SOIL SURVEY OF

Chilton County, Alabama

United States Department of Agriculture
Soil Conservation Service and Forest Service
in cooperation with
Alabama Agricultural Experiment Station
and
Alabama Department of Agriculture and Industries

Issued October 1972

Major fieldwork for this soil survey was done in the period 1963–66. Soil names and descriptions were approved in 1967. Unless otherwise indicated, statements in the publication refer to conditions in the county in 1966. This survey was made cooperatively by the Soil Conservation Service, the Forest Service, the Alabama Agricultural Experiment Station, and the Alabama Department of Agriculture and Industries. It is part of the technical assistance furnished to the Chilton County Soil and Water Conservation District.

Either enlarged or reduced copies of the soil map in this publication can be made by commercial photographers, or they can be purchased on individual order from the Cartographic Division, Soil Conservation Service, United States Department of Agriculture, Washington, D.C. 20250.

HOW TO USE THIS SOIL SURVEY

THIS SURVEY contains information that can be applied in managing farms, ranches, and woodlands; in selecting sites for roads, ponds, buildings, and other structures; and in judging the suitability of tracts of land for farming, industry, and recreation.

Locating Soils

All the soils of Chilton County are shown on the detailed map at the back of this publication. This map consists of many sheets made from aerial photographs. Each sheet is numbered to correspond with a number on the Index to Map Sheets.

On each sheet of the detailed map, soil areas are outlined and are identified by symbols. All areas marked with the same symbol are the same kind of soil. The soil symbol is inside the area if there is enough room; otherwise, it is outside and a pointer shows where the symbol belongs.

Finding and Using Information

The "Guide to Mapping Units" can be used to find information. This guide lists all the soils of the county in alphabetic order by map symbol and gives the capability classification of each. It also shows the page where each soil is described and the page for the capability unit and woodland group in which the soil has been placed.

Individual colored maps showing the relative suitability or degree of limitation of soils for many specific purposes can be developed by using the soil map and the information in the text. Translucent material can be used as an overlay over the soil map and colored to show soils that have the same limitation or suitability. For example, soils that have a slight limitation for a given use can be colored green, those with a moderate limitation can be colored yellow, and those with a severe limitation can be colored red.

Farmers and those who work with farmers can learn about use and management of the soils from the soil descriptions and from the descriptions of the woodland groups.

Foresters and others can refer to the section "Use of the Soils for Woodland," where the soils of the county are grouped according to their suitability for trees.

Game managers, sportsmen, and others can find information about soils and wildlife in the section "Use of the Soils for Wildlife."

Community planners and others can read about soil properties that affect the choice of sites for nonindustrial buildings and for recreation areas in the section "Town and Country Planning."

Engineers and builders can find, under "Use of the Soils in Engineering" tables that contain test data, estimates of soil properties, and information about soil features that affect engineering practices.

Scientists and others can read about how the soils formed and how they are classified in the section "Formation and Classification of the Soils."

Newcomers in the 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 information about the county given at the beginning of the publication.

Cover: Well-managed woodland on a Bowie fine sandy loam. Young planted pines in foreground.

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SURVEY BY R. B. McNUTT

SOILS SURVEYED BY R. B. McNUTT, W. H. KELLEY, C. F. MONTGOMERY, AND H. C. BUCKELEW, SOIL CONSERVATION SERVICE

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

CHILTON COUNTY is in the center of Alabama (fig. 1). It has an area of 699 square miles, or 447,360 acres. In 1960 the population was 25,693. Clanton, the county seat and largest town, is slightly southeast of the center of the State. The eastern half of the county is on the Piedmont Plateau, and the western half on the Upper Coastal Plain.

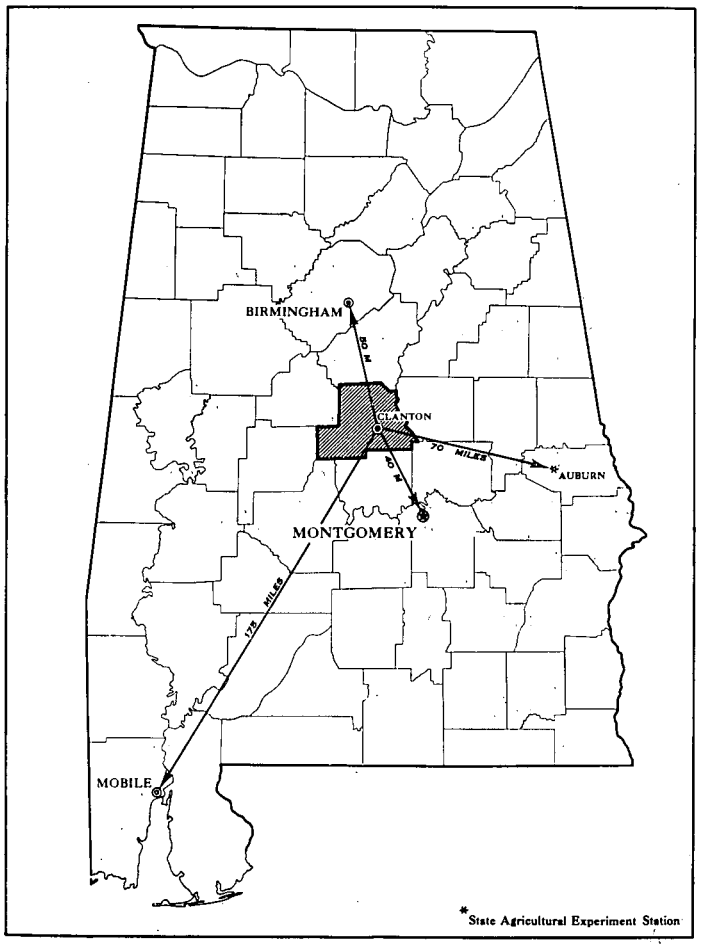

Figure 1.—Location of Chilton County in Alabama.

The climate is humid and temperate, and rainfall is generally well distributed throughout the year. Summers are long and hot, and winters are mild.

About 25 percent of the county is used for field crops or pasture. Corn, cotton, and peaches are the principal crops. Beef cattle, hogs, and dairy cattle are the principal kinds of livestock. In recent years, the number of farms and the acreage in cropland have decreased and the size of individual farms has increased.

Many of the soils are so steep and so susceptible to erosion that they are not suited to crops or pasture. They are, however, well suited to trees. Nearly all the soils are acid and are low in natural fertility and content of organic matter.

The eastern half of the county is drained by the Coosa River and its tributaries: the Waxahatchee, Yellowleaf, Walnut, Chestnut, and Mountain Creeks. The western half is drained by Big Mulberry, Little Mulberry, Swift, and Oakmulgee Creeks, all of which flow into the Alabama River. A small area in the northwest corner of the county is drained by Mahan Creek, which flows into the Cahaba River. The highest point in the county, about 5 miles north of Clanton, is 850 feet above sea level.

The water supply is adequate for domestic use in all parts of the county. The main streams flow throughout the year. The Coosa River furnishes water for the town of Clanton, and wells furnish water for Thorsby, Jemison, Maplesville, and Verbena. Wells ranging from 30 to 100 feet deep also furnish water for homes in rural areas.

The county is well served by roads and railroads. Hard surface, farm-to-market roads reach every community.

How This Survey Was Made

Soil scientists made this survey to learn what kinds of soil are in Chilton County, where they are located, and how they can be used. The soil scientists went into the county knowing they likely would find many soils they had already seen and perhaps some they had not. They observed the steepness, length, and shape of slopes, the size and speed of streams, the kinds of native plants or

crops, the kinds of rock, and many facts about the soils. They dug many holes to expose 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 the action of plant roots.

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. The *soil series* and the *soil phase* (*7*)[1] are the categories of soil classification most used in a local survey.

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. Bibb and Luverne, 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 affect their behavior in the undisturbed landscape.

Soils of one series can differ in texture of the surface soil and in slope, stoniness, or some other characteristic that affects use of the soils by man. On the basis of such differences, a soil series is divided into phases. The name of a soil phase indicates a feature that affects management. For example, Luverne fine sandy loam, 2 to 6 percent slopes, eroded, is one of several phases within the Luverne series.

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 help in drawing boundaries accurately. The soil map in the back of this publication 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 the management of farms and fields, a mapping unit is nearly equivalent to a soil phase. 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 phase.

Some mapping units are made up of soils of different series, or of different phases within one series. Three such kinds of mapping units are shown on the soil map of Chilton County: soil complexes, soil associations, and undifferentiated groups.

A soil complex consists of areas of two or more soils, so intermingled or so small in size that they cannot be shown separately on the soil map. Each area of a complex contains some of each of the two or more dominant soils, and the pattern and relative proportions are about the same in all areas. The name of a soil complex consists of the names of the dominant soils, joined by a hyphen. Luverne-Boswell complex, 2 to 10 percent slopes, eroded, is an example.

A soil association is made up of adjacent soils that occur as areas large enough to be shown individually on the soil map but are shown as one unit because the time and effort of delineating them separately cannot be justified. There is a considerable degree of uniformity in pattern and relative extent of the dominant soils, but the soils may differ greatly one from another. The name of an association consists of the names of the dominant soils, joined by a hyphen. Tallapoosa-Madison association, steep, is an example.

An undifferentiated group is made up of two or more soils that could be delineated individually but are shown as one unit because, for the purpose of the soil survey, there is little value in separating them. The pattern and proportion of soils are not uniform. An area shown on the map may be made up of only one of the dominant soils, or of two or more. The name of an undifferentiated group consists of the names of the dominant soils, joined by "and." Guin and Bowie soils, 10 to 25 percent slopes, is an example.

In most areas surveyed there are places where the soil material is so rocky, so shallow, or so severely eroded that it cannot be classified by soil series. These places are shown on the soil map and are described in the survey, but they are called land types and are given descriptive names. Gullied land is a land type in Chilton County.

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 soil 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 soil. 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 such a way as to be readily useful to different groups of users, among them farmers, managers of woodland and rangeland, and engineers.

On the basis of yield and practice tables and other data, the soil scientists set up trial groups. They test these groups by further study and by consultation with farmers, agronomists, engineers, and others. Then they adjust 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

The general soil map at the back of this survey shows, in color, the soil associations in Chilton County, Alabama. A soil association is a landscape that has a distinctive proportional pattern of soils. It normally consists of one or more major soils and at least one minor soil, and it is named for the major soils. The soils in one association may occur in another, but in a different pattern.

A map showing soil associations is useful to people who want a general idea of the soils in a county, who want to compare different parts of a county, or who want to know

[1] Italic numbers in parentheses refer to Literature Cited, page 80.

the location of large tracts that are suitable for a certain kind of land use. Such a map is a useful general guide in managing a watershed, a wooded tract, or a wildlife area, or in planning engineering works, recreational facilities, and community developments. It is not a suitable map for planning the management of a farm or field, or for selecting the exact location of a road, building, or similar structure, because the soils in any one association ordinarily differ in slope, depth, stoniness, drainage, and other characteristics that affect their management.

The 18 soil associations in Chilton County are described in the following pages.

Soils of the Piedmont Hills

The soils of the Piedmont Hills are steep, shallow to deep, and well drained. They are highly dissected in a dendritic pattern of drainage. These soils are in the eastern part of the county, adjacent to the Coosa River. They formed in material weathered from slate and schist. In most areas bedrock is at a depth of 20 to 50 inches.

These soils are used mainly for pine trees. Campsites and good hunting and fishing areas can be developed. Soil associations 1 and 2 are in the Piedmont Hills.

1. Talladega association

Steep, moderately deep, well-drained soils that formed in material weathered from slate and schist

This association is on uplands of the Piedmont. It occupies a belt 3 to 5 miles wide that extends from just north of Marrs Hill northeastward to the Shelby County line and southward along the Coosa River to Walnut Creek. It is highly dissected by many intermittent streams and a few permanent streams. Within the association are many, narrow, winding ridgetops; steep side slopes; and narrow, crooked hollows. For the most part, slopes range from 15 to 45 percent.

Soil association 1 makes up about 14 percent of the county. It is more than 90 percent Talladega soils. The rest is minor soils.

The surface layer of the Talladega soils is dark-brown channery silt loam. The subsoil is yellowish-red to yellowish-brown channery silt loam or silty clay loam. Schist bedrock from the Talladega Formation is at a depth of 20 to 40 inches. The soils are more than 35 percent rock fragments. Fragments as much as 2 feet in diameter are common on the surface and throughout the soils. Rock outcrop also is common.

Minor soils in this association are the Tatum and Masada soils. They are gently rolling and are on toe slopes and stream terraces.

Most of the acreage is owned by pulp and paper companies and is used mainly to produce timber. The few farms in the association are less than 100 acres in size and are dominantly wooded.

Because of steep slopes, generally unfavorable soil characteristics, high hazard of erosion, and droughtiness, the soils in this association are not suited to cultivated crops. They are better suited to woodland than to cropland. Some areas along streams in narrow valleys can be cultivated.

This association is used for hunting, fishing, and hiking but is generally too hilly for recreational development.

2. Tallapoosa-Madison association

Steep, shallow to deep, well-drained, micaceous soils that formed in material weathered from mica schist

This association is on uplands of the Piedmont. It occurs in the southeastern part of the county, east of U.S. Highway No. 31, and extends from Walnut Creek southward along the Coosa River to just below Chestnut Creek. It is highly dissected by many intermittent streams and a few permanent streams. Within the association are many, narrow, winding ridgetops; steep side slopes; and narrow, crooked hollows.

Soil association 2 makes up about 7 percent of the county. It is about 60 percent Tallapoosa soils and 30 percent Madison soils. The rest are minor soils.

The Tallapoosa soils are dominantly on steep side slopes, but a few areas are on narrow ridgetops. Their surface layer is brown loam or fine sandy loam. The subsoil is yellowish-red silty clay loam. Bedrock of mica schist or quartz mica schist is at a depth of 10 to 20 inches. On the surface and throughout the profile are numerous boulders, cobblestones, and angular quartz and schist fragments. Mica flakes occur throughout the profile. Rock outcrops are common.

Madison soils are dominantly on narrow ridgetops, but some areas are on steep side slopes. The surface layer is dark-brown gravelly loam. The subsoil is dominantly red silty clay or clay. Bedrock of mica schist or quartz mica schist is at a depth of 21 to 48 inches. Mica flakes occur throughout the profile.

Minor soils in this association are the Congaree and Hiwassee soils, both of which are well drained. The Congaree soils occur as narrow strips on the flood plains along streams. The Hiwassee soils are gently sloping to steep soils of the uplands.

Large tracts in this association are owned by pulp and paper companies and are used for timber production. Some large tracts are privately owned. The steep slopes, the high hazard of erosion, and the droughtiness make these soils unsuitable for cultivated crops. Some small areas along streams in the narrow valleys can be cultivated. The soils are better suited to woodland than to cropland.

This association is used for hunting, fishing, and hiking. Generally much of it is unsuitable for recreational development.

Steep Hills of the Coastal Plain

The landscape of this area is similar to that of the Piedmont Hills. The underlying material differs. It consists largely of unconsolidated sand and clay. Gullies form and cave in where this material is exposed, and landslides are a hazard during extended periods of rainfall. Because of this instability, construction work can be hazardous.

Soil associations 3 and 4 are in the steep hills of the Coastal Plain.

3. Luverne-Boswell association

Steep, deep, well drained to moderately well drained soils

This association is on uplands of the Coastal Plain. It occurs in the west-central and southwestern parts of the county and extends from the Autauga County line northward to Thorsby. It is highly dissected by many intermit-

tent streams and a few permanent streams. The landscape is one of many narrow, winding ridgetops; steep side slopes; and nearly level valleys about 100 to 200 feet wide. Slopes are dominantly 15 to 45 percent.

Soil association 3 makes up about 6 percent of the county. It is about 70 percent Luverne soils and 15 percent Boswell soils. The rest is minor soils.

The Luverne soils are on narrow ridgetops and steep side slopes. The surface layer is brown fine sandy loam. The subsoil is red clay to sandy clay loam that becomes coarser textured at a depth of 20 to 50 inches.

The Boswell soils are widely distributed throughout the association. The surface layer is dark-brown loam. The subsoil is red, firm, plastic clay or silty clay that is mottled at a depth of 15 to 20 inches.

Minor soils in this association are the Ruston, Toccoa, and Bibb soils. The well-drained Ruston soils are on uplands, and the Toccoa and Bibb soils are on flood plains.

Practically all the acreage is forest. Because of steep slopes and the high hazard of erosion, the soils are not suited to cultivated crops. They are better suited to woodland than to cropland.

Large tracts in this association are owned by commercial companies and are used for timber. A few tracts, 300 to 700 acres in size, are privately owned. Most farms are less than 150 acres in size.

Because of unfavorable soil characteristics, limitations are severe in most areas for roads and homesites.

4. Ruston-Shubuta-Troup association

Steep, deep, well-drained soils

This association is on uplands of the Coastal Plain. It extends over the southwestern part of the county, west-southwest of Maplesville. It is dissected by many intermittent streams and a few permanent streams. Within this association are many, narrow, winding ridgetops. Slopes are dominantly 15 to 45 percent.

This soil association makes up about 7 percent of the county. It is about 40 percent Ruston soils, 30 percent Shubuta soils, and 15 percent Troup soils. The rest is minor soils.

The Ruston soils are on narrow ridgetops and steep side slopes. The surface layer is brown fine sandy loam. Their subsoil is yellowish-red to red sandy loam and clay loam.

The Shubuta soils also are on ridgetops and steep side slopes. The surface layer is dark grayish-brown sandy loam. The subsoil is yellowish-red to red sandy clay or clay and is mottled with yellow, brown, or gray below a depth of 20 inches. In some places fragments of iron-crust rock are on the surface and throughout the profile.

The Troup soils are dominantly on foot slopes or at the base of steep side slopes. The surface layer is grayish-brown loamy sand more than 40 inches thick. The subsoil is red to yellowish-brown sandy loam to sandy clay loam.

Minor soils in this association are the Toccoa and Wehadkee soils. They are on flood plains along streams.

Most of this association is under the authority of the U.S. Forest Service. Practically all the acreage is forest; about 70 percent of the acreage is in the Talladega National Forest. The soils on the steep side slopes are very difficult to work, and if cleared, the hazard of erosion is high. They are better suited to woodland than to cropland. A few large tracts in this association are owned by pulp and paper companies.

This association can be developed as a fairly good area for hunting, fishing, and camping. Roadbuilding can be hazardous on the Troup soils and can cause serious gullying on the steep slopes.

Hilly, Gravelly and Cherty Soils

These are soils of the hilly uplands on the Coastal Plain, in the Piedmont, and in the northwestern part of the county. They occur mainly on side slopes and range widely in texture, depth, and content of gravel. They are cut by many intermittent streams and a few permanent streams. Slopes are dominantly about 10 to 25 percent. Most of the acreage is wooded. Farms generally are small, and most of the farming is done on the less sloping ridgetops. Because of the wide range in characteristics of the soils, limitations are severe in places for many types of construction.

Soil associations 5, 6, 7, and 8 are in these areas.

5. Guin-Bowie association

Deep, excessively drained to well-drained, gravelly or non-gravelly soils

This association is on hilly uplands of the Coastal Plain. It is dominantly in the southwestern part of the county, mainly between Mulberry and Swift Creeks. It is highly dissected by many intermittent streams and a few permanent streams. The landscape is one of many narrow ridgetops; few, fairly wide, sloping to rolling ridgetops; moderately steep, highly dissected side slopes; and narrow, crooked hollows. Slopes are dominantly 10 to 25 percent.

This soil association makes up about 9 percent of the county. It is about 40 percent Guin soils and 20 percent Bowie soils. The rest, the minor soils, are Saffell, Troup, McLaurin, Luverne, Ruston, and Toccoa soils.

The Guin soils are more than 35 percent gravel. They are dominantly moderately steep and occupy side slopes. The surface layer is dark-brown gravelly sandy loam. It is underlain by light yellowish-brown gravelly sandy loam and brownish-yellow gravelly loamy sand.

The Bowie soils are dominantly sloping to rolling and occupy ridgetops, but in some places they are moderately steep and occupy side slopes. Generally slopes are less than 10 percent. The surface layer is dark grayish-brown fine sandy loam. The subsoil is yellowish-brown sandy clay loam. Below a depth of 20 inches, Bowie soils are 5 to 15 percent soft plinthite.

Practically all the acreage is forest. There are small areas of pasture and, here and there, patches of cultivated crops. Because of the slope, the high hazard of erosion, the very low fertility, and droughtiness, the soils in this association are not suited to cultivated crops. They are better suited to woodland than to cropland.

Most of the farms in this association are less than 120 acres and are operated by the owner. Some areas are used for commercial timber.

In some places the Guin soils are a good source of gravel, and in others they can be developed into fairly good hunting areas. Building roads or homes is hazardous because of the moderately steep slopes and the low binding quality of the soil material.

6. *Hartsells-Linker association*

Deep, well-drained, loamy soils that formed in material weathered from sandstone

This association consists of sloping to hilly soils on uplands that cross Interstate Highway 65 about 4 miles southeast of Jemison. It is dissected by a moderate number of intermittent streams. Within the association are several, fairly wide to broad, sloping ridgetops and sloping to moderately steep side slopes.

Soil association 6 makes up about 1 percent of the county. It is 75 percent Hartsells soil and about 25 percent Linker soils.

The Hartsells soils are dominantly sloping and occupy ridgetops. The surface layer is dark grayish-brown sandy loam. The subsoil is yellowish-brown or strong-brown sandy clay loam and clay loam. Sandstone bedrock is at a depth of 40 to 55 inches.

The Linker soils are dominantly sloping to moderately steep and occupy side slopes. The surface layer is dark grayish-brown sandy loam. The subsoil is yellowish-red sandy clay loam. Sandstone is at a depth of 40 to 55 inches. In some places Linker soils are gravelly, and in other places they are cobbly.

About half of this association is wooded, and the other half is used mainly for cultivated crops. Small areas are in pasture.

The cultivated areas are mainly on sloping ridgetops where the soils are well suited to crops commonly grown in the county. Corn, peaches, and cotton are the main crops. Small acreages are used for truck crops. The farms in the association generally are less than 100 acres in size and are operated by owners, some on a part-time basis.

The soils in this association have no serious limitation for industrial and residential development. Because of the sandstone bedrock, they have moderate limitations for roadbuilding.

7. *Bodine association*

Deep, well-drained, cherty soils

This association is on hilly uplands, mostly in the northwestern quarter of the county. It is highly dissected by many intermittent streams and a few permanent streams. About 30 percent of the association occupies narrow to broad ridgetops where slopes are about 2 to 10 percent. The side slopes range from 10 to 25 percent. This soil association makes up about 1 percent of the county.

In the Bodine soils the surface layer is dark grayish-brown cherty silt loam. The subsoil is mottled, pale-brown cherty silty clay loam to silt loam. These soils generally are more than 35 percent chert fragments, but in some small areas they contain fewer chert fragments, and in others they are free of fragments.

Most of the association is forest. The soils are well suited to trees, but the slope and the number of rock fragments on the surface and throughout make them unsuitable for cultivated crops. Small areas are suited to pasture.

About half the association is owned by pulp and paper companies. The rest is owned by nonresidents. To some extent, rock fragments interfere with residential development. Good hunting areas can be developed in this association.

8. *Talladega-Tatum association*

Moderately deep, well-drained soils that formed in material weathered from slate and schist

This association is on hilly uplands of the Piedmont and adjoins the Shelby County line just west of U.S. Highway No. 31. It is highly dissected by many intermittent streams. The landscape is one of many, narrow to fairly wide, sloping to rolling ridgetops; moderately steep, highly dissected side slopes; and narrow, crooked hollows.

This soil association occupies less than 1 percent of the county. It is 70 percent Talladega soils and 25 percent Tatum soils. The rest is minor soils, mainly Tallapoosa soils and narrow strips of alluvial soils.

The Talladega soils are more than 35 percent rock fragments. The surface layer is dark-brown channery silt loam. The subsoil is yellowish-red to yellowish-brown channery silt loam or silty clay loam. Schist bedrock is at a depth of 20 to 40 inches.

The Tatum soils have a surface layer of very dark brown gravelly loam. The subsoil is red clay. Partially weathered rock is at a depth of 20 to 40 inches, and hard rock is at a depth of 40 to 60 inches.

Much of this association is forested and is owned by timber companies. A small acreage of the Tatum soils is cultivated. Because of strong slopes, high hazard of erosion, and low fertility, the soils in this association are unsuited to cultivated crops.

The underlying schist in this association is a limitation to roadbuilding. The slope and soil texture are limitations to residential development. Good hunting areas can be developed.

Gently Sloping to Rolling, Dominantly Well Drained Soils on Uplands

These soils are mostly moderately deep and deep and generally have slopes of about 2 to 15 percent.

They have a wide range of suitability and respond to good management. They have fewer limitations for nonfarm uses than soils in most parts of the county. Most of the farms in the county are in this area.

Soil associations 9 through 15 are on uplands.

9. *Madison-Tatum association*

Moderately deep and deep, well-drained soils that formed in material weathered from slate and mica schist

This association consists of gently sloping to strongly sloping soils on uplands of the Piedmont. It is mainly east and north of Clanton, and east of U.S. Highway No. 31. Within the association are a few broad, gently sloping ridgetops and many narrow, gently sloping to sloping ridgetops; sloping to strongly sloping side slopes; and nearly level valleys up to about 200 feet wide. It is moderately dissected by many intermittent streams and a few permanent streams. Slopes range from 2 to 15 percent but are dominantly 6 to 10 percent.

Soil association 9 makes up about 6 percent of the county. It is about 50 percent Madison soils and 40 percent Tatum soils. The rest is minor soils, mainly Tallapoosa, Talladega, Hiwassee, Congaree, and Masada soils.

The Madison soils have a surface layer of dark-brown gravelly loam. Their subsoil is dominantly red silty clay

or clay. Bedrock is at a depth of 20 to 50 inches. There are common to many mica flakes throughout the profile.

The Tatum soils have a surface layer of very dark brown gravelly loam. Their subsoil is red clay. Partly weathered rock is at a depth of 20 to 40 inches and is underlain by hard rock to a depth of about 60 inches.

About 70 percent of this association is forest, 20 percent is pasture, and 10 percent is cropland. More than half the acreage has been cleared and used for cultivated crops, but much of it has reverted to trees, mainly loblolly pine. In most areas the soils are suited to the crops commonly grown in the county. Fields are generally irregular in shape and size. The erosion hazard is moderate to high.

Farms in this association are less than 100 acres in size and are owner operated. Corn, cotton, and peaches are the most commonly grown crops. There are a few beef cattle farms. Some large tracts are owned by commercial companies that produce timber.

This association has no limitation for residential development or for recreational development, for example, playgrounds, campsites, and hunting areas. It has some limitation for roadbuilding.

10. Iredell-Wilkes association

Moderately deep to shallow, moderately well drained and well drained soils that formed in material weathered from chloritic schist

This association consists of nearly level to sloping soils on uplands of the Piedmont. It occurs mainly in an area 4 to 5 miles north of Clanton. It is dissected by only a few intermittent drains. Slopes range from 0 to 10 percent but are dominantly 2 to 6 percent.

Soil association 10 makes up less than 1 percent of the county. It is about 60 percent Iredell soils and 40 percent Wilkes soils.

Iredell soils have a surface layer of dark-brown gravelly loam. Their subsoil is yellowish-brown silty clay to clay. Partly weathered rock or hard bedrock is at a depth of 20 to 40 inches.

Wilkes soils have a surface layer of dark-brown to dark grayish-brown gravelly loam. Their subsoil is strong-brown to brownish-yellow gravelly silty clay or clay. Partly weathered rock or hard bedrock is at a depth of 10 to 20 inches.

Most of this association has been cleared and cultivated. More than half is now in pasture, some areas are loblolly pine forest, and small areas are used for corn and cotton. The soils are generally poorly suited to cultivated crops but are fairly well suited to permanent sod crops.

This association consists mostly of parts of farms that are more than 150 acres in size. Raising beef cattle is the major enterprise.

This association is limited for residential development and for engineering structures. Good hunting and fishing areas can be developed.

11. Hiwassee association

Deep, well-drained, dark-red soils

This association consists of gently sloping to strongly sloping soils on uplands of the Piedmont. It occurs as two areas; one area is along U.S. Highway No. 31, adjacent to the Shelby County line, and the other is 9 miles northeast of Jemison, locally called Sawyers Cave. Within the association are many intermittent streams and a few permanent streams. Slopes range from 2 to 15 percent but are dominantly 2 to 10 percent.

Soil association 11 makes up less than 1 percent of the county. It is about 80 percent Hiwassee soils. The remaining 20 percent is made up of Masada, Altavista, and Tatum soils.

Hiwassee soils have a surface layer of dark reddish-brown clay loam. Their subsoil is dark-red clay. Bedrock is at a depth of more than 60 inches.

Practically all the acreage has been used for cultivated crops, but most of it is now in pasture. Small areas are used for corn and cotton. The soils are good for farming and are well suited to the crops commonly grown in the county.

The average farm in this association is less than 100 acres in size and is owner operated. Raising beef cattle is the major enterprise.

This association is only fair for recreational development, for example, for campsites, playgrounds, golf courses, and hunting areas. The texture of the surface layer is a limitation. Slope is the only limitation for residential development and for roads and other engineering structures.

12. Luverne-Ruston association

Moderately deep and deep, well-drained soils

This association consists of gently sloping to strongly sloping soils on uplands of the Coastal Plain. It mainly occupies an area north of State Route 22 to Mahan Creek and west of Thorsby and Jemison to the Bibb County line. It is dissected by many intermittent streams and a few permanent streams. Within the association are a few broad, gently sloping ridgetops and many, narrow, gently sloping to sloping ridgetops; sloping to strongly sloping side slopes; and narrow, crooked hollows. Slopes range from 2 to 15 percent but are dominantly 6 to 10 percent.

Association 12 makes up about 10 percent of the county. It is 60 percent Luverne soils and 25 percent Ruston soils. The rest is minor soils, mainly Ora, Bibb, Toccoa, and Bowie soils.

Luverne soils have a surface layer of brown fine sandy loam. Their subsoil is red, plastic silty clay, clay, sandy clay, or clay loam. Stratified sand, silt, and sandy clay are at a depth of 20 to 50 inches.

Ruston soils have a surface layer of brown fine sandy loam. Their subsoil is yellowish-red to red sandy clay loam more than 50 inches thick.

About 60 percent of the association is forest, 20 percent is cropland, and 20 percent is pasture. Most of the acreage has been cultivated, but many areas have reverted to loblolly pine forest. These soils are fairly well suited to well suited to the crops commonly grown in the county. The odd shape and small size of the fields make use of mechanized equipment difficult.

Commercial companies own large tracts that are used to produce timber. A few tracts of 300 to 700 acres are privately owned. Most farms are less than 150 acres in size and are owner operated. Some farming is on a part-time basis. Cotton and corn are the crops commonly grown. A few farmers raise poultry for market, mainly turkeys. There are a few beef cattle farms and dairy farms.

This association has no limitations for residential de-

velopment and for roads and other engineering structures. In some areas slope is a limitation for recreational development, for example, for campsites, playgrounds, golf courses, and hunting areas.

13. Ruston-Ora-Bowie association

Deep, well drained and moderately well drained soils; a fragipan in some places, plinthite in other places

This association consists of broad, nearly level to strongly sloping soils on uplands of the Coastal Plain. It is about 3 miles wide and occurs parallel to U.S. Highway No. 31, extending from the Autauga County line to Jemison and then westward to the Bibb County line. It is dissected by many intermittent streams and a few permanent streams. Streams generally are narrow and crooked. Within the association are many, broad, nearly level to gently sloping ridgetops and many, narrow, gently sloping to sloping ridgetops. The side slopes are moderately wide to narrow and sloping to strongly sloping. Slopes range from 0 to 15 percent but are dominantly 2 to 6 percent.

Association 13 makes up about 17 percent of the county. It is about 35 percent Ruston soils, 25 percent Ora soils, and 3 percent Bowie soils. The rest is minor soils, mainly Luverne, Saffell, Bibb, and Toccoa soils.

Ruston soils have a surface layer of brown fine sandy loam. Their subsoil, more than 50 inches thick, is yellowish-red to red sandy clay loam and clay loam.

Ora soils have a surface layer of brown sandy loam. Their subsoil is yellowish-red sandy clay loam and loam. A compact, brittle fragipan is at a depth of 25 to 35 inches.

Bowie soils have a surface layer of dark grayish-brown fine sandy loam. Their subsoil is yellowish-brown sandy clay loam. Soft plinthite is at a depth of 20 to 55 inches.

This association is used more intensively for cultivated crops than is any other association in the county. Most of the acreage has been cultivated. About 50 percent is cropland, about 30 percent is forest, and 20 percent is pasture. The soils are well suited to all the crops commonly grown in the county. They are fairly easy to work and respond well to good management.

Most farms in this association are less than 100 acres in size and are owner operated, mostly as part-time enterprise. Corn, peaches, and cotton are the main crops. Some farms have small acreages in truck crops, such as tomatoes, beans, cowpeas, okra, collards, and strawberries. There are a few beef cattle farms and a few dairy farms.

This association has no limitations for recreational developments or for roadbuilding. It has no limitations for residential development, but onsite investigation is needed in selecting locations for septic tank filter fields.

14. Saffell-McLaurin-Ruston association

Deep, gently sloping to strongly sloping, well-drained, gravelly and loamy soils

This association is on broad uplands of the Coastal Plain. It is dominantly in an area that is east of Mulberry Creek, west of Interstate Highway 65, and south of State Route 22, and extends to the Autauga County line. It is dissected by many intermittent streams and a few permanent streams. The streams are narrow and crooked. Within the association are a few, broad, gently sloping ridgetops; many, narrow, gently sloping to sloping ridgetops; and generally narrow, sloping to strongly sloping side slopes.

Association 14 makes up about 11 percent of the county. It is 50 percent Saffell soils, 20 percent McLaurin soils, and 5 percent Ruston soils. The rest is minor soils, mainly Bowie, Troup, Eustis, and Toccoa soils.

The Saffell soils are more than 35 percent gravel. Their surface layer is dark grayish-brown gravelly sandy loam. The subsoil is yellowish-red and reddish-brown gravelly sandy clay loam less than 50 inches thick.

The McLaurin soils have a surface layer of dark grayish-brown sandy loam. Their subsoil is yellowish-red fine sandy loam more than 50 inches thick.

The Ruston soils have a surface layer of brown fine sandy loam. Their subsoil is yellowish-red and red sandy clay loam and clay loam more than 50 inches thick.

About 50 percent of the association is cropland, 40 percent is forest, and 10 percent is pasture or is idle. The soils are well suited to all the crops commonly grown. Their texture makes them easy to work and slow to erode.

Most farms in this association are less than 120 acres in size and are owner operated. Some are operated on a part-time basis. Corn, peaches, and cotton are the main crops. Small acreages are used for watermelons, tomatoes, beans, okra, and other truck crops. There are a few beef cattle farms. Some areas are owned by commercial companies and are used for timber.

This association has no limitation for most recreational developments, such as campsites, playgrounds, golf courses, and hunting areas, or for residential developments, roadbuilding, or other engineering purposes.

15. Eustis-Troup association

Deep, well-drained to excessively drained, sandy soils

This association is on uplands of the Coastal Plain. It is mainly adjacent to Autauga County along U.S. Highway No. 82, but one small area is along State Route 183 in the northwestern part of the county. Within the association are fairly broad, nearly level to strongly sloping ridgetops and a few intermittent streams. Slopes range from 0 to 15 percent but are dominantly 6 to 10 percent.

Association 15 makes up about 1 percent of the county. It is 60 percent Eustis soils and 35 percent Troup soils. The rest is minor soils, mainly McLaurin and Saffell soils.

The surface layer of the Eustis soils is dark-brown loamy sand. The subsoil is yellowish-red loamy sand more than 50 inches thick.

The Troup soils have a surface layer of grayish-brown loamy fine sand about 40 to 70 inches thick. Their subsoil is strong-brown sandy loam.

About 50 percent of the association is cropland, 40 percent is forest, and 10 percent is pasture or is idle. These soils are suitable for the crops commonly grown. Their sandy texture makes them easy to work and slow to erode.

Most farms in this association are less than 100 acres in size and are owner operated. Watermelon, peaches, tomatoes, cotton, and corn are the main crops. Some areas are owned by commercial companies and are used for timber.

This association has severe limitations for recreational developments, such as campsites or playgrounds, and moderate limitations for engineering structures and residential developments.

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Soils on Flood Plains and Low Stream Terraces

These soils are deep and are poorly drained to well drained. Most areas are subject to flooding, and some areas have a water table near the surface during wet periods. The soils vary in texture from place to place and throughout the profile. In most places they are stratified.

Much of the acreage is hardwood forest. Some areas are used for pasture, and some of the better drained areas are used for row crops.

Because of the flood hazard and the high water table, most areas have severe limitations for nonfarm uses.

Soil associations 16, 17, and 18 are on the flood plains and low stream terraces of Chilton County.

16. Myatt-Bibb association

Poorly drained soils that have a high water table; subject to occasional flooding

This association consists of nearly level soils on broad, low terraces and flood plains along streams throughout the western two-thirds of the county. It is 300 to 5,000 feet wide. In most places the divides between the terraces and flood plains are gradual.

Association 16 makes up about 5 percent of the county. It is 50 percent Myatt soils and 30 percent Bibb soils. The rest is minor soils, mainly Toccoa, Altavista, Angie, and Wickham soils.

The Myatt soils have a surface layer of dark grayish-brown loam. Their subsoil is dominantly gray silty clay loam more than 50 inches thick.

The Bibb soils have a surface layer of gray sandy loam that is underlain by mottled gray and light-gray sandy loam.

About 90 percent of the association is forest and 10 percent is pasture. The soils are well suited to trees. Unless properly drained, they are not suited to cultivated crops. They are wet and are subject to occasional flooding and ponding.

This association consists of parts of farms that generally are more than 200 acres in size and are owner operated. Some areas are owned by commercial companies and are used for timber.

This association provides good hunting. It has severe limitations for residential and recreational developments.

17. Toccoa-Angie-Wickham-Altavista association

Well drained and moderately well drained soils; some areas subject to occasional or frequent flooding

This association consists of nearly level soils on broad stream terraces and flood plains. It occurs dominantly near Maplesville and along Mahan Creek in the northwestern corner of the county. It is from 200 to 2,500 feet wide. In most places the divides between the terraces and flood plains are gradual.

Association 17 makes up about 3 percent of the county. It is about 40 percent Toccoa soils, 30 percent Angie and Wickham soils, and 15 percent Altavista soils. The rest is minor soils, mainly Bibb and Myatt soils.

The Toccoa soils are on flood plains adjacent to streams and are subject to occasonal flooding after periods of prolonged or heavy rainfall. Their surface layer is dark-brown fine sandy loam. It is underlain by yellowish-brown sandy loam.

The Angie and Wickham soils are on stream terraces. In some areas they are subject to occasional flooding of 1 or 2 days duration. Their surface layer is brown to yellowish-brown fine sandy loam. The subsoil is dominantly yellowish-red to strong-brown and light brownish-gray silty clay to sandy clay loam.

The Altavista soils are on intermediate terraces and are subject to occasional flooding. Their surface layer is dark grayish-brown fine sandy loam. The subsoil is dominantly yellowish-brown sandy clay loam to silty clay loam.

About 40 percent of the association is forest, 30 percent is cropland or is idle, and 30 percent is pasture. The soils are well suited to the cultivated crops, pasture, and trees commonly grown. Flooding is a hazard.

The average farm in the association is more than 200 acres in size and is owner operated. Corn, pasture, and cotton are the dominant crops. There are a few beef cattle farms.

This association provides good hunting areas. It has moderate limitations for roads and other engineering structures. Because of the flood hazard, it has severe limitations for residential development and for camps and playgrounds.

18. Masada association

Well-drained soils that have bedrock at a depth of about 30 to 50 inches; most areas subject to occasional flooding

This association consists of nearly level soils on stream terraces in the northeastern corner of the county. It is from 100 to 400 feet wide in some places.

Association 18 makes up about 1 percent of the county. It is 90 percent Masada soils. The rest is minor soils, mainly Tatum and Altavista soils.

The Masada soils have a surface layer of dark grayish-brown silt loam. The subsoil is yellowish-brown silty clay loam.

About 70 percent of the association is forest, and about 30 percent is pasture or is idle. The soils are suited to the crops commonly grown in the county, but flooding may be a hazard. They are well suited to trees.

Several areas are owned by commercial companies that produce timber. Most farms in the association are less than 120 acres in size and are owner operated. Beef cattle is the main enterprise. Some farming is done on a part-time basis.

This association has moderate limitations for roadbuilding and severe limitations for residential development. Good hunting areas can be developed.

Descriptions of the Soils

This section describes the soil series and mapping units in Chilton County. Each soil series is described in considerable detail, and then, briefly, each mapping unit in that series. Unless it is specifically mentioned otherwise, it is to be assumed that what is stated about the soil series holds true for the mapping units in that series. Thus, to get full information about any one mapping unit, it is necessary to read both the description of the mapping unit and the description of the soil series to which it belongs.

An important part of the description of each soil series

is the soil profile, that is, the sequence of layers from the surface downward to rock or other underlying material. Each series contains two descriptions of this profile. The first is brief and in terms familiar to the layman. The second, detailed and in technical terms, is for scientists, engineers, and others who need to make thorough and precise studies of soils.

As mentioned in the section "How This Survey Was Made," not all mapping units are members of a soil series. Gulled land and Rock land, for example, do not belong to a soil series, but nevertheless, are listed in alphabetic order along with the soil series.

Following the name of each mapping unit 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 is the capability unit and woodland group in which the mapping unit has been placed. The page for the description of each capability unit, woodland group, or other interpretative group can be found by referring to the "Guide to Mapping Units" at the back of this survey.

The acreage and proportionate extent of each mapping unit are shown in table 1. Many of the terms used in describing soils can be found in the Glossary at the end

TABLE 1.—*Approximate acreage and proportionate extent of the soils*

[An asterisk before the soil name indicates a low intensity mapping unit. The composition of these units is more variable than that of others in the county but has been controlled well enough for interpretation of expected use]

Soil	Area	Extent	Soil	Area	Extent
	Acres	*Percent*		*Acres*	*Percent*
Altavista fine sandy loam, 0 to 2 percent slopes	2,015	0.5	McLaurin sandy loam, 6 to 10 percent slopes	5,771	1.3
Angie-Wickham complex, 0 to 2 percent slopes	3,273	.7	McLaurin sandy loam, 10 to 15 percent slopes	1,078	.2
Angie-Wickham complex, 2 to 6 percent slopes	683	.2	Madison gravelly loam, 2 to 6 percent slopes, eroded	2,161	.5
Bibb soils	957	.2	Madison gravelly loam, 6 to 10 percent slopes, eroded	8,057	1.8
Bodine cherty silt loam, 2 to 10 percent slopes	1,045	.2	Madison gravelly loam, 10 to 15 percent slopes, eroded	5,716	1.3
Bodine complex, 2 to 10 percent slopes	1,878	.4	Masada silt loam, 0 to 2 percent slopes	4,858	1.1
Bodine complex, 10 to 25 percent slopes	2,863	.6	Myatt loam	2,914	.7
Bowie fine sandy loam, 0 to 2 percent slopes	325	.1	*Myatt-Bibb association, level	30,118	6.7
Bowie fine sandy loam, 2 to 6 percent slopes	1,975	.4	Ora sandy loam, 0 to 2 percent slopes	532	.1
Bowie fine sandy loam, 6 to 10 percent slopes	480	.1	Ora sandy loam, 2 to 6 percent slopes	11,270	2.5
Congaree silt loam	2,985	.7	Ora sandy loam, 2 to 6 percent slopes, eroded	1,379	.3
Eustis loamy sand, 2 to 6 percent slopes	1,524	.3	Ora sandy loam, 6 to 10 percent slopes	2,817	.6
Eustis loamy sand, 6 to 15 percent slopes	2,300	.5	Ora sandy loam, 6 to 10 percent slopes, eroded	2,361	.5
Guin and Bowie soils, 6 to 10 percent slopes	1,760	.4	Rock land	604	.1
Guin and Bowie soils, 10 to 25 percent slopes	35,226	7.9	Ruston fine sandy loam, 0 to 2 percent slopes	1,107	.2
Gullied land	120	(1)	Ruston fine sandy loam, 2 to 6 percent slopes	16,218	3.6
Harleston sandy loam, 0 to 2 percent slopes	771	.2	Ruston fine sandy loam, 6 to 10 percent slopes	11,311	2.5
Harleston sandy loam, 2 to 6 percent slopes	767	.2	Ruston fine sandy loam, 6 to 10 percent slopes, eroded	3,835	.9
Hartsells sandy loam, 2 to 6 percent slopes	1,375	.3	Ruston fine sandy loam, 10 to 15 percent slopes, eroded	3,905	.9
Hartsells sandy loam, 6 to 10 percent slopes	1,792	.4	*Ruston-Shubuta-Troup association, hilly	12,045	2.7
Hiwassee clay loam, 2 to 6 percent slopes, eroded	443	.1	*Ruston-Shubuta-Troup association, steep	13,693	3.1
Hiwassee clay loam, 6 to 10 percent slopes, eroded	443	.1	Saffell gravelly sandy loam, 2 to 6 percent slopes	11,500	2.6
Hiwassee clay loam, 10 to 15 percent slopes, eroded	295	.1	Saffell gravelly sandy loam, 6 to 10 percent slopes	15,424	3.4
Iredell-Wilkes complex, 0 to 2 percent slopes	299	.1	Saffell gravelly sandy loam, 10 to 15 percent slopes	4,049	.9
Iredell-Wilkes complex, 2 to 10 percent slopes	943	.2	Shubuta sandy loam, 2 to 15 percent slopes, eroded	2,987	.7
Linker sandy loam, 2 to 6 percent slopes	139	(1)	Talladega channery silt loam, 6 to 15 percent slopes	11,935	2.7
Linker gravelly sandy loam, 6 to 10 percent slopes	261	.1	Talladega channery silt loam, 15 to 45 percent slopes	50,214	11.2
Linker cobbly sandy loam, 6 to 15 percent slopes	671	.2	*Tallapoosa-Madison association, steep	29,525	6.6
Lucedale fine sandy loam, 0 to 2 percent slopes	208	(1)	Tatum gravelly loam, 2 to 6 percent slopes	3,560	.8
Lucedale fine sandy loam, 2 to 6 percent slopes	593	.1	Tatum gravelly loam, 6 to 15 percent slopes	9,146	2.0
Lucedale fine sandy loam, 6 to 10 percent slopes	441	.1	Toccoa fine sandy loam	5,464	1.2
Luverne fine sandy loam, 2 to 6 percent slopes	2,921	.7	Toccoa soils, local alluvium	732	.2
Luverne fine sandy loam, 2 to 6 percent slopes, eroded	4,463	1.0	Troup loamy fine sand, 0 to 6 percent slopes	1,239	.3
Luverne fine sandy loam, 6 to 10 percent slopes	3,869	.9	Troup loamy fine sand, 6 to 10 percent slopes	1,937	.4
Luverne fine sandy loam, 6 to 10 percent slopes, eroded	16,870	3.8	Troup loamy fine sand, 10 to 15 percent slopes	616	.1
Luverne fine sandy loam, 10 to 15 percent slopes, eroded	8,353	1.9	Wehadkee loam	4,071	.9
Luverne-Boswell complex, 2 to 10 percent slopes, eroded	777	.2	Gravel pits, mica quarries, and other such small areas	1,101	.2
Luverne-Boswell complex, 10 to 15 percent slopes, eroded	13,431	3.0			
Luverne-Boswell complex, 15 to 45 percent slopes	27,330	6.1	Total	447,360	100.0
McLaurin sandy loam, 2 to 6 percent slopes	5,201	1.2			

[1] Less than 0.1 percent.

of this survey, and more detailed information about the terminology and methods of soil mapping can be obtained from the Soil Survey Manual (7).

Altavista Series

The Altavista series consists of deep, moderately well drained soils on stream terraces. These soils are widely distributed throughout the western half of the county. They formed in material washed from uplands of the surrounding Coastal Plain. Slopes are 0 to 2 percent.

In a typical profile the surface layer is dark grayish-brown fine sandy loam about 5 inches thick. The friable to firm subsoil extends to a depth of about 50 inches. The upper 18 inches is yellowish-brown sandy clay loam to silty clay loam. The next layers are mottled light brownish-gray silty clay loam and sandy loam and mottled light-gray sandy clay loam. The underlying material is mottled light brownish-gray loamy sand and light-gray silty clay loam to silty clay.

These soils are low in fertility, low in content of organic matter, and very strongly acid. Water enters the soil at a moderate rate and moves through the profile at a moderate to rapid rate. The available water capacity is medium.

Altavista soils are suited to most crops commonly grown in the county. They are easy to work and can be worked throughout a moderately wide range of moisture content. They are easy to keep in good tilth. The response to management is good.

The native vegetation is mixed hardwood forest. There are a few pines. Most of the acreage has been cleared and is used for corn and cotton.

Profile of an Altavista fine sandy loam, 0 to 2 percent slopes, in a moist, cultivated area 1 mile north of Mulberry Baptist Church, SE¼SW¼ sec. 29, T. 22 N., R. 13 E.:

Ap—0 to 5 inches, dark grayish-brown (10YR 4/2) fine sandy loam; weak granular structure; very friable; many fine roots; many fine mica flakes; strongly acid; clear, wavy boundary.

B21t—5 to 14 inches, yellowish-brown (10YR 5/6) sandy clay loam to silty clay loam; moderate, medium, subangular blocky structure; friable; few fine roots; patchy clay films on many ped faces; many medium mica flakes; very strongly acid; gradual, wavy boundary.

B22t—14 to 23 inches, yellowish-brown (10YR 5/8) silty clay loam; common, medium, distinct mottles of strong brown and pale brown; moderate, medium, subangular blocky structure; firm; few fine roots; thin continuous clay films on most ped faces; many medium mica flakes; very strongly acid; gradual, wavy boundary.

B23t—23 to 31 inches, mottled light brownish-gray (10YR 6/2), yellowish-brown (10YR 5/6), strong-brown (7.5YR 5/6), and yellowish-red (5YR 5/6) silty clay loam; moderate, medium, subangular blocky structure; friable; thin patchy clay films on many ped faces; many medium mica flakes; very strongly acid; gradual, wavy boundary.

B31t—31 to 36 inches, mottled light brownish-gray (2.5Y 6/2), light yellowish-brown (2.5Y 6/4), yellowish-brown (10YR 5/8), and strong-brown (7.5YR 5/6) sandy loam; weak, medium, subangular blocky structure; very friable; thin patchy clay films on some ped faces; many medium mica flakes; very strongly acid; gradual, wavy boundary.

B32t—36 to 50 inches, mottled light-gray (N 7/), yellowish-brown (10YR 5/6), and strong-brown (7.5YR 5/6) sandy clay loam; moderate, medium to coarse, subangular blocky structure; friable; thin patchy clay films on a few ped faces; many medium mica flakes; very strongly acid; gradual, wavy boundary.

C1—50 to 60 inches, mottled light brownish-gray (10YR 6/2), yellowish-brown (10YR 5/8), and strong-brown (7.5YR 5/6) loamy sand; single grain; very friable; many medium mica flakes; very strongly acid; gradual, wavy boundary.

C2—60 to 65 inches +, gray to light-gray (10YR 6/1) silty clay loam to silty clay; few, medium, faint, yellowish-brown mottles; massive; firm; many medium mica flakes; very strongly acid.

The Ap horizon ranges from dark grayish brown to very dark grayish brown, brown, or dark yellowish brown. The darker colored surface layer is generally an undisturbed layer less than 6 inches thick. The B2t horizon ranges from sandy clay loam or silty clay loam to clay loam in texture and from yellowish brown to light olive brown or strong brown in color. Mottles of yellow, brown, gray, or red are between depths of 20 and 30 inches. Common to many mica flakes are throughout the profile.

Altavista soils are adjacent to the Angie, Wickham, Masada, and Myatt soils. They are not so well drained as Wickham and Masada soils but are better drained than Myatt soils.

Altavista fine sandy loam, 0 to 2 percent slopes (AaA).—This is the only Altavista soil mapped in the county. Included are small areas where gray mottles occur within a depth of 20 inches, areas where the surface layer is silt loam and loam and the subsoil is silty clay loam or silty clay, and small areas where slopes are as much as 6 percent.

Surface runoff is slow, and the erosion hazard is slight. (Capability unit IIw–31; woodland suitability group 2w8)

Angie Series

The Angie series consists of deep, moderately well drained soils on stream terraces. These soils formed in material washed from uplands of the Coastal Plain. Slopes range from 0 to 6 percent.

The surface layer in a typical profile is brown or dark-brown fine sandy loam about 7 inches thick. The next layers, extending to a depth of 41 inches, are yellowish-red to strong-brown silty clay to silty clay loam that is mottled in the lower part. Below this is about 12 inches of mottled sandy clay loam. The underlying material to a depth of about 60 inches is mottled sandy loam.

These soils are low in natural fertility and content of organic matter. They are medium to strongly acid. Water enters the soil at a moderate rate and moves through the profile at a slow rate. The available water capacity is high. The hazard of erosion is slight to moderate.

Angie soils are well suited to most locally grown crops. Most of the acreage is used for corn and cotton, but some areas are in pasture and some are idle.

The Angie soils in this county are mapped only with Wickham soils.

Profile of an Angie fine sandy loam (0 to 2 percent slopes) in a moist, cultivated area 2 miles south of Stanton, SE¼SE¼ sec. 18, T. 20 N., R. 12 E.:

Ap—0 to 7 inches, brown to dark-brown (10YR 4/3) fine sandy loam; weak, medium, granular and subangular blocky structure; very friable; many fine roots; many fine mica flakes; medium acid; abrupt, smooth boundary.

B21t—7 to 23 inches, yellowish-red (5YR 4/6) silty clay; moderate, medium, subangular blocky structure; few fine roots; thin continuous clay films on most ped faces; firm; slightly sticky, slightly plastic; common

fine mica flakes; strongly acid; clear, smooth boundary.

B22t—23 to 28 inches, strong-brown (7.5YR 5/6) silty clay loam; weak to moderate, medium, subangular blocky structure; friable, slightly sticky, slightly plastic; thin continuous clay films on some ped faces; common fine mica flakes; strongly acid; gradual, smooth boundary.

B23t—28 to 41 inches, mottled light brownish-gray (10YR 6/2), strong-brown (7.5YR 5/6), and yellowish-red (5YR 4/6) silty clay loam; weak, medium, subangular blocky structure; friable, slightly sticky, slightly plastic; patchy to continuous clay films on most ped faces; common fine mica flakes; strongly acid; gradual, wavy boundary.

B24t—41 to 53 inches, mottled gray to light-gray (10YR 6/1), yellowish-brown (10YR 5/6), and strong-brown (7.5YR 5/6) sandy clay loam; weak, medium, subangular blocky structure; friable; patchy to continuous clay films on some ped faces; common fine mica flakes; strongly acid; gradual, wavy boundary.

C—53 to 60 inches +, mottled pale-brown (10YR 6/3) and strong-brown (7.5YR 5/6) sandy loam; very weak, medium, subangular blocky structure and single grain; very friable; common fine mica flakes; strongly acid.

In areas that have not been cleared the A horizon ranges from dark brown to dark grayish brown or very dark grayish brown. It is dominantly fine sandy loam but ranges to loam or silt loam. In cultivated areas the Ap horizon ranges from dark brown to dark yellowish brown or brown. The Bt horizon ranges from reddish yellow to brown and from sandy clay loam to clay. The C horizon is sandy loam or loamy sand or contains strata of sand and gravel. Mica flakes range from common to many throughout the profile.

Angie soils are adjacent to Altavista, Wickham, Masada, and Myatt soils. They have a finer textured subsoil than Wickham soils and tend to be redder than Altavista soils. They are deeper than Masada soils and are not so well drained. They are better drained than Myatt soils.

Angie-Wickham complex, 0 to 2 percent slopes (AwA).—This complex is 50 percent Angie soils and 40 percent Wickman soils. The rest is minor soils, mainly Altavista, Masada, and Myatt soils. Both of the dominant soils occur in each mapped area. Both have profiles similar to those described as typical for their respective series.

Surface runoff is slow to very slow, and the erosion hazard is slight.

These soils are easy to work and can be worked throughout a fairly wide range of moisture content. They are well suited to intensive use, but occasional flooding late in winter or in spring is a slight hazard. Most of the acreage is used for pasture, corn, hay, and cotton. (Capability unit IIw–31; woodland suitability group 2w8)

Angie-Wickham complex, 2 to 6 percent slopes (AwB).—This complex is 40 percent Angie soils and 40 percent Wickham soils. The rest is minor soils, mainly Altavista, Masada, and Myatt soils. The dominant soils have a thinner surface layer and deeper red and brown colors in the subsoil than are typical of the respective series.

Surface runoff is slow to medium, and erosion hazard slight to moderate.

The soils are easy to work and can be worked throughout a fairly wide range of moisture content. They are well suited to all crops locally grown and are among the soils of the county most responsive to good management, especially to fertilization and liming. Most of the acreage has been cleared. (Capability unit IIe–14; woodland suitability group 2w8)

Bibb Series

The Bibb series consists of nearly level, poorly drained, acid alluvial soils. These soils are widely distributed throughout the county. They occur in depressions on uplands, at heads of small drainageways, or on flood plains. They formed in material washed from surrounding uplands of the Coastal Plain and are subject to frequent flooding and pounding. Slopes are 0 to 2 percent.

In a typical profile this soil is gray sandy loam to a depth of 34 inches. It is mottled below a depth of about 12 inches. Below a depth of 34 inches is mottled light-gray sand and loamy sand.

These soils are low to medium in natural fertility and content of organic matter and are strongly acid to very strongly acid. Water enters the soil at a moderate to rapid rate and moves through the profile at a moderate to rapid rate. The available water capacity is low to medium. The water table is high and is near the surface in winter.

Bibb soils are fairly well suited to crops commonly grown in the area. They respond well to management.

The native vegetation is mixed hardwood forest. Some areas have been used for pasture, corn, or hay.

Profile of a Bibb sandy loam (0 to 2 percent slopes) in a moist pasture 1¼ miles west-southwest of Chilton County Courthouse, SW¼NW¼ sec. 2, T. 21 N., R. 14 E.:

Ap—0 to 12 inches, gray (N 5/0) sandy loam; weak, fine, granular structure; very friable; many fine roots in upper 3 inches, few in the 3- to 12-inch zone; very strongly acid; abrupt, smooth boundary.

C1g—12 to 34 inches, gray to light-gray (10YR 6/1) heavy sandy loam; many, fine, prominent, strong-brown (7.5YR 5/6) mottles and many, fine, faint, gray (10YR 5/1) and dark-gray (10YR 4/1) mottles; very weak, fine, subangular blocky structure; friable, slightly sticky; coated sand grains; very strongly acid; clear, wavy boundary.

C2g—34 to 44 inches, gray to light-gray (10YR 6/1) sand; few, medium, faint, light-gray (2.5Y 7/2) and very pale brown (10YR 7/3) mottles; single grain; loose; strongly acid; gradual, wavy boundary.

C3g—44 to 65 inches +, gray to light-gray (10YR 6/1) loamy sand; common, medium, distinct mottles of light yellowish brown (2.5Y 6/4); single grain; loose; 15 percent rounded gravel up to half an inch in diameter; very strongly acid.

The Ap horizon ranges from sandy loam to fine sandy loam, loam or silt loam in texture, from 4 to 15 inches in thickness, and from gray to light gray, dark grayish brown, dark gray, or black in color. The darker colored layers are less than 6 inches thick. The Cg horizon ranges from sandy loam to light loam, silt loam, and sand in texture, and from gray or light gray to light brownish gray in color. In many places at a depth of more than 30 inches, the texture is loamy sand, sand, or stratified sand and gravel. There are faint to prominent, brown or yellow mottles throughout the profile. In some places the profile contains varying amounts of mica.

Bibb soils are on first bottoms adjacent to the Toccoa, Congaree, and Wehadkee soils. They are grayer and more poorly drained than Toccoa or Congaree soils and are coarser textured throughout the profile than Wehadkee soils.

Bibb soils (Bb).—This is the only unit of Bibb soils mapped in the county. Slopes are 0 to 2 percent. Included in the mapping are areas where sandy clay loam or silty clay loam is at a depth of more than 12 inches.

Surface runoff is slow, and the erosion hazard is slight. Because of poor drainage, a high water table, and the hazard of flooding or ponding for long periods, these soils are well suited to pasture (fig. 2) or trees. If drained,

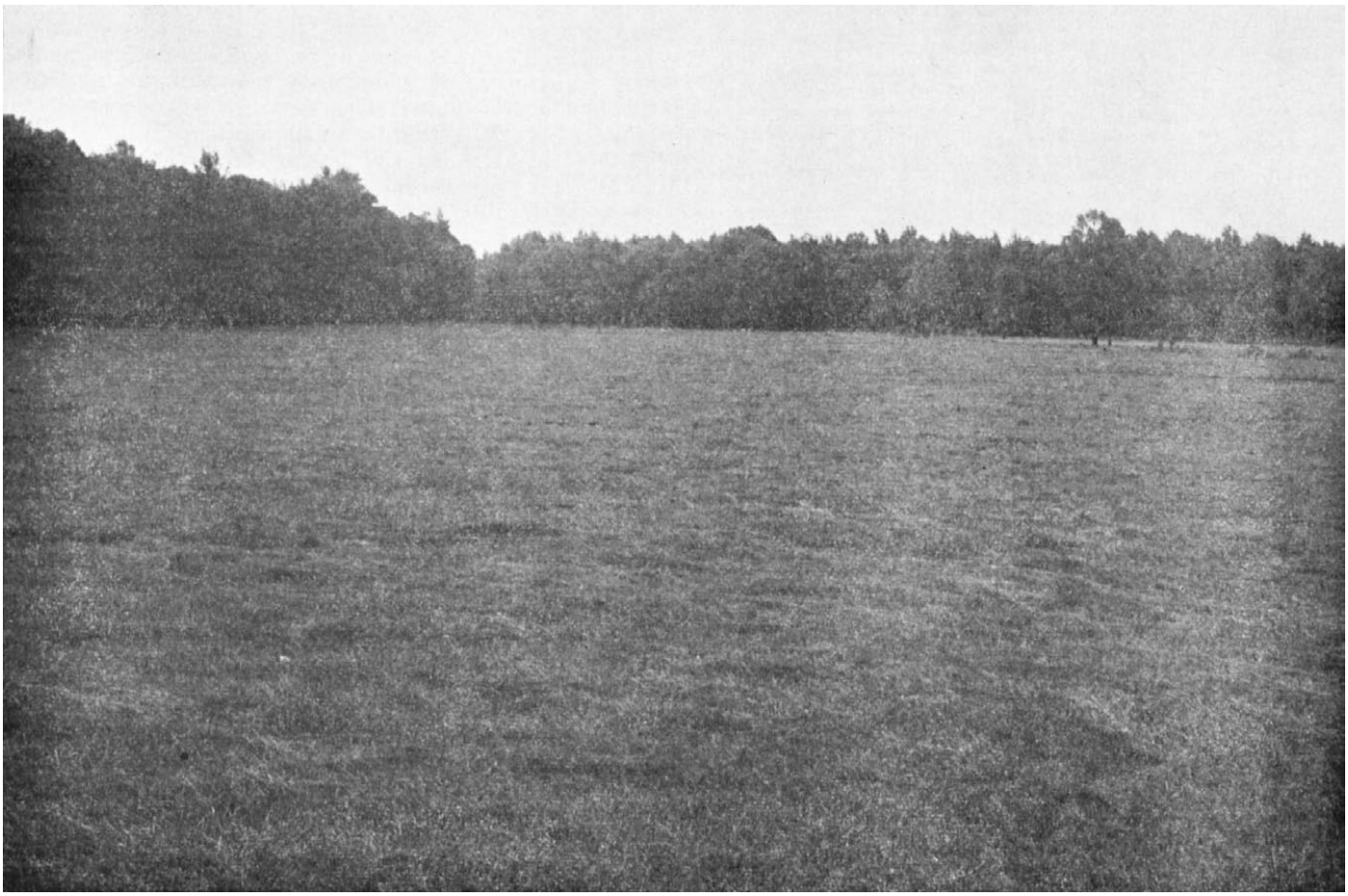

Figure 2.—Pasture on Bibb soils.

they can be used for the commonly grown cultivated crops. (Capability unit IVw–11; woodland suitability group 2w9)

Bodine Series

The Bodine series consists of deep, well-drained soils on uplands in the northwestern part of the county near Dry Creek and Jemison. These soils formed in material weathered from cherty limestone. They generally are more than 35 percent coarse fragments. Slopes are 2 to 25 pecent.

In a typical profile the surface layer is dark grayish-brown cherty silt loam about 3 inches thick. The subsurface layer is light olive-brown cherty silt loam 9 inches thick. Below this, to a depth of about 60 inches, is very pale brown cherty silt loam that is mottled below a depth of 18 inches.

These soils are very low in natural fertility, are low in content of organic matter, and are strongly acid and very strongly acid. Water enters the soil at a moderate to rapid rate and moves through the profile at a moderate to moderately rapid rate. The available water capacity is low.

Bodine soils are difficult to work because of the number of chert fragments on the surface and in the surface layer. They are better suited to woodland than to cropland because of the content of coarse fragments, the poor fertility, and the low available water capacity. Tilth is poor.

The native vegetation is mixed oak and hickory and some pine. Only a few areas have been cultivated or used for pasture.

Typical profile of Bodine cherty silt loam, 2 to 10 percent slopes, in a moist, wooded area, 1 mile south of the Union Grove fire tower, SW¼NW¼ sec. 20, T. 23 N., R. 14 E.:

A1—0 to 3 inches, dark grayish-brown (2.5Y 4/2) cherty silt loam; weak, fine, granular structure; very friable; many fine roots; 20 to 25 percent chert fragments up to half an inch in diameter; strongly acid; clear, smooth boundary.

A2—3 to 12 inches, light olive-brown (2.5Y 5/4) cherty silt loam; weak, fine, granular and subangular blocky structure; friable; common fine roots and a few medium and large roots; 15 percent chert fragments up to an inch in diameter; strongly acid; clear, wavy boundary.

B1—12 to 18 inches, very pale brown (10YR 7/4) very cherty silt loam; weak, fine, subangular blocky structure to massive; friable; 65 to 70 percent chert fragments up to half an inch in diameter; very strongly acid; clear, wavy boundary.

B2t—18 to 60 inches +, mottled very pale brown (10YR 7/3 and 8/3) and yellow (10YR 7/6) cherty silty clay loam; moderate to strong, medium, subangular blocky structure; firm; 40 percent chert fragments up to an inch in diameter; few, thin, patchy clay films on some ped faces; very strongly acid.

The A horizon ranges from cherty silt loam to cherty loam in texture, from very dark grayish brown to pale yellow in color, and from 4 to 15 inches in thickness. The B horizon ranges from cherty silty clay loam to cherty loam or silt loam. It is very pale brown to yellow, strong brown, or yellowish red or red and is mottled in the lower part. The profile is 15 to 70 percent chert fragments, mostly less than 2 inches in diameter. These fragments are also on the surface.

Bodine soils are adjacent to Hartsells and Linker soils. They are deeper than those soils, are finer textured throughout the profile, and contain a larger number of chert fragments.

Bodine cherty silt loam, 2 to 10 percent slopes (BdC).—This soil has the profile described as typical for the series. Included in mapping are areas where the subsoil is silty clay or clay below a depth of 30 inches, areas of soils that are less than 35 percent coarse fragments, and small areas where slopes are 10 to 25 percent.

Surface runoff is slow to medium, and the erosion hazard is moderate. Some areas are suited to pasture. (Capability unit IIIe–43; woodland suitability group 4f2)

Bodine complex, 2 to 10 percent slopes (BoC).—The soils in this complex have profiles similar to that described as typical for the series except that the surface layer is brown cherty loam 5 to 12 inches thick and in places the subsoil is yellowish red or red. About 40 percent of this complex is less than 50 percent chert, and 20 percent is more than 50 percent chert.

Included in the mapping are areas where the surface layer is fine sandy loam and the subsoil below a depth of 30 inches is silty clay or clay; areas of soils that are less than 35 percent coarse fragments; areas of soils that are free of fragments; small areas that have a subsoil of red, sticky and plastic silty clay or clay and common to many limestone outcrops; and small areas where slopes are 10 to 25 percent. Inclusions make up about 40 percent of the complex.

Surface runoff is slow to medium, and the erosion hazard is moderate. Some small areas are suited to cultivated crops and pasture. (Capability unit IIIe–43; woodland suitability group 4f2)

Bodine complex, 10 to 25 percent slopes (BoE).—The soils in this complex have profiles similar to that described as typical for the series except that the surface layer is brown cherty loam 4 to 10 inches thick and the subsoil in places is yellowish red to red. Slopes range from 10 to 25 percent but are dominantly 15 to 25 percent. About 40 percent of this complex is less than 50 percent chert, and 30 percent is more than 50 percent chert.

Included in mapping are areas where the surface layer is fine sandy loam and the subsoil below a depth of 30 inches is silty clay or clay; areas of soils that are less than 35 percent coarse fragments; areas of soils that are free of fragments; and small areas that have a subsoil of red, sticky and plastic silty clay or clay and common to many outcrops of limestone in the lower layers. These inclusions make up about 30 percent of the complex.

Surface runoff is medium to rapid, and the erosion hazard moderate to high.

This soil is very difficult to work because of the slope and the high content of fragments. All the acreage is forest, to which the soil is well suited. (Capability unit VIe-19; woodland suitability group 4f2)

Boswell Series

The Boswell series consists of slowly permeable, acid soils on side slopes. These soils are in the central part of the county. They formed in thick, unconsolidated beds of marine sediments, mainly clay and sandy clay. The landscape is highly dissected. Slopes range from 2 to 15 percent.

In a typical profile the surface layer is dark-brown loam about 4 inches thick. The next layer is 12 inches of yellowish-red, plastic clay. Below this to a depth of 70 inches is mottled plastic clay. Between depths of 70 and 90 inches is mottled gray, slightly plastic silty clay.

These soils are low in fertility and organic-matter content and are strongly to very strongly acid. Water enters the soil at a moderate rate and moves through the profile at a slow rate. The available water capacity is medium.

Boswell soils are better suited to trees or permanent sod crops for hay or pasture than to cultivated crops.

The native vegetation is mixed hardwood forest. There are a few pines. Some areas have been cultivated, but most of these areas are now loblolly pine forest. Some small areas are used for pasture.

The Boswell soils in this county are mapped only with Luverne soils.

Profile of a Boswell loam (2 to 6 percent slopes) in a moist pasture 6.5 miles west-southwest of Clanton, NE¼NE¼ sec. 14, T. 21 N., R. 13 E.:

Ap—0 to 4 inches, dark-brown (7.5YR 4/4) loam; weak, fine, granular structure; very friable; many fine roots; 3 to 4 percent rounded gravel up to half an inch in diameter; strongly acid; abrupt, smooth boundary.

B21t—4 to 16 inches, yellowish-red (5YR 4/6) clay; few, fine, faint, pale-brown (10YR 6/3) mottles; strong, medium, angular and subangular blocky structure; very firm, sticky, plastic; common fine mica flakes; thick, continuous clay films; common fine and medium roots; very strongly acid; clear, smooth boundary.

B22t—16 to 29 inches, pale-brown (10YR 6/3) to light brownish-gray (10YR 6/2) clay; common, medium, distinct mottles of red (2.5YR 4/6), yellowish red (5YR 4/6), and brown (7.5YR 5/4); strong, medium, angular and subangular blocky structure; very firm, sticky, plastic; common fine mica flakes; thick, continuous clay films; few fine and medium roots; very strongly acid; clear, smooth boundary.

B23t—29 to 40 inches, mottled red (2.5YR 4/6), yellowish-red (5YR 4/6), yellowish-brown (10YR 5/6), and light-gray (10YR 7/1) clay; moderate, medium, angular and subangular blocky structure; few weak slickensides; very firm, sticky, plastic; common fine mica flakes; thick, continuous clay films; few fine and medium roots; very strongly acid; gradual, smooth boundary.

B24t—40 to 70 inches, light-gray (N 7/0) clay that has many, medium, prominent mottles of dark red (2.5YR 3/6), red (2.5YR 4/6), strong brown (7.5YR 5/6), yellowish brown (10YR 5/6), and pale brown (10YR 6/3); moderate, medium, angular and subangular blocky structure; few weak slickensides; very firm, slightly sticky, plastic; common fine mica flakes; thick, continuous clay films; very few fine and medium roots; very strongly acid; gradual, smooth boundary.

B3t—70 to 90 inches +, light-gray (N 7/0) silty clay that has many, medium, prominent mottles of red (2.5YR 4/6), yellowish red (5YR 4/6), strong brown (7.5YR 5/6), and yellowish brown (10YR 5/6); moderate, medium, subangular blocky structure; firm, slightly sticky, plastic; common fine mica flakes; patchy clay films on ped faces; few fine and medium roots; very strongly acid.

The Ap horizon ranges from loam to fine sandy loam or silt loam in texture and from dark brown to very dark grayish brown or light yellowish brown in color. It is less than 10 inches thick. The upper 10 to 15 inches of the Bt horizon ranges from yellowish-red to red clay that in many places is faintly mottled with brown and yellow. Depth to gray mottles is more than 15 inches. The B23t, B24t, and B3t horizons are clay or silty clay distinctly and prominently mottled with red, brown, yellow, and gray. At a depth of more than 40 inches, the dominant color is gray. At a depth of more than 50 inches, the texture is silty clay to silty clay loam. The solum is more than 60 inches thick; the subsoil is more than 50 inches thick.

Boswell soils are adjacent to the Shubuta and Luverne soils. They have a more clayey and plastic B horizon than either of those soils.

Bowie Series

The Bowie series consists of deep, well-drained, acid soils on uplands of the Coastal Plain. These soils formed in unconsolidated beds of medium-textured sediments. They have soft plinthite between depths of 20 and 60 inches. Slopes range from 0 to 12 percent.

In a typical profile the surface layer is about 5 inches of dark grayish-brown fine sandy loam. The subsurface layer is about 5 inches of dark grayish-brown and yellowish-brown sandy loam. Below this, to a depth of about 36 inches, is yellowish-brown sandy clay loam. Between depths of 36 and 60 inches is mottled yellowish-brown sandy clay loam that contains plinthite.

These soils are low in natural fertility and are practically devoid of calcium in the lower layers. They are low in content of organic matter and are medium acid to very strongly acid. Water enters the soil at a moderate to rapid rate and moves at a moderate to moderately rapid rate through the layers that contain soft plinthite. Few roots occur in these layers. The available water capacity is medium.

Bowie soils are well suited to crops commonly grown in the county. They are easy to work and can be worked throughout a wide range of moisture content. They are easy to keep in good tilth.

The native vegetation is mixed hardwood and pine forest. Most of the acreage has been cleared and is used for corn, cotton, pasture, and hay.

Profile of Bowie fine sandy loam, 0 to 2 percent slopes, in a moist, cultivated area, seven-eighths of a mile south of New Cedron Baptist Church, NE¼NE¼ sec. 24, T. 20 N., R. 13 E.:

Ap—0 to 5 inches, dark grayish-brown (10YR 3/2) fine sandy loam; weak, fine, granular structure; very friable; common fine roots; 2 to 3 percent rounded gravel less than half an inch in diameter; strongly acid; abrupt, smooth boundary.

A3—5 to 10 inches, dark grayish-brown (10YR 4/2) and yellowish-brown (10YR5/6) sandy loam; weak, fine, granular structure and weak, fine and medium, subangular blocky; very friable; few fine roots; strongly acid; clear, smooth boundary.

B1—10 to 15 inches, yellowish-brown (10YR 5/6) to dark yellowish-brown (10YR 4/4) light sandy clay loam; weak, medium, subangular blocky structure; very friable; few fine and medium roots; few small pores; very strongly acid; clear, smooth boundary.

B21t—15 to 28 inches, yellowish-brown (10YR 5/6) sandy clay clay loam; weak, medium, subangular blocky structure; friable; few fine roots; coated sand grains; patchy clay films in root channels; very strongly acid; clear, smooth boundary.

B22t—28 to 36 inches, yellowish-brown (10YR 5/6) light sandy clay loam; few, medium, faint, strong-brown (7.5YR 5/6) mottles; weak, medium, subangular blocky structure; friable; sand grains coated and bridged with clay; few, thin, patchy clay films on some ped faces; very strongly acid; gradual, wavy boundary.

B23t—36 to 40 inches, yellowish-brown (10YR 5/6) sandy clay loam; common, medium, distinct mottles of pale brown, strong brown, and red; weak, fine and medium, subangular blocky structure; friable to firm; somewhat compact in place; common, fine, brittle vesicles; 5 to 7 percent plinthite; thin, patchy clay films on some ped faces; strongly acid; gradual, wavy boundary.

B24t—40 to 60 inches +, mottled yellowish-brown, pale-brown, and red sandy clay loam; common, medium, distinct mottles; weak, medium, subangular blocky structure; friable to firm; compact and brittle; 5 to 7 percent soft plinthite nodules; patchy clay films on a few ped faces; strongly acid.

The Ap horizon ranges from grayish brown to dark grayish brown, yellowish brown, or very dark grayish brown. The Bt horizon ranges from sandy clay loam to clay loam or loam. It ranges from yellowish brown to brownish yellow, light olive brown, or strong brown and is mottled with red, brown, yellow, or gray. Between depths of 20 and 60 inches, this horizon is 5 to 15 percent soft plinthite.

Bowie soils are adjacent to the Ruston, Luverne, Ora, and Saffell soils. They are less red than Ruston soils and are coarser textured in the B horizon than Luverne soils. They do not have the fragipan that is characteristic of the Ora soils or the gravel content that is characteristic of the Saffell soils.

Bowie fine sandy loam, 0 to 2 percent slopes (BwA).—This soil has the profile described as typical for the series. Included in the mapping are some areas where the surface layer is loam, some areas where the subsoil is sandy loam, and areas of a soil that is less than 5 percent soft plinthite.

Surface runoff is slow, and the erosion hazard slight.

This soil is well suited to all crops commonly grown in the county. It can be farmed intensively. All the acreage has been cleared. A small acreage has reverted to woodland, mostly loblolly pine. (Capability unit I–12; woodland suitability group 3o1)

Bowie fine sandy loam, 2 to 6 percent slopes (BwB).—The surface layer of this soil is 5 to 12 inches thick. Plinthite is between depths of 20 and 40 inches. Included in the mapping are small areas that are gravelly, areas where the subsoil is sandy loam, and areas where the soil is less than 5 percent soft plinthite.

Surface runoff is slow to medium, and the erosion hazard slight to moderate.

Most of the acreage has been cleared and is used for the crops commonly grown in the county. It is also used for pasture, especially where stock water is available (fig. 3). Some areas are in loblolly pine. (Capability unit IIe–12; woodland suitability group 3o1)

Bowie fine sandy loam, 6 to 10 percent slopes (BwC).—The surface layer of this soil is 4 to 12 inches thick. Soft plinthite between depths of 20 and 60 inches. Included in the mapping are areas where the surface layer is sandy loam and loam and the subsoil is sandy loam, small gravelly areas, areas of a soil that is less than 5 percent soft plinthite, and small areas where the surface layer is less than 4 inches thick and has a few shallow rills.

Surface runoff is medium, and the erosion hazard moderate.

Most of the acreage has been cleared and can be used for any of the crops commonly grown in the county. Part of the acreage formerly cleared has reverted to pine forests. (Capability unit IIIe–12; woodland suitability group 3o1)

Figure 3.—**Dug pond on Bowie fine sandy loam, 2 to 6 percent slopes.**

Congaree Series

The Congaree series consists of well-drained, acid soils on first bottoms. They are moderately deep and deep to gravel. These soils formed in material washed from the Piedmont Uplands. Slopes are 0 to 2 percent.

In a typical profile the surface layer is dark-brown silt loam about 3 inches thick. The next 20 inches is dark yellowish-brown silt loam that has a few mottles. Below a depth of about 23 inches is strong-brown sandy loam that also has a few mottles. Underlying this layer is gravelly and sandy stratified material.

These soils are low to moderate in natural fertility and organic-matter content and are medium acid to strongly acid. Water enters the soil at a moderate rate and moves through the profile at a moderate to moderately rapid rate. The available water capacity is high. Surface runoff is slow. The erosion hazard is none to slight. Flooding of short duration late in winter or early in spring is hazardous to some crops.

Congaree soils are well suited to most crops commonly grown in the county. They are easy to work and to keep in good tilth. They are among the most productive soils in the county.

The native vegetation consists of oak, gum, poplar, hickory, and pine. A few areas have been cleared and used for corn, cotton, pasture, and hay. Now, most areas are in pasture and some small areas are idle.

Profile of a Congaree silt loam (0 to 2 percent slopes) in a moist, wooded area, 1½ miles north-northwest of Providence Church, NW¼NE¼ sec. 26, T. 22 N., R. 15 E.:

A1—0 to 3 inches, dark-brown (10YR 3/3) silt loam; weak, fine, granular structure; very friable; many fine roots; many fine mica flakes; medium acid; clear, smooth boundary.

C1—3 to 18 inches, mottled dark yellowish-brown (10YR 4/4) and yellowish-brown (10YR 5/8) silt loam; thin lenses of dark yellowish brown (10YR 3/4); weak, fine, granular structure; very friable; many fine roots; many fine mica flakes; medium acid; gradual, wavy boundary.

C2—18 to 23 inches, mottled dark yellowish-brown (10YR 4/4), brown (10 YR 5/3), and strong-brown (7.5YR 5/6) silt loam; weak, fine, granular structure and very weak, medium, subangular blocky; very fri-

able; few fine and medium roots; many fine mica flakes; strongly acid; gradual, wavy boundary.
C3—23 to 41 inches, strong-brown (7.5YR 5/6) sandy loam; common, medium, distinct mottles of yellowish brown (10YR 5/4) and pale brown (10YR 6/3); weak, fine, granular structure and very weak, medium, subangular blocky; very friable; few fine and medium roots; many fine mica flakes; strongly acid.
C4—41 to 60 inches, gravel strata is 50 to 70 percent fragments mostly less than 1 inch in diameter.

The A1 horizon ranges from dark brown to brown or dark grayish brown. The C horizon above the gravel ranges from dark brown to yellowish brown or strong brown and in many places is faintly to distinctly mottled with pale brown and yellow. This horizon ranges from silt loam to sandy loam or loam. Few to common gray mottles are at a depth of more than 30 inches. Few to many mica flakes are throughout the profile.

Congaree soils are adjacent to the Toccoa, Bibb, and Wehadkee soils. They have finer textured A1, C1, and C2 horizons than Toccoa soils. They are not so gray nor so poorly drained as Bibb and Wehadkee soils.

Congaree silt loam (Co).—This is the only Congaree soil mapped in the county. Slopes are 0 to 2 percent. Included with this soil in mapping are areas where the surface layer is loam and sandy loam; areas where the subsoil is stratified sandy loam, light loam, or silty clay loam; and areas where gray mottles occur within a depth of 20 inches. (Capability unit IIw-45; woodland suitability group 1o7)

Eustis Series

The Eustis series consists of deep, excessively drained, acid soils on uplands of the Coastal Plain, mainly in the southwestern part of the county. These soils formed in thick beds of marine-deposited sand and loamy sand. They occupy smooth ridgetops and rolling side slopes of 2 to 15 percent.

In a typical profile the surface layer is dark-brown loamy sand about 12 inches thick. The next layer, about 7 inches thick, is brown and yellowish-red loamy sand. Between depths of about 19 and 115 inches is yellowish-red loamy sand. Below this is reddish-yellow sand.

These soils are very low in natural fertility, are low in content of organic matter, and are strongly acid to very strongly acid. Water enters the soil at a rapid rate and moves through the profile at a moderately rapid rate. The available water capacity is low. The hazard of erosion, mainly gullying, is slight to moderate.

Eustis soils are easy to work and can be worked throughout a wide range of moisture content. They are easy to keep in good tilth.

The native vegetation is mixed hardwood and pine forest. Most of the acreage has been used for corn, cotton, truck crops, pasture, and hay. Some areas have reverted to trees, mainly loblolly pine.

Profile of Eustis loamy sand, 6 to 15 percent slopes, in a moist, wooded area 1½ miles north of Alpine Church, NE¼NW¼ sec. 23, T. 20 N., R. 12 E.:

A1—0 to 12 inches, dark-brown (7.5YR 4/2) loamy sand; single grain; loose; many fine and few medium roots; very strongly acid; clear, wavy boundary.
A&B—12 to 19 inches, brown (7.5YR 4/4) and yellowish-red (5YR 4/6) loamy sand; weak, fine, granular and subangular blocky structure; loose; few fine roots; very strongly acid; clear, wavy boundary.
B21t—19 to 31 inches, yellowish-red (5YR 4/6) loamy sand; weak, medium, subangular blocky structure; very friable; few fine roots; sand grains bridged and coated with clay; strongly acid; gradual, wavy boundary.
B22t—31 to 88 inches, yellowish-red (5YR 4/8) loamy sand; weak, medium, subangular blocky structure; very friable; few fine roots; sand grains bridged and coated with clay; very strongly acid; gradual, smooth boundary.
B3—88 to 115 inches, yellowish-red (5YR 5/8) loamy sand; very weak, fine, subangular blocky structure to weak, fine, granular; very friable to loose; sand grains thinly coated with clay; few small iron-crust fragments; strongly acid; smooth, diffuse boundary.
C—115 to 126 inches +, reddish-yellow (7.5YR 6/8) sand; single grain; loose; sand grains clean; a few fragments of iron crust; medium acid.

The A horizon ranges from 12 to 20 inches in thickness. The A1 horizon ranges from dark brown to dark grayish brown and dark yellowish brown. The B horizon ranges from yellowish red to red or yellowish brown. It is dominantly loamy sand but ranges to loamy fine sand. At a depth of more than 70 inches, the soil material is sand or loamy sand that in many places contains a moderate amount of rounded gravel.

Eustis soils are adjacent to the Troup and McLaurin soils. They do not have the thick A horizon typical of the Troup soils. They are not so fine textured throughout the profile as the McLaurin soils.

Eustis loamy sand, 2 to 6 percent slopes (EuB).—This soil has a profile similar to that of Eustis loamy sand, 6 to 15 percent slopes, described as representative for the series. Included in the mapping are areas where the surface layer is dark reddish brown, areas where the texture is sandy loam, and areas where slopes are 0 to 2 percent.

Surface runoff is slow to very slow. The erosion hazard is slight. (Capability unit IIIs–11; woodland suitability group 3s3)

Eustis loamy sand, 6 to 15 percent slopes (EuD).—This soil has the profile described as typical for the series. Included in the mapping are areas where the subsoil is sandy loam.

Surface runoff is slow. The hazard of erosion, mainly cave-in gullies, is moderate. (Capability unit VIs–11; woodland suitability group 3s3)

Guin Series

The Guin series consists of deep, excessively drained, acid soils on uplands of the Coastal Plain. These soils formed in thick beds of sand and gravel. They are more than 35 percent gravel.

In a typical profile the surface layer is dark-brown gravelly sandy loam about 4 inches thick. The next layer, about 8 inches thick, is light yellowish-brown gravelly sandy loam. The underlying material, to a depth of about 55 inches, is brownish-yellow gravelly loamy sand.

These soils are very low in natural fertility and content of organic matter and are medium acid to very strongly acid. Water enters the soil at a rapid rate and moves through the profile at a moderately rapid to rapid rate. The available water capacity is low to very low.

These soils are poor for crops, but they are suited to trees. In some areas they are suited to permanent sod crops for hay or pasture.

The Guin soils in this county are mapped only with Bowie soils.

Profile of Guin gravelly sandy loam, 10 to 25 percent slopes, in a moist, wooded area, 1.7 miles northeast of

Perry Mountain fire tower, SW¼SE¼ sec. 23, T. 21 N., R. 11 E.:

A1—0 to 4 inches, dark-brown (10YR 3/3) gravelly sandy loam; single grain and weak, fine, granular structure; very friable; many fine roots; 35 percent gravel ¼ inch to 2 inches in diameter; strongly acid; clear, wavy boundary.

A2—4 to 12 inches, light yellowish-brown (10YR 6/4) gravelly sandy loam; single grain and weak, fine, granular structure; very friable; many fine roots; 45 percent gravel ¼ inch to 2 inches in diameter; medium acid; gradual, wavy boundary.

C—12 to 55 inches +, brownish-yellow (10YR 6/6) gravelly loamy sand; single grain; loose; few fine and medium roots; 50 percent gravel ¼ inch to 2 inches in diameter; medium acid.

The A horizon is less than 20 inches thick. The A1 horizon ranges from dark brown to very dark grayish brown or brown in color and is no more than 5 inches thick. The A2 horizon ranges from light yellowish brown to yellowish brown, pale brown, or light brownish gray in color and from 4 to 12 inches in thickness. The C horizon ranges from brownish yellow to pale brown or strong brown. Below the C horizon is more than 40 inches of gravelly loamy sand or light sandy loam. The content and size of gravel vary throughout the profile. Generally the profile is 35 to 75 percent gravel less than 2 inches in diameter. Discontinuous layers of iron-crust rock, 1 to 3 inches thick, occur in many places at varying depths. In places a few mica flakes occur throughout the profile.

The Guin soils are adjacent to the Eustