-7	95-100	90-100	85-95	0. 2-0. 8	Blocky	0. 8-1. 5	4. 5-5. 0	Moderate	Moderate or high.
ML or CL	A-4	92-100	80-100	70-80	0. 8-1. 5	Granular	0. 7-1. 2	5. 0-5. 5	High	Low.
MH	A-7	90-100	85-100	85-95	0. 4-1. 0	Blocky	0. 9-1. 7	4. 5-5. 0	Moderate	Moderate.
MH	A-7	85-95	80-90	75-85	0. 3-0. 8	Blocky	0. 8-1. 5	4. 5-5. 0	Moderate	Moderate or high.
ML or CL	A-4	100	95-100	85-90	0. 8-1. 4	Granular and blocky.	0. 6-1. 0	5. 6-6. 0	High	Low.
CL	A-4 or A-6.	100	95-100	90-95	0. 4-0. 8	Blocky	0. 7-1. 1	5. 1-5. 5	Moderate	Moderate.

TABLE 4.—*Brief description of soils and*

Map symbol	Soil	Depth to seasonally high water table	Depth to bedrock	Brief description of site and soil	Depth from surface (typical profile)	Classification: USDA texture
		Feet	*Feet*		*Inches*	
CaA	Cahaba fine sandy loam, 0 to 2 percent slopes.	10+	10+	About 1½ feet of fine sandy loam over 1 foot of fine sandy clay loam over 1½ feet of fine sandy loam that is underlain by loamy fine sand; formed on stream terraces in old alluvium washed from soils of the Coastal Plain.	0–19	Fine sandy loam.
CaB	Cahaba fine sandy loam, 2 to 6 percent slopes.				19–32	Fine sandy clay loam.
					32–50	Fine sandy loam.
					50–72	Loamy fine sand.
CmB2	Cane loam, 2 to 6 percent slopes, eroded.	1½–2½) (perched	6–10	About ½ foot of loam over 1 foot of fine sandy clay loam or silty clay loam; fragipan of loam to silty clay loam at a depth of 21 inches; formed in old general alluvium derived from sandstone and shale.	0–5	Loam
CmC2	Cane loam, 6 to 10 percent slopes, eroded.				5–21	Silty clay loam.
					21–54	Silty clay loam.
CnB	Captina silt loam, 2 to 6 percent slopes.	1½–2½ (perched)	4–10	About ½ foot of silt loam over 1½ feet of loam over 2 feet of silty clay; fragipan at a depth of 2 feet impedes drainage; formed in old alluvium derived from limestone and shale.	0–8	Silt loam
					8–23	Loam
					23–54+	Silty clay
CoA	Colbert silt loam, 0 to 2 percent slopes.	1½–10	1½–6	About ½ foot of silt loam over 4½ feet of clay over limestone; plastic clay subsoil retards drainage; limestone crops out in places.	0–4	Silt loam
CoB2	Colbert silt loam, 2 to 6 percent slopes, eroded.				4–57	Clay
CoC2	Colbert silt loam, 6 to 10 percent slopes, eroded.					
CoD2	Colbert silt loam, 10 to 15 percent slopes, eroded.					
CrB3	Colbert silty clay loam, 2 to 6 percent slopes, severely eroded.					
CrC3	Colbert silty clay loam, 6 to 10 percent slopes, severely eroded.					
CsC	Cuthbert fine sandy loam, 6 to 10 percent slopes.	10+	20+	About ½ foot of fine sandy loam or loam over 1 foot of silty clay over 4½ feet of clay; formed on uplands in Coastal Plain material; in places contains thin sheets of iron-cemented sandstone ½ to 2 inches thick.	0–6	Fine sandy loam.
CsD	Cuthbert fine sandy loam, 10 to 15 percent slopes.				6–18	Silty clay
CtC3	Cuthbert sandy clay loam, 6 to 10 percent slopes, severely eroded.				18–72	Clay
CtE3	Cuthbert sandy clay loam, 10 to 25 percent slopes, severely eroded.					
CuD	Cuthbert and Ruston soils, 10 to 15 percent slopes.	10+	10+	Areas of Cuthbert and Ruston soils so intermixed that it is not practical to separate them. For description and physical properties see Cuthbert fine sandy loam and Ruston fine sandy loam.	----------	----------
CuE	Cuthbert and Ruston soils, 15 to 25 percent slopes.					
DaB2	Decatur silt loam, 2 to 6 percent slopes, eroded.	10+	5–20	About ½ foot of silt loam over 6 feet of clay.	0–8	Silt loam
DcB3	Decatur silty clay loam, 2 to 6 percent slopes, severely eroded.				8–75	Clay
DcC3	Decatur silty clay loam, 6 to 10 percent slopes, severely eroded.					
DcD3	Decatur silty clay loam, 10 to 15 percent slopes, severely eroded.					
DoA	Dowellton silty clay, 0 to 2 percent slopes.	0–1	1–6	About 3½ feet of clay over limestone; on uplands of the limestone valleys.	0–42	Clay

their estimated physical properties—Continued

Classification—Continued		Percentage passing sieve—			Permeability	Structure	Available water	Reaction	Dispersion	Shrink-swell potential
Unified	AASHO	No. 4 (4.7 mm.)	No. 10 (2.0 mm.)	No. 200 (0.074 mm.)						
					Inches per hour		*Inches per foot of depth*	*pH*		
SC	A-4	100	100	35–45	1. 5–2. 5	Granular and blocky.	0. 8–1. 2	5. 1–5. 5	High	Low.
ML or CL	A-4	100	100	75–85	1. 0–2. 0	Blocky	1. 0–1. 5	5. 1–5. 5	Moderate	Low.
ML	A-4	100	100	70–80	1. 2–2. 2	Blocky	0. 8–1. 2	5. 1–5. 5	Moderate	Low.
SM or SC	A-2	100	100	25–30	2. 5–5. 0	Granular	0. 8–1. 0	5. 1–5. 5	High	Low.
ML or CL	A-4	90–100	85–98	55–65	1. 7–2. 2	Granular	1. 6–2. 0	5. 6–6. 0	High	Low.
ML or CL	A-4 or A-6.	<100	90–100	60–70	0. 8–1. 0	Blocky	1. 8–2. 2	5. 1–5. 5	Moderate	Low or moderate.
ML or CL	A-4 or A-6.	<100	85–100	55–70	0. 3–0. 6	Blocky and massive.	1. 0–1. 2	5. 1–5. 5	Moderate	Low or moderate.
ML or CL	A-4	100	100	95–100	0. 8–1. 5	Granular	1. 4–1. 8	5. 6–6. 0	High	Low.
CL	A-6	95–100	95–100	85–90	0. 3–1. 00	Blocky	1. 8–2. 0	5. 1–5. 5	Moderate	Moderate.
MH	A-7	95–100	95–100	85–95	0. 2–0. 6	Blocky	1. 0–1. 2	5. 1–5. 5	Moderate	Moderate or high.
CL	A-4 or A-6.	95–100	95–100	65–75	0. 3–0. 6	Crumb and blocky.	1. 4–1. 6	5. 1–5. 5	Moderate	Moderate.
CH	A-7	95–100	95–100	80–90	0. 0–0. 2	Blocky	1. 8–1. 0	5. 1–7. 0	Low	High.
SM	A-4	85–95	75–85	45–50	0. 8–1. 5	Granular	0. 8–1. 5	5. 1–5. 5	Moderate	Low.
MH or CH	A-7	100	95–100	80–90	0. 6–1. 0	Blocky	1. 0–1. 4	5. 1–5. 5	Low	High.
MH or CH	A-7	100	95–100	75–85	0. 4–0. 8	Blocky and massive.	0. 8–1. 00	5. 1–5. 5	Low	High.
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ML or CL	A-4	95–100	90–100	75–85	0. 8–2. 0	Granular	1. 2–1. 7	5. 1–5. 5	Moderate	Low.
CH	A-7	100	95–100	80–90	0. 8–2. 0	Blocky	1. 2–1. 7	5. 1–5. 5	Moderate	High.
CH	A-7	95–100	75–85	65–75	0. 0–0. 2	Blocky	1. 0–1. 4	4. 5–5. 5	Low	High.

TABLE 4.—*Brief description of soils and*

Map symbol	Soil	Depth to seasonally high water table	Depth to bedrock	Brief description of site and soil	Depth from surface (typical profile)	Classification: USDA texture
		Feet	*Feet*		*Inches*	
Du	Dunning silty clay.	0–1	4–10	About ½ foot of silty clay over 3 to 5 feet of clay; formed in alluvium washed from soils derived from limestone; frequently flooded.	0–8	Silty clay
					8–46	Clay
GrB2	Greenville loam, 2 to 6 percent slopes, eroded.	10+	10+	About ⅓ foot of loam over 3½ feet of clay loam over 6 feet of fine sandy clay loam that is underlain by beds of sand at 10 to 20 feet; formed on uplands in Coastal Plain material.	0–4	Loam
GrB3	Greenville loam, 2 to 6 percent slopes, severely eroded.				4–46	Clay loam
GrC3	Greenville loam, 6 to 10 percent slopes, severely eroded.				46–120	Fine sandy clay loam.
GrD3	Greenville loam, 10 to 15 percent slopes, severely eroded.				120+	Loamy fine sand.
GuD2	Guin gravelly sandy loam, 10 to 15 percent slopes, eroded.	10+	10+	6 to 30 feet of gravelly sandy loam; formed in gravel and sand of the Coastal Plain; pebbles, ¼ to 3 inches across, are mostly chert and partly quartz.	0–96	Gravelly sandy loam.
GuF	Guin gravelly sandy loam, 15 to 40 percent slopes.					
Gw	Gullied land.	10+	10+	Variable soil material and deep gullies	----------	----------
Ho	Hollywood silty clay.	0–1	1½–5	About ½ foot of silty clay over 4 feet of plastic clay; formed from residuum of limestone in depressions and nearly level areas; drainage retarded by clay subsoil and surface relief.	0–7	Silty clay
					7–52	Clay
Hs	Hollywood silty clay, shallow.	0–1	½– 1½	About ½ foot of silty clay over ½ foot of clay over limestone; occurs in depressions and nearly level areas; plastic clay soil and surface relief cause poor drainage.	0–4	Silty clay
					4–14	Clay
Hu	Huntington silt loam, local alluvium.	0–3	10+	About 3 feet of silt loam over 1½ feet of silty clay loam; formed in local alluvium washed from soils derived from limestone; occurs in depressions.	0–38	Silt loam
					38–54	Silty clay loam.
Is	Iuka fine sandy loam.	0–2	10+	About 4½ feet of fine sandy loam; on flood plains in recent alluvium washed from soils of the Coastal Plain; flooded once or twice a year.	0–54	Fine sandy loam.
Iu	Iuka fine sandy loam, local alluvium.	0–2	10+	About 1½ feet of fine sandy loam over 3 feet of loam or silt loam; formed in depressions from local alluvium washed from soils of the Coastal Plain.	0–18	Fine sandy loam.
					18–50	Silt loam
Ld	Lindside silt loam.	0–2	10+	About 2 feet of silt loam over 2 feet of silty clay loam; formed on flood plains in alluvium washed from soils weathered from limestone; flooded once or twice each year.	0–21	Silt loam
					21–46	Silty clay loam.
Le	Lindside silt loam, local alluvium.	0–2	10+	About 2 feet of silt loam over 2 feet of silty clay loam; formed in local alluvium washed from soils derived from limestone; in upland depressions.	1–22	Silt loam
					22–42	Silty clay loam.
LkB2	Linker fine sandy loam, 2 to 6 percent slopes, eroded.	10+	2½–6	About ½ foot of fine sandy loam over 4 feet of loam or fine sandy clay loam underlain by sandstone and some shale; on well-drained uplands.	0–8	Fine sandy loam.
LkC	Linker fine sandy loam, 6 to 10 percent slopes.				8–54	Loam
LkC2	Linker fine sandy loam, 6 to 10 percent slopes, eroded.					
LkD2	Linker fine sandy loam, 10 to 15 percent slopes, eroded.					
Me	Melvin silt loam.	0–1	10+	About 2 feet of silt loam over 2 feet of silty clay loam; formed on flood plains in recent alluvium washed from soils derived from limestone; frequently flooded.	0–24	Silt loam
					24–52	Silty clay loam.
Mp	Mine pits and dumps.	--------	--------	Mining areas in which cuts are 30 to 60 feet deep and 40 to 200 feet wide; high, steep-sided mounds of gravel, sand, and silt between the cuts.	----------	----------

their estimated physical properties—Continued

Classification—Con.		Percentage passing sieve—			Permeability	Structure	Available water	Reaction	Dispersion	Shrink-swell potential
Unified	AASHO	No. 4 (4.7 mm.)	No. 10 (2.0 mm.)	No. 200 (0.074 mm.)						
					Inches per hour		*Inches per foot of depth*	*pH*		
CL	A-6 or A-7.	100	95–100	90–95	0–0. 2	Blocky	1. 2–1. 6	5. 6–6. 0	Low	Moderate.
MH or CH	A-7	100	95–100	95–100	0–0. 2	Massive	1. 2–1. 6	5. 6–7. 3	Low	High.
SC	A-4	95–100	86–95	35–45	1. 2–4. 0	Granular	1. 0–1. 2	5. 1–5. 5	Moderate	Low.
CL	A-6	98–100	85–95	55–75	2. 0–3. 0	Blocky	1. 0–1. 3	5. 1–5. 5	Moderate	Moderate.
SC	A-4	95–100	85–95	40–50	2. 2– 3. 5	Blocky	1. 0–1. 2	4. 5–5. 5	Moderate	Low.
SM	A-2	95–100	80–95	15–30	5. 0–10. 0	Single grain	0. 3–0. 5	4. 5–5. 0	High	Low.
GM or GC	A-2	60–70	50–60	25–35	10+	Single grain	0. 2–0. 5	5. 1–5. 5	High	Low.
CH	A-7	100	100	90–100	0. 2– 0. 6	Granular and blocky.	2. 0–2. 2	6. 1–6. 5	Low	High.
CH	A-7	100	100	95–100	0. 2– 0. 4	Blocky and massive.	2. 0–2. 3	6. 6–7. 8	Low	High.
CH	A-7	100	90–100	90–100	0. 2– 0. 6	Blocky	2. 0–2. 2	6. 1–6. 5	Low	High.
CH	A-7	100	95–100	95–100	0. 2– 0. 4	Blocky	2. 0–2. 3	6. 6–7. 3	Low	High.
ML or CL	A-4 or A-6.	98–100	95–100	75–85	1. 5– 3. 0	Granular	2. 0–3. 0	5. 6–6. 0	High	Low or moderate.
CL	A-6	98–100	95–100	80–90	1. 0– 2. 0	Blocky	2. 0–2. 5	5. 6–6. 0	Moderate	Moderate.
SC	A-4	98–100	80–100	40–50	1. 5– 3. 0	Granular	1. 5–2. 5	5. 1–5. 5	High	Low.
SC	A-4	100	80–95	45–50	2. 0– 4. 0	Granular	1. 5–2. 5	5. 1–5. 5	High	Low.
ML or CL	A-6	100	85–95	75–85	1. 0– 2. 0	Granular	1. 8–2. 5	5. 1–5. 5	High	Low.
ML or CL	A-6	100	95–100	70–85	1. 5– 3. 0	Granular	2. 0–3. 0	6. 1–6. 5	High	Low or moderate.
CL	A-6	100	95–100	80–90	1. 0– 1. 5	Blocky	2. 0–2. 5	6. 6–7. 3	Moderate	Moderate.
ML or CL	A-6	100	95–100	75–85	1. 5– 3. 0	Granular	2. 0–3. 0	5. 1–6. 5	High	Low or moderate.
CL	A-6	100	95–100	85–90	1. 0– 1. 5	Blocky	2. 0–2. 5	5. 1–6. 5	Moderate	Moderate.
ML or CL	A-4	98–100	85–95	50–60	1. 0– 1. 5	Granular	1. 5–2. 0	5. 1–5. 5	High	Low.
CL or ML	A-4 or A-6.	98–100	90–95	55–65	1. 0– 1. 8	Blocky	1. 7–2. 2	5. 1–5. 5	High	Low.
ML or CL	A-4	100	95–100	70–80	0. 0– 0. 4	Granular	2. 5–3. 0	5. 1–5. 5	Moderate	Low or moderate.
CL	A-6	98–100	95–100	75–85	0. 2– 1. 6	Blocky	2. 0–2. 5	5. 1–5. 5	Moderate	Moderate.

TABLE 4.—*Brief description of soils and*

Map symbol	Soil	Depth to seasonally high water table	Depth to bedrock	Brief description of site and soil	Depth from surface (typical profile)	Classification: USDA texture
		Feet	*Feet*		*Inches*	
Oc	Ochlockonee fine sandy loam.	0–3	10+	About ½ foot of fine sandy loam over 2½ feet of silt loam or loam over 3 feet of loamy fine sand; formed on flood plains in recent alluvium washed from the sandy soils of the Coastal Plain; well drained but flooded occasionally.	0–7 7–38 38–72+	Fine sandy loam. Loam Loamy fine sand.
OrB2	Ora fine sandy loam, 2 to 6 percent slopes, eroded.	1½–2½ (perched)	20+	About ½ foot of fine sandy loam over 1½ feet of loam over 4 feet of compact fine sandy loam (fragipan) that retards the movement of water; formed in Coastal Plain material on stream terraces.	0–4 4–22 22–72	Fine sandy loam. Loam Fine sandy loam.
OrC	Ora fine sandy loam, 6 to 10 percent slopes.					
OrC2	Ora fine sandy loam, 6 to 10 percent slopes, eroded.					
OsB2	Ora fine sandy loam, heavy substratum, 2 to 6 percent slopes, eroded.					
PrA	Prentiss fine sandy loam, 0 to 2 percent slopes.	1½–2½	10+	About 1 foot of fine sandy loam over 1 foot of loam over 2½ feet of compact fine sandy loam (fragipan) that slows the movement of water; formed in Coastal Plain material on stream terraces.	0–10 10–24 24–54	Fine sandy loam. Loam Fine sandy loam.
PrB	Prentiss fine sandy loam, 2 to 6 percent slopes.					
RaD	Ramsey fine sandy loam, 10 to 15 percent slopes.	20+	1–2	About 1 foot of fine sandy loam; 10 to 20 percent consists of sandstone fragments 2 to 8 inches across; underlain by sandstone.	0–14	Fine sandy loam.
Ro	Rock land, limestone.	10+	0–1½	0 to 1½ feet of plastic clay between outcrops and boulders of limestone that cover 30 to 90 percent of surface; slopes of 2 to 25 percent.	0–12	Clay
Rs	Rock land, sandstone.	10+	0–1½	0 to 1½ feet of loamy fine sand between fragments and outcrops of sandstone that cover 30 to 90 percent of surface; slopes of 15 to 35 percent.	0–18	Loamy fine sand.
RuB2	Ruston fine sandy loam, 2 to 6 percent slopes, eroded.	10+	20+	About 1½ feet of fine sandy loam over 1½ feet of fine sandy clay loam underlain by loamy sand or sandy loam; on Coastal Plain uplands; well drained.	0–18 18–36 36–72	Fine sandy loam. Fine sandy clay loam. Fine sandy loam.
RuC	Ruston fine sandy loam, 6 to 10 percent slopes.					
RuC2	Ruston fine sandy loam, 6 to 10 percent slopes, eroded.					
RuC3	Ruston fine sandy loam, 6 to 10 percent slopes, severely eroded.					
RuD2	Ruston fine sandy loam, 10 to 15 percent slopes, eroded.					
RuD3	Ruston fine sandy loam, 10 to 15 percent slopes, severely eroded.					
SaB	Saffell gravelly fine sandy loam, 2 to 6 percent slopes.	10+	20+	About 1 foot of gravelly fine sandy loam over 1 foot of gravelly fine sandy clay loam over compact gravelly fine sandy loam that is underlain by 3 feet of gravelly loamy fine sand; on Coastal Plain uplands; rounded pebbles of chert and quartz.	0–11 11–24 24–35 35–72	Gravelly fine sandy loam. Gravelly fine sandy clay loam. Gravelly fine sandy loam. Gravelly loamy fine sand.
SaC	Saffell gravelly fine sandy loam, 6 to 10 percent slopes.					
SaC2	Saffell gravelly fine sandy loam, 6 to 10 percent slopes, eroded.					
ShC3	Savannah loam, 6 to 10 percent slopes, severely eroded.	1½–2½	20+	About ½ foot of very fine sandy loam over 1½ feet of loam over 3 feet of fine sandy clay loam; fragipan at a depth of 18 to 30 inches retards drainage; on Coastal Plain uplands.	0–6 6–37 37–72	Very fine sandy loam. Loam Fine sandy clay loam.
SnA	Savannah very fine sandy loam, 0 to 2 percent slopes.					
SnB	Savannah very fine sandy loam, 2 to 6 percent slopes.					
SnB2	Savannah very fine sandy loam, 2 to 6 percent slopes, eroded.					
SnC	Savannah very fine sandy loam, 6 to 10 percent slopes.					
SnC2	Savannah very fine sandy loam, 6 to 10 percent slopes, eroded.					

their estimated physical properties—Continued

Classification—Con.		Percentage passing sieve—			Permeability	Structure	Available water	Reaction	Dispersion	Shrink-swell potential
Unified	AASHO	No. 4 (4.7 mm.)	No. 10 (2.0 mm.)	No. 200 (0.074 mm.)						
					Inches per hour		*Inches per foot of depth*	*pH*		
SM	A-4	98-100	90-100	45-50	2.0- 4.0	Granular	1.0-1.5	5.6-6.0	High	Low.
ML or CL	A-4	98-100	90-100	70-80	1.5- 3.0	Granular	1.8-2.5	5.1-5.5	High	Low.
SM	A-2	98-100	90-100	10-20	2.0- 6.0	Single grain	0.8-1.0	4.5-5.5	High	Low.
SM	A-4	95-100	95-100	45-50	0.7- 1.6	Granular	1.2-1.6	5.1-5.5	High	Low.
ML or CL	A-4 or A-6.	95-100	95-100	70-80	0.6- 1.4	Blocky	1.2-1.6	5.1-5.5	High	Low.
SM	A-4	95-100	95-100	45-50	0.4- 1.0	Blocky and massive.	0.8-1.0	5.1-5.5	High	Low.
SM	A-4	95-100	70-80	45-50	0.6- 1.4	Granular	1.2-1.6	5.1-5.5	High	Low.
ML or CL	A-4 or A-6.	95-100	90-100	65-75	0.6- 1.4	Blocky	1.2-1.6	4.5-5.5	High	Low.
SM	A-4	95-100	85-95	40-50	0.4- 1.0	Blocky	0.6-1.0	4.5-5.0	Moderate	Low.
SM or SC	A-4	95-100	90-95	36-45	4.0-10.0	Granular	0.6-0.1	5.1-5.5	High	Low.
CH	A-7	90-95	90-95	60-70	0.0- 0.2	Granular and blocky.	1.0-1.4	5.1-6.4	Low	High.
SM	A-2	70-90	35-70	20-35	4.0-10.0	Granular and single grain.	0.5-1.0	5.1-5.5	High	Low.
SM	A-2 or A-4.	100	95-100	30-40	1.5- 6.0	Granular and blocky.	0.9-1.2	4.5-5.5	High	Low.
SM or SC	A-4	100	95-100	40-50	1.2- 3.0	Blocky	1.2-1.5	4.5-5.5	High	Low.
SM	A-2 or A-4.	100	95-100	30-40	1.5- 6.0	Single grain.	0.9-1.2	4.5-5.5	High	Low.
SM	A-4	75-85	65-75	35-45	5-10	Granular	0.6-1.0	5.1-5.5	High	Low.
GC	A-4	65-70	50-60	40-50	6-10	Blocky	0.5-0.8	5.1-5.5	High	Low.
GM	A-1 or A-2.	50-60	35-45	20-30	10+	Blocky	0.4-0.6	5.1-5.5	High	Low.
SM	A-1	60-65	20-30	10-15	10+	Single grain.	0.3-0.5	4.5-5.0	High	Low.
ML or CL	A-4	100	95-100	65-75	1.7- 2.2	Granular	1.2-2.0	5.1-5.5	High	Low.
ML or CL	A-4 or A-6.	95-100	90-100	65-75	0.8- 1.0	Blocky	1.8-2.2	4.5-5.5	High	Low or moderate.
CL	A-6 or A-7.	95-100	90-100	60-70	0.3- 0.6	Blocky	1.0-1.2	4.5-5.0	High	Moderate.

TABLE 4.—*Brief description of soils and*

Map symbol	Soil	Depth to seasonally high water table	Depth to bedrock	Brief description of site and soil	Depth from surface (typical profile)	Classification: USDA texture
Ss	Slickens.	0–3	10+	2 to 10 feet of silt and clay washed from iron ore; areas are dry on the surface but are wet a few inches below the surface.	24–120	Silt and clay
TaB2 TaC2 TbB3 TbC3	Talbott silt loam, 2 to 6 percent slopes, eroded. Talbott silt loam, 6 to 10 percent slopes, eroded. Talbott silty clay, 2 to 6 percent slopes, severely eroded. Talbott silty clay, 6 to 10 percent slopes, severely eroded.	10+	2–6	About ½ foot of silt loam over 5½ feet of silty clay or clay derived from argillaceous limestone; internal drainage impeded by clayey subsoil; rock crops out in places.	0–4 4–72	Silt loam Clay
TdB	Tilden fine sandy loam, 2 to 6 percent slopes.	1½–2½ (perched)	10+	About 1½ feet of fine sandy loam or loam over 3 feet of fine sandy clay loam; on stream terraces in old alluvium washed from soils of the Coastal Plain; internal drainage impeded by fragipan.	0–8 8–52	Fine sandy loam. Fine sandy clay loam.
TuA	Tupelo silt loam, 0 to 2 percent slopes.	1–2	3–10	About 1 foot of silt loam or silty clay loam over 3½ feet of clay or silty clay; formed on stream terraces in old alluvium washed from soils derived from limestone; internal drainage impeded by claypan.	0–8 8–54	Silt loam Clay

TABLE 5.—*Engineering*

[Dashed lines indicate that

Soil series, land types, and map symbols [1]	Suitability for grading in winter and wet weather	Suitability of soil material for— Road subgrade	Road fill	Suitability as source of— Topsoil	Sand and gravel	Soil features affecting— Disposal of waste from septic tanks [2]
Albertville (AbB2, AbC, AbC2, AsD).	Fair or poor	Poor	Poor to fair	Good in surface layer.	Not suitable	Slow absorption
Bibb (Bb)	Not suitable	Fair or poor	Fair	Poor	Not suitable	Water table at the surface; not suitable.
Cahaba (CaA, CaB)	Fair	Fair	Good	Good in surface layer.	Good for fine sand below depth of 50 inches.	Moderate to rapid absorption.
Cane (CmB2, CmC2)	Fair	Fair	Fair	Good in surface layer.	Not suitable	Slow absorption; fragipan at a depth of 18 to 30 inches.

See footnotes at end of table.

their estimated physical properties—Continued

Classification—Con.		Percentage passing sieve—			Permeability	Structure	Available water	Reaction	Dispersion	Shrink-swell potential
Unified	AASHO	No. 4 (4.7 mm.)	No. 10 (2.0 mm.)	No. 200 (0.074 mm.)						
					Inches per hour		*Inches per foot of depth*	*pH*		
----------	----------	----------	----------	----------	----------	Massive	----------	5. 1–5. 5	Low	High.
ML or CL	A-6	100	95–100	85–95	0. 3– 0. 8	Granular	1. 2–1. 4	5. 1–5. 5	Moderate	Moderate.
MH	A-7	100	95–100	90–100	0. 2– 0. 5	Blocky	----------	4. 5–5. 5	Low	High.
ML or SM	A-4	95–100	85–95	40–70	1. 8– 2. 2	Granular	1. 2–2. 0	5. 6–6. 0	High	Low.
ML or CL	A-4 or A-6.	95–100	95–100	55–75	0. 4– 1. 0	Blocky	1. 0–2. 2	5. 6–6. 0	High	Low.
ML or CL	A-4	95–100	95–100	80–90	0. 4– 0. 8	Granular	1. 4–1. 6	5. 6–6. 0	High	Low.
CH or MH	A-7	98–100	95–100	85–95	0. 2– 0. 6	Blocky and massive.	1. 2–1. 4	5. 6–6. 0	Low	High.

interpretations

structure or practice is not needed]

Soil features affecting—Continued							Remarks
Dikes or levees	Farm ponds		Agricultural drainage	Irrigation	Terraces and diversions	Waterways	
	Reservoir area	Embankment					
Moderate strength and stability.	Slow seepage	Moderate strength and stability.	----------	Slow infiltration; slow permeability.	Slow permeability; moderate stability.	Erodibility; waterways need vegetation and some shaping.	
Poor stability	Slow seepage; high water table.	Poor stability; may be used if properly controlled.	Moderate permeability; high water table.	Moderate infiltration; moderate water-holding capacity.	----------	----------	Flooded periodically.
Good strength and stability in upper 50 inches.	Excessive seepage; not suitable.	Good strength and stability to depth of 50 inches, poor below.	----------	Moderate infiltration; moderate water-holding capacity.	Moderate to rapid permeability; good stability.	Loamy fine sand at 50 inches; highly erodible below that depth.	
Good strength and stability.	Moderate to slow seepage.	Good strength and stability.	----------	Moderate infiltration; moderate to low water-holding capacity.	Fragipan at depth of 18 to 30 inches.	Erodibility; waterways need vegetation and may need some shaping.	

TABLE 5.—*Engineering*

Soil series, land types, and map symbols [1]	Suitability for grading in winter and wet weather	Suitability of soil material for—		Suitability as source of—		Soil features affecting—
		Road subgrade	Road fill	Topsoil	Sand and gravel	Disposal of waste from septic tanks [2]
Captina (CnB)	Poor	Poor	Fair or poor	Good in surface layer.	Not suitable	Slow absorption
Colbert (CoA, CoB2, CoC2, CoD2, CrB3, CrC3).	Not suitable	Not suitable	Poor or not suitable; high shrink-swell potential.	Not suitable	Not suitable	Very slow absorption; not suitable.
Cuthbert (CsC, CsD, CtC3, CtE3).	Not suitable	Not suitable	Poor or not suitable; high shrink-swell potential.	Not suitable	Not suitable	Slow absorption; not suitable.
Decatur (DaB2, DcB3, DcC3, DcD3).	Poor	Poor	Poor	Fair in surface layer.	Not suitable	Moderate absorption
Dowellton (DoA)	Not suitable	Not suitable	Poor or not suitable; high shrink-swell potential.	Not suitable	Not suitable	High water table and very slow absorption; not suitable.
Dunning (Du)	Not suitable	Not suitable	Poor; high shrink-swell potential.	Not suitable; high water table.	Not suitable	High water table; not suitable.
Greenville (GrB2, GrB3, GrC3, GrD3).	Fair	Fair to good	Good	Good in surface layer.	Good for fine sand at depth of 8 to 12 feet.	Moderate absorption.
Guin (GuD2, GuF)	Good	Good	Good	Poor; high content of gravel.	Good for gravel consisting mostly of rounded fragments of chert.	Very rapid absorption.
Hollywood (Ho, Hs)	Not suitable	Not suitable	Poor; high shrink-swell potential; 1 to 5 feet to limestone.	Poor	Not suitable	Very low absorption; not suitable.
Huntington (Hu)	Poor	Poor	Poor	Good	Not suitable	Rapid absorption
Iuka (Is, Iu)	Poor	Fair to poor	Fair; erodible	Good to a depth of 20 to 30 inches.	Not suitable	High water table
Lindside (Ld, Le)	Poor	Poor	Fair	Good to a depth of 20 to 30 inches.	Not suitable	High water table
Linker (LkB2, LkC, LkC2, LkD2).	Fair	Good	Good	Good in surface layer.	Not suitable	Moderate absorption
Melvin (Me)	Not suitable	Poor	Fair	Fair	Not suitable	High water table; not suitable.

See footnotes at end of table.

interpretations—Continued

Soil features affecting—Continued							Remarks
Dikes or levees	Farm ponds		Agricultural drainage	Irrigation	Terraces and diversions	Waterways	
	Reservoir area	Embankment					
Moderate strength and stability.	Slow seepage	Moderate strength and stability.	Fragipan at depth of 18 to 30 inches.	Moderate infiltration; low to moderate permeability.	Fragipan at depth of 18 to 30 inches.	Erodibility; waterways need vegetation.	
Fair stability	Very slow seepage.	Fair stability on gentle. slopes.	Very slow permeability.	Very slow infiltration.	Very slow permeability; will crack.	Erodibility; waterways need vegetation and are difficult to shape.	Very plastic and sticky clay.
Fair stability	Slow seepage	Fair stability on gentle slopes.	Slow permeability.	Slow infiltration	Slow permeability; will crack.	Erodibility; waterways need vegetation.	
Fair strength and stability.	Excessive seepage.	Fair strength and stability.	----------	Slow infiltration; moderate water-holding capacity.	Highly erodible; moderate permeability.	Highly erodible; medium fertility.	
High shrink-swell potential.	Very slow seepage.	Poor strength and stability.	Very slowly permeable.	Slow infiltration	High erodibility; will crack.	Highly erodible; low fertility.	Very plastic and sticky clay.
High shrink-swell potential.	Very slow seepage.	Poor strength and stability.	Very slowly permeable; frequently flooded.	Slow infiltration	----------	----------	Very plastic and sticky clay.
Good strength and stability.	Excessive seepage.	Good strength and stability.	----------	Rapid infiltration; rapid permeability.	Rapid permeability; good stability.	Highly erodible; caving gullies may form at heads of waterways.	
Very stable for pervious shells.	Very rapid seepage; not suitable.	May be used for shell with impervious core.	----------	Rapid infiltration; very low water-holding capacity.	Steep slopes	----------	50 to 60 percent gravel
High shrink-swell potential.	May have underground drainage channels.	Poor strength and stability.	Slow permeability.	Very slow infiltration.	----------	----------	
Fair strength and stability.	Moderate seepage.	Fair strength and stability.	----------	Moderate to rapid infiltration; moderate to rapid permeability.	----------	Erodibility; waterways need vegetation.	
Moderate strength and stability.	Moderate to slow seepage.	Moderate strength and stability.	Moderate permeability; drainage needed.	Moderate infiltration; moderate to high water-holding capacity.	----------	----------	Areas on first bottoms flooded 1 or 2 times a year.
Low strength and stability.	Moderate to slow seepage.	Low strength and stability.	Moderate permeability; drainage needed.	Moderate infiltration; high water-holding capacity.	----------	----------	Areas on first bottoms flooded 1 or 2 times a year.
Good strength and stability	Slow seepage	Good strength and stability.	----------	Medium infiltration; moderate permeability.	Moderate permeability; good stability.	Erodibility; waterways need vegetation.	
Poor trength and stability.	Slow seepage	Poor strength and stability.	Slow permeability; drainage needed.	Slow infiltration; slow permeability.	----------	----------	Frequently flooded.

TABLE 5.—*Engineering*

Soil series, land types, and map symbols [1]	Suitability for grading in winter and wet weather	Suitability of soil material for—		Suitability as source of—		Soil features affecting—
		Road subgrade	Road fill	Topsoil	Sand and gravel	Disposal of waste from septic tanks [2]
Mine pits and dumps (Mp).	Good	Good to poor	Good	Not suitable	Good for gravel in roads and concrete; pebbles are ½ to 3 inches across.	Rapid absorption
Ochlockonee (Oc)	Fair	Fair	Good	Good in upper 3 feet.	Fair for fine sand below 3 feet.	Moderate to rapid absorption.
Ora (OrB2, OrC, OrC2, OsB2).	Poor to fair	Fair	Good	Good	Not suitable	Slow absorption; depth of fragipan 18 to 30 inches.
Prentiss (PrA, PrB)	Poor or fair	Fair	Good	Good	Not suitable	Slow absorption; depth of fragipan 18 to 30 inches.
Ramsey (RaD)	Good	Good	Fair; shallow to bedrock.	Fair in surface layer.	Not suitable	Shallow to rock
Rock land, limestone (Ro).	Poor	Not suitable	Poor or not suitable; shallow to bedrock.	Not suitable	Not suitable	Not suitable
Rock land, sandstone (Rs).	Fair or good	Not suitable	Poor; shallow to bedrock.	Not suitable	Not suitable	Shallow to rock; not suitable.
Ruston (RuB2, RuC, RuC2, RuC3, RuD2, RuD3).	Good	Good	Good	Good	Not suitable	Rapid absorption
Saffell (SaB, SaC, SaC2).	Good	Good	Good	Fair	Good source of gravel ½ to 3 inches in size for surfacing roads.	Rapid absorption
Savannah (ShC3, SnA, SnB, SnB2, SnC, SnC2).	Poor or fair	Poor	Fair	Good	Not suitable	Slow absorption
Slickens (Ss)	Poor or not suitable.	Not suitable	Fair or poor	Not suitable	Not suitable	Slow absorption
Talbott (TaB2, TaC2, TbB3, TbC3).	Poor	Poor	Poor	Poor	Not suitable	Slow absorption
Tilden (TdB)	Poor or fair	Fair	Good	Good	Not suitable	Slow absorption
Tupelo (TuA)	Poor	Poor	Poor	Poor	Not suitable	Very slow absorption.

[1] Because Gullied land varies greatly from place to place, it is not included in this table.

interpretations—Continued

Soil features affecting—Continued							Remarks
Dikes or levees	Farm ponds		Agricultural drainage	Irrigation	Terraces and diversions	Waterways	
	Reservoir area	Embankment					
Not suitable	Not suitable except where excavation is deeper than water table.	Not suitable	----------	Unfavorable features prohibit irrigation.	----------	----------	
Good strength and stability.	Rapid seepage.	Good strength and stability.	----------	Medium infiltration; high water-holding capacity.	----------	----------	Flooded 1 or 2 times a year.
Good strength and stability.	Slow seepage	Good strength and stability.	----------	Medium infiltration; moderate to low water-holding capacity.	Fragipan at depth of 18 to 30 inches; good stability.	Erodibility; waterways need vegetation.	Fragipan at depth of 18 to 30 inches.
Good strength and stability.	Slow seepage	Good strength and stability.	----------	Medium infiltration; moderate water-holding capacity.	Fragipan at depth of 18 to 30 inches; good stability.	Erodibility; waterways need vegetation.	Fragipan at depth of 18 to 30 inches.
Moderate strength and stability.	Moderate to rapid seepage; not suitable.	Moderate strength and stability.	----------	----------	----------	----------	Shallow and stony.
Poor strength and stability.	Rapid seepage.	Poor strength and stability.	----------	----------	Stones and rocks; poor stability.	----------	Stony, ledgy, and shallow.
Not suitable	Not suitable	Stones; not suitable.	----------	----------	----------	----------	
Good strength and stability.	Rapid seepage.	Good strength and stability.	----------	Medium to rapid infiltration; moderate water-holding capacity.	Rapid permeability; good stability.	Subject to severe gullying; need vegetation.	
Good strength and stability.	Rapid seepage.	Good strength and stability.	----------	Rapid infiltration; low water-holding capacity.	Rapid permeability; good stability.	Erodibility; waterways need vegetation.	
Good strength and stability.	Slow seepage	Good strength and stability.	----------	Moderate infiltration; moderate water-holding capacity.	Fragipan at depth of 18 to 30 inches.	Erodibility; need vegetation.	Fragipan at depth of 18 to 30 inches.
Low strength and stability.	Slow seepage	Poor strength and stability.	Slow permeability; drainage needed.	Poor soil features make irrigation impractical.	----------	----------	
Low strength and stability.	May have underground drainage channels.	Poor strength and stability.	----------	Slow infiltration; moderate to low water-holding capacity.	Poor stability; slow permeability.	Erodibility; waterways need vegetation.	
Moderate strength and stability.	Slow seepage	Moderate strength and stability.	----------	Medium infiltration; moderate water-holding capacity.	Fragipan at depth of 18 to 30 inches; moderate stability.	Erodibility; waterways need vegetation.	Fragipan at depth of 18 to 30 inches.
Low strength and stability.	Slow seepage	Poor strength and stability.	Slow permeability; drainage needed.	Slow infiltration; low water-holding capacity.	----------	Erodibility; waterways need vegetation.	Claypan at depth of 12 to 24 inches.

[2] In general, soils rated as slow or very slow are not suitable for septic fields.

TABLE 6.—*Approximate acreage and proportionate extent of the soils*

Soil name	Area	Extent
	Acres	*Percent*
Albertville fine sandy loam, 2 to 6 percent slopes, eroded	1, 780	0. 4
Albertville fine sandy loam, 6 to 10 percent slopes	749	. 2
Albertville fine sandy loam, 6 to 10 percent slopes, eroded	2, 342	. 6
Albertville fine sandy loam, shallow, 10 to 15 percent slopes	850	. 2
Bibb loam	9, 031	2. 2
Cahaba fine sandy loam, 0 to 2 percent slopes	353	. 1
Cahaba fine sandy loam, 2 to 6 percent slopes	1, 062	. 3
Cane loam, 2 to 6 percent slopes, eroded	280	. 1
Cane loam, 6 to 10 percent slopes, eroded	254	. 1
Captina silt loam, 2 to 6 percent slopes	852	. 2
Colbert silt loam, 0 to 2 percent slopes	2, 862	. 7
Colbert silt loam, 2 to 6 percent slopes, eroded	11, 050	2. 7
Colbert silt loam, 6 to 10 percent slopes, eroded	5, 101	1. 2
Colbert silt loam, 10 to 15 percent slopes, eroded	1, 317	. 3
Colbert silty clay loam, 2 to 6 percent slopes, severely eroded	1, 011	. 2
Colbert silty clay loam, 6 to 10 percent slopes, severely eroded	1, 384	. 3
Cuthbert fine sandy loam, 6 to 10 percent slopes	5, 594	1. 4
Cuthbert fine sandy loam, 10 to 15 percent slopes	1, 649	. 4
Cuthbert sandy clay loam, 6 to 10 percent slopes, severely eroded	685	. 2
Cuthbert sandy clay loam, 10 to 25 percent slopes, severely eroded	1, 354	. 3
Cuthbert and Ruston soils, 10 to 15 percent slopes	1, 559	. 4
Cuthbert and Ruston soils, 15 to 25 percent slopes	50, 483	12. 2
Decatur silt loam, 2 to 6 percent slopes, eroded	1, 451	. 3
Decatur silty clay loam, 2 to 6 percent slopes, severely eroded	3, 278	. 8
Decatur silty clay loam, 6 to 10 percent slopes, severely eroded	2, 252	. 5
Decatur silty clay loam, 10 to 15 percent slopes, severely eroded	438	. 1
Dowellton silty clay, 0 to 2 percent slopes	3, 144	. 8
Dunning silty clay	3, 076	. 7
Greenville loam, 2 to 6 percent slopes, eroded	770	. 2
Greenville loam, 2 to 6 percent slopes, severely eroded	267	. 1
Greenville loam, 6 to 10 percent slopes, severely eroded	1, 019	. 2
Greenville loam, 10 to 15 percent slopes, severely eroded	194	(1)
Guin gravelly sandy loam, 10 to 15 percent slopes, eroded	8, 563	2. 1
Guin gravelly sandy loam, 15 to 40 percent slopes	58, 436	14. 2
Gullied land	1, 192	. 3
Hollywood silty clay	1, 023	. 2
Hollywood silty clay, shallow	454	. 1
Huntington silt loam, local alluvium	646	. 2
Iuka fine sandy loam	6, 788	1. 6
Iuka fine sandy loam, local alluvium	806	. 2
Lindside silt loam	4, 568	1. 1
Lindside silt loam, local alluvium	297	. 1
Linker fine sandy loam, 2 to 6 percent slopes, eroded	2, 295	. 6
Linker fine sandy loam, 6 to 10 percent slopes	893	0. 2
Linker fine sandy loam, 6 to 10 percent slopes, eroded	4, 290	1. 0
Linker fine sandy loam, 10 to 15 percent slopes, eroded	854	. 2
Melvin silt loam	3, 153	. 8
Mine pits and dumps	4, 364	1. 1
Ochlockonee fine sandy loam	7, 274	1. 8
Ora fine sandy loam, 2 to 6 percent slopes, eroded	2, 479	. 6
Ora fine sandy loam, 6 to 10 percent slopes	551	. 1
Ora fine sandy loam, 6 to 10 percent slopes, eroded	2, 801	. 7
Ora fine sandy loam, heavy substratum, 2 to 6 percent slopes, eroded	610	. 1
Prentiss fine sandy loam, 0 to 2 percent slopes	990	. 2
Prentiss fine sandy loam, 2 to 6 percent slopes	702	. 2
Ramsey fine sandy loam, 10 to 15 percent slopes	1, 243	. 3
Rock land, limestone	32, 838	8. 0
Rock land, sandstone	60, 254	14. 6
Ruston fine sandy loam, 2 to 6 percent slopes, eroded	2, 272	. 6
Ruston fine sandy loam, 6 to 10 percent slopes	2, 665	. 6
Ruston fine sandy loam, 6 to 10 percent slopes, eroded	7, 267	1. 8
Ruston fine sandy loam, 6 to 10 percent slopes, severely eroded	1, 955	. 5
Ruston fine sandy loam, 10 to 15 percent slopes, eroded	1, 629	. 4
Ruston fine sandy loam, 10 to 15 percent slopes, severely eroded	1, 051	. 3
Saffell gravelly fine sandy loam, 2 to 6 percent slopes	1, 821	. 4
Saffell gravelly fine sandy loam, 6 to 10 percent slopes	4, 279	1. 0
Saffell gravelly fine sandy loam, 6 to 10 percent slopes, eroded	15, 185	3. 7
Savannah loam, 6 to 10 percent slopes, severely eroded	1, 479	. 4
Savannah very fine sandy loam, 0 to 2 percent slopes	355	. 1
Savannah very fine sandy loam, 2 to 6 percent slopes	1, 900	. 5
Savannah very fine sandy loam, 2 to 6 percent slopes, eroded	20, 223	4. 9
Savannah very fine sandy loam, 6 to 10 percent slopes	5, 424	1. 3
Savannah very fine sandy loam, 6 to 10 percent slopes, eroded	10, 811	2. 6
Slickens	737	. 2
Talbott silt loam, 2 to 6 percent slopes, eroded	3, 264	. 8
Talbott silt loam, 6 to 10 percent slopes, eroded	862	. 2
Talbott silty clay, 2 to 6 percent slopes, severely eroded	883	. 2
Talbott silty clay, 6 to 10 percent slopes, severely eroded	921	. 2
Tilden fine sandy loam, 2 to 6 percent slopes	553	. 1
Tupelo silt loam, 0 to 2 percent slopes	769	. 2
Total	412, 160	100. 0

[1] Less than 0.05 percent.

described can be found readily by referring to the "Guide to Mapping Units" at the back of the report.

Soil scientists, engineers, students, and others who want detailed descriptions of the soil series should turn to the section "Formation and Classification of Soils." Many terms used in the soil descriptions and other sections of the report are defined in the Glossary and in the "Soil Survey Manual"(*11*).

Albertville Series

In the Albertville series are gently sloping and sloping, well-drained soils of the uplands. Uneroded areas have a surface layer of dark grayish-brown fine sandy loam and a subsoil of yellowish-brown, firm silty clay loam to clay. The soils are underlain by sandstone and shale.

Albertville soils occur with the Linker, Savannah, and Ramsey soils. They have a finer textured subsoil than the Linker soils and lack the red color of those soils. Their subsoil is finer textured than that of the Savannah soils, but they do not have a fragipan. Albertville soils have a well-developed B horizon, which is absent in the Ramsey soils.

The Albertville soils make up about 1.4 percent of the county and are mainly in the southeastern part. The native vegetation consists mostly of oak, hickory, gum, dogwood, persimmon, sourwood, ash, and pine. Much of the acreage has been cleared

Albertville fine sandy loam, 2 to 6 percent slopes, eroded (AbB2).—This is a well-drained soil on uplands. It has a yellowish-brown, clayey subsoil.

Representative profile:

0 to 5 inches, brown, very friable fine sandy loam.
5 to 36 inches, yellowish-brown, friable silty clay; blocky structure.
36 to 72 inches, light-gray, firm clay mottled with brown and pale red; weak, blocky structure.
72 inches +, gray shale.

This soil is low in natural fertility and organic-matter content and is very strongly acid. It is generally in good tilth, responds well to management, has a moderate to low available moisture capacity, and consequently is well suited to cultivated crops.

Practically all of the acreage is used for crops and pasture. Erosion is a moderate hazard. (Capability unit IIe–44; woodland suitability group 2)

Albertville fine sandy loam, 6 to 10 percent slopes (AbC).—The surface layer of this soil is thinner and darker colored than that of Albertville fine sandy loam, 2 to 6 percent slopes, eroded. It is 1 to 3 inches thick and is dark grayish brown.

This soil has medium runoff and moderate to low available moisture capacity. It is suitable for cultivation, but the erosion hazard is severe. The soil is inextensive in the county and is forested. (Capability unit IIIe–44; woodland suitability group 2)

Albertville fine sandy loam, 6 to 10 percent slopes, eroded (AbC2).—This soil is 2 to 4 inches thinner in the surface layer than Albertville fine sandy loam, 2 to 6 percent slopes, eroded, and is less deep to parent material.

In Franklin County, this is the most extensive soil of the Albertville series. Most of the acreage has been cleared and is used for most crops and pasture grown locally. A small acreage has been replanted to loblolly pine. Surface runoff is medium, and the hazard of erosion is severe. (Capability unit IIIe–44; woodland suitability group 2)

Albertville fine sandy loam, shallow, 10 to 15 percent slopes (AsD).—This is a well-drained soil on uplands. It has a brownish-yellow, firm, clayey subsoil.

Representative profile:

0 to 8 inches, very dark-grayish-brown, very friable fine sandy loam.
8 to 17 inches, brownish-yellow, firm silty clay to clay; weak, blocky structure.
17 to 30 inches, brownish-yellow, firm clay mottled with brown and red; weak, blocky structure.
30 inches +, gray shale.

Because it is strongly sloping and has a shallow root zone, this soil is not suited to row crops. It is well suited to pine trees and fairly well suited to pasture. About half of the acreage is moderately eroded. (Capability unit VIe–49; woodland suitability group 3A)

Bibb Series

In the Bibb series are deep, poorly drained soils on first bottoms along Bear, Little Bear, and Cedar Creeks and along smaller streams in the southern and western parts of the county. These soils developed in alluvium that washed chiefly from soils on the Coastal Plain and to some extent from soils derived from sandstone and shale.

Bibb soils occur with the well-drained Ochlockonee and the moderately well drained Iuka soils.

The Bibb soils have a high water table during wet periods, and in many areas ditches are required to remove excess water. They are flooded rather frequently but usually for short periods.

The Bibb soils make up about 2.2 percent of the county. The native vegetation consists chiefly of water, willow, and swamp chestnut oaks, sweetgum, beech, hickory, poplar, and an understory of briers, grasses, and vines. Less than half of the acreage has been cleared.

Bibb loam (Bb).—This poorly drained soil is on bottom land of the Coastal Plain and is subject to flooding.

Representative profile:

0 to 6 inches, dark grayish-brown, friable loam.
6 to 35 inches, grayish-brown, friable silt loam with many, fine, gray and brown mottles.
35 to 54 inches, light-gray and strong-brown, mottled, friable silt loam to silty clay loam; weak, blocky structure.

This soil is low in natural fertility and in organic-matter content and is medium to strongly acid. It has a moderate available moisture capacity and responds well to management.

Overflow and poor drainage are the main hazards. If the soil is adequately drained and is protected from flooding, it is fairly well suited to soybeans, grain sorghum, corn, and some hay crops. It is well suited to most pasture plants. About one-third of the acreage is used for crops and pasture. The rest is wooded. (Capability unit IVw–11; woodland suitability group 1)

Cahaba Series

In the Cahaba series are deep, nearly level to gently sloping, brown soils on well-drained terraces along the larger streams in the western part of the county. These soils developed in sediments that washed from Ruston, Greenville, Savannah, Cuthbert, and Guin soils.

Cahaba soils occur with Prentiss and Tilden soils, but they are deeper and better drained than those soils and, unlike them, do not have a fragipan. They are redder than the Prentiss soils.

The Cahaba soils make up only 0.33 percent of the county. Their native vegetation consists of mixed hardwoods and some loblolly and shortleaf pines. Flooding is only a slight hazard. These soils are relatively low in fertility, but they respond well to good management. Most of the acreage has been cleared.

Cahaba fine sandy loam, 2 to 6 percent slopes (CaB).—This is a friable, well-drained soil on stream terraces.

Representative profile:

0 to 8 inches, dark grayish-brown, very friable fine sandy loam.
8 to 32 inches, strong-brown, friable fine sandy clay loam; weak, fine, blocky structure.
32 to 50 inches, yellowish-red, friable fine sandy loam; weak, fine, blocky structure.

This soil has low natural fertility and a low content of organic matter. Infiltration is medium to rapid, permeability is moderate to rapid, and the available moisture capacity is moderate. Tilth is good. The soil has a thick root zone, responds well to management, and is suited to many kinds of crops. Runoff is medium and causes a moderate erosion hazard.

Practically all of the acreage has been cleared and is used for crops and pasture. (Capability unit IIe–12; woodland suitability group 2A)

Cahaba fine sandy loam, 0 to 2 percent slopes (CaA).—This nearly level soil is less susceptible to erosion than Cahaba fine sandy loam, 2 to 6 percent slopes. It is generally in good tilth and responds well to management. It has a moderate available moisture capacity and is well suited to many kinds of crops. Practically all of the acreage is used for crops and pasture. (Capability unit I–12; woodland suitability group 2A)

Cane Series

In the Cane series are moderately well drained and well drained, strongly acid soils that have a fragipan. These soils developed in old alluvium that washed from ridges of interbedded sandstone, shale, and cherty limestone. They occupy gently sloping and sloping foot slopes along Cedar and Little Bear Creeks.

The Cane soils occur with the Talbott and Ramsey soils and with Rock land, limestone. They are less red and are coarser textured in the subsoil than the Talbott soils, which do not have a fragipan. The Cane soils have clearly defined horizons, but the Ramsey soils and Rock land, limestone, do not.

The Cane soils make up only 0.12 percent of the county. The native vegetation is chiefly red oak, white oak, post oak, hickory, blackgum, elm, redbud, sweetgum, and a few loblolly and shortleaf pines. About two-thirds of the acreage has been cleared.

Cane loam, 2 to 6 percent slopes, eroded (CmB2).—This moderately well drained soil with a fragipan has developed in old alluvium on foot slopes in the limestone valleys.

Representative profile:

0 to 5 inches, dark-brown, friable loam with a few sandstone fragments ¼ to 2 inches across.
5 to 21 inches, yellowish-red, friable silty clay loam with a few sandstone fragments ¼ to 2 inches across; blocky structure.
21 to 36 inches, yellowish-red, firm, brittle to very firm loam that is mottled with pale brown, gray, and red; a few sandstone fragments ¼ to 2 inches across; blocky structure.
36 to 54 inches, mottled red and yellowish-brown, firm silty clay loam with a few sandstone fragments ¼ to 2 inches across.

Surface runoff, infiltration, and internal drainage are medium, and permeability is slow. The soil has a moderately thick root zone and moderate to low available moisture capacity. Tilth is generally good to fair. Natural fertility and organic-matter content are medium to low.

This soil is well suited to cultivation and responds well to management. It can be used intensively, but runoff causes an erosion hazard. Most of the acreage is used for crops and pasture. (Capability unit IIe–15; woodland suitability group 1A)

Cane loam, 6 to 10 percent slopes, eroded (CmC2).—This strongly sloping soil has a thinner surface layer and subsoil than Cane loam, 2 to 6 percent slopes, eroded. A few areas too small to be mapped separately have slopes of more than 10 percent.

This soil has a moderately thick root zone. It responds well to management and can be used moderately intensively. Erosion is a serious hazard, especially on the stronger slopes.

About half of the acreage has been cleared and is used chiefly for crops and pasture. The remaining acreage is forested or is idle. (Capability unit IIIe–15; woodland suitability group 1A)

Captina Series

Soils of the Captina series are on high stream terraces. They are gently sloping, moderately well drained, strongly acid soils that have a fragipan. They have developed in old alluvium washed from soils that were derived chiefly from limestone and partly from sandstone and shale. The surface layer of Captina soils generally is dark-brown to very dark grayish-brown silt loam, and the subsoil is dark-brown to yellowish-red loam or silt loam. The fragipan is at a depth of 18 to 30 inches.

The Captina soils occur with the Tupelo and Colbert soils. They are deeper, redder, coarser textured, and better drained than those soils, which do not have a fragipan in the lower subsoil.

These soils are not extensive in this county and occur only in the northeastern part. The native vegetation consists chiefly of oak, hickory, gum, maple, and loblolly and shortleaf pines. Most of the acreage has been cleared.

Captina silt loam, 2 to 6 percent slopes (CnB).—This moderately well drained soil on stream terraces has a fragipan.

Representative profile:

0 to 5 inches, dark-brown, very friable silt loam.
5 to 23 inches, strong-brown, friable loam; weak, fine, blocky structure.
23 to 38 inches, mottled yellowish-brown, gray, and yellowish-red, firm, brittle silt loam; blocky structure.
38 to 54 inches, mottled yellowish-brown, light-gray, and yellowish-red, firm silty clay; blocky structure.

Included with this soil are severely eroded areas that have a reddish-brown surface layer. Also included are a few small areas that have a friable, yellowish-red to

reddish-brown subsoil without a fragipan. Some small areas are on slopes of less than 2 percent.

This soil is strongly acid and is low in natural fertility and in organic-matter content. It is well suited to cultivated crops and responds well to good management. Tilth is generally good. Permeability is medium in the surface layer and upper subsoil and is slow in the lower subsoil. The available moisture capacity is moderate to low.

Most of the acreage is used for crops and pasture. Cultivated fields have a moderate erosion hazard. (Capability unit IIe–15; woodland suitability group 1A)

Colbert Series

In the Colbert series are moderately well drained to somewhat poorly drained, nearly level to sloping soils that developed in residuum weathered mainly from clayey limestone and, to a lesser extent, from calcareous shale. The surface layer is dark yellowish-brown silt loam, and the subsoil is yellowish-brown to strong-brown, plastic silty clay to clay.

Colbert soils occur with Decatur, Talbott, Dowellton, Tupelo, and Hollywood soils. They are yellower than Decatur and Talbott soils and are not so well drained. They are browner and better drained than the Dowellton and Tupelo soils. The Colbert soils are lighter colored and more acid than the Hollywood soils.

The Colbert soils make up about 5.55 percent of the county and are mostly in the northeastern part, but small areas are in the Frankfort community. The native vegetation consists chiefly of oak, hickory, dogwood, redbud, gum, ash, black walnut, elm, persimmon, loblolly and shortleaf pines, and a few redcedars. About half of the acreage has been cleared.

Colbert silt loam, 2 to 6 percent slopes, eroded (CoB2).—This moderately well drained to somewhat poorly drained soil is on uplands and has a plastic clay subsoil.

Representative profile:

0 to 4 inches, dark yellowish-brown, friable silt loam.
4 to 20 inches, yellowish-brown, firm silty clay or clay; moderate, fine and medium, blocky structure.
20 to 57 inches, mottled strong-brown, yellowish-red, and gray clay; massive (structureless).
57 inches +, limestone bedrock.

Covering the surface of small areas in the Frankfort community are 2 to 3 inches of gravelly fine sandy loam that washed or sloughed from soils of the Coastal Plain.

This strongly acid soil is low in natural fertility and in content of organic matter. It has slow to very slow infiltration and permeability and low available moisture capacity. Runoff is medium. This is a fairly good soil for cultivation, but its firm, plastic clay subsoil limits its suitability and the yield of crops. The response to management is fair, and the risk of further erosion is high.

In Franklin County, this is the most extensive soil in the Colbert series. About half of the acreage is used for crops and pasture. (Capability unit IIIe–48; woodland suitability group 3A)

Colbert silt loam, 0 to 2 percent slopes (CoA).—This nearly level soil has a thicker surface layer than Colbert silt loam, 2 to 6 percent slopes, eroded, and is more poorly drained.

This soil is in fair to poor tilth; is slowly to very slowly permeable to water, roots, and air; and has a low available moisture capacity. It is fairly well suited to cultivation. The response to management is fair. About one-third of the acreage is in crops and pasture, and the rest is forested or idle. (Capability unit IIIw–42; woodland suitability group 3A)

Colbert silty clay loam, 2 to 6 percent slopes, severely eroded (CrB3).—This soil differs from Colbert silt loam, 2 to 6 percent slopes, eroded, in having lost, through erosion, all or nearly all of its original surface layer of light grayish-brown silt loam. The plow layer is now brownish-yellow or yellowish-brown, firm silty clay loam. The subsoil is yellowish-brown, mottled, plastic silty clay loam to clay. Shallow gullies are common in most areas.

This soil is poorly suited to cultivated crops. It is sticky when wet and clods when it dries. Tilth is very poor. Infiltration is very slow, runoff is rapid, and the hazard of further erosion is severe.

Most of this soil has been used for tilled crops and pasture. About one-fifth of the acreage is now cultivated; the rest is in pasture or native trees or is idle. (Capability unit IVe–448; woodland suitability group 3A)

Colbert silt loam, 6 to 10 percent slopes, eroded (CoC2).—Because it is more sloping than Colbert silt loam, 2 to 6 percent slopes, eroded, this soil is more likely to erode if used for cultivated crops. In a few places too small to be mapped separately, the soil is severely eroded and has a surface layer of yellowish-brown, firm, sticky silty clay loam. Here, a few shallow gullies have formed. A few small areas on foot slopes, near Frankfort and westward to Liberty Church, have been covered by 2 to 3 inches of gravelly sandy loam that washed or sloughed from soils of the Coastal Plain.

The tilth of this soil is generally fair, and the root zone is moderately deep. The risk of erosion is great, but the response to management is fair. Most of this soil has been used for cotton, corn, small grain, and hay, but only about one-third of the acreage is now in crops and pasture. The rest is forested or idle. (Capability unit IVe–48; woodland suitability group 3B)

Colbert silty clay loam, 6 to 10 percent slopes, severely eroded (CrC3).—This strongly sloping soil is more severely eroded than Colbert silt loam, 2 to 6 percent slopes, eroded. It has had more than 75 percent of its original surface layer washed away and, in places, some of the subsoil. The present surface layer is brownish-yellow silty clay loam. Shallow gullies are common, and in some areas a few deep gullies have formed.

Infiltration is very slow in this soil, and the risk of erosion is very high. The surface layer is sticky when wet and forms firm clods when it dries.

Most of the acreage has been used for crops and pasture. About one-sixth is now cultivated, and the rest is forested or idle. (Capability unit VIe–48; woodland suitability group 3B)

Colbert silt loam, 10 to 15 percent slopes, eroded (CoD2).—The combined surface layer and subsoil of this strongly sloping, eroded soil are thinner than those of Colbert silt loam, 2 to 6 percent slopes, eroded. Many areas too small to be mapped separately have a few shallow gullies and a surface layer of firm, sticky silty clay loam. Near Frankfort and west to Liberty Church, small areas of this soil are overlain by 2 to 3 inches of gravelly sandy loam that washed or sloughed from soils in the Coastal Plain.

This soil is generally in poor tilth. The available moisture capacity is low, runoff is rapid, and the hazard

of further erosion is very severe. Consequently, this is a poor soil for cultivation, though it can be safely cultivated occasionally. About four-fifths of the acreage is forested; the rest is pastured, cultivated, or idle. (Capability unit VIe–48; woodland suitability group 3B)

Cuthbert Series

In the Cuthbert series are moderately well drained soils that developed in beds of sand, silt, and clay on rough, highly dissected uplands of the Coastal Plain. These soils have a thin subsoil of strong-brown, firm silty clay. Except in eroded areas, the surface layer is dark grayish-brown fine sandy loam.

The Cuthbert soils occur with the Ruston, Savannah, and Guin soils and have a thinner, finer textured subsoil than all those soils. They do not have the fragipan of Savannah soils, nor the high gravel content of Guin soils.

The Cuthbert soils make up about 2.23 percent of the county and are largely near Vina and Atwood. The native vegetation consists chiefly of red, post, blackjack, and scarlet oaks, hickory, and some loblolly and shortleaf pines. About half of the acreage has been cleared.

Cuthbert fine sandy loam, 10 to 15 percent slopes (CsD).—This moderately well drained soil on Coastal Plain uplands has a firm, yellowish-brown subsoil.

Representative profile:

0 to 3 inches, dark grayish-brown, friable fine sandy loam.
3 to 6 inches, yellowish-brown, friable loam; weak, fine, blocky structure; common fragments of iron crust 1 to 8 inches across.
6 to 18 inches, yellowish-red, firm silty clay with mottles of yellow and brown; blocky structure; few fragments of iron crust 1 to 8 inches across.
18 to 47 inches, strong-brown, firm to very firm clay mottled with yellow, red, and gray; blocky structure; few fragments of iron crust 1 to 6 inches across.

This soil is strongly acid to very strongly acid, is low in natural fertility and organic-matter content, has low available moisture capacity, and is highly susceptible to erosion. For these reasons, this soil is poorly suited to cultivation, though it is generally in fair tilth and responds moderately well to management. Most of the acreage is forested or idle. (Capability unit VIe–19; woodland suitability group 2D)

Cuthbert sandy clay loam, 6 to 10 percent slopes, severely eroded (CtC3).—Although this soil is not so steep as Cuthbert fine sandy loam, 10 to 15 percent slopes, it is much more eroded. Its surface layer and subsoil combined are slightly thinner than those of the steeper soil, and the surface layer is yellowish brown instead of dark grayish brown. Shallow gullies are common, and a few deep ones have formed.

This soil is generally in poor tilth. It has rapid runoff, has a low available moisture capacity, and is subject to severe erosion. It is a poor soil for cultivation but is well suited to pines.

The acreage of this soil amounts to only about 0.2 percent of the county. All of it has been cleared and used for crops and pasture, but most is now reforested to loblolly and shortleaf pines or is idle. (Capability unit VIIe–19; woodland suitability group 2D)

Cuthbert fine sandy loam, 6 to 10 percent slopes (CsC).—This sloping soil has a grayish-brown fine sandy loam surface layer that is 3 to 6 inches thick and is thicker than that of Cuthbert fine sandy loam, 10 to 15 percent slopes.

The soil is low in natural fertility and organic-matter content and is strongly to very strongly acid. Surface runoff is medium, and the available moisture capacity is low. The soil erodes easily and is poorly suited to cultivation.

In Franklin County, this soil is the most extensive of the Cuthbert series. Most of the acreage has been cleared. (Capability unit VIe–19; woodland suitability group 2C)

Cuthbert sandy clay loam, 10 to 25 percent slopes, severely eroded (CtE3).—Erosion has removed all or nearly all of the original surface layer of this soil. The present surface layer is thin and is yellowish-brown sandy clay loam. Shallow gullies are common, and a few deep ones have formed.

This soil is not suitable for cultivation. It is subject to rapid runoff, has low capacity for available moisture, and is likely to erode severely if planted to tilled crops. The soil is suited to trees.

In Franklin County, this soil has a small total acreage. Most of it has been cleared, but much is reverting to loblolly pine and other forest trees or is idle. (Capability unit VIIe–19; woodland suitability group 2E)

Cuthbert and Ruston soils, 10 to 15 percent slopes (CuD).—These soils occur together in rough, highly dissected areas covered with forest and are so intermingled that is was impractical to map them separately. A profile description of a Cuthbert soil follows the description of the Cuthbert series, and one of a Ruston soil follows the description of the Ruston series.

These soils have a surface layer of similar texture and were derived from similar parent material. Their surface layer is sandy loam, fine sandy loam, loam, or silt loam. In some areas, on the surface of the soil and through the profile, there are a few fragments of iron crust, 2 to 5 inches across, and some brown iron concretions, ⅛ to ¼ inch across. The soils formed in beds of sand, silt, and clay. The Cuthbert soils have a thinner and finer textured subsoil than the Ruston soils, and they are more poorly drained.

These soils are low in natural fertility and content of organic matter, and they are strongly acid to very strongly acid. They have medium to slow infiltration and medium to rapid surface runoff. The erosion hazard is moderate to severe.

The soils of this mapping unit are inextensive in the county and occur chiefly in the western part. They are mostly in native hardwoods, including oak, hickory, dogwood, gum, sourwood, and pine, but small areas are in pasture. Their best use is forest. (Capability unit VIe–19; woodland suitability group 2D)

Cuthbert and Ruston soils, 15 to 25 percent slopes (CuE).—These steep soils are more susceptible to erosion than Cuthbert and Ruston soils, 10 to 15 percent slopes. They have rapid surface runoff, slow to medium infiltration, and a low available moisture capacity. Consequently, the erosion hazard is severe.

These extensive soils make up about 12.2 percent of the county and occur chiefly in the western half. They are mostly in forest, their best use. (Capability unit VIIe–19; woodland suitability group 2E)

Decatur Series

In the Decatur series are deep, well-drained, gently sloping and sloping soils in the limestone valleys. Uneroded areas have a reddish-brown to dark reddish-brown silt loam surface layer and a dark-red, friable to moderately firm silty clay subsoil. The soils are underlain by limestone.

Decatur soils occur with Talbott and Colbert soils. They are deeper and redder than those soils and have a more friable subsoil.

The Decatur soils make up about 1.78 percent of the county and are mainly in an area east of Russellville, near Waco and Newburg. The native vegetation consists chiefly of mixed hardwoods, though there are some pines and redcedars. Nearly all of the acreage has been cleared.

Decatur silt loam, 2 to 6 percent slopes, eroded (DaB2).—This dark-red, friable soil in limestone valleys is deep and well drained.

Representative profile:

0 to 3 inches, reddish-brown, friable silt loam.
3 to 60 inches, dark-red, friable to firm silty clay; medium, blocky structure.
60 to 75 inches, dark-red, firm silty clay or clay with mottles of brownish yellow and pale brown; medium, blocky structure.

This soil has moderate runoff, medium infiltration, moderate permeability, and a moderate available moisture capacity. It is strongly acid and is medium in natural fertility and in content of organic matter. Tilth is generally good. The soil is well suited to cultivation, but the erosion hazard is moderate to severe. Nearly all the acreage is used for crops and pasture. (Capability unit IIe–41; woodland suitability group 3A)

Decatur silty clay loam, 2 to 6 percent slopes, severely eroded (DcB3).—Infiltration is slower in this soil than in Decatur silt loam, 2 to 6 percent slopes, eroded, and erosion has been more severe. The soil has lost three-fourths or more of the original surface layer and, in places, some of the subsoil. The present surface layer is silty clay loam that is firm when moist and slightly sticky when wet. Shallow gullies are common in some areas.

This soil is well suited to cultivation, but it is highly susceptible to further erosion and is in poorer tilth than Decatur silt loam 2 to 6 percent slopes, eroded. This is the most extensive soil of the Decatur series in the county. Most of the acreage has been cleared. (Capability unit IIIe–441; woodland suitability group 3B)

Decatur silty clay loam, 6 to 10 percent slopes, severely eroded (DcC3).—This sloping, severely eroded soil has lost three-fourths or more of the original surface layer and, in places, some of the upper subsoil. The present surface layer is finer textured than that of Decatur silt loam, 2 to 6 percent slopes, eroded, and is dark reddish brown instead of reddish brown. It is firm when moist and slightly sticky when wet. Shallow gullies are common in some areas.

The tilth of this soil is generally fair; infiltration is slow to medium. The soil is fairly well suited to cultivation but is subject to severe erosion. Most of the acreage has been cleared. (Capability unit IVe–441; woodland suitability group 3B)

Decatur silty clay loam, 10 to 15 percent slopes, severely eroded (DcD3).—This soil is steeper than Decatur silt loam, 2 to 6 percent slopes, eroded, and is more severely eroded. It has had nearly all of its original surface layer washed away, and in some places part of the upper subsoil. The surface layer is now dark reddish-brown silty clay loam that is firm when moist and slightly sticky when wet. Shallow gullies are common, and a few deep ones have formed in some areas.

Infiltration is slow, the available moisture capacity is moderate to low, and the hazard of further erosion is severe. Consequently, this soil is poorly suited to cultivation and is only fairly well suited to hay and pasture. (Capability unit VIe–441; woodland suitability group 3B)

Dowellton Series

Soils of the Dowellton series have a brownish-gray, plastic heavy clay subsoil and are somewhat poorly drained. These soils are in limestone valleys and developed in residuum from argillaceous limestone. In Franklin County, these soils are nearly level.

Dowellton soils occur with Talbott, Colbert, and Hollywood soils. They are lighter colored and grayer through the profile than those soils, are more plastic in the subsoil, and are more poorly drained.

The Dowellton soils make up about 0.8 percent of the county and are mainly in the eastern part, near the Lawrence County line. The native vegetation consists chiefly of post, white, red, willow, and blackjack oaks; hickory, elm, and beech. Redcedar, loblolly pine (fig. 11), and shortleaf pine are in scattered stands. Only a small acreage has been cleared.

Figure 11.—**Stand of loblolly pine on Dowellton silty clay, 0 to 2 percent slopes. Trees reseeded naturally and are 10 to 12 years old.**

Dowellton silty clay, 0 to 2 percent slopes (DoA).—This is a mottled, brown and gray, clayey soil that is somewhat poorly drained.

Representative profile:

0 to 3 inches, dark-brown, friable silty clay.
3 to 14 inches, light olive-brown, firm, sticky clay mottled with gray, brown, and red; moderate, medium, blocky structure.
14 to 42 inches +, mottled gray, red, and yellowish-brown clay; massive (structureless).

This soil is low in natural fertility, contains little organic matter, and is strongly acid. Infiltration is very slow, and the available moisture capacity is low. Tilth is generally poor. This is a fair to poor soil for cultivation, and only a small acreage is used for crops and pasture. Poor drainage is a severe hazard. (Capability unit IIIw–42; woodland suitability group 3A)

Dunning Series

The soils of the Dunning series are poorly drained. They are on flood plains in limestone valleys and developed in alluvium that washed mostly from soils derived from clayey limestone. These soils are dark grayish brown and are medium acid to neutral. Most of the acreage is subject to flooding.

The Dunning soils occur with the well drained Huntington, the moderately well drained Lindside, and the poorly drained Melvin soils, and they are darker colored and finer textured than those soils.

Dunning soils amount to about 0.7 percent of the acreage in the county. The native vegetation consists mainly of water-tolerant trees, including oaks, red maple, sweetgum, willow, and redcedar. About half of the acreage has been cleared.

Dunning silty clay (Du).—This is a poorly drained, dark grayish-brown silty clay that has developed on first bottoms and has areas of clay included.

Representative profile:

0 to 4 inches, very dark gray, friable silty clay.
4 to 8 inches, dark grayish-brown, firm silty clay or clay; moderate, blocky structure.
8 to 22 inches, dark gray to very dark gray clay that has mottles of yellowish brown; massive (structureless).
22 to 46 inches, mottled light olive-brown, gray, and yellowish-brown, massive clay.

This soil is medium acid to neutral. Its natural fertility and organic-matter content range from medium to high. The available moisture capacity is moderate, and tilth is fair to poor. This soil responds well to management but is suited to only a few kinds of crops because of excess water. About half of the acreage is used for crops and pasture. (Capability unit IIIw–41; woodland suitability group 4)

Greenville Series

The Greenville series is made up of dark-red, deep, well-drained soils on uplands of the Coastal Plain. These soils developed in beds of fine sand and fine sandy loam. Uneroded areas have a surface layer of dark grayish-brown fine sandy loam to loam and a subsoil of dark-red, friable clay loam.

The Greenville soils occur with the Ruston, Ora, and Savannah soils and have a redder, finer textured subsoil than all those soils. Greenville soils lack the fragipan of Ora and Savannah soils.

Greenville soils amount to only about 0.54 percent of the county. The largest areas are west of Vina and near Red Bay. The native vegetation consists mainly of oak, hickory, dogwood, poplar, gum, and pine. Most of the acreage has been cleared.

Greenville loam, 2 to 6 percent slopes, eroded (GrB2).—This deep, well-drained soil is on Coastal Plain uplands and has a dark-red clay loam subsoil.

Representative profile:

0 to 4 inches, reddish-brown, friable loam.
4 to 46 inches, dark-red, friable clay loam; fine and medium, blocky structure; few, fine, dark-brown concretions, ⅛ to ¼ inch across.
46 to 120 inches, dark-red, friable fine sandy clay loam; weak, fine, blocky structure.

This soil is well suited to cultivation. It is moderately low in natural fertility and organic-matter content, but it responds well to management. Tilth is good, permeability is rapid, and the available moisture capacity is moderate. Further erosion is not a serious hazard. Practically all of the acreage is used for crops and pasture. (Capability unit IIe–12; woodland suitability group 2A)

Greenville loam, 2 to 6 percent slopes, severely eroded (GrB3).—This gently sloping soil has a surface layer that is redder and 1 to 3 inches thinner than that of Greenville loam, 2 to 6 percent slopes, eroded. The red surface layer is friable when moist and slightly sticky when wet. Shallow gullies are common in some areas.

This soil has a very small total acreage. Most of it has been cleared and is used for crops and pasture, but a few small areas have been reforested to loblolly pine. The soil is well suited to cultivation, but the hazard of further erosion is moderate to severe. (Capability unit IIIe–111; woodland suitability group 2B)

Greenville loam, 6 to 10 percent slopes, severely eroded (GrC3).—The surface layer of this sloping, severely eroded soil is redder and is 1 to 3 inches thinner than that of Greenville loam, 2 to 6 percent slopes, eroded. The red plow layer is friable when moist and slightly sticky when wet. Shallow gullies are common, and a few deep ones have formed in some areas.

Most of the acreage of this inextensive soil has been cleared. Tilth is fair, and infiltration is slow to medium. The soil is fairly well suited to cultivation, but the hazard of further erosion is severe. (Capability unit IVe–11; woodland suitability group 2B)

Greenville loam, 10 to 15 percent slopes, severely eroded (GrD3).—In this severely eroded soil, the surface layer is redder and is 2 to 4 inches thinner than that of Greenville loam, 2 to 6 percent slopes, eroded. The plow layer of red loam is slightly sticky when wet. Shallow gullies are common, and a few deep ones have formed in some areas.

This inextensive soil is not suited to cultivated crops and is only fairly well suited to hay or pasture. It is well suited to loblolly pine. Because infiltration is slow and runoff is rapid, the hazard of further erosion is severe. The soil has a moderate available moisture capacity. (Capability unit VIe–111; woodland suitability group 2D)

Guin Series

In the Guin series are strongly sloping and steep, gravelly soils that are excessively drained. These soils developed from thick beds of acid gravel and fine sand. Uneroded areas have a surface layer of dark grayish-brown gravelly sandy loam, and a subsoil of yellowish-brown to strong-brown very gravelly sandy loam.

The Guin soils occur with the Cuthbert and Ruston soils. Guin soils are coarser textured than those soils and are more gravelly in the subsoil.

The Guin soils are the most extensive soils in Franklin County and account for about 16.27 percent of the total

acreage. Large areas occur near Belgreen, near Jonesboro, and west of Russellville. The native vegetation consists chiefly of oak, hickory, poplar, gum, ash, dogwood, maple, and pine. Most of the acreage is forested.

Guin gravelly sandy loam, 15 to 40 percent slopes (GuF).—This is a deep, gravelly soil on the Coastal Plain.

Representative profile:

0 to 6 inches, brown, very friable gravelly sandy loam that is 10 to 20 percent gravel.
6 to 96 inches, strong-brown, loose gravelly sandy loam that is about 75 percent gravel.

This soil is not suitable for cultivation. It is low in natural fertility and organic-matter content and is very strongly acid. Infiltration is rapid, but the available moisture capacity is very low.

The soil is well suited to trees, especially loblolly and Virginia pines. (Capability unit VIIs–11; woodland suitability group 2F)

Guin gravelly sandy loam, 10 to 15 percent slopes, eroded (GuD2).—This soil is less strongly sloping but is more eroded than Guin gravelly sandy loam, 15 to 40 percent slopes.

It is low in natural fertility and content of organic matter and is very strongly acid. Although infiltration is rapid, the available moisture capacity is very low. This soil is poorly suited to cultivation but is well suited to trees, especially loblolly and Virginia pines. (Capability unit VIs–11; woodland suitability group 2F)

Gullied Land

Areas that have been so badly gullied that they are generally not suited to crops or pasture are mapped as Gullied land.

Gullied land (Gw).—This land type consists of areas that are so severely eroded that the original soil profiles have been destroyed. These areas are mostly in gullies that range from 1 to more than 5 feet in depth, but remnants of the original soils remain between the gullies in places. The slopes are between 6 and 40 percent. The original soils developed chiefly from beds of sand, silt, and gravel of the Coastal Plain, though a few soils were derived from limestone. Before erosion destroyed their profiles, these soils were of the Greenville, Ruston, Cuthbert, Guin, Decatur, Talbott, and Colbert series.

The soil material that remains is low to very low in natural fertility and organic-matter content. It is strongly acid to very strongly acid. Surface runoff is very rapid, and infiltration and permeability are slow. Nearly all of the acreage of Gullied land is in the western part of the county. Some of the larger areas are in the Jonesboro community and range is size from 20 to more than 60 acres.

These gullied areas have been abandoned because it is generally not practical to reclaim them for pasture or cropland. Some of them have a sparse growth of persimmon, honeysuckle, briers, and broomsedge. A few are in fair to good stands of loblolly, shortleaf, and Virginia pines. (Capability unit VIIe–441; woodland suitability group 3)

Hollywood Series

In the Hollywood series are dark-colored, moderately well drained to somewhat poorly drained soils in the limestone valleys. These soils are nearly level, are shallow to moderately deep, and occur in depressions and on low benches at the foot of steeper slopes. They developed in residuum or colluvium derived from argillaceous limestone. Their surface layer is generally a very dark gray silty clay, and their subsoil is a black, sticky, plastic clay.

Hollywood soils occur with Talbott, Colbert, Tupelo, Dowellton, and Dunning soils and with Rock land, limestone. They are thicker and darker colored in the surface layer than all those soils. Hollywood soils are not so red as Talbott soils or so yellow as Colbert and Tupelo soils, all of which have more clearly defined horizons than Hollywood soils. They are better drained than the Dowellton soils of the uplands and the Dunning soils of first bottoms.

The Hollywood soils make up about 0.3 percent of the county and are mainly in the northeastern part. The native vegetation consists mainly of oak, willow, hickory, locust, elm, gum, redbud, and redcedar.

Hollywood silty clay (Ho).—This is a black, moderately well drained to somewhat poorly drained soil derived from clayey limestone.

Representative profile:

0 to 7 inches, very dark gray silty clay; weak, fine and medium, blocky structure.
7 to 18 inches, black, sticky, very firm clay; medium, blocky structure.
18 to 40 inches, mottled dark-gray and brown, very plastic clay; medium, blocky structure.
40 to 52 inches, mottled very dark gray clay.

This soil becomes waterlogged during wet periods, and it hardens and cracks as it dries. Consequently, it is suited to only a few kinds of crops. It is fairly well suited to corn and soybeans and is well suited to pasture. The soil is moderately high in natural fertility and organic-matter content and is slightly acid to mildly alkaline. Runoff, infiltration, and permeability are slow to very slow. Excess water and unfavorable soil texture are severe limitations. (Capability unit IIIw–43; woodland suitability group 4)

Hollywood silty clay, shallow (Hs).—This is a black, shallow soil that is somewhat poorly drained to moderately well drained.

Representative profile:

0 to 4 inches, very dark brown silty clay; fine, blocky structure.
4 to 14 inches, black, very plastic, very firm clay; medium, blocky structure.
14 inches +, limestone bedrock.

This soil is 10 to 18 inches thick over bedrock. The shallow root zone makes the soil poorly suited to row crops and only fairly well suited to pasture. Excess water also is a limitation. (Capability unit VIs–43; woodland suitability group 4)

Huntington Series

In the Huntington series are deep, well-drained soils that occupy depressions and stream terraces in the limestone valleys. These soils formed in local alluvium washed from soils that developed in the residuum from high-grade limestone. Their surface layer and subsoil are reddish-brown to dark reddish-brown silt loam.

The Huntington soils occur with the Decatur, Talbott, Lindside, and Melvin soils. They have less developed horizons than the Decatur and Talbott soils but are

better drained than the moderately well drained Lindside and the poorly drained Melvin soils.

The Huntington soils make up only about 0.2 percent of the county and are mainly in areas east of Russellville and near Waco and Newburg. The native vegetation consists chiefly of oak, hickory, elm, poplar, and cedar. Practically all the acreage is cleared.

Huntington silt loam, local alluvium (Hu).—This well-drained soil developed from local alluvium in the limestone valleys.

Representative profile:

0 to 18 inches, reddish-brown, friable silt loam.
18 to 38 inches, dark reddish-brown, friable silt loam.
38 to 54 inches +, yellowish-red, friable silty clay loam with fine mottles of reddish brown.

The soil is medium to high in natural fertility and in content of organic matter and is medium acid. It is generally in good tilth, responds well to management, and has a high available moisture capacity. For these reasons, this soil is well suited to cultivation. Practically all of the acreage is used for crops and pasture. Occasional flooding or ponding for short periods is a slight hazard. (Capability unit I–43; woodland suitability group 1B)

Iuka Series

In the Iuka series are moderately well drained soils of the Coastal Plain that formed in local and general alluvium washed from the Savannah, Ruston, Greenville, Saffell, and Cuthbert soils. The Iuka soils are brown to dark-brown fine sandy loam that is underlain by brown and gray, mottled layers of fine sandy loam to silt loam at a depth of 18 to 30 inches.

The Iuka soils occur with the well-drained Ochlockonee and the poorly drained Bibb soils.

The Iuka soils make up about 1.8 percent of the county and are scattered throughout the southern and western parts. The native vegetation consists mainly of oak, gum, poplar, beech, willow, and pine. About half of the acreage has been cleared.

Iuka fine sandy loam (Is).—This is a moderately well drained, sandy soil on first bottoms.

Representative profile:

0 to 4 inches, dark grayish-brown, very friable fine sandy loam.
4 to 20 inches, dark-brown, very friable very fine sandy loam.
20 to 30 inches, yellowish-brown, very friable fine sandy loam. mottled faintly with brown.
30 to 54 inches, mottled gray and brown, friable fine sandy loam.

This soil is generally in good tilth. It is strongly acid and is medium in natural fertility and content of organic matter. The available moisture capacity is moderate to high. The soil responds well to management, is well suited to cultivated crops, especially corn, soybeans, and grain sorghum, and is a good soil for pasture. Excess water hinders cultivation at times but is not a serious problem. (Capability unit IIw–12; woodland suitability group 1)

Iuka fine sandy loam, local alluvium (Iu).—This moderately well drained, sandy soil is generally in upland depressions.

Representative profile:

0 to 5 inches, brown, very friable fine sandy loam.
5 to 18 inches, brown, very friable very fine sandy loam.
18 to 22 inches, light olive-brown, friable loam with few, faint mottles of gray.
22 to 50 inches, mottled gray and brown, friable silt loam.

This soil is medium in natural fertility and organic-matter content and is strongly acid. It has a moderate to high available moisture capacity, is generally in good tilth, responds well to management, and is well suited to cultivation. Excess water is a hazard. (Capability unit IIw–12; woodland suitability group 1)

Lindside Series

In the Lindside series are moderately well drained soils that occupy first bottoms and depressions in the limestone valleys. These soils are forming in general and local alluvium washed from soils that developed in the residuum from high-grade limestone. They consist of dark-brown to reddish-brown silt loam that is underlain, at a depth of 18 to 30 inches, by mottled gray and brown silt loam to silty clay loam.

The Lindside soils occur with the well-drained Huntington and the poorly drained Melvin soils and have formed from similar material.

The Lindside soils make up about 1.2 percent of the county and are chiefly in the northeastern part. The native vegetation consists mainly of mixed stands of hardwoods, pines, and redcedar. Most of the acreage has been cleared.

Lindside silt loam (Ld).—This is a moderately well drained soil on first bottoms.

Representative profile:

0 to 7 inches, dark-brown, very friable silt loam.
7 to 21 inches, dark grayish-brown, friable silt loam.
21 to 28 inches, dark-brown, friable heavy silt loam with common mottles of gray and brown.
28 to 46 inches, mottled grayish-brown, dark-brown, and yellowish-brown, friable silt loam to silty clay loam.

This soil is slightly acid to medium acid. Natural fertility and the content of organic matter are medium. The soil is generally in good tilth, has a high available moisture capacity, responds well to management, and consequently is well suited to cultivation. Excess water is a moderate hazard. (Capability unit IIw–41; woodland suitability group 1B)

Lindside silt loam, local alluvium (Le).—This moderately well drained soil is generally in upland depressions.

Representative profile:

0 to 22 inches, reddish-brown, friable silt loam.
22 to 28 inches, light yellowish-brown, friable silt loam mottled with yellow and brown.
28 to 42 inches +, mottled gray and brown, friable silty clay loam to silty clay; blocky structure.

This soil is medium in natural fertility, contains a moderate amount of organic matter, and is slightly acid to medium acid. It is generally in good tilth, responds well to management, has a high available moisture capacity, and is well suited to cultivation. Excess water is the chief limitation to cultivation. (Capability unit IIw–41; woodland suitability group 1B)

Linker Series

In the Linker series are deep, friable, well-drained soils that developed in residuum from sandstone that has been influenced by acid shale. Uneroded areas have a surface

layer of very dark grayish-brown fine sandy loam and a subsoil of yellowish-red to red loam to fine sandy clay loam.

Linker soils occur with Albertville and Ramsey soils and are redder than those soils. They are coarser textured than the Albertville soils and are thicker and finer textured than the Ramsey soils.

The Linker soils make up about 2 percent of the county and are in the southeastern part. The native vegetation consists chiefly of oak, pine, hickory, blackgum, and dogwood. About three-fourths of the acreage has been cleared.

Linker fine sandy loam, 2 to 6 percent slopes, eroded (LkB2).—This deep, well-drained soil is on mountain uplands and has a friable loam subsoil.

Representative profile:

0 to 8 inches, very dark grayish-brown, very friable fine sandy loam.
8 to 42 inches, yellowish-red, friable loam; weak, blocky structure.
42 to 54 inches, yellowish-red, friable loam with fine, red and light-gray mottles.
54 inches +, fine-grained sandstone bedrock.

This soil is low in natural fertility and organic-matter content and is strongly acid. Infiltration is medium, and permeability is moderate. The soil is generally in good tilth, responds well to management, and is well suited to cultivation. Most all the acreage has been cleared and is used for crops and pasture. Erosion is the chief limitation to cultivation. (Capability unit IIe–12; woodland suitability group 3A).

Linker fine sandy loam, 6 to 10 percent slopes (LkC).—This strongly sloping soil is slightly thinner than Linker fine sandy loam, 2 to 6 percent slopes, eroded. It is fairly well suited to cultivation but is highly erodible. Surface runoff is medium; the available moisture capacity is moderate. Most of the acreage is forested. (Capability unit IIIe–12; woodland suitability group 3A)

Linker fine sandy loam, 6 to 10 percent slopes, eroded (LkC2).—This strongly sloping soil is thinner than Linker fine sandy loam, 2 to 6 percent slopes, eroded. In most places the surface layer is grayish-brown to yellowish-brown fine sandy loam. Included, however, are severely eroded areas too small to be mapped separately that have a surface layer of strong-brown sandy clay loam.

This soil is moderately well suited to cultivation. Surface runoff is medium, the available moisture capacity is moderate, and the erosion hazard is moderate to severe. In this county this soil is the most extensive in the Linker series. Practically all of it has been cleared and is mostly used for crops and pasture, but a small acreage has been reforested to loblolly pine. (Capability unit IIIe–12; woodland suitability group 3A)

Linker fine sandy loam, 10 to 15 percent slopes, eroded (LkD2).—This moderately steep, eroded soil is 1 to 3 inches thinner in the surface layer than Linker fine sandy loam, 2 to 6 percent slopes, eroded. The present surface layer is generally grayish brown to yellowish brown. Small included areas are uneroded or are severely eroded.

The available moisture capacity of this soil is moderate, surface runoff is medium to rapid, and the erosion hazard is severe. Most of this inextensive soil has been cleared and used as cropland and pasture. Some areas are reverting to trees, mainly loblolly and shortleaf pines. (Capability unit IVe–11; woodland suitability group 3A)

Melvin Series

In the Melvin series are light-colored, poorly drained soils on first bottoms in the limestone valleys. These soils formed from young alluvium that washed mainly from soils of uplands that are underlain by limestone.

Melvin soils occur mainly with the well-drained Huntington and the moderately well drained Lindside soils. In places they occur with the dark grayish-brown, poorly drained Dunning soils.

The Melvin soils make up about 0.8 percent of the county and are chiefly in the northeastern part. The native vegetation consists of hardwoods, including several kinds of water-tolerant oak, red maple, sweetgum, poplar, willow, and elm. About one-fourth of the acreage has been cleared.

Melvin silt loam (Me).—This is a poorly drained soil on first bottoms in limestone valleys.

Representative profile:

0 to ½ inch, very dark grayish-brown, very friable silt loam.
½ inch to 8 inches, light-gray, friable silt loam with few, faint mottles of dark gray and brown.
8 to 24 inches, mottled brown and gray, friable silt loam.
24 to 52 inches, mottled gray and brown, friable to firm silt loam to silty clay loam; weak, fine, blocky structure.

This soil is medium in natural fertility, has a low content of organic matter, and has a medium to high available moisture capacity. About one-fourth of the acreage is in cultivated crops and pasture. Excess water is a hazard and limits the kinds of crops that can be grown. (Capability unit IIIw–41; woodland suitability group 1B)

Mine Pits and Dumps

This land type consists of areas that have been strip mined for iron ore.

Mine pits and dumps (Mp).—This land is in the vicinity of Russellville and Belgreen and is made up of steep, uneven piles of overburden and deep cuts. The material on the surface is a mixture of the original soil and underlying gravel, and in places limestone. Deep channels, unfilled pits, and high, cone-shaped piles remain where seams of iron ore have been removed through strip mining.

In many places, revegetation of this land type is difficult because the soil material is steep and unevenly placed. The hazard of erosion is severe, the available moisture capacity is low, and the raw soil material is generally unfavorable for plant growth. Some of the older areas have seeded naturally to loblolly pine. (Capability unit VIIs–48; woodland suitability group 3)

Ochlockonee Series

In the Ochlockonee series are deep, well-drained soils that occupy first bottoms of streams in the Coastal Plain. These soils developed in alluvium that washed chiefly from soils in sandy Coastal Plain material and partly from soils that originated from limestone and sandstone.

The Ochlockonee soils occur with the moderately well drained Iuka and the poorly drained Bibb soils and, like them, are subject to flooding in winter and spring.

The Ochlockonee soils occur along streams in all parts of the county except the northeastern, and they make up about 1.8 percent of the total acreage. The native vegetation consists chiefly of water, willow, and swamp

chestnut oaks, gum, hickory, beech, and poplar. Much of the acreage has been cleared.

Ochlockonee fine sandy loam (Oc).—This is a well-drained, sandy soil on first bottoms.

Representative profile:

0 to 7 inches, brown, very friable fine sandy loam.
7 to 28 inches, brown, friable silt loam.
28 to 38 inches, dark-brown, friable loam.
38 to 72 inches, dark grayish-brown, loose loamy fine sand.

This soil is medium in natural fertility and organic-matter content and is strongly acid to very strongly acid. It is generally in good tilth, has a high available moisture capacity, responds well to management, and is well suited to cultivation. Nearly all the acreage is used for crops and pasture. Flooding is the main limitation to cultivation. (Capability unit IIw–12; woodland suitability group 1)

Ora Series

In the Ora series are moderately deep, moderately well drained soils that have a fragipan at a depth of 18 to 30 inches. These soils are on gently sloping to sloping uplands in the Coastal Plain. Forested areas have a surface layer of dark grayish-brown fine sandy loam that is underlain by strong-brown to yellowish-red loam and that, in turn, by a fragipan at a depth of 18 to 28 inches. In some places near Hodges and Vina, the fragipan is underlain by a layer of firm silty clay loam to silty clay, and in these areas the soil is mapped as a phase with a heavy substratum.

Ora soils occur with Savannah, Saffell, and Cuthbert soils. They have a fragipan like that in Savannah soils, but they are redder than those soils. Ora soils are redder and less gravelly than Saffell soils and are coarser textured and more friable in the subsoil than Cuthbert soils.

The Ora soils make up only about 1.5 percent of the county and are scattered throughout the southern and western parts. The native vegetation consists chiefly of loblolly and shortleaf pines, white, red, and post oaks, hickory, blackgum, and dogwood. Most of the acreage has been cleared.

Ora fine sandy loam, 2 to 6 percent slopes, eroded (OrB2).—This is a moderately well drained soil on the Coastal Plain. It has a fragipan that retards the movement of water and the growth of roots.

Representative profile:

0 to 4 inches, grayish-brown, very friable fine sandy loam.
4 to 22 inches, yellowish-red, friable loam; medium, blocky structure.
22 to 42 inches, brown, firm to very firm, brittle fine sandy loam mottled with gray, brown, and red.
42 to 72 inches, mottled red, brown, and gray, firm fine sandy loam.

This soil is moderately well suited to well suited to cultivation. It is generally in good tilth and responds well to management but has a moderate to low available moisture capacity. Natural fertility and content of organic matter are low. Reaction is strongly acid to very strongly acid. Permeability of the subsoil is moderate except in the fragipan, where it is slow.

About two-thirds of the acreage of this soil has been cleared and is used for crops and pasture. Erosion is the main limitation to cultivation. (Capability unit IIe–15; woodland suitability group 2C)

Ora fine sandy loam, heavy substratum, 2 to 6 percent slopes, eroded (OsB2).—This moderately well drained soil has a fragipan that is underlain by a heavy substratum.

Representative profile:

0 to 4 inches, dark yellowish-brown, friable fine sandy loam; few to common fragments of iron crust ¼ to 2 inches across.
4 to 20 inches, strong-brown, friable loam; blocky structure; few fragments of iron crust ¼ to 2 inches across.
20 to 28 inches, strong-brown, very firm, compact and brittle fine sandy loam or loam mottled with brown and gray; common, hard fragments of iron crust ¼ to 2 inches across.
28 to 48 inches +, mottled yellow, red, gray, and brown, firm to very firm silty clay loam to silty clay.

This soil is generally in good tilth and responds well to management. It has a moderate to low available moisture capacity, is low in natural fertility and organic-matter content, and is strongly acid to very strongly acid. Permeability of the subsoil is moderate above the fragipan but is slow to very slow in it. This soil is moderately well suited or well suited to cultivation. About two-thirds of the acreage has been cleared and is used for crops and pasture. Erosion is the main limitation to cultivation. (Capability unit IIe–15; woodland suitability group 2C)

Ora fine sandy loam, 6 to 10 percent slopes (OrC).—Although this soil is more strongly sloping than Ora fine sandy loam, 2 to 6 percent slopes, eroded, it is less eroded and is dark grayish brown instead of grayish brown in the surface layer. This soil is very strongly acid, is low in natural fertility, has a medium content of organic matter, and has a moderately low available moisture capacity. The total acreage is small and is mostly in forest. Erosion is the main limitation in cropped areas. (Capability unit IIIe–15; woodland suitability group 2C)

Ora fine sandy loam, 6 to 10 percent slopes, eroded (OrC2).—This strongly sloping soil is generally thinner than Ora fine sandy loam, 2 to 6 percent slopes, eroded. Included are some severely eroded areas that are too small to be shown on the map.

This soil is low in natural fertility and organic-matter content and is very strongly acid. It has a moderately low available moisture capacity. It is moderately well suited to cultivation, but the hazard of further erosion is moderate to severe. Most of the acreage has been cleared and is used for crops and pasture. (Capability unit IIIe–15; woodland suitability group 2C)

Prentiss Series

In the Prentiss series are moderately deep soils that have a fragipan and are moderately well drained. These soils are on stream terraces and have formed in alluvium washed mostly from soils of the Coastal Plain, including the Savannah, Ora, Ruston, Saffell, Greenville, and Cuthbert soils. The Prentiss soils have a surface layer of dark-brown fine sandy loam and a subsoil of yellowish-brown, friable loam.

Prentiss soils occur with Tilden and Cahaba soils and are yellower through the profile than those soils. Like Tilden soils, however, Prentiss soils have a well-developed fragipan, which is absent in Cahaba soils.

The Prentiss soils make up about 0.4 percent of the county; their largest areas are along Bear Creek near Red Bay. The native vegetation consists chiefly of oak,

hickory, pine, beech, elm, poplar, and dogwood. Most of the acreage has been cleared.

Prentiss fine sandy loam, 0 to 2 percent slopes (PrA).—This moderately well drained soil on stream terraces has a fragipan.

Representative profile:

0 to 10 inches, dark-brown, very friable fine sandy loam.
10 to 24 inches, yellowish-brown, friable loam; weak, fine, blocky structure.
24 to 38 inches, yellowish-brown, firm and brittle fine sandy loam that is mottled with gray and brown.
38 to 54 inches, light olive-brown, friable to firm fine sandy loam mottled with gray.

This soil is low in natural fertility and has a low content of organic matter. It is strongly acid to very strongly acid. The subsoil is moderately permeable except in the fragipan, where it is slowly permeable. The soil is generally in good tilth, has a moderate available moisture capacity, responds well to management, and is well suited to cultivation. Nearly all of the acreage is used for crops and pasture. Excess water restricts tillage and other field operations at times. (Capability unit IIw-15; woodland suitability group 2A)

Prentiss fine sandy loam, 2 to 6 percent slopes (PrB).—This gently sloping soil is 2 to 5 inches thinner in the surface layer than Prentiss fine sandy loam, 0 to 2 percent slopes.

This inextensive soil is well suited to cultivation. It has a moderately thick root zone, is generally in good tilth, and has a moderate available moisture capacity. The erosion hazard is moderate. Most of the acreage has been cleared and is used for crops and pasture. (Capability unit IIe-15; woodland suitability group 2C)

Ramsey Series [5]

Soils of the Ramsey series are shallow to very shallow and are excessively drained. These soils developed in residuum derived chiefly from sandstone and shale. Their surface layer of grayish-brown to very dark grayish-brown fine sandy loam is underlain by thin layers of light olive-brown to yellowish-brown fine sandy loam. Depth to bedrock is 10 to 20 inches.

Ramsey soils occur with Linker and Albertville soils and are shallower and coarser textured than those soils.

Ramsey soils in the county make up only about 0.3 percent of the total acreage. The native vegetation consists chiefly of red, post, and white oaks, hickory, poplar, sweetgum, dogwood, ash, and loblolly, shortleaf, and Virginia pines. Most of the acreage is in forest.

Ramsey fine sandy loam, 10 to 15 percent slopes (RaD).—This is a shallow to very shallow, excessively drained soil that has developed in residuum weathered chiefly from sandstone.

Representative profile:

0 to 3 inches, very dark grayish-brown, very friable fine sandy loam.
3 to 9 inches, dark-brown, very friable fine sandy loam.
9 to 14 inches, yellowish-brown, loose stony sandy loam with few sandstone fragments 2 to 8 inches across.
14 inches +, sandstone bedrock.

Because it is moderately steep and has a shallow root zone, this soil is not suited to row crops and is only fairly well to poorly suited to pasture. It is well suited to loblolly and Virginia pines. Most of the acreage is forested. (Capability unit VIe-49; woodland suitability group 3D)

[5] The Ramsey series has been mapped as the Muskingum series in other counties in Alabama.

Rock Land

Rock land consists of areas in which 30 to 90 percent of the surface is covered by outcrops of bedrock and by loose boulders and fragments of rock.

Rock land, limestone (Ro).—This land type consists of nearly level to steep areas where limestone occurs on the surface as outcrops of bedrock and as loose boulders and fragments of rock. Between the boulders and outcrops is very firm, plastic, sticky silty clay or clay of varying depth, and in places there is a thin mantle of sandy colluvium that came from higher soils derived from limestone and shale. Most slopes range from 2 to 25 percent.

This land type is extensive and makes up about 8 percent of the county. The larger areas occur along the base of the mountains between Rockwood and the Lawrence County line. Smaller areas are along Duncan Creek and in the vicinity of Frankfort.

Generally, not enough soil is in this land type to permit cultivation, and nearly all of the acreage is forested. The native vegetation is chiefly red, post, white, and scarlet oaks, hickory, maple, redbud, walnut, and redcedar. In places redcedar is the most common tree. Scattered in the forest are a few pines. (Capability unit VIIs-48; woodland suitability group 6)

Rock land, sandstone (Rs).—Sandstone boulders, outcrops, and fragments of loose sandstone cover 30 to 90 percent of this land type. Slopes range from 15 to 35 percent.

Rock land, sandstone, occurs with Ramsey fine sandy loam and Guin gravelly sandy loam, and small areas of those soils are included with it.

This land type is extensive in the county and is mainly in the southeastern part, where a few areas are locally called bluffy areas. Practically all of the acreage is forested. The major forest trees are red, white, and post oaks, black locust, red maple, black cherry, poplar, hickory, and loblolly, shortleaf, and Virginia pines. (Capability unit VIIs-48; woodland suitability group 5)

Ruston Series

In the Ruston series are brown to yellowish-red, sandy soils that occupy Coastal Plain uplands and are deep and well drained. In forested areas these soils have a surface layer of dark grayish-brown fine sandy loam and a subsoil of strong-brown to yellowish-red, friable very fine sandy clay loam. In most places the soils are underlain by loamy fine sand.

The Ruston soils occur with the Ora, Savannah, Saffell, and Greenville soils. They lack the fragipan of Ora and Savannah soils and are less gravelly than Saffell soils. The subsoil of Ruston soils is redder than that of Savannah soils and is lighter colored, coarser textured, and more friable than that of Greenville soils.

The Ruston soils make up about 4.2 percent of the county and occur throughout the Coastal Plain area. The native vegetation consists mainly of post, red, white,

and scarlet oaks, hickory, dogwood, and pine. Much of the acreage has been cleared.

Ruston fine sandy loam, 2 to 6 percent slopes, eroded (RuB2).—This is a deep, well-drained soil on Coastal Plain uplands.

Representative profile:

0 to 6 inches, dark-brown, very friable fine sandy loam.
6 to 32 inches, yellowish-red, friable very fine sandy clay loam.
32 to 45 inches, yellowish-red fine sandy loam.
45 to 72 inches, red, loose sandy loam splotched with yellowish red.

The soil is low in natural fertility and organic-matter content and is strongly acid to very strongly acid. It is generally in good tilth, responds well to management, and has moderate available moisture capacity. This soil is well suited to cultivation but is moderately susceptible to erosion. About two-thirds of the acreage is used for crops and pasture. Erosion is the major limitation to cultivation. (Capability unit IIe-12; woodland suitability group 2B)

Ruston fine sandy loam, 6 to 10 percent slopes (RuC).—The surface layer of this strongly sloping soil is dark grayish brown and is thicker than that of Ruston fine sandy loam, 2 to 6 percent slopes, eroded.

This soil is suited to moderately intensive cultivation, but it is mostly in forest consisting of mixed hardwoods and pines. The available moisture capacity is moderate, surface runoff is moderate, and the hazard of erosion is moderate to severe. (Capability unit IIIe-12; woodland suitability group 2B)

Ruston fine sandy loam, 6 to 10 percent slopes, eroded (RuC2).—This strongly sloping soil is thinner than Ruston fine sandy loam, 2 to 6 percent slopes, eroded. It is suited to moderately intensive use, but surface runoff is moderate, and the erosion hazard is moderate to severe. The available moisture capacity is moderate.

In Franklin County this soil is the most extensive soil of the Ruston series. Most of it has been cleared and used for crops and pasture, but some acreage has been reforested to loblolly pine. (Capability unit IIIe-12; woodland suitability group 2B)

Ruston fine sandy loam, 6 to 10 percent slopes, severely eroded (RuC3).—This strongly sloping soil is more severely eroded and is much thinner than Ruston fine sandy loam, 2 to 6 percent slopes, eroded.

Surface runoff from this soil is medium to high and the erosion hazard is severe. The available moisture capacity is moderate to low. Tilth is generally fair.

All of this inextensive soil has been cleared and used for crops and pasture at one time. A large acreage, however, is reverting to loblolly pine, a small acreage is in crops and pasture, and the rest is idle. (Capability unit IVe-11; woodland suitability group 2D)

Ruston fine sandy loam, 10 to 15 percent slopes, eroded (RuD2).—This moderately steep soil is thinner than Ruston fine sandy loam, 2 to 6 percent slopes, eroded. It is only fairly well suited to cultivation and is highly susceptible to erosion. Surface runoff is medium to rapid, and the available moisture capacity is moderate. The soil has a small total acreage, most of which has been cleared and used for crops and pasture. Some areas, however, are reverting to trees, chiefly loblolly pine. (Capability unit IVe-11; woodland suitability group 2D)

Ruston fine sandy loam, 10 to 15 percent slopes, severely eroded (RuD3).—This moderately steep soil is thinner than Ruston fine sandy loam, 2 to 6 percent slopes, eroded, and is more severely eroded. Shallow gullies are common, and a few deep ones have formed. Included are a few small areas on 15 to 25 percent slopes. This soil has a low available moisture capacity, has medium to rapid runoff, is subject to further severe erosion, and consequently is not suited to cultivation. Tilth is generally fair.

This soil is inextensive in the county. Practically all of the acreage has been cleared, but most of it is reverting to trees, chiefly loblolly and Virginia pines. (Capability unit VIe-111; woodland suitability group 2D)

Saffell Series

In the Saffell series are gently sloping and sloping, gravelly, well-drained soils on uplands of the Coastal Plain. Uneroded places have a surface layer of very dark grayish-brown gravelly fine sandy loam and a subsoil of strong-brown, gravelly fine sandy loam to sandy clay loam. Saffell soils formed from underlying beds of sand, fine sandy loam, and gravel.

The Saffell soils occur with the Ora, Ruston, Savannah, and Guin soils and are more gravelly throughout than all those soils. They have a yellower subsoil than Ora and Ruston soils and lack the fragipan of Ora and Savannah soils. They are less strongly sloping than Guin soils and have better developed horizons.

The Saffell soils make up about 5.1 percent of the county. The largest areas are in the Gravel Hill community. The native vegetation consists mainly of oak, hickory, gum, dogwood, ash, sourwood, persimmon, and pine. Most of the acreage has been cleared.

Saffell gravelly fine sandy loam, 2 to 6 percent slopes (SaB).—This is a gravelly, well-drained soil on uplands.

Representative profile:

0 to 11 inches, dark grayish-brown, friable gravelly fine sandy loam.
11 to 24 inches, strong-brown, friable gravelly fine sandy clay loam; weak, fine, blocky structure.
24 to 35 inches, yellowish-red, friable gravelly fine sandy loam with few splotches of red.
35 to 72 inches +, yellowish-red, loose gravelly loamy fine sand.

This soil is low in natural fertility, contains a small amount of organic matter, has a low available moisture capacity, and is strongly acid. However, it is generally in good tilth, responds well to management, and is well suited to cultivation. Erosion is a moderate hazard, and gravel hinders cultivation in some places. Most of the acreage is used for crops and pasture. (Capability unit IIe-12; woodland suitability group 2B)

Saffell gravelly fine sandy loam, 6 to 10 percent slopes (SaC).—This strongly sloping soil has a darker colored surface layer than Saffell gravelly fine sandy loam, 2 to 6 percent slopes.

This soil is suited to moderately intensive use, but most of the acreage has never been cleared and is in mixed stands of hardwoods and pines. Tilth is generally good, the available moisture capacity is low, surface runoff is moderate, and the erosion hazard is moderate to severe. (Capability unit IIIe-12; woodland suitability group 2B)

Saffell gravelly fine sandy loam, 6 to 10 percent slopes, eroded (SaC2).—This strongly sloping, eroded soil is thinner in the surface layer than Saffell gravelly fine sandy loam, 2 to 6 percent slopes.

This soil is fairly extensive and is fairly well suited to cultivation. Although tilth is generally good, the available moisture capacity is low, surface runoff is moderate, and the erosion hazard is moderate to severe. Most of the acreage has been cleared and is used for tilled crops and pasture. (Capability unit IIIe–12; woodland suitability group 2B)

Savannah Series

In the Savannah series are nearly level to strongly sloping, moderately well drained soils that are on uplands and have a fragipan. Uneroded areas have a surface layer of dark grayish-brown very fine sandy loam and a subsoil of olive-brown to yellowish-brown loam. These soils are generally underlain with beds of sand, fine sand, and gravel.

Savannah soils occur chiefly with the Ora and Saffell soils. They have a fragipan like that in the Ora soils but are yellower in the subsoil. They are much less gravelly than Saffell soils, which lack a fragipan.

The Savannah soils make up about 9.8 percent of the total acreage of the county and occur throughout the southern and western parts. The native vegetation consists chiefly of oak, hickory, dogwood, and gum, and there are scattered pines. Most of the acreage has been cleared.

Savannah very fine sandy loam, 2 to 6 percent slopes, eroded (SnB2).—This is a moderately well drained soil on uplands. The subsoil of light olive-brown to yellowish-brown loam contains a fragipan.

Representative profile:

0 to 6 inches, grayish-brown, very friable very fine sandy loam.
6 to 19 inches, light olive-brown to light yellowish-brown, friable loam; weak, blocky structure.
19 to 37 inches, mottled gray, brown, and yellowish-red, firm, compact, brittle loam (fragipan).
37 to 72 inches, mottled yellowish-brown, light brownish-gray, and yellowish-red, firm fine sandy clay loam.

This soil is low in natural fertility, has a low content of organic matter, and is strongly acid. Tilth is generally good. The erosion hazard is only moderate. The soil responds well to management and is well suited to cultivation. The amount of moisture available to plants is low, however, because the fragipan slows the movement of water in the subsoil. The fragipan also restricts the growth of roots. (Capability unit IIe–15; woodland suitability group 2C)

Savannah very fine sandy loam, 0 to 2 percent slopes (SnA).—This nearly level soil is 2 to 5 inches thicker in the surface layer than Savannah very fine sandy loam, 2 to 6 percent slopes, eroded.

This soil is well suited to cultivation, for it is generally in good tilth and responds well to amendments. The fragipan, however, retards water movement, limits the depth of the root zone, and reduces the moisture available to plants. This soil is inextensive in the county; it is mostly cleared and is used for crops and pasture. (Capability unit IIw–15; woodland suitability group 2A)

Savannah very fine sandy loam, 2 to 6 percent slopes (SnB).—The surface layer of this soil is 3 to 6 inches thicker than that of Savannah very fine sandy loam, 2 to 6 percent slopes, eroded. This soil is low in natural fertility, has a medium to low content of organic matter, and is strongly acid. The available moisture capacity is moderate to low. Most of the acreage is forested. If cleared and cultivated, this soil is moderately susceptible to erosion. (Capability unit IIe–15; woodland suitability group 2C)

Savannah very fine sandy loam, 6 to 10 percent slopes (SnC).—This strongly sloping soil is thinner than Savannah very fine sandy loam, 2 to 6 percent slopes, eroded. It is fairly well suited to cultivation but has a fragipan that restricts the root zone and limits the moisture available to plants. Most of the acreage is forested. In areas that are cleared and cropped, erosion is a major hazard. (Capability unit IIIe–15; woodland suitability group 2C)

Savannah very fine sandy loam, 6 to 10 percent slopes, eroded (SnC2).—This soil is more strongly sloping and is thinner than Savannah very fine sandy loam, 2 to 6 percent slopes, eroded. It is extensive in this county. Most of the acreage is cleared and used for crops and pasture. Erosion is a major hazard. (Capability unit IIIe–15; woodland suitability group 2C)

Savannah loam, 6 to 10 percent slopes, severely eroded (ShC3).—This strongly sloping, severely eroded soil has a thinner and finer textured surface layer than Savannah very fine sandy loam, 2 to 6 percent slopes, eroded, and generally is shallower to parent material. Surface runoff is medium to high, the available moisture capacity is low, and the erosion hazard is severe. Tilth is generally fair.

All of this soil has been cleared and used for crops and pasture. About 30 percent of the acreage is now cropped; the rest has been reforested to loblolly pine or is idle. (Capability unit IVe–115; woodland suitability group 2D)

Slickens

In this miscellaneous land type are deposits of fine-textured sediments that were separated from iron ore when it was washed.

Slickens (Ss).—These deposits are in natural basins and in low-lying areas that have been dammed. They consist of yellowish-brown to dark reddish-brown silt or clay that is 2 to 10 feet deep or more. The surface layer swells on wetting and cracks badly on drying, but the underlying material remains wet during prolonged dry periods. Recent deposits are too soft to be of economic use, but areas of older material are used for pasture and hay crops. Some areas are planted to loblolly pine. (Capability unit VIIs–48; woodland suitability group 3)

Talbott Series

In the Talbott series are gently sloping and sloping, moderately well drained soils in limestone valleys. These soils have a plastic subsoil and are underlain by limestone. In forested areas they have a surface layer of dark reddish-brown silt loam and a subsoil of yellowish-red to red, plastic silty clay or clay.

The Talbott soils occur with the Decatur and Colbert soils. They have a thinner, tougher, more plastic subsoil than Decatur soils. They are redder than Colbert soils and have a thicker, less plastic subsoil.

Talbott soils make up about 1.4 percent of the county and are mainly in the northeastern part. Their native vegetation consists mostly of white, post, and red oaks, hickory, and redcedar. Some loblolly and shortleaf pines grow on cutover areas. Much of the acreage has been cleared.

Talbott silt loam, 2 to 6 percent slopes, eroded (TaB2).—This moderately well drained soil has a red, plastic subsoil over limestone.

Representative profile:

0 to 4 inches, reddish-brown, friable silt loam.
4 to 15 inches, red, firm, plastic silty clay or clay with a few, fine mottles of yellowish brown; medium, blocky structure.
15 to 24 inches, yellowish-red, firm, plastic clay mottled with yellow and brown; moderate, blocky structure.
24 to 72 inches, mottled yellow, brown, and gray, very firm, plastic heavy clay.

This soil is strongly acid and is medium in natural fertility and organic-matter content. It is generally in good tilth, has a moderate to low available moisture capacity, and responds well to fertilization. It is fairly well suited to cultivation, but the risk of further erosion is great. Practically all of the acreage is used for crops and pasture. (Capability unit IIIe–46; woodland suitability group 3A)

Talbott silty clay, 2 to 6 percent slopes, severely eroded (TbB3).—This gently sloping soil has lost three-fourths or more of the original surface layer and, in places, some of the subsoil. The present surface layer is red, sticky, plastic silty clay and is thinner, redder, and finer textured than that of Talbott silt loam, 2 to 6 percent slopes, eroded. Shallow gullies are common in some areas.

This inextensive soil is generally in fair tilth and is fairly well suited to cultivation, but erosion is a major problem. Most of the acreage has been cleared. (Capability unit IVe–448; woodland suitability group 3A)

Talbott silt loam, 6 to 10 percent slopes, eroded (TaC2).—This strongly sloping soil is thinner than Talbott silt loam, 2 to 6 percent slopes, eroded. Its inextensive acreage in the county is mostly cleared. The soil has a moderate to low available moisture capacity, is in fair to good tilth, responds well to fertilization, and is fairly well suited to cultivation. Erosion is a major hazard. (Capability unit IVe–48; woodland suitability group 3A)

Talbott silty clay, 6 to 10 percent slopes, severely eroded (TbC3).—This strongly sloping soil has had 75 percent or more of its original surface layer washed away and, in places, some of the upper subsoil. The present surface layer of tough, plastic, red silty clay is thinner, redder, and finer textured than that of Talbott silt loam, 2 to 6 percent slopes, eroded.

All of this inextensive soil has been cleared, but it is poorly suited to cultivation. Tilth is generally fair to poor, runoff is moderate to rapid, infiltration is generally slow, and the erosion hazard is very severe. (Capability unit VIe–48; woodland suitability group 3B)

Tilden Series

In the Tilden series are moderately well drained soils that occupy stream terraces and have a fragipan. These soils developed chiefly in old alluvium that washed from soils of the Coastal Plain. Uneroded areas have a dark-brown fine sandy loam surface layer and a yellowish-red, friable loam subsoil.

Tilden soils occur with Cahaba and Prentiss soils. They resemble Cahaba soils in color and texture of the upper subsoil, but they are less well drained than Cahaba soils, which do not have a fragipan. Tilden soils are browner or redder than Prentiss soils.

These soils amount to only about 0.13 percent of the county. The largest areas are along Little Bear Creek east of Red Bay and along Cedar Creek near Pogo. The native vegetation consists chiefly of oak, hickory, gum, beech, elm, dogwood, poplar, and pine. Much of the acreage has been cleared.

Tilden fine sandy loam, 2 to 6 percent slopes (TdB).—This moderately well drained soil is on stream terraces and has a fragipan.

Representative profile:

0 to 8 inches, dark-brown, very friable fine sandy loam.
8 to 21 inches, yellowish-red heavy loam to light clay loam; fine, blocky structure.
21 to 37 inches, yellowish-red, firm, brittle fine sandy clay loam mottled with yellow.
37 to 52 inches +, mottled strong-brown, light brownish-gray, and yellowish-brown, friable to firm fine sandy loam.

This soil is well suited to cultivation. Although it is low in natural fertility and organic-matter content and is medium acid to strongly acid, it is generally in good tilth, has a moderate available moisture capacity, and responds fairly well to management. The lower subsoil is slowly to very slowly permeable because of the fragipan.

Most of this soil has been cleared and is used for crops and pasture. Erosion is a moderate hazard. (Capability unit IIe–15; woodland suitability group 2C)

Tupelo Series

Soils of the Tupelo series are on nearly level stream terraces in the limestone valleys and are somewhat poorly drained. These soils developed in fine-textured, old alluvium that washed from soils derived mainly from clayey limestone that was influenced by sandstone and shale.

Tupelo soils occur with Captina and Colbert soils. They are similar to Colbert soils in texture and color but are more poorly drained. The Tupelo soils, unlike the Captina soils, have a mottled, clayey subsoil and lack a fragipan.

The Tupelo soils make up only about 0.20 percent of the county and are chiefly in the northeastern part. The native vegetation consists chiefly of red, blackjack, and post oaks, gum, hickory, maple, and loblolly, shortleaf, and Virginia pines.

Tupelo silt loam, 0 to 2 percent slopes (TuA).—This somewhat poorly drained soil on stream terraces has a yellowish-brown, clayey subsoil that is firm and plastic.

Representative profile:

0 to 8 inches, dark grayish-brown, friable silt loam.
8 to 13 inches, yellowish-brown, firm, plastic silty clay loam mottled with brown; blocky structure.
13 to 24 inches, light olive-brown, very firm, plastic silty clay mottled with strong brown and gray; blocky structure.
24 to 54 inches, mottled yellowish-brown, brown, yellow, red, and gray clay; massive.

This soil is low in natural fertility, contains little organic matter, and is medium acid. It is generally in poor tilth and responds only fairly or poorly to management. Infiltration and permeability are slow to very slow, and the available moisture capacity is low. Most of the acreage has been cleared and is used for crops and pasture. However, the firm, plastic clay subsoil reduces the yields of some crops and, during wet periods, interferes with tillage

and other field operations. (Capability unit IIIw–42; woodland suitability group 3C)

Formation and Classification of Soils

This section has two main parts. The first part discusses the factors of soil formation. In the second part each soil series in the county is placed in higher categories, and some factors that have contributed to the morphology of the soils are given. Also in the second part is a description of each soil series, which includes a profile representative of the series.

Factors of Soil Formation

Soil is the product that results when the soil-forming processes act on materials deposited or accumulated by geologic agencies. The characteristics of the soil at any given point are determined by (1) the composition of the parent material; (2) the climate under which the soil material has accumulated and existed since accumulation; (3) the plant and animal life on and in the soil; (4) the relief, or lay of the land; and (5) the length of time the processes of soil development have acted on the soil material.

Climate and vegetation are the active factors of soil genesis. They act on the parent material and change it into a body having definite soil characteristics. The effects of climate and vegetation on the parent material are conditioned by relief, which influences drainage, the quantity of water that percolates through the soil, the rate of erosion, and the kind of vegetation that grows on the soil. The nature of the parent material also affects the kind of profile that can be formed. Time is needed for changing the parent material into soil. Generally, a long period is required for distinct soil horizons to develop.

The factors of soil genesis are so closely interrelated in their effects on the soil that few generalizations can be made regarding the effects of any one factor alone. This interrelationship is so complex that many of the processes that take place in the development of the soils are not known.

Parent material

Parent material is the unconsolidated mass from which a soil develops. It greatly influences the chemical and mineralogical composition of soils. On the basis of their parent material, the soils of Franklin County may be grouped into two classes: (1) those that formed in place in the weathered products of rock, and (2) those that formed in material transported by water or gravity and were laid down as deposits of gravel, sand, silt, and clay. The parent material of the first class of soils is generally related directly to the underlying rock, and that of the second class is related to the soils or the rocks from which it washed or rolled.

In this county the parent material that formed in place consists of residuum from sedimentary rocks, chiefly limestone, sandstone, and shale. Geologically, the rocks are very old. They were laid down as sediments and were gradually converted into rock. Their ages range from Mississippian to Pennsylvanian. Figure 12 shows the main gelogical formations in a typical cross section of Franklin County. As a rule, soils developed from residuum are related to a particular rock formation or part of a rock formation. The Linker and Ramsey soils are generally related to the sandier parts of the Pottsville formation of Pennsylvanian age. The Albertville soils are generally related to the more shaly parts of that formation. The Decatur soils are related to high-grade limestone of the Bangor (restricted) formation. The Talbott, Colbert, and Dowellton soils are formed from clayey limestone of the Pennington formation or from the Bangor (restricted) formation.

The parent materials that were transported by water or gravity are of two general kinds: (1) sediments of the Tuscaloosa formation in the Coastal Plain, and (2) alluvium and colluvium. A variety of soils developed from beds of sand, clay, and gravel of the Tuscaloosa formation. Some of these beds are known to be 1,000 feet thick (*1*) and probably are residues or mixtures of several kinds of material. The Greenville, Ruston, Savannah, Ora, Saffell, and Guin soils are generally related to the sandier parts of the Tuscaloosa formation, and the Cuthbert soils to the more clayey part.

The kinds of alluvium and colluvium are reflected in some of the characteristics of the soils derived from them. Some soils developed from general alluvium that washed from materials weathered mostly from limestone but influenced by sandstone and shale. They are the Captina, Tupelo, and Hollywood soils on stream terraces and foot slopes and in upland depressions; the much younger Lindside, Dunning, and Melvin soils on first bottoms; the Cane soils on foot slopes in old alluvium; and the local alluvium phases of the Huntington and Lindside soils. Other soils developed from general alluvium that washed chiefly from soils derived from Coastal Plain sediments that were influenced by sandstone, shale, and limestone. They are the Cahaba, Tilden, and Prentiss soils on stream terraces; the much younger Ochlockonee, Iuka, and Bibb soils on first bottoms; and the local alluvium phase of Iuka soils.

Climate

As a genetic factor climate affects the physical, chemical, and biological relationships in the soil primarily through the influences of precipitation and temperature. Water dissolves minerals, supports biological activity, and transports mineral and organic residues through the soil profile. In a broad area the amount of water that actually percolates through the soil depends mainly upon rainfall, relative humidity, and the length of the frost-free period. At a given point, the amount of downward percolation is also affected by physiographic position and soil permeability. Temperature influences the kinds and growth of organisms and the speed of physical and chemical reactions in soils. Microclimatic variations cause certain characteristics of the soils to differ from those developed under the prevailing macroclimate.

Under the present-day climate in Franklin County, the soils are moist and are subject to leaching much of the time from November 1 through June 30; are moderately moist much of the time from July 1 through August 30; and are moderately dry or dry much of the time from August 31 through October 31. The soils are frozen for only 1 to 4 days at a time, but freezing and thawing have some effect on weathering and soil-forming processes.

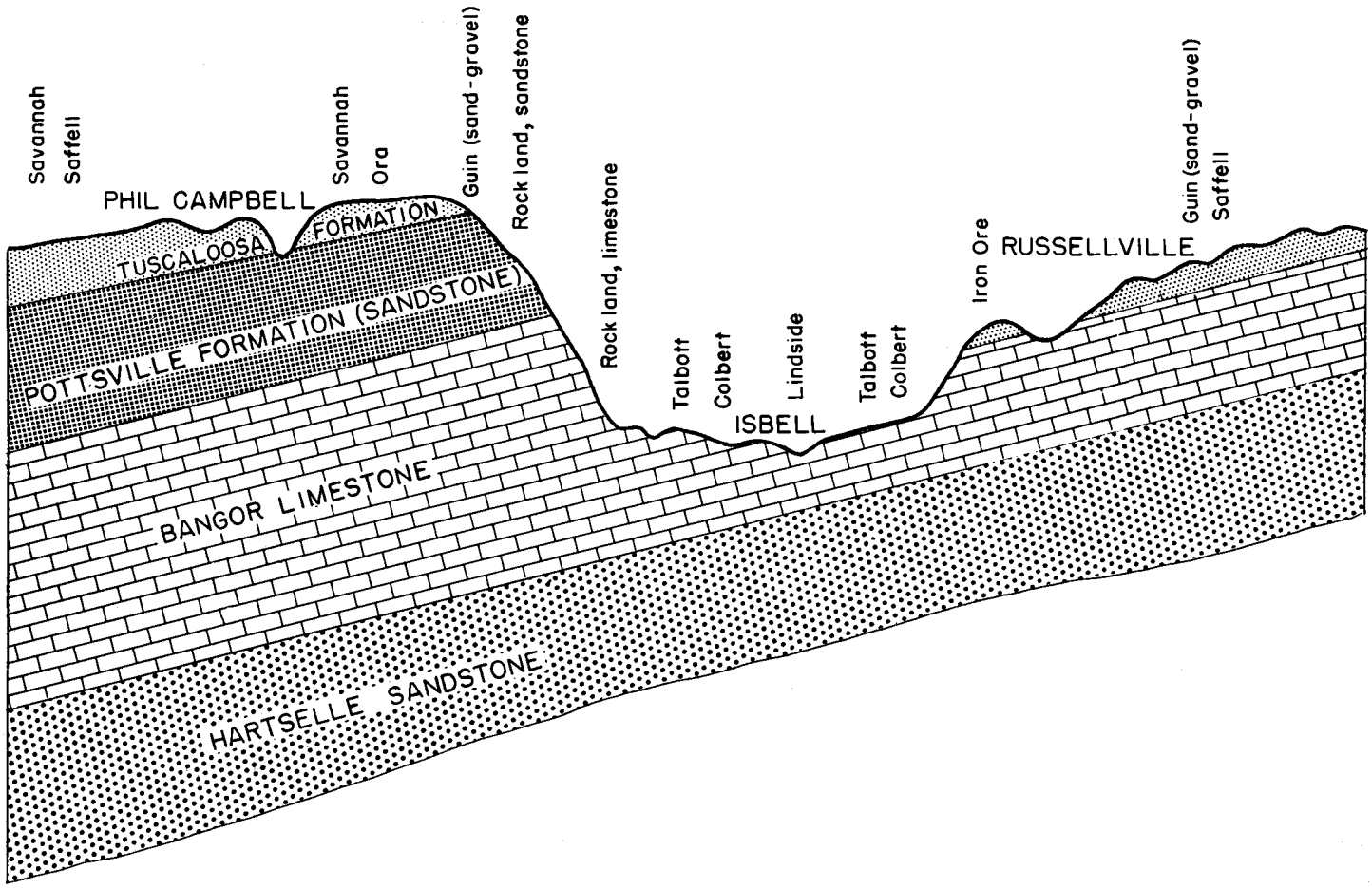

Figure 12.—**Typical cross section of Franklin County showing some of the soils in relation to topographic position and main geological formations.**

Plant and animal life

Active in soil forming are trees, shrubs, grasses, and other plants, as well as micro-organisms, earthworms, and various other forms of plant and animal life on and in the soil. The kinds of plants and animals that live on and in the soil are determined by environmental factors, which include climate, parent material, relief, and age of the soil.

Not much is known of the fungi and micro-organisms in the soil, except that they aid in weathering rock and in decomposing organic matter and that most of them are in the uppermost few inches. The earthworms and other small invertebrates are most active in the A1 horizon, where they slowly but continually mix the soil. The larger plants furnish organic matter and transfer elements from the subsoil to the surface soil.

The native vegetation on the well-drained, well-developed soils in this county was dominantly deciduous hardwoods, chiefly oak, hickory, and chestnut intermixed with some pine. On the bottom lands the trees were also hardwoods, mainly yellow-poplar, sweetgum, ash, oak, and sycamore. On the poorly drained bottom lands were willow, birch, blackgum, beech, water oak, willow oak, and other trees.

Relief

Relief is determined largely by the geological history of the region, including the resistance of the underlying bedrock to dissection by streams. Relief influences soil formation by affecting internal drainage, runoff, the rate of erosion, and other results of water action. The influence of relief is modified by the other four factors of soil formation.

The slopes in Franklin County range from 0 to about 40 percent. In upland areas Decatur, Greenville, Linker, and similar soils have thick, well-expressed profiles where they occur on slopes of 15 percent or less. On slopes of 15 to 40 percent, increased runoff caused by the steeper slopes tends to remove the soil almost as fast as it is formed. As a result, the profiles of many of the soils on steeper slopes, including those of the Muskingum and Guin series, are weakly expressed and have some characteristics of Lithosols. The alluvial soils are level or nearly level.

Time

The length of time required for soils to develop depends largely on the other factors of soil formation. Less time is generally required for a soil to develop in a humid, warm region with luxuriant vegetation than in a dry or cold region with scanty vegetation.

The soils of Franklin County range from young to very old. The young soils in the county are in two broad groups. In one group, the soil material has been in place for only a short time and has not been influenced enough by climate and vegetation for well-defined, genetically related horizons to develop. Most soils on first bottoms are of this kind. In the second group, the soil material is on steep slopes where genetically related horizons do not develop because the soil material is removed by erosion almost as fast as it forms.

Soils that have been in place for a long time and have approached equilibrium with their environment are considered mature or old. Some nearly level, well-drained soils that are only slightly eroded have more strongly marked profile characteristics than have some well-drained, well-developed soils on sloping uplands.

Classification of Soils

In the system of soil classification commonly used in the United States, soils are placed in four categories. From the broadest category to the narrowest, these are the order, great soil group, series, and type (*8*).

Soils in the broadest category are classified in three soil orders—zonal, intrazonal, and azonal. Each of these orders consists of a number of great soil groups. In each great soil group are soils that have many characteristics in common. The section "How Soils Are Mapped and Classified" describes how soils are classified in the lower categories—the soil series and soil type.

The classification of the soils in Franklin County by orders and great soil groups is discussed in this subsection and is shown in table 7. For each series, table 7 also gives a brief profile description, the topographic position, drainage, slope range, parent material, and degree of profile development.

Zonal soils are well drained and well developed. They have formed under nearly uniform vegetation and climate from parent material that has been in place for a long time but that has not been subject to extremes of relief. Climate and vegetation have had a greater influence on zonal soils than have relief and age. Thus the soils that developed from various kinds of parent material have many similar properties.

TABLE 7.—*Characteristics and genetic relationships of soil series*

ZONAL SOILS

Great soil group and soil series	Brief profile description [1]	Topographic position	Soil drainage class	Slope range	Parent material	Degree of profile development [2]
Red-Yellow Podzolic soils:						
Central concept:				*Percent*		
Albertville	Dark grayish-brown to light yellowish-brown fine sandy loam over yellowish-brown silty clay loam.	Uplands	Well drained	2 to 15	Residuum from sandstone and shale.	Moderate.
Cahaba	Dark grayish-brown to brown fine sandy loam over yellowish-red fine sandy clay loam.	Stream terraces.	Well drained	0 to 6	Alluvial and colluvial material from the Coastal Plains.	Strong.
Colbert	Dark grayish-brown silt loam underlain by mottled yellowish-brown to strong-brown and brownish-gray clay.	Uplands	Moderately well drained to somewhat poorly drained.	0 to 15	Residuum from argillaceous limestone.	Strong.
Cuthbert	Dark grayish-brown fine sandy loam over strong-brown silty clay loam to to clay.	Uplands	Moderately well drained.	6 to 25	Unconsolidated beds of sand, silt, and clay of the Coastal Plains.	Strong.
Linker	Very dark grayish-brown fine sandy loam over yellowish-red loam.	Uplands	Well drained	2 to 15	Residuum from sandstone.	Moderate.
Ruston	Grayish-brown fine sandy loam over yellowish-red very fine sandy clay loam.	Uplands	Well drained	2 to 15	Unconsolidated beds of sand and silt of the Coastal Plains.	Moderate.
Saffell	Dark grayish-brown gravelly fine sandy loam over yellowish-red gravelly fine sandy clay loam.	Uplands	Well drained	2 to 10	Beds of sand, sandy loam, and gravel of the Coastal Plains.	Moderate.
Talbott	Dark reddish-brown silt loam over red silty clay or clay.	Uplands	Moderately well drained.	2 to 10	Residuum from limestone.	Strong.

See footnotes at end of table.

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TABLE 7.—*Characteristics and genetic relationships of soil series*—Continued

ZONAL SOILS—Continued

Great soil group and soil series	Brief profile description [1]	Topographic position	Soil drainage class	Slope range	Parent material	Degree of profile development [2]
Red-Yellow Podzolic soils—Continued						
With fragipan:						
Cane	Dark grayish-brown silt loam over yellowish-red silty clay loam with a fragipan at a depth of about 22 inches.	Foot slopes	Moderately well drained and well drained.	2 to 10	Old local alluvium from sandstone and limestone residuum.	Strong.
Captina	Very dark grayish-brown to dark-brown silt loam over strong-brown loam to light silt loam with a fragipan at a depth of about 24 inches.	Stream terraces.	Moderately well drained.	2 to 6	Old alluvium and local alluvium chiefly from limestone residuum.	Strong.
Ora	Grayish-brown fine sandy loam over strong-brown to yellowish-red loam with a fragipan at a depth of about 24 inches.	Uplands	Moderately well drained.	2 to 10	Beds of fine sand and silt of the Coastal Plains.	Strong.
Prentiss	Dark-brown very fine sandy loam over yellowish-brown loam with a fragipan at a depth of about 24 inches.	Stream terraces.	Moderately well drained.	0 to 6	Old alluvium and local alluvium from Coastal Plain soils.	Strong.
Savannah	Grayish-brown very fine sandy loam over olive-brown to yellowish-brown loam with a fragipan at a depth of about 22 inches.	Uplands	Moderately well drained.	0 to 10	Beds of fine sand and silt of the Coastal Plains.	Strong.
Tilden	Dark-brown very fine sandy loam over yellowish-red loam to fine sandy clay loam with a fragipan at a depth of about 24 inches.	Stream terraces.	Moderately well drained.	2 to 6	Old alluvium from Coastal Plain soils.	Strong.
Grading toward Low-Humic Gley soils:						
Tupelo	Dark grayish-brown to brownish-yellow silt loam over mottled, olive-brown, grayish-brown, and strong-brown silty clay to clay.	Stream terraces.	Somewhat poorly drained.	0 to 2	Old alluvium and local alluvium from limestone residuum.	Moderate to strong.
Reddish-Brown Lateritic soils:						
Central concept:						
Decatur	Dark reddish-brown silt loam over dark-red silty clay to clay.	Uplands	Well drained	2 to 15	Residuum from limestone.	Strong.
Greenville	Dark reddish-brown fine sandy loam to loam over dark-red fine sandy clay loam to clay loam.	Uplands	Well drained	2 to 15	Beds of fine sand and fine sandy loam of the Coastal Plains.	Strong.

INTRAZONAL SOILS

Grumusols:						
Hollywood	Very dary gray silty clay over very dark gray or black clay.	Upland depressions and low benches.	Somewhat poorly drained or moderately well drained.	0 to 5	Residuum or local limestone alluvium.	Weak.
Low-Humic Gley soils:						
Bibb	Dark grayish-brown loam over mottled grayish-brown and gray silt loam.	First bottoms	Poorly drained	0 to 2	General and local alluvium from Coastal Plains.	Weak.

See footnotes at end of table.

TABLE 7.—*Characteristics and genetic relationships of soil series*—Continued

INTRAZONAL SOILS—Continued

Great soil group and soil series	Brief profile description [1]	Topographic position	Soil drainage class	Slope range	Parent material	Degree of profile development [2]
Low-Humic Gley soils—Continued						
Dowellton	Dark-gray to dark-brown silty clay over mottled olive-brown and gray clay.	Uplands flats	Poorly drained	0 to 2	Residuum from shale and argillaceous limestone.	Weak to moderate.
Melvin	Dark brownish-gray to light-gray silt loam over mottled light brownish-gray and yellowish-brown silt loam to silty clay loam.	First bottoms	Poorly drained	0 to 2	General and local alluvium from limestone residuum.	Weak.
Humic Gley soils:						
Dunning	Very dark gray silty clay over mottled gray and yellowish-brown clay.	First bottoms	Poorly drained	0 to 2	Alluvium from limestone. residuum.	Weak.
AZONAL SOILS						
Alluvial soils:						
Huntington	Dark reddish-brown to reddish-brown silt loam over yellowish-red and gray silty clay loam.	Stream terraces and depressions.	Well drained	0 to 2	General and local alluvium from limestone residuum.	Weak.
Iuka	Dark grayish-brown very fine sandy loam over mottled brown and gray fine sandy loam at a depth of about 22 inches.	First bottoms and depressions.	Moderately well drained.	0 to 2	General and local alluvium from Coastal Plain soils.	Weak.
Lindside	Dark-brown to reddish-brown silt loam over mottled brown and gray silt loam to silty clay loam at a depth of about 24 inches.	First bottoms and depressions.	Moderately well drained.	0 to 2	General and local alluvium from limestone residuum.	Weak.
Ochlockonee	Yellowish-brown to dark-brown fine sandy loam to loam over grayish-brown and gray loamy fine sand to silt loam.	First bottoms	Well drained	0 to 2	General and local alluvium from Coastal Plain soils.	Weak.
Lithosols:						
Ramsey	Very dark grayish-brown to grayish-brown fine sandy loam over sandstone fragments and bedrock.	Uplands	Excessively drained.	10 to 15	Residuum from acid sandstone and shale.	Weak.
Regosols:						
Guin	Dark grayish-brown to brown gravelly fine sandy loam over beds of fine sand and gravel.	Uplands	Excessively drained.	10 to 40	Unconsolidated beds of fine sand and gravel of the Coastal Plains.	Weak.

[1] These descriptions are of soil profiles not materially affected by accelerated erosion.
[2] As measured by the number of important genetic horizons and the degree of contrast between them.

Intrazonal soils occur in nearly level areas where internal and external drainage are restricted or where geologic erosion is very slow. These soils have been in place a long time, and they have more or less well-developed soil characteristics that reflect the dominating influence of some local factor of parent material or relief over the normal effects of climate and vegetation. The properties of intrazonal soils in this county are generally the result of level relief influenced greatly by the character of the parent material and by the kinds of vegetation that grow in such an environment.

Azonal soils lack distinct, genetically related horizons because of their youth, resistant parent material, or steep topography. They occur where the parent material has been in place only a short time; for example, where recently transported material has been deposited. Azonal soils have very poorly defined or no genetic horizons. They are young and have few or none of the properties of zonal soils. They are frequently called A-C soils because they do not have a B horizon.

Azonal soils are in some hilly or steep areas, as well as in nearly level areas. In steep areas, much water runs

off the soil and contributes to relatively rapid geologic erosion. Soils in these places are young because the parent materials are constantly renewed or mixed. The changes brought about by vegetation and climate may be so slight that the soils are essentially A-C, or azonal.

Zonal soils

The zonal soils in Franklin County are Red-Yellow Podzolic soils of the central concept, Red-Yellow Podzolic soils with a fragipan, Red-Yellow Podzolic soils grading toward Low-Humic Gley soils, and Reddish-Brown Lateritic soils.

RED-YELLOW PODZOLIC SOILS
(Central concept)

The Red-Yellow Podzolic great soil group consists of well-developed, well-drained, acid soils having thin organic AO and organic-mineral A1 horizons over a light-colored, bleached A2 horizon. The A2 horizon is underlain by a red, yellow, or yellowish-red, more clayey B horizon (*3*). The parent material is more or less siliceous. In general, the soils of this group have a low cation-exchange capacity and a low base saturation (commonly 20 to 35 percent). Kaolinite is the dominant clay mineral. The subsoil has a weak to strong, subangular blocky structure and colors of medium to high chroma.

In Franklin County, undisturbed Red-Yellow Podzolic soils under a forest have a thin, dark-colored A1 horizon that is fairly high in organic-matter content. The A2 horizon is well defined but has a weak, granular structure and a considerably lower content of organic matter than the A1 horizon. In cultivated areas the soil material in the AO and the A1 horizons have been mixed and are no longer distinguishable. Where accelerated erosion has occurred, much or all of the A horizon may have been removed. The B2 horizon contains more clay than the A2 horizon and has a more distinct structure. The C horizon is mottled or reticulated with red, yellow, and gray. It generally contains less clay than the B2 horizon and has a weaker structure.

Soils in this county that conform to the central concept of Red-Yellow Podzolic soils are in the Albertville, Cahaba, Colbert, Cuthbert, Linker, Ruston, Saffell, and Talbott series. Following is a description of each of these series in which a soil profile representative of the series is described.

Albertville series: In this series are moderately deep and deep, well-drained soils developed in residuum from acid shale that has been influenced by sandstone of the Pottsville formation. Following is a profile of Albertville fine sandy loam, 2 to 6 percent slopes, eroded, in a moist idle field about 2½ miles southwest of Union School (NW¼SW¼ sec. 16, T. 8 S., R. 10 W.):

Ap—0 to 5 inches, brown (10YR 5/3) fine sandy loam; weak, fine and medium, granular structure; very friable; few dark reddish-brown pebbles of sandstone; strongly acid; gradual, smooth boundary.

B1—5 to 9 inches, brownish-yellow (10YR 6/6) silty clay loam; weak, fine, subangular blocky structure; friable; strongly acid; gradual, smooth boundary.

B2—9 to 26 inches, yellowish-brown (10YR 5/6) silty clay that has a few, fine, faint mottles of yellowish red (5YR 5/8); weak and moderate, fine and medium, subangular blocky structure; friable; very strongly acid; gradual boundary.

B3—26 to 36 inches, brownish-yellow (10YR 6/6) clay that has common, medium, distinct mottles of brown (10YR 5/3) and light gray (10YR 7/2); weak and moderate, fine and medium, subangular blocky structure; firm; very strongly acid; gradual boundary.

C—36 to 72 inches, light-gray (2.5Y 7/2) clay that has many, coarse, prominent mottles of brown (10YR 5/3) and pale red (10R 6/3); weak, fine and medium, angular blocky structure; firm; very strongly acid.

Dr—72 inches +, shale.

In places the surface layer is a very fine sandy loam. In most areas small rounded, dark reddish-brown pebbles of sandstone, ⅛ to ¼ inch in diameter, occur on the surface. Small pockets or strata of sand are common in the lower subsoil. The depth to shale is 20 to 72 inches.

Cahaba series: In this series are deep, well-drained soils that occupy stream terraces and that developed in old alluvium washed chiefly from soils derived from Coastal Plain sediments of the Tuscaloosa formation. Following is a profile of Cahaba fine sandy loam, 2 to 6 percent slopes, in a mosit, cultivated field about 4 miles north of Vina on the west side of county road 23 and the south side of Bear Creek (SW¼NE¼ sec. 30, T. 7 S., R. 14 W.):

Ap—0 to 5 inches, dark grayish-brown (10YR 4/2) fine sandy loam; weak, fine, granular structure; very friable; strongly acid; clear, smooth boundary.

A2—5 to 8 inches, dark-brown (7.5YR 4/4) very fine sandy loam; weak, fine, granular structure; friable; strongly acid; clear, smooth boundary.

B1—8 to 19 inches, strong-brown (7.5YR 5/6) very fine sandy loam; weak, fine, subangular blocky structure; friable, strongly acid; gradual, wavy boundary.

B2—19 to 32 inches, strong-brown (7.5YR 5/8) fine sandy clay loam; weak and moderate, fine and medium, subangular blocky structure; friable; strongly acid; gradual, wavy boundary.

B3—32 to 50 inches, yellowish-red (5YR 4/6) fine sandy loam; weak, fine, subangular blocky structure; friable; strongly acid; gradual, wavy boundary.

C—50 to 72 inches, yellowish-red (5YR 4/8) loamy fine sand that has few, fine, faint mottles of light brownish gray (10YR 6/2); weak, fine, granular structure; very friable; strongly acid.

The surface layer ranges from sandy loam to loam. The B horizon ranges from strong brown (7.5YR 5/6) to yellowish red (5YR 5/6) in color and from fine sandy loam to sandy clay in texture. In places this soil contains a few pebbles ¼ to 1 inch across.

Colbert series: In this series are moderately deep, moderately well drained or somewhat poorly drained soils developed in residuum from highly argillaceous limestone that was influenced by calcareous shale. Following is a profile of Colbert silt loam, 2 to 6 percent slopes, eroded, in a moist pasture ½ mile east of Saints Crossroads on the south side of county road 48 (NW¼NE¼ sec. 10, T. 6 S., R. 10 W.):

Ap—0 to 4 inches, dark yellowish-brown (10YR 4/4) silt loam; weak, fine, subangular blocky and fine, crumb structure; friable; a few fine roots; medium to strongly acid; gradual, smooth boundary.

B1—4 to 7 inches, yellowish-brown (10YR 5/4) silty clay loam; weak and moderate, fine and medium, subangular blocky structure; firm when moist, sticky and plastic when wet; a few, small, brown concretions; strongly acid; gradual, wavy boundary.

B2—7 to 16 inches, yellowish-brown (10YR 5/8) clay or silty clay; moderate, fine and medium, subangular blocky structure; common clay films on peds; firm or very firm when moist, very sticky and plastic when wet; a few chert fragments 1 to 2 inches across and a few,

small, brown concretions; strongly acid; gradual, wavy boundary.

B3—16 to 20 inches, yellowish-brown (10YR 5/8) clay with common, distinct, fine mottles of yellowish red (5YR 4/8) and light brownish gray (2.5Y 6/2); moderate, fine and medium, subangular blocky structure; common clay films on peds; very firm when moist, very sticky and very plastic when wet; common dark-brown concretions ⅛ to ¼ inch across; common chert fragments 1 to 2 inches across; strongly acid; gradual, wavy boundary.

C1—20 to 43 inches, strong-brown (7.5YR 5/8) clay that has many, medium, prominent mottles of yellowish red (5YR 4/8) and light gray (2.5Y 7/2); massive (structureless) to moderate, medium, subangular blocky structure; very firm when moist, very plastic and very sticky when wet; a few dark-brown concretions ⅛ to ¼ inch across; common chert fragments 1 to 2 inches across; strongly acid; gradual, wavy boundary.

C2—43 to 57 inches, mottled strong-brown (7.5YR 5/6), yellowish-red (5YR 5/6), and gray (10YR 6/1) clay; mottles are many, medium, and distinct; massive (structureless); very firm when moist, very plastic and very sticky when wet; common fragments of cherty limestone 2 to 6 inches across; many brown concretions ⅛ to ¼ inch across; mildly acid to neutral.

Dr—57 inches +, limestone bedrock.

The surface layer is light brownish-gray (10YR 6/2) silt loam in forested areas and yellowish-brown (10YR 5/4) silt loam to silty clay loam in cultivated fields. The subsoil is mottled and ranges from brownish-yellow (10YR 6/6) to strong-brown (7.5YR 5/6) plastic silty clay or clay.

Cuthbert series: The soils of this series have a thin B horizon and are moderately well drained. They developed from beds of acid silt and clay and thin strata of sand of the Tuscaloosa formation. Following is a profile of Cuthbert fine sandy loam, 10 to 15 percent slopes, in a moist, forested area 2 miles east of Vina next to State Highway 172 (SE¼SE¼ sec. 17, T. 8 S., R. 14 W.):

A1—0 to 3 inches, dark grayish-brown (10YR 4/2) fine sandy loam; weak, fine, granular structure; friable; a few fine roots; few to common dark-brown concretions ⅛ to ¼ inch across; common fragments of iron crust, 1 to 6 inches across; strongly acid; gradual, wavy boundary.

B1—3 to 6 inches, yellowish-brown (10YR 5/6) loam; weak, fine, subangular blocky structure; friable; a few fine roots; few to common dark-brown concretions ⅛ to ¼ inch across; common fragments of iron crust, 1 to 8 inches across; strongly acid; gradual, wavy boundary.

B2—6 to 14 inches, strong-brown (7.5YR 5/6) silty clay that has few, fine, faint mottles of pale brown (10YR 6/3); moderate, fine, subangular blocky structure; firm when moist, sticky when wet; few medium tree roots; few fragments of iron crust, 1 to 8 inches across; strongly acid or very strongly acid; gradual, wavy boundary.

B3—14 to 18 inches, yellowish-red (5YR 5/8 to 4/6) silty clay with few, fine, faint mottles of light yellowish brown (2.5Y 6/4); firm when moist, sticky when wet; moderate, fine and medium, subangular blocky structure; a few fragments of iron crust, 1 to 8 inches across; strongly acid or very strongly acid; gradual, wavy boundary.

C—18 to 47 inches, strong-brown (7.5YR 5/6) clay with many, medium and coarse, distinct mottles of yellowish red (5YR 4/6) and gray (10YR 6/1); moderate, medium, subangular blocky structure; firm or very firm when moist, sticky when wet; a few fragments of iron crust, 1 to 6 inches across; strongly acid or very strongly acid; gradual, wavy boundary.

D—47 to 72 inches, variegated, strong-brown (7.5YR 5/6), red (2.5YR 4/8), and gray (10YR 6/1) clay; massive (structureless); very hard when dry, sticky when wet; strongly acid or very strongly acid.

725-010—64——6

The surface layer ranges from sandy loam to silt loam in texture and from dark grayish brown (10YR 4/2) to pale olive (5YR 6/3) in color. On the surface and in the soil are a few to many fragments of iron crust, 1 to 8 inches across. The subsoil is silty clay loam to clay that ranges from strong brown (7.5YR 5/6) to red (2.5YR 4/6).

Linker series: In this series are deep, well-drained soils that developed in the residuum of sandstone and were influenced by thinly interbedded shale of the Pottsville formation. Following is a profile of Linker fine sandy loam, 2 to 6 percent slopes, eroded, in a moist, forested area about 2 miles southwest of Union School (NE¼NW¼ sec. 16, T. 8 S., R. 10 W.):

A1—0 to 2 inches, very dark grayish-brown (10YR 3/2) fine sandy loam; weak, fine, granular structure; very friable; many fine roots; strongly acid; clear, smooth boundary.

A2—2 to 8 inches, yellowish-brown (10YR 5/4) fine sandy loam; weak, fine, granular structure; very friable; many fine roots; strongly acid; gradual, smooth boundary.

B1—8 to 14 inches, strong-brown (7.5YR 5/6) light fine sandy clay loam; weak, fine, crumb structure and weak, fine, subangular blocky structure; friable; a few fine roots; strongly acid; gradual, wavy boundary.

B2—14 to 32 inches, yellowish-red (5YR 4/8) loam; weak, fine, subangular blocky structure; friable; strongly acid; gradual, wavy boundary.

B3—32 to 42 inches, strong-brown (7.5YR 5/8) loam that has many, fine, distinct mottles of yellowish red (5YR 4/8), yellowish brown (10YR 5/6), and light brownish gray (10YR 6/2); weak and moderate, fine and medium, subangular blocky structure; friable; strongly acid; gradual, wavy boundary.

C—42 to 54 inches, yellowish-red (5YR 4/8) loam that has many, fine, distinct mottles of red and light gray; weak, fine, granular structure; friable; strongly acid; abrupt, wavy boundary.

Dr—54 inches +, fine-grained sandstone bedrock.

In cultivated areas the surface layer is yellowish-brown (10YR 5/4) fine sandy loam, and in some places the subsoil is red (2.5YR 4/8). In some areas a few fragments of sandstone, 1 to 3 inches across, are on and in the soil. The depth to bedrock is 30 to 72 inches.

Ruston series: In this series are deep, well-drained soils that developed from thick beds of acid sandy loam and sandy clay loam of the Tuscaloosa formation. Following is a profile of Ruston fine sandy loam, 2 to 6 percent slopes, eroded, in a moist reforested area ¼ mile west of Coker Spur (SE¼SW¼ sec. 35, T. 7 S., R. 15 W.):

Ap—0 to 4 inches, dark-brown (10YR 4/3) fine sandy loam; weak, fine, granular structure; very friable; common fine roots; strongly acid; clear, smooth boundary.

B1—4 to 12 inches, reddish-brown (5YR 4/4) very fine sandy loam; weak, fine, granular structure; very friable; common fine roots; strongly acid; gradual, wavy boundary.

B2—12 to 32 inches, yellowish-red (5YR 5/8) very fine sandy clay loam; weak, fine, subangular blocky structure; friable; strongly acid; gradual, wavy boundary.

B3—32 to 45 inches, yellowish-red (5YR 4/8) fine sandy loam; weak, fine, granular and subangular blocky structure; friable; strongly acid; gradual, wavy boundary.

C—45 to 72 inches, red (2.5YR 5/8) sandy loam splotched with yellowish red (5YR 5/8); weak, fine, granular structure to single grain (structureless); very friable; strongly acid or very strongly acid.

In places the surface layer is sandy loam or light loam. The color ranges from dark grayish brown (10YR 4/2) to yellowish brown (10YR 5/4) in the A horizon and from strong brown (7.5YR 5/8) to red (2.5YR 5/8) in the B2 horizon. Present throughout the soil in some areas are

a few pebbles ¼ to 2 inches across and a few fragments of iron crust 1 to 5 inches across. Strata of loamy sand are common in the C horizon.

Saffell series: In this series are deep, well-drained soils derived from thick beds of acid sandy loam, sandy clay loam, and gravel of the Tuscaloosa formation. Following is a profile of Saffell gravelly fine sandy loam, 2 to 6 percent slopes, in a moist, cultivated area ½ mile east of Gravel Hill School (NE¼SE¼ sec. 17, T. 8 S., R. 12 W.):

Ap—0 to 6 inches, dark grayish-brown (10YR 4/2) gravelly fine sandy loam; weak, fine, granular structure; very friable; soil mass is about 35 to 45 percent chert fragments and quartz pebbles ranging from ¼ to 2 inches across; common fine roots; strongly acid; clear, smooth boundary.

B1—6 to 11 inches, yellowish-brown (10YR 5/6) gravelly very fine sandy loam; weak, fine, subangular blocky structure; friable; soil mass is about 40 to 50 percent gravel consisting of pebbles ¼ to 2 inches across; few fine roots; strongly acid; gradual, wavy boundary.

B2—11 to 24 inches, strong-brown (7.5YR 5/8) gravelly fine sandy clay loam; weak, fine, subangular blocky structure; friable; the soil mass is about 50 to 60 percent gravel consisting of pebbles ¼ to 2 inches across; strongly acid; gradual, wavy boundary.

B3—24 to 35 inches, yellowish-red (5YR 4/8) gravelly fine sandy loam with few splotches of red (2.5YR 5/8); weak, fine, granular structure; friable; soil mass is about 75 percent gravel consisting of pebbles ¼ to 2 inches across; strongly acid; gradual, wavy boundary.

C—35 to 72 inches +, yellowish-red (5YR 5/8) gravelly loamy fine sand; single grain (structureless); very friable when moist, loose when dry; soil mass is about 80 to 90 percent pebbles; very strongly acid.

In places the surface layer is gravelly sandy loam or gravelly loam. The color of the subsoil ranges from yellowish brown (10YR 5/8) to yellowish red (5YR 5/8). The gravel content ranges from 15 to 90 percent. The pebbles are mostly chert and are ¼ to 3 inches across.

Talbott series: In this series are moderately deep, moderately well drained soils that developed in residuum from argillaceous limestone and have a plastic B horizon. Following is a profile of Talbott silt loam, 2 to 6 percent slopes, eroded, in a moist, cultivated area 1¾ miles southwest of Waco, 1,500 feet west of the intersection of county roads 75 and 44 (SE¼NW¼ sec. 11, T. 7 S., R. 11 W.):

Ap—0 to 4 inches, reddish-brown (5YR 4/4) silt loam; weak, fine, subangular blocky structure; friable; a few small, dark-brown concretions; common fine roots; strongly acid; clear, smooth boundary.

B1—4 to 9 inches, reddish-brown (5YR 4/4) to yellowish-red (5YR 4/8) silty clay; moderate, medium, subangular blocky structure; moderately friable when moist, hard when dry, sticky and plastic when wet; a few brown concretions about ⅛ inch across; strongly acid; gradual, wavy boundary.

B2—9 to 15 inches, red (2.5YR 4/8) silty clay to clay that has a few, faint, fine mottles of yellowish brown (10YR 5/8); strong, medium, subangular blocky structure; moderately friable when moist, hard when dry, sticky and plastic when wet; contains a few brown concretions about ⅛ to ¼ inch across; very strongly acid; gradual, wavy boundary.

B3—15 to 24 inches, yellowish red (5YR 4/8) clay that has common, fine to medium, distinct mottles of yellowish brown (10YR 5/8); moderate to strong, medium, subangular blocky structure; moderately friable when moist, hard to very hard when dry, sticky and plastic when wet; a few brown concretions about ⅛ to ¼ inch across; gradual, wavy boundary.

C—24 to 72 inches, mottled reddish-yellow (5YR 6/8), yellowish-brown (10YR 5/8), and light brownish-gray (10YR 6/2) heavy clay; mottles many, medium, and distinct; massive (structureless); moderately friable when moist, very hard when dry, very plastic and sticky when wet; a few (less than 1 percent) angular chert fragments ¼ to 1 inch across; strongly acid.

Dr—72 inches +, limestone bedrock.

The surface layer ranges from dark reddish brown (5YR 3/4) to reddish brown (5YR 5/4) in color and is silty clay loam in places. Bedrock is generally 2 to 6 feet deep, but some rock crops out in severely eroded areas. Small fragments of chert occur throughout the soil in some places.

RED-YELLOW PODZOLIC SOILS
(With fragipan)

In Franklin County soils of the Cane, Captina, Ora, Prentiss, Savannah, and Tilden series are Red-Yellow Podzolic soils with a fragipan. Except that a fragipan occurs at a depth of 18 to 30 inches, these soils are similar to Red-Yellow Podzolic of the central concept. The fragipan is slowly permeable and slows the movement of water, especially in the lower subsoil. Consequently, in periods of normal or excess rainfall, the upper parts of these soils are saturated. In periods of dry weather, these soils are droughty because water moving upward is retarded by the pan. A description of each series of Red-Yellow Podzolic soils with a fragipan in the county follows; this description includes a soil profile representative of the series.

Cane series: In this series are moderately deep and deep, moderately well drained and well drained soils that have a fragipan. These soils formed in old alluvium and local alluvium that washed from soils derived from sandstone, shale, and limestone. They occur on foot slopes and fans along Cedar and Little Bear Creeks.

Following is a profile of Cane loam, 2 to 6 percent slopes, eroded, in a moist, cultivated area near a road, located 1 mile west of county road 75 and south of Cedar Creek (SE¼NW¼ sec. 22, T. 7 S., R. 11 W.):

Ap—0 to 5 inches, dark-brown (10YR 4/3) loam; weak, fine, granular structure; very friable; few sandstone fragments ¼ to 2 inches across; many fine roots; medium acid; gradual, smooth boundary.

B1—5 to 11 inches, strong-brown (7.5YR 5/8) fine sandy clay loam; weak, fine, subangular blocky structure; friable; a few sandstone fragments ¼ to 2 inches across; few fine roots; strongly acid; gradual, wavy boundary.

B2—11 to 21 inches, yellowish-red (5YR 5/6) silty clay loam; weak and moderate, medium, subangular blocky structure; friable; a few sandstone fragments ¼ to 2 inches across; strongly acid; gradual, wavy boundary.

B3m—21 to 36 inches, yellowish-red (5YR 5/6) loam to silty clay loam that has many, common, distinct mottles of pale brown (10YR 6/3), gray (10YR 6/1), and red (2.5YR 5/8); moderate, medium, subangular blocky structure; firm and brittle; a few sandstone fragments ¼ to 2 inches across; few brown concretions; strongly acid; gradual, wavy boundary.

C—36 to 54 inches, mottled red (2.5YR 4/8), yellowish-brown (10YR 5/6), and pale-brown (10YR 6/3) silty clay loam; massive (structureless); firm; a few sandstone fragments ¼ to 2 inches across; strongly acid.

The surface layer ranges from fine sandy loam to light silty clay loam. The depth to the fragipan layer is generally 18 to 30 inches. In places the fragipan is friable to firm and is brittle.

Captina series: In this series are moderately deep and deep, well-drained soils that have a fragipan. These

soils occur on stream terraces and developed in old alluvium and local alluvium that washed from soils derived mainly from limestone and partly from sandstone. Following is a profile of Captina silt loam, 2 to 6 percent slopes, in a moist, idle area ¾ mile northeast of Bethsaida Church on county road 48 (SE¼NE¼ sec. 2, T. 6 S., R. 10 W.):

Ap—0 to 5 inches, dark-brown (10YR 3/3) silt loam; weak, fine, granular structure; very friable; many fine roots; medium acid; clear, smooth boundary.

B1—5 to 8 inches, brown (7.5YR 4/4) silt loam; weak, fine, subangular blocky structure; friable; many fine roots; strongly acid; gradual, wavy boundary.

B2—8 to 23 inches, strong-brown (7.5YR 5/8) loam; weak and moderate, fine and medium, subangular blocky structure; friable; a few fine, brown concretions; a few fine roots; strongly acid; gradual, wavy boundary.

B3m—23 to 38 inches, mottled light yellowish-brown (2.5Y 6/4), light-gray (5Y 7/2), and yellowish-red (5YR 4/6) silt loam; moderate, medium, subangular blocky structure; firm; a few fine, brown concretions; strongly acid; gradual, wavy boundary.

C—38 to 54 inches, mottled yellowish-brown (10YR 5/8), light-gray (5Y 7/2), and yellowish-red (5YR 4/6) silty clay; mottles are many, medium, distinct; moderate, medium, subangular blocky structure; firm; a few fine, brown concretions; strongly acid.

The surface layer ranges from fine sandy loam to silt loam. The subsoil is dark brown (7.5YR 3/2) to yellowish red (5YR 5/8). In the B horizon are a few dark-brown concretions ⅛ to ¼ inch across. The fragipan is brittle and ranges from very compact to slightly compact.

Ora series: In this series are moderately deep, moderately well drained soils that occupy uplands and have a distinct fragipan. These soils developed from thick beds of acid sandy loam and sandy clay loam of the Tuscaloosa formation. Following is a profile of Ora fine sandy loam, 2 to 6 percent slopes, eroded, in a moist, cultivated area 1 mile northwest of Hodges (SW¼NE¼ sec. 30, T. 8 S., R. 13 W.):

Ap—0 to 4 inches, grayish-brown (10YR 5/2) fine sandy loam; weak, fine, granular structure; very friable; a few fine roots; strongly acid; abrupt, smooth boundary.

B1—4 to 9 inches, reddish-brown (5YR 5/4) loam; weak, fine, subangular blocky structure; friable; a few fine roots; strongly acid; gradual, smooth boundary.

B2—9 to 22 inches, yellowish-red (5YR 4/6) loam; moderate, medium, subangular blocky structure; friable; strongly acid; gradual, wavy boundary.

B3m—22 to 42 inches, brown (7.5YR 5/4) fine sandy loam that has common, medium, distinct mottles of light gray (10YR 7/2), pale brown (10YR 6/3), and red (2.5YR 4/8); moderate, medium, subangular blocky structure; hard and brittle when dry, firm and compact when moist; vesicular; strongly acid; gradual, wavy boundary.

C—42 to 72 inches, mottled red (2.5YR 4/8), yellowish-brown (10YR 5/8), pale-brown (10YR 6/3), and light-gray (10YR 7/2) fine sandy loam; massive (structureless); firm; very strongly acid.

In places the surface layer is loam or very fine sandy loam. The color of the B horizon ranges from strong brown (7.5YR 5/8) to red (2.5YR 5/8). In some places a few rounded pebbles, ¼ to 2 inches across, occur throughout the soil. The fragipan is 18 to 30 inches deep and is 10 to 18 inches thick.

Prentiss series: In this series are moderately deep, moderately well drained soils that are on stream terraces and have a moderately distinct fragipan. These soils developed in old alluvium and local alluvium that washed from soils derived chiefly from Coastal Plain sediments of the Tuscaloosa formation. Following is a profile of Prentiss fine sandy loam, 0 to 2 percent slopes, in a moist, cultivated field 1 mile southwest of New Union Church on the old Red Bay bottom road (SE¼NW¼ sec. 23, T. 7 S., R. 15 W.):

Ap—0 to 8 inches, dark-brown (10YR 4/3) fine sandy loam; weak, fine, granular structure; very friable; common fine roots; strongly acid; abrupt, smooth boundary.

B1—8 to 10 inches, dark yellowish-brown (10YR 4/4) fine sandy loam to very fine sandy loam; weak, fine, granular and subangular blocky structure; friable; a few fine roots; strongly acid; gradual, wavy boundary.

B21—10 to 20 inches, yellowish-brown (10YR 5/6) loam; weak, fine and medium, subangular blocky structure; friable; very strongly acid; gradual, wavy boundary.

B22—20 to 24 inches, yellowish-brown (10YR 5/8) loam that has a few, fine, faint mottles of light olive brown (2.5Y 5/4); weak, fine and medium, subangular blocky structure; friable; very strongly acid; gradual, wavy boundary.

B3m—24 to 38 inches, yellowish-brown (10YR 5/8) fine sandy loam that has common, medium, distinct mottles of grayish brown (2.5Y 5/2); moderate, medium, subangular blocky structure; compact, brittle; few dark-brown concretions; very strongly acid; gradual, wavy boundary.

C—38 to 54 inches, light olive-brown (2.5Y 5/6) fine sandy loam that has common, distinct mottles of gray (2.5Y 5/0); weak, fine, subangular blocky structure; friable to firm; very strongly acid.

In places the surface layer is silt loam. The fragipan is 18 to 30 inches deep, and in places it is friable and only slightly compact and brittle. In some areas a few pebbles, ¼ to 1 inch across, occur throughout the soil.

Savannah series: In this series are moderately deep, moderately well drained soils that have a distinct fragipan. These soils occur on uplands and developed from thick beds of acid sandy loam and sandy clay loam of the Tuscaloosa formation. Following is a profile of Savannah very fine sandy loam, 2 to 6 percent slopes, eroded, in a moist, cultivated area ½ mile east of Liberty Hill School (NE¼SE¼ sec. 23, T. 8 S., R. 12 W.):

Ap—0 to 6 inches, grayish-brown (2.5Y 5/2) very fine sandy loam: weak, fine, granular structure; very friable; a few fine roots; strongly acid; clear, smooth boundary.

B1—6 to 9 inches, light olive-brown (2.5Y 5/4) loam; weak, fine, subangular blocky structure; friable; a few fine roots; strongly acid; gradual, wavy boundary.

B2—9 to 19 inches, light yellowish-brown (2.5Y 6/4) to light olive-brown (2.5Y 5/4) loam; weak, fine, subangular blocky structure; friable; strongly acid; gradual, wavy boundary.

B3m1—19 to 22 inches, light olive-brown (2.5Y 5/4) loam that has a few, fine, faint mottles of yellowish brown (10YR 5/6) and light gray (10YR 7/2); weak, fine and medium, subangular blocky structure; friable; strongly acid; gradual, wavy boundary.

B3m2—22 to 37 inches, grayish-brown (2.5Y 5/2) loam that has many, fine and medium, distinct mottles of yellowish brown (10YR 5/4) and yellowish red (5YR 5/6); moderate, medium, subangular blocky structure; dark-brown, patchy clay skins on peds; firm when moist, hard when dry; brittle; vesicular; a few small, dark-brown concretions ⅛ to ¼ inch across; very strongly acid; gradual, wavy boundary.

C—37 to 72 inches, mottled yellowish-brown (10YR 5/6), light brownish-gray (10YR 6/2), and yellowish-red (5YR 4/6) fine sandy clay loam; mottles are many, medium, and distinct; moderate, medium, subangular blocky structure; firm; very strongly acid.

In forested areas the surface layer is dark grayish brown (10YR 4/2), and in some places it is fine sandy loam. The

B horizon ranges from 15 to 24 inches in thickness, from light olive brown (2.5Y 5/6) to yellowish brown (10YR 5/6) in color, and from loam to silt loam in texture. The depth to the fragipan is 18 to 30 inches.

Tilden series: In this series are moderately deep, moderately well drained soils that occur on stream terraces and have a moderately distinct fragipan. These soils developed in old alluvium that washed from soils derived mainly from Coastal Plain sediments of the Tuscaloosa formation. Following is a profile of Tilden fine sandy loam, 2 to 6 percent slopes, in a moist, cultivated area on the south side of Little Bear Creek, 1 mile northeast of Sparks Chapel (SE¼NW¼ sec. 19, T. 7 S., R. 13 W.):

Ap—0 to 6 inches, dark-brown (10YR 4/3) fine sandy loam; weak, fine, granular structure; very friable; common fine roots; medium acid; abrupt, smooth boundary.

B1—6 to 8 inches, strong-brown (7.5YR 5/6) loam; weak, fine, granular and subangular blocky structure; friable; few fine roots; medium acid; gradual, smooth boundary.

B2—8 to 21 inches, yellowish-red (5YR 5/8) heavy loam to light clay loam; weak, fine, subangular blocky structure; friable; medium acid; gradual, smooth boundary.

B3m—21 to 37 inches, yellowish-red (5YR 4/8) fine sandy clay loam that has common, medium, distinct mottles of light yellowish brown (10YR 6/4) and light brownish gray (10YR 6/2); moderate, medium, subangular blocky structure; hard, compact, and brittle; medium acid; gradual, wavy boundary.

C—37 to 52 inches +, mottled strong-brown (7.5YR 5/8), light brownish gray (2.5Y 6/2), and light yellowish brown (2.5Y 6/4) sandy clay loam; mottles common, medium, and distinct; friable or firm; medium acid.

The surface layer ranges from sandy loam to silt loam. The fragipan is 18 to 30 inches deep, and in places it is friable and only moderately brittle. In some areas the soil contains a few pebbles ¼ to 1 inch across.

RED-YELLOW PODZOLIC SOILS
(Grading toward Low-Humic Gley soils)

Soils of the Tupelo series have developed under climate and vegetation similar to those of the other Red-Yellow Podzolic soils in the county, but they lack the high content of clay in the B horizon that is characteristic of those soils. Because they have a gleyed layer, Tupelo soils grade toward Low-Humic Gley soils.

Tupelo series: In this series are moderately deep, somewhat poorly drained soils that occupy stream terraces and that developed in old alluvium and local alluvium that washed from soils derived chiefly from argillaceous limestone. Following is a profile of Tupelo silt loam, 0 to 2 percent slopes, in a moist, cultivated area 1.9 miles southwest of Isbell and ½ mile southeast of McWright Cemetery (SW¼SE¼ sec. 23, T. 7 S., R. 12 W.):

Ap—0 to 8 inches, dark grayish-brown (10YR 4/2) silt loam; weak, fine, granular structure; friable; common fine roots; medium acid; clear, smooth boundary.

B2—8 to 13 inches, yellowish-brown (10YR 5/6) silty clay loam that has a few, fine, faint mottles of brown (7.5YR 5/4); weak, fine and medium, subangular blocky structure; firm when moist, sticky and plastic when wet; many small, dark-brown concretions; medium acid; gradual, smooth boundary.

B3g—13 to 24 inches, light olive-brown (2.5Y 5/6) silty clay to clay; many, medium, distinct mottles of strong brown (7.5YR 5/8) and grayish brown (2.5Y 5/2); moderate, medium, subangular blocky structure; very firm when moist, sticky and plastic when wet; many small, dark-brown concretions; medium acid; gradual, smooth boundary.

Cg—24 to 54 inches, mottled, yellowish-brown (10YR 5/8), light brownish-gray (2.5Y 6/2), yellowish-red (5YR 5/8), and grayish-brown (2.5Y 5/2) clay; mottles are many, medium, and distinct; massive (structureless); very firm when moist, very sticky and very plastic when wet; many small, dark-brown to black concretions; medium acid.

The surface layer ranges from brownish yellow (10YR 6/6) to very dark grayish brown (10YR 3/2) and in some places is silty clay loam. The thickness of the old alluvium is 2 to 5 feet. In most places the soil contains a few dark-brown concretions ⅛ to ¼ inch across.

REDDISH-BROWN LATERITIC SOILS

The Reddish-Brown Lateritic group consists of well-drained soils having a dark reddish-brown, granular surface soil, a red, friable clay B horizon, and red or reticulately mottled lateritic parent material. These soils developed under a tropical forest in a humid tropical climate having wet and dry seasons (*3*).

In Franklin County the Decatur and Greenville soils are members of this great soil group. These soils do not conform with the definitions of typical Reddish-Brown Lateritic soils, because they did not develop under a tropical forest, and their subsoil is generally thinner and less friable than that in typical Reddish-Brown Lateritic soils. In addition, the clay in the subsoil is probably mainly kaolinite rather than sesquioxides. The nature of the clay fraction and the reaction of the Decatur and Greenville soils are not significantly different from those of Red-Yellow Podzolic soils. Descriptions of the Decatur and Greenville series follow and include a profile description of a soil representative of each series.

Decatur series: The soils in this series are dark red, deep, and well drained. They developed in residuum from high-grade limestone of the Bangor formation. Following is a profile of Decatur silt loam, 2 to 6 percent slopes, eroded, in a moist, cultivated area 1½ miles south of Waco on county road 75 (NW¼SE¼ sec. 11, T. 7 S., R. 11 W.):

Ap—0 to 3 inches, reddish-brown (5YR 4/3) silt loam; weak, fine, granular structure: very friable; many fine roots; medium acid or strongly acid; gradual, wavy boundary.

B1—3 to 8 inches, dark reddish-brown (2.5YR 3/4) silty clay loam; weak and moderate, fine and medium, subangular blocky structure; friable; a few small, dark-brown concretions ⅛ to ¼ inch across; common fine roots; strongly acid; gradual, wavy boundary.

B2—8 to 51 inches, dark-red (10R 3/6) silty clay; moderate, medium, subangular blocky structure; a few patchy clay films on surface of peds; moderately friable to firm; a few small, dark-brown concretions ⅛ to ¼ inch across; strongly acid; gradual, wavy boundary.

B3—51 to 60 inches, red (2.5YR 4/8) silty clay or clay that has common, fine, distinct mottles of reddish yellow (7.5YR 6/6); moderate, medium, subangular blocky structure; a few patchy clay films on surface of peds; firm; a few angular chert fragments ½ to 2 inches across; strongly acid; gradual boundary.

C—60 to 75 inches, dark-red (2.5YR 3/6) silty clay or clay that has common, medium, distinct mottles of brownish yellow (10YR 6/6) and very pale brown (10YR 7/4); massive (structureless) or weak, medium, subangular blocky structure; firm; a few angular chert fragments ½ to 2 inches across; strongly acid.

In some places the surface soil is loam or silty clay loam. Dark-brown concretions, ⅛ to ¼ inch across, are few or common throughout the soil. Fragments of chert, ½ to 2 inches across, occur in the C horizon. The depth to bedrock ranges from 5 to 20 feet.

Greenville series: In this series are dark-red, deep, well-drained soils on uplands. These soils developed in thick beds of acid sandy loam and sandy clay loam of the Tuscaloosa formation. Following is a profile of Greenville loam, 2 to 6 percent slopes, eroded, in a moist, cultivated area 1½ miles west of Vina (NW¼SW¼ sec. 13, T. 8 S., R. 15 W.):

Ap—0 to 4 inches, reddish-brown (5YR 4/4) loam; weak, fine, granular structure; friable; a few fine roots; medium acid or strongly acid; abrupt, clear boundary.

B1—4 to 18 inches, dark-red (2.5YR 3/6) light clay loam; weak, fine and medium, subangular blocky structure; friable; medium acid; gradual, wavy boundary.

B2—18 to 46 inches, dark-red (2.5YR 3/6) clay loam; moderate, fine and medium, subangular blocky structure; moderately friable to firm; a few fine, dark-brown concretions; medium acid or strongly acid; gradual, wavy boundary.

B3—46 to 120 inches, dark-red (10R 3/6) fine sandy clay loam; weak, fine, subangular blocky structure; friable; strongly acid or very strongly acid.

The A horizon ranges from sandy loam to loam in texture and from dark brown (7.5YR 3/2) to reddish brown (2.5YR 4/4) in color. The solum is 4 to 10 feet thick. Most areas have a few dark-brown concretions, ⅛ to ¼ inch across, on and in the soil. Strata of fine sand are common in the lower part of the subsoil.

Intrazonal soils

The intrazonal soils in Franklin County are members of the Grumusol, Low-Humic Gley, and Humic Gley great soil groups.

GRUMUSOLS

The Grumusols have a prominent A1 horizon in some places but lack a B horizon. They generally have dull colors of low chroma, and they are not well drained. These soils are dominated by montmorillonitic clay. They are typically clay in texture, lack eluvial and illuvial horizons, have moderate to strong, granular structure in the upper horizons, and have a high coefficient of expansion on wetting and of contraction on drying. Calcium and magnesium are the dominant exchangeable bases. Because of their high coefficients of expansion and contraction, Grumusols shrink and swell markedly as the moisture content changes.

Soils of the Hollywood series are the only members of this great soil group in Franklin County. They have characteristics that do not differ significantly from those of typical Grumusols.

Hollywood series: In this series are moderately deep to shallow, somewhat poorly drained or moderately well drained soils. These soils developed in the residuum of argillaceous limestone or from alluvium washed from soils developed in that residuum. Following is a profile of Hollywood silty clay in a moist, permanent pasture on the west side of county road 99 and about 1½ miles south of the Colbert County line (NE¼SE¼ sec. 12, T. 6 S., R. 10 W.):

A11p—0 to 7 inches, very dark gray (10YR 3/1) silty clay; weak, fine, granular and weak, fine and medium, subangular blocky structure; friable when moist, sticky and plastic when wet, hard when dry; common fine roots; a few fine, brown and black concretions; slightly acid; abrupt, smooth boundary.

A12—7 to 18 inches, black (10YR 2/1) clay; moderate, fine and medium, angular blocky and subangular blocky structure; pressure faces on surface of peds; firm when moist, sticky and very plastic when wet; very few fine and medium roots; few old root or worm channels filled with light olive-brown (2.5Y 5/4) clay; a few fine, brown and black concretions; neutral; abrupt, smooth boundary.

A13—18 to 23 inches, very dark gray (10YR 3/1) clay that has a few, fine, faint mottles of light olive brown (2.5Y 5/6); moderate, fine and medium, angular and subangular blocky structure; pressure faces on surface of peds; friable when moist, sticky and very plastic when wet, very hard when dry; a few fine and medium roots; a few fine, brown and black concretions; mildly alkaline; clear, smooth boundary.

C1—23 to 40 inches, mottled dark grayish-brown (2.5Y 4/2) and very dark gray (10YR 3/1) clay; mottles are many, fine, and faint; a few, fine, faint mottles of light olive brown (2.5Y 5/4); moderate, fine and medium, angular and subangular blocky structure; pressure faces on ped surfaces; friable when moist, sticky and very plastic when wet, very hard when dry; few weathered limestone fragments at a depth of 36 inches; a few fine roots; a few fine, brown and black concretions; mildly alkaline; clear, wavy boundary.

C2—40 to 52 inches, mottled very dark gray (10YR 3/1) and light olive-brown (2.5Y 5/6) clay; mottles are many, fine, and distinct; few, fine, gray (10YR 6/1) mottles; massive (structureless); sticky and very plastic when wet, very hard when dry; a few fine, brown and black concretions; common limestone fragments ½ inch across or larger; mildly alkaline; abrupt, wavy boundary.

The surface soil is clay or silty clay. The A horizon is generally very dark gray (10YR 3/1) or black (10YR 2/1) but ranges to dark grayish brown (10YR 4/2). The depth to mottles ranges from 12 to 28 inches but is 18 to 20 inches in most places. The depth to bedrock is 18 to 60 inches.

LOW-HUMIC GLEY SOILS

This great soil group consists of poorly drained or somewhat poorly drained soils having a very thin surface horizon and moderately high content of organic matter. The surface horizon is underlain by mottled gray and brown, gleyed mineral horizons. The gleyed horizons differ little from the surface horizon in texture (*3*). Low-Humic Gley soils vary widely in texture, and their parent material varies widely in physical and chemical properties. Most of these soils are medium acid to very strongly acid.

In Franklin County, the Bibb, Dowellton, and Melvin soils are Low-Humic Gley soils. Although they formed from different kinds of parent material, these soils are similar in those profile characteristics that are typical of Low-Humic Gley soils. The chief differences in their profiles can be seen in the detailed descriptions that follow.

Bibb series: In this series are deep or moderately deep, poorly drained soils on first bottoms. These soils developed in general and local alluvium that washed from soils weathered from Coastal Plain sediments of the Tuscaloosa formation. Following is a profile of Bibb loam in a moist, cultivated area 2 miles southwest of New Union Church on the old Red Bay bottom road (NE¼SW¼ sec. 22, T. 7 S., R. 15 W.):

Ap—0 to 6 inches, dark grayish-brown (10YR 4/2) loam; weak, fine and medium, granular structure; very friable; many fine roots; medium acid; abrupt, smooth boundary.

C1g—6 to 35 inches, grayish-brown (2.5Y 5/2) silt loam that has many, distinct, fine mottles of light gray (2.5Y 7/2) and dark grayish brown (2.5Y 4/2); weak, fine and medium, subangular blocky structure, friable; a few fine roots; a few brown concretions ⅛ inch across; strongly acid; gradual, smooth boundary.

C2g—35 to 54 inches, mottled light-gray (2.5Y 7/2) and strong-brown (7.5YR 5/8) silt loam to silty clay loam; mottles are many, prominent, and medium; weak, fine and medium, subangular blocky structure; friable; strongly acid.

The surface layer is loam in most areas but ranges from fine sandy loam to heavy loam. In areas of native forest, the surface layer is very dark grayish brown (10YR 3/2). In some places the C horizon has a uniform texture, and in other places it consists of thinly stratified beds of sandy loam, silt loam, and silty clay loam.

Dowellton series: Soils in this series are moderately deep or shallow and are poorly drained. They occur on uplands and developed in residuum that weathered from argillaceous limestone and from shale composed mostly of calcareous clay. Following is a profile of Dowellton silty clay, 0 to 2 percent slopes, in a moist, cultivated area 2.3 miles north of State Highway 24 next to the Lawrence County line (SE¼NE¼ sec. 25, T. 6 S., R. 10 W.):

Ap—0 to 3 inches, dark-brown (10YR 4/3) silty clay; weak, fine, granular structure; friable; many fine roots; strongly acid; abrupt, smooth boundary.

Bg—3 to 14 inches, light olive-brown (2.5Y 5/4) clay that has common, medium, distinct mottles of grayish brown (2.5Y 5/2) and yellowish red (5YR 5/8); moderate, medium, subangular blocky structure; very hard when dry, very sticky and plastic when wet; a few small, dark-brown concretions; very strongly acid; gradual, wavy boundary.

Cg—14 to 42 inches +, mottled gray (10YR 6/1), red (2.5YR 4/8), and yellowish-brown (10YR 5/8) clay; mottles are many, medium, and distinct; massive (structureless); very hard when dry, very plastic and very sticky when wet; a few small, dark-brown concretions very strongly acid.

The surface layer is silty clay in most areas but ranges from heavy silt loam to clay. It is dark gray (10YR 4/1) to dark brown (10YR 3/3). The depth to bedrock is commonly 2 to 6 feet but ranges from 1 to 8 feet.

Melvin series: In this series are deep or moderately deep, poorly drained soils that occur on first bottoms and developed in general and local alluvium that washed from soils derived chiefly from limestone of the Bangor formation. Following is a profile of Melvin silt loam in a moist, forested area 1.1 miles south of the Colbert County line and next to the Lawrence County line (NE¼NE¼ sec. 12, T. 6 S., R. 10 W.):

A1—0 to ½ inch, very dark grayish-brown (2.5Y 3/2) silt loam; weak, fine, granular structure; very friable; many fine roots; strongly acid; clear, smooth boundary.

A2—½ inch to 8 inches, light-gray (2.5Y 7/2) silt loam that has a few, faint mottles of dark grayish brown (10YR 4/2); weak, fine, granular structure; very friable; common, fine and medium tree roots; strongly acid; gradual, smooth boundary.

Cg1—8 to 24 inches, light brownish-gray (2.5Y 6/2) silt loam that has common, fine and medium, distinct mottles of dark grayish brown (10YR 4/2); weak, fine, granular and blocky structure; few medium tree roots; strongly acid; gradual, smooth boundary.

Cg2—24 to 52 inches, grayish-brown (2.5Y 5/2) silt loam to silty clay loam that has many, medium, distinct mottles of yellowish brown (10YR 5/8); weak, fine, granular and blocky structure; friable to firm; strongly acid.

The surface layer is silty clay loam in places, and it ranges from very dark grayish brown (2.5Y 3/2) in forested areas to light gray (2.5Y 7/2) in cleared areas. In some places the C horizon is silty clay loam to silty clay. Small, dark-brown concretions are common in places.

HUMIC GLEY SOILS

The Humic Gley group consists of poorly drained or very poorly drained hydromorphic soils that have dark-colored, organic-mineral horizons of moderate thickness underlain by gleyed mineral horizons (*8*). Humic Gley soils occur naturally under marsh plants or swamp forest, mostly in humid and subhumid climates. In Franklin County, only the Dunning soils are in this great soil group.

Dunning series: In this series are deep or moderately deep soils that occupy first bottoms and are poorly drained. These soils developed in alluvium that washed from soils derived from limestone of the Bangor formation. Following is a profile of Dunning silty clay in a moist, permanent pasture adjacent to Rock Creek, ½ mile west of the Lawrence County line and 1½ miles south of the Colbert County line (NE¼SW¼ sec. 12, T. 6 S., R. 10 W.):

A11p—0 to 4 inches, very dark gray (10YR 3/1) silty clay; weak, fine and medium, granular structure and weak to moderate, fine, subangular blocky structure; friable; common fine roots; slightly acid; clear, smooth boundary.

A12—4 to 8 inches, dark grayish-brown (2.5Y 4/2) silty clay to clay; fine and medium, moderate, subangular blocky structure; friable or firm; few small, dark-brown concretions; few fine roots; medium acid; gradual, wavy boundary.

Cg1—8 to 22 inches, dark gray to very dark gray (N 4/0 to N 3/0) clay that has common, fine, distinct mottles of yellowish brown (10YR 5/8); massive (structureless); firm when mosit, sticky and plastic when wet, hard when dry; a few small, dark-brown concretions; a few fine roots; medium acid; gradual, wavy boundary.

Cg2—22 to 46 inches, mottled light olive-brown (2.5Y 5/4), grayish-brown (2.5Y 5/2), and yellowish-brown (10YR 5/8) clay; mottles are many, fine, and distinct; massive (structureless); firm when moist, sticky and plastic when wet, hard when dry; a few small, dark-brown concretions; a few fine roots in the upper part of the horizon; neutral.

The surface layer ranges from heavy loam to silty clay, and the underlying layers from silty clay loam to clay. In some places the soil contains dark-brown concretions ⅛ to ¼ inch across.

Azonal soils

The Azonal soils in Franklin County are Alluvial soils, Lithosols, and Regosols.

ALLUVIAL SOILS

Alluvial soils have developed in alluvium that was transported and relatively recently deposited. They are characterized by weak or no modification of the original material by soil-forming processes and, consequently, they lack genetically related horizons. The properties of these soils strongly reflect the character of the alluvial deposits from which they formed. The Alluvial soils in Franklin County are in the Huntington, Iuka, Lindside, and Ochlockonee series.

Huntington series: In this series are deep, well-drained soils that occur on stream terraces and in upland depressions. These soils developed in general and local alluvium that washed from soils derived chiefly from limestone of the Bangor formation. Following is a profile of Hunting-

ton silt loam, local alluvium, in a moist, cultivated area ¾ mile southwest of Sloss Lake on the east side of county road 42 (SW¼NW¼ sec. 5, T. 7 S., R. 11 W.):

Ap—0 to 8 inches, reddish-brown (5YR 4/3) silt loam; weak, fine, granular structure; friable; medium acid; gradual, smooth boundary.

C1—8 to 18 inches, reddish-brown (5YR 4/3) silt loam; weak, fine, granular structure; friable; medium acid; gradual, wavy boundary.

C2—18 to 38 inches, dark reddish-brown (5YR 3/2) silt loam; weak, fine, granular structure; friable; medium acid; gradual, wavy boundary.

D—38 to 54 inches +, yellowish-red (5YR 4/8) silty clay loam that has common, fine, distinct mottles or splotches of reddish brown (5YR 4/3); weak, fine, subangular blocky structure; friable; medium acid.

The surface layer ranges from light silt loam to silty clay loam in texture and from reddish brown (5YR 5/3) to dark reddish brown (5YR 3/3) in color. The depth of well-drained alluvial material ranges from 30 to 60 inches or more.

Iuka series: In this series are soils on first bottoms that are deep or moderately deep and are moderately well drained. These soils developed in alluvium that washed chiefly from soils formed in Coastal Plain sediments of the Tuscaloosa formation. Following is a profile of Iuka fine sandy loam in a moist, cultivated area on the first bottom of Bear Creek, 1.9 miles west of New Union Church and 1,000 feet north of State Highway 24 (NW¼NW¼ sec. 22, T. 7 S., R. 15 W.):

Ap—0 to 4 inches, dark grayish-brown (10YR 4/2) fine sandy loam; weak, fine, granular structure; very friable; common fine roots; strongly acid; gradual, smooth boundary.

C1—4 to 20 inches, dark-brown (10YR 4/3) very fine sandy loam; weak, fine, granular structure; very friable; a few fine roots; strongly acid to very strongly acid; gradual, wavy boundary.

C2—20 to 30 inches, yellowish-brown (10YR 5/4) fine sandy loam that has common, fine, faint mottles of brown (10YR 5/3) and light brownish gray (10YR 6/2); weak, fine, granular structure; very friable; strongly acid; gradual, wavy boundary.

C3—30 to 54 inches, pale-brown (10YR 6/3) fine sandy loam that has many, medium, distinct mottles of light brownish gray (10YR 6/2) and dark brown (10YR 3/3); weak, fine, granular structure; very friable; strongly acid.

In places the surface layer is very fine sandy loam to silt loam and is light brownish gray (10YR 6/2) or dark grayish brown (10YR 4/2). Thin strata of sand are common in the lower layers. The thickness of the alluvium ranges from 30 to 60 inches or more.

Lindside series: In this series are deep or moderately deep, moderately well drained soils that occur on first bottoms and developed in general and local alluvium that washed from soils derived from limestone of the Bangor formation. Following is a profile of Lindside silt loam in a cultivated area next to Mud Creek, about 4 miles south of the Colbert County line and 2.5 miles west of the Lawrence County line (NE¼SW¼ sec. 22, T. 6 S., R. 10 W.):

Ap—0 to 7 inches, dark-brown (10YR 4/3) silt loam; weak, fine, granular structure; very friable; common fine roots; slightly acid; clear, smooth boundary.

C1—7 to 21 inches, dark grayish-brown (10YR 4/2) silt loam; weak, fine and medium, granular structure; friable; a few fine roots; slightly acid; gradual, smooth boundary.

C2—21 to 28 inches, dark-brown (10YR 4/3) heavy silt loam that has common, fine, distinct mottles of grayish brown (2.5Y 5/2) and dark brown (10YR 3/3); weak, fine and medium, subangular blocky and granular structure; friable; a few fine roots; slightly acid or neutral; gradual, smooth boundary.

C3—28 to 46 inches, grayish-brown (2.5Y 5/2) silt loam to silty clay loam that has many, medium, distinct mottles of dark brown (10YR 4/3) and yellowish brown (10YR 5/8); weak, fine and medium, subangular blocky and granular structure; friable; neutral.

In some places the surface layer is silty clay loam. The depth of alluvium ranges from 30 to more than 60 inches.

Ochlockonee series: In this series are soils on first bottoms that are deep and well drained. These soils formed in general and local alluvium that washed chiefly from soils derived from Coastal Plain sediments of the Tuscaloosa formation. Following is a profile of Ochlockonee fine sandy loam in a moist, cultivated area next to Little Bear Creek, 2 miles southwest of Pleasant Hill Church (SW¼NW¼ sec. 7, T. 8 S., R. 12 W.):

Ap—0 to 7 inches, brown (10YR 5/3) fine sandy loam; weak, fine, granular structure; very friable; common fine roots; medium acid; gradual, smooth boundary.

C1—7 to 28 inches, brown (10YR 5/3) silt loam; weak, fine, granular structure; friable; medium acid; gradual, smooth boundary.

C2—28 to 38 inches, dark-brown (10YR 3/3) loam; weak, fine, granular structure; friable; strongly acid; gradual, wavy boundary.

D—38 to 72 inches +, dark grayish-brown (10YR 4/2) loamy fine sand; single grain (structureless); very friable; strongly acid or very strongly acid.

The surface layer is loam in some places, and it ranges from light yellowish brown (10YR 6/4) to dark brown (10YR 3/3). In some areas there are thin strata of loamy fine sand or loam. The D horizon ranges from loamy sand to light silty clay loam.

LITHOSOLS

A freshly and imperfectly weathered mass of rock fragments makes up Lithosols, which have an incomplete solum or no clearly expressed soil morphology. These soils occur mainly on steep slopes (*8*). They developed in areas of ample moisture. The Ramsey soils are the only Lithosols in Franklin County. They represent the central concept of this great soil group.

Ramsey series: In this series are shallow or very shallow, excessively drained soils that developed in the residuum of acid sandstone and shale. Following is a profile of Ramsey fine sandy loam, 10 to 15 percent slopes, in a moist, forested area that is 400 feet north of Turkey Creek, 50 feet east of county road 80, and 4 miles south of Oak Grove Church (SW¼SW¼ sec. 9, T. 8 S., R. 10 W.):

A1—0 to 3 inches, very dark grayish-brown (10YR 3/2) fine sandy loam; weak, fine, granular structure; very friable; common fine roots; strongly acid; clear, smooth boundary.

A2—3 to 9 inches, dark-brown (10YR 4/3) fine sandy loam; weak, fine, granular structure; very friable; a few fine roots; strongly acid; gradual, wavy boundary.

C—9 to 14 inches, yellowish-brown (10YR 5/6) stony sandy loam; structureless; very friable; a few fine roots; common sandstone fragments 2 to 8 inches across; strongly acid.

Dr—14 inches +, sandstone bedrock.

The surface soil ranges from grayish brown (10YR 5/2) to very dark grayish brown (10YR 3/2). The subsurface

layer ranges from sandy loam to loam in texture and from light olive brown (2.5Y 5/4) to yellowish brown (10YR 5/4) in color.

REGOSOLS

Regosols have few or no clearly expressed soil characteristics. They formed from deep, soft, unconsolidated mineral deposits. Soils of the Guin series are the only Regosols in Franklin County.

Guin series: In this series are excessively drained soils that formed in deep beds of sand, fine sand, and gravel of the Tuscaloosa formation and have little or no development of a B horizon (fig. 13). Following is a profile of Guin gravelly sandy loam, 15 to 40 percent slopes, in a moist, forested area 1.2 miles east of Jonesboro on county road 58 (SE¼SW¼ sec. 1, T. 6 S., R. 12 W.):

A—0 to 6 inches, brown (10YR 5/3) gravelly sandy loam; granular structure; very friable; soil mass is 10 to 20 percent gravel consisting of pebbles ¼ to 1½ inches across; many fine roots; strongly acid; clear, wavy boundary.

C—6 to 96 inches, strong-brown (7.5YR 5/6) gravelly sandy loam; single grain (structureless); very friable; soil mass is about 75 percent gravel consisting of pebbles ¼ to 3 inches across; a few medium tree roots; very strongly acid.

***Figure 13.*—Roadside cut in Guin gravelly sandy loam, 15 to 40 percent slopes. In background is a volunteer stand of Virginia pine.**

In places the surface layer is gravelly fine sandy loam. The gravel makes up 40 to 90 percent of the soil mass and consists of pebbles ¼ to 3 inches across. Pockets or strata of sand are common in the lower layers. The gravelly sandy loam extends to a depth of 3 to 50 feet or more.

General Nature of the Area

This section is provided mainly for those not familiar with Franklin County. It tells about the physiography, drainage, geology, climate, water supply, and other subjects of general interest. Details about agriculture in the county will be found in the section "Agriculture."

Physiography

This county lies in two physiographic areas, the Coastal Plain and the limestone valleys (*10*). Most of the county except the northeastern part is in the Coastal Plain. This area, locally called the mountain area, is markedly more hilly and broken than the typical Coastal Plain farther south.

The limestone valleys are mainly in the northeastern one-fourth of the county. In general, they are the smoothest part of the uplands; their slopes are nearly level to undulating and rolling.

The elevation in the limestone valleys ranges from about 560 feet to 750 feet. The highest point in the county has an elevation of more than 1,100 feet and is located in the eastern part, east of Oak Grove, near the Lawrence County line. Other elevations are: Russellville, 764 feet; Spruce Pine, 1,031; Phil Campbell, 1,021; Hodges, 842; Vina, 680; Red Bay, 650; and Frankfort, 741.

Drainage

About 95 percent of Franklin County is drained by streams that flow northward and northwestward into the Tennessee River, although that river is neither in the county nor bordering it. Of the remaining part of the county, a small area of about 1.5 square miles in the southeastern corner drains southward into the drainage basin of the Black Warrior River, and a larger area south and west of Hodges, Vina, and Red Bay drains southwestward through several small streams into the Tombigbee River.

Geology

The major geologic formations of Franklin County are the Tuscaloosa formation, the Pottsville formation, and the Bangor limestone (*1*). The Tuscaloosa formation, of Upper Cretaceous age, is geologically the youngest in the county and is at the surface in more than one-half of the total area. It occurs as irregular beds of light-colored sand, clay, gravel, and some lignite. Materials weathered from this formation make up the parent material of the soils of the Coastal Plain.

The Pottsville formation, of Pennsylvanian age, is a succession of similar beds of sandstone and shale. It lies directly below the Tuscaloosa formation and is generally under the land surface at a depth ranging from a few feet in the southeastern part of the county to about 1,000 feet in the western part. In the southeastern part, it crops out on a few narrow ridgetops and on the lower part of many of the steep slopes.

The Bangor limestone, of Mississippian age, occupies most of the northeastern one-fourth of the county. In addition, small areas are exposed along the lower reaches of Cedar Creek to the mouth of Little Bear Creek, along Duncan and Tollison Creeks near Frankfort, and in a few other places. Bangor limestone consists mainly of bluish-gray, thick-bedded, coarsely crystalline or finely granular limestone. It gives rise to soils of the limestone valleys.

A few, small outcrops of the Hartselle sandstone are in the channels of Foxtrap Creek north of Mount Star School, Miller Branch Creek near Frankfort, and Cedar Creek near Pleasant Site. Geologically, it is the oldest formation in the county.

Climate [6]

Franklin County has a temperate climate, and rainfall is well distributed throughout the year. The day-to-day weather is controlled largely by the movement of pressure systems across the nation, though during the summer complete exchanges of air masses are few, and tropical maritime air masses persist for extended periods.

Wind and humidity records are not available for Franklin County, but records at Birmingham show that the prevailing winds are from the south and southwest in summer and from the north and northeast in winter. The average speed of these winds is about 8 miles per hour. In the Birmingham area the strongest wind on record to last 1 minute was 65 miles per hour in May 1951, and in March 1955. The average relative humidity at noon ranges from a low of 49 percent in April to a high of 62 percent in January. The average relative humidity for the year, based on daily readings at midnight, 6 a.m., noon, and 6 p.m., is approximately 71 percent.

In the average year, about 77 days have 0.10 inch or more of rain, 39 days have 0.50 inch or more, and 18 days have 1 inch or more. For the year, on an average, the sun is visible during about 57 percent of the daylight hours. The range is from a minimum average of 39 percent in January to a maximum average of 65 percent in October.

Summers are generally long, and the weather is warm from some time in May into September. Breaks in the heat are few during midsummer. In the average summer, a maximum temperature of 100° F. or more is recorded on about 6 days, or 2 days in June, 2 in July, and 2 in August. Occasionally, a temperature of 100° F. is recorded in May and in September. Temperatures of 90° F. or higher are recorded on an average of 94 days a year.

Fall is a season of transition. The summerlike weather early in September changes in October to Indian summer, and that to prewinter cold spells in November. Generally fall is the most pleasant season, especially from late in September to early in November. During this period, rainfall is light, the percentage of sunshine is high, and extremes in temperature are rare.

Winters range from mild to cold but are relatively short. Freezing temperatures occur on about one-third of the days. The chance for several snow flurries during the winter is good, but a snowfall that leaves a cover for more than 1 or 2 days is unusual. In the eastern part of the county, however, snow depths averaged nearly 16 inches in February 1958, and from 12 to 14 inches in February 1960. The average winter has about 6 days when the temperature falls to 20° or less, 3 days when it falls to 15° or less, and 1 day when it falls to 10° or less.

Spring is the most changeable season. In March the days are frequently cold and windy, but in May they are generally warm and pleasant. Local thunderstorms and tornadoes are most likely to occur in spring.

Table 8, compiled from records of the United States Weather Bureau, gives average monthly and annual temperatures and precipitation. Data on the probability of low temperatures in spring and in fall are given in table 9.

Since records were started nearly 100 years ago, the most disastrous drought in Alabama was in 1954. Partial droughts occur once or twice every 10 years. By definition, a drought occurs when there is no water available to plants in the soil (*13*). A drought day is a day during which no water is available to the plants. The frequency and severity of drought depends on the capacity of the soil to hold available moisture, on the amount and distribution of precipitation, and on the amount of water used or transpired by the plants. Even in a normal year, there are periods when rainfall does not supply the water needs of most crops. Consequently, in most years supplementary irrigation is needed for maximum crop production in most parts of the State. During a severe drought, however, the supply of water for irrigation is generally limited or nonexistent.

Table 10 gives, for four probabilities, the number of drought days likely in each month from April through October for soils having moisture-storage capacities of 1 inch, 2 inches, 3 inches, and 5 inches. These estimates were obtained by using the Penman method for computing evapotranspiration and by defining a drought day as stated earlier.

Evapotranspiration is the removal of water from the soil by evaporation and plant transpiration. The rate of evapotranspiration is highest in summer and lowest in winter. In Franklin County, the highest daily rate occurs in June and the next highest in July.

The total possible amount of stored moisture available to plants varies with soils and with the depth of roots. For this reason, table 10 shows the estimated number of drought days at four levels of storage capacity and four levels of probability. For example, for a soil that has a 2-inch storage capacity, the chance is fifty-fifty that there will be 17 drought days in June.

Water Supply

The water supply is adequate for domestic use in most parts of the county, but in the limestone valleys a good supply is hard to find in some places. Much of the water for agricultural uses is obtained from permanent streams. The larger among these are Bear, Cedar, Little Bear, Hurricane, and Mud Creeks. Cedar Creek furnishes some water for the city of Russellville. Most of the smaller streams and creeks dry up late in summer and in fall.

Wells supplement the water supply of Russellville and also furnish water for Red Bay, Phil Campbell, Vina, and Hodges. Water for homes in the rural sections is provided by dug or drilled wells that generally range from 40 to 100 feet in depth. Many rural homes have automatic water systems.

[6] ARTHUR R. LONG, State climatologist, U.S. Weather Bureau, airport station, Montgomery, Alabama, prepared this subsection.

TABLE 8.—*Estimated temperature and precipitation, Franklin County, Alabama*

[Data on temperature interpolated from records at the U.S. Weather Bureau Stations at Haleyville and Muscle Shoals. Precipitation data are those of the Belgreen Station, except snowfall data which are those of the Decatur Station]

Month	Temperature				Precipitation			
	Average daily maximum	Average daily minimum	2 years in 10 will have at least 4 days with—		Average monthly total	1 year in 10 will have—		Average snowfall
			Maximum temperature equal to or higher than—	Minimum temperature equal to or lower than—		Less than—	More than—	
	°F.	°F.	°F.	°F.	Inches	Inches	Inches	Inches
January	52	33	71	15	6.0	2.2	12.0	0.9
February	55	35	71	18	6.0	1.9	11.6	.8
March	62	41	79	25	6.3	2.7	10.7	.2
April	73	50	84	33	4.9	2.3	8.1	(1)
May	80	58	89	46	3.6	1.0	5.9	.0
June	88	66	95	56	3.5	1.2	5.3	.0
July	90	69	95	61	4.8	1.3	9.2	.0
August	90	68	96	60	4.0	.8	7.5	.0
September	84	61	92	50	2.8	.9	5.1	.0
October	75	51	86	36	2.6	.7	5.6	(1)
November	62	39	77	23	4.4	.8	9.8	.2
December	53	34	68	16	5.1	2.5	9.9	.6
Year	72	50	[2] 97	[3] 9	54.0	39.0	66.5	2.7

[1] Trace (less than 0.05 inch).
[2] Average highest annual maximum in 10-year period.
[3] Average lowest annual minimum in 10-year period.

TABLE 9.—*Probabilities of last low temperatures in spring and first in fall*

[Estimates based on records of U.S. Weather Bureau Station at Haleyville, Ala.]

Probability	Dates for given probability of temperature						
	40° F. or less	36° F. or less	32° F. or less	28° F. or less	24° F. or less	20° F. or less	16° F. or less
Spring:							
1 year in 10 later than	May 8	April 30	April 15	April 14	March 24	March 16	March 4.
2 years in 10 later than	May 7	April 21	April 14	April 4	March 16	March 5	February 28.
5 years in 10 later than	April 21	April 13	April 7	March 20	March 2	February 13	February 8.
Fall:							
1 year in 10 earlier than	October 5	October 16	October 17	October 26	November 5	November 15	November 21.
2 years in 10 earlier than	October 7	October 16	October 21	October 30	November 11	November 21	November 24.
5 years in 10 earlier than	October 16	October 28	November 4	November 10	November 25	December 3	December 14.

In recent years many farmers have constructed ponds to supplement the water supply and to provide fishing. More than 250 fish and stock ponds are in the county, according to reports of the Franklin County Soil Conservation District. Companies that mine iron ore have constructed several large ponds to obtain some of the water needed in their operations.

Organization and Population

Franklin County was created by the territorial legislature, February 6, 1818, and was named for Benjamin Franklin. Its territory was part of the ancient lands of the Chickasaw Indians, although claimed by the Cherokees. After the final cession of the Chickasaws on October 20, 1832, the county boundaries were extended westward to the Mississippi State line. On February 6, 1867, Colbert County was formed from the northern part of Franklin County.

The town of Russellville was chartered in 1819, a few weeks before Alabama became a State. The county seat was first located ar Russellville but in 1849 was moved to Frankfort because that town was nearer the center of the county. In about 1879, soon after Colbert County was formed, the county seat was moved to Belgreen, where it remained until fire destroyed the courthouse in 1890. In the following year, by popular vote, it was moved back to Russellville and is there at the present time.

Most of the first settlers came to this county from Tennessee, the Carolinas, and Georgia. The first settlement was in the area of limestone valleys near the present site of Russellville, where soils were productive and water was easily accessible. Among the first settlers were those named Cooper, Dickson, Ellis, Garner, Hester, Martin,

TABLE 10.—*Probabilities of drought days on soils of four different moisture-storage capacities*

Probability by month [1]	Minimum number of drought days if soil has a moisture-storage capacity [2] of—			
	1 inch	2 inches	3 inches	5 inches
April:				
1 in 10	15	10	0	0
2 in 10	11	6	0	0
3 in 10	8	2	0	0
5 in 10	3	0	0	0
May:				
1 in 10	25	22	16	1
2 in 10	21	17	11	0
3 in 10	18	14	7	0
5 in 10	14	9	2	0
June:				
1 in 10	27	27	25	22
2 in 10	25	24	21	17
3 in 10	23	22	18	12
5 in 10	19	17	13	3
July:				
1 in 10	23	23	22	21
2 in 10	20	19	18	15
3 in 10	18	16	15	11
5 in 10	14	11	9	4
August:				
1 in 10	26	24	23	23
2 in 10	23	20	17	16
3 in 10	20	16	14	11
5 in 10	16	11	8	4
September:				
1 in 10	25	24	24	22
2 in 10	21	19	18	16
3 in 10	18	15	14	12
5 in 10	13	9	7	6
October:				
1 in 10	25	23	23	22
2 in 10	21	20	19	18
3 in 10	18	17	15	14
5 in 10	13	10	5	0

[1] January, February, March, November, and December are not shown because crops are rarely damaged by drought in these months.

[2] The depth of water that a soil can hold and make available to plants.

McCulloch, Moore, Russell, Sevier, Tharp, Weatherford, and Winson. In 1820, Bryce Wilson became the first merchant in Russellville.

According to the 1960 census, Franklin County had a population of 21,988 in that year. The population of Russellville was 6,628; Red Bay, 1,954; Phil Campbell, 898; Spruce Pine, 495; Hodges, 194; and Vina, 184.

Transportation

The county is served by two railroads. A branch line of the Southern, built during the middle 1880's, passes through Russellville, Spruce Pine, and Phil Campbell in the east-central part of the county. A line of the Illinois Central, built about 1907, runs diagonally across the southwestern part through Red Bay, Vina, Atwood, and Hodges. Bus and truck lines provide transportation to the towns and most of the community centers.

The county has about 101 miles of Federal and State roads, 345 miles of paved farm-to-market roads, and 400 miles of all-weather graveled roads that connect the community centers.

Industries

Mining and smelting of iron ore were among the occupations of the early settlers. In 1818, the first blast furnace in Alabama was built by Joseph Heslip on Cedar Creek, about 1½ miles northwest of Isbell (*4*). At the furnace site, cooking utensils were made for neighboring families, and bar iron was prepared for shipment to other locations. Poor transportation made the venture unprofitable, however, and the furnace was abandoned in 1832. At the present time, surface mining for iron ore is not a major activity but is the oldest industry in the county.

Among the major industrial plants are a limestone quarry near Isbell; a sand and gravel company near Spruce Pine; a garment factory, a lumber mill, and a feed mill at Red Bay; a packing plant at Vina; and a lumber mill and a manufacturing plant at Russellville.

Community Facilities

In the county are 4 high schools, 15 junior high schools, and 16 elementary schools. All rural pupils living 1 mile or more from school are transported by buses provided by the county school system. The city of Russellville operates its own school system, which consists of 2 high schools, 2 junior high schools, and 2 elementary schools.

Also in Russellville are 1 radio station, 1 weekly newspaper, the 74-bed North Alabama Hospital, 3 modern nursing homes, and 1 small private hospital. Red Bay has a small private hospital. Daily mail service and electricity are available to all parts of the county, and many rural homes have telephone service. Most communities have churches. The quality of rural farm homes has been much improved in recent years.

Agriculture

This section describes pioneer and present-day agriculture in Franklin County. It contains statistics on land use, tenure and types of farms, crops, and livestock production.

The early settlers grew crops and raised livestock chiefly for home use. They also grew some cotton for spinning and weaving. Most of the livestock was grazed on land near the settlements.

Cotton and corn sold on the market were the major sources of income. As transportation facilities improved and the demand for cotton increased, additional land was cleared for cotton.

In the early days, little was done to maintain soil fertility. When yields became low, new land was cleared for crops. The better farmers began to use fertilizers and to rotate crops when they realized the natural fertility of the soil had been depleted.

As farming became more scientific, various programs of the State and Federal governments were started to help farmers improve yields and conserve their soil through better management. Today, agencies that help farmers in Franklin County are the Alabama Conservation Department, Alabama State Division of Forestry, Alabama Agricultural Experiment Station, Agricultural Extension

Service, Soil Conservation Service, Farmers Home Administration, Forest Service, and Agricultrual Stabilization and Conservation Service.

Land Use

According to the census of agriculture, 58.0 percent of Franklin County was in farms in 1959. The rest of the county consists of areas occupied by towns and areas owned by the U.S. Government, mining companies, and paper companies. The 1,698 farms in the county averaged 140.8 acres in size.

Farm Tenure and Types of Farms

According to the agricultural census, in 1959 there were 1,061 farms operated by full owners, 335 by part owners, 8 by managers, and 294 by tenant. In 1959, there were 959 miscellaneous and unclassified farms in the county. The rest of the farms, classified according to their major source of income, were classified as follows:

Type of farm:	*Number*
Field-crop farms other than vegetable and fruit-and-nut farms	417
Cash grain	15
Cotton	402
Dairy farms	25
Poultry farms	138
Livestock farms other than dairy and poultry farms	131
General farms	15

Crops

Cotton and corn have been the chief crops for more than 100 years. Cotton is grown extensively throughout the county, except on the steep, stony, or gravelly soils and on the poorly drained soils. The highest yields are in areas of red soils. The acreages of principal crops in Franklin County are shown in table 11.

Most of the corn is fed to livestock, but people eat some, and some is sold. The acreage of corn has decreased in the past 20 years, but yields have increased. Most of the oat crop is grazed by livestock during the winter months, but some of it is harvested as grain in the spring. Sericea lespedeza, annual lespedeza, alfalfa, and soybeans are the principal hay crops. Nearly every farm has a few fruit trees for home use, but there are no commercial orchards in the county.

Livestock

Beef and dairy cattle and poultry have increased in number and improved in quality in recent years, and they have become increasingly important in the agricultural economy of the county. Broiler sales have increased more than twelvefold since 1954. A census report shows that farmers in Franklin County sold 5,356,991 broilers in 1959.

According to the U.S. Census of 1959, 1,284 farms had cattle and calves, 1,132 had hogs and pigs, 723 had horses and mules, and 121 sold milk or cream. The number of livestock and poultry on farms is shown in table 12.

TABLE 11.—*Acreages of principal crops and number of fruit trees and grapevines of bearing age in stated years*

Crop	1939	1949	1959
	Acres	*Acres*	*Acres*
Cotton, harvested	24, 350	31, 280	10, 110
Corn, all purposes	42, 852	34, 075	23, 203
Small grain:			
Oats threshed or combined	20	322	275
Wheat threshed or combined	(1)	[2]141	371
Sorghum for all purposes, except sirup	310	405	265
Soybeans for all purposes, grown alone	6, 811	2, 496	1, 072
Harvested for beans, grown alone	43	309	700
Cut for hay, grown alone	(1)	2, 187	372
Hay:			
Alfalfa and alfalfa mixtures cut for hay	104	378	673
Lespedeza cut for hay	1, 955	3, 088	3, 019
Clover, timothy, and mixtures of clover and grasses cut for hay	96	390	482
Small grains	121	231	492
Other hay cut	8, 394	663	214
Vegetables harvested for sale	72	129	89
Fruit trees and vines:	*Number*[3]	*Number*[3]	*Number*
Apple	14, 962	14, 064	2, 746
Peach	24, 824	17, 785	3, 440
Pear	3, 102	2, 114	994
Grapevines	7, 813	8, 129	1, 993

[1] Not reported.
[2] Reported as other grain.
[3] One year later than year at head of column.

TABLE 12.—*Livestock and poultry on farms in stated years*

Livestock	1939	1949	1959
	Number	*Number*	*Number*
Cattle and calves	8, 454	12, 324	15, 460
Horses and mules	5, 503	4, 281	1, 258
Hogs and pigs	6, 622	4, 746	18, 193
Chickens	140, 182	29, 419	152, 318

Glossary

Acidity. See Reaction.

Aggregate, soil. Many fine particles held in a single mass or cluster, such as a clod, crumb, block, or prism.

Alluvium. Soil material, such as sand, silt, or clay, that has been deposited on land by streams.

Local alluvium.—Alluvium that originates from the adjacent uplands. It occupies narrow strips along drainageways and is not subject to prolonged flooding.

General alluvium.—Alluvium that originates in more distant uplands. In general, it occupies broad, nearly level areas along streams and is regularly subject to flooding.

Available moisture capacity. The capacity of a soil to hold water in a form available to plants. The amount of moisture held in the soil between field capacity, or about one-third atmosphere of tension, and the wilting coefficient, or about 15 atmospheres of tension.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Claypan. A compact, slowly permeable soil horizon that contains more clay than the horizons above and below it. A claypan is commonly hard when dry and plastic or stiff when wet.

Consistence, soil. The feel of the soil and the ease with which a lump can be crushed by the fingers. Some of the terms commonly used to describe consistence are—

Loose.—Noncoherent; soil does not hold together in a mass.

Friable.—When moist, soil crushes easily under gentle pressure between thumb and forefinger and can be pressed together into a lump.

Firm.—When moist, soil crushes under moderate pressure between thumb and forefinger, but resistance is distinctly noticeable.

Plastic.—When wet, soil readily deformed by moderate pressure but can be pressed into a lump; forms a "wire" when rolled between thumb and forefinger.

Sticky.—When wet, soil adheres to other material, and tends to stretch somewhat and pull apart, rather than to pull free from other material.

Hard.—When dry, soil moderately resistant to pressure; can be broken with difficulty between thumb and forefinger.

Compact.—A combination of firm consistence and close packing or arrangement of soil particles.

Contour tillage. Plowing or cultivating at right angles to the direction of slope, at about the same level throughout, and ordinarily at reasonably close intervals.

Cropland. Land regularly used for crops, except forest crops. Cropland includes rotation pasture, cultivated summer fallow, and other land ordinarily used for crops but temporarily idle.

Drainage, soil. The rapidity and extent of the removal of water from the soil by runoff, by flow through the soil to underground spaces, or by both processes.

Runoff.—The surface flow of water from an area, or the total volume of surface flow during a specified time. The amount and rapidity of runoff is closely related to slope, and it is affected by the texture, structure, and porosity of the surface soil. The relative degrees of runoff are *ponded, very slow, slow, medium, rapid,* and *very rapid.*

Internal drainage.—That quality of a soil that permits the downward flow of excess water through it. It is reflected in the frequency and duration of periods of saturation. Relative terms for expressing internal drainage are *none, very slow, slow, medium, rapid,* and *very rapid.*

Natural drainage.—Conditions of drainage that existed during the development of the soil, as opposed to those of altered drainage, which is commonly the result of artificial drainage or irrigation but may be caused by the sudden deepening of channels or the blocking of drainage outlets. Relative terms that express natural drainage are *excessively drained, somewhat excessively drained, well drained, moderately well drained, imperfectly* or *somewhat poorly drained, poorly drained,* and *very poorly drained.*

Erosion. The wearing away of the land surface by wind, running water, and other geological agents.

Fertility, soil. The inherent quality of a soil that enables it to provide compounds in adequate amounts and in proper balances for the growth of plants when light, moisture, temperature, and the physical condition of the soil are favorable.

First bottom. The normal flood plain of a stream, subject to frequent or occasional flooding.

Forest. Land not in farms, bearing a stand of trees of any age or form, including seedlings, and of species that attain a minimum average height of 6 feet at maturity; or land from which such a stand has been removed but on which no other use has been substituted. Forests on farms are commonly called woodland or farm forests.

Fragipan. A loamy, brittle, subsurface horizon that is very low in organic matter and clay but is rich in silt or very fine sand. The layer is seemingly cemented when dry, has a hard or very hard consistence, and has a high bulk density in comparison with the horizon or horizons above it. When moist, the fragipan tends to rupture suddenly if pressure is applied, rather than to deform slowly. The layer is generally mottled, is slowly or very slowly permeable to water, and has few or many bleached fracture planes that form polygons. Fragipans are a few inches to several feet thick; they generally occur below the B horizon, 15 to 40 inches below the surface.

Gravel. Coarse mineral particles ranging from 2 millimeters to 3 inches in diameter. Fine gravel ranges from 2 millimeters to ½ inch in diameter.

Green-manure crop. Any crop grown and plowed under while green for the purpose of improving the soil, especially through the addition of organic matter.

Infiltration. The downward entry of water into the soil. The rate of infiltration is defined as the volume of water passing into soil per unit of area per unit of time.

Leaching. The removal of material in solution by water passing through soil.

Loam. Soil having approximately equal amounts of sand, silt, and clay.

Mapping unit. Any soil, miscellaneous land type, or undifferentiated soil group shown on the detailed soil map and identified by a symbol.

Mottled. Irregularly marked with spots of different colors that vary in number and size. Mottling in soils usually indicates poor aeration and lack of drainage. Descriptive terms are as follows: Abundance—*few, common,* and *many;* size—*fine, medium,* and *coarse;* and contrast—*faint, distinct,* and *prominent* (*6*).

Parent material. The unconsolidated mass of rock material from which the soil developed.

Permeability. The quality of a soil horizon that enables water or air to move through it. Terms used to describe permeability are as follows: *very slow, slow, moderately slow, moderate, moderately rapid, rapid,* and *very rapid.*

Profile, soil. A vertical section of the soil through all its horizons and extending into the parent material.

Reaction. The degree of acidity or alkalinity of a soil expressed in pH values. A soil that tests to pH 7.0 is precisely neutral in reaction because it is neither acid nor alkaline. An acid, or "sour," soil is one that gives an acid reaction; an alkaline soil is one that is alkaline in reaction. In words, the degrees of acidity or alkalinity are expressed thus:

	pH
Extremely acid	below 4.5
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Medium acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Mildly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

Relief. The elevations or inequalities of a land surface, considered collectively.

Sand. Individual rock or mineral fragments in soils having diameters ranging from 0.05 millimeter to 2.0 millimeters. Most sand grains consist of quartz, but they may be of any mineral composition. The textural class name of any soil contains 85 percent or more sand and not more than 10 percent clay.

Silt. Individual mineral particles in a soil that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). Soil of the silt textural class is 80 percent or more silt and less than 12 percent clay.

Site index. A number that expresses the quality of a forest site and is based on the height of the dominant stand at an arbitrarily chosen age; for example, the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years.

Soil. A natural, three-dimensional body on the earth's surface that supports plants and that has properties resulting from the integrated effect of climate and living matter acting upon parent material, as conditioned by relief over periods of time.

Stripcropping. Growing crops in a systematic arrangement of strips, or bands, that serve as vegetative barriers to wind and water erosion.

Structure, soil. The arrangement of primary soil particles into compound particles, or clusters, that are separated from adjoining aggregates and have properties unlike those of an equal mass of unaggregated primary soil particles. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are (1) *single grain* (each grain by itself, as in dune sand) or (2) *massive* (the particles adhering together without any regular cleavage, as in many claypans and hardpans).

Subsoil. In many soils, the B horizon; roughly, the part of the profile below plow depth.

Surface soil. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, about 5 to 8 inches in thickness. The plowed layer.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay.* The sand, loamy

sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

Tilth, soil. The condition of the soil in relation to the growth of plants, especially soil structure. Good tilth refers to the friable state and is associated with high noncapillary porosity and stable, granular structure. A soil in poor tilth is nonfriable, hard, nonaggregated, and difficult to till.

Topsoil. A presumed fertile soil or soil material, ordinarily rich in organic matter, used to topdress roadbanks, lawns, and gardens.

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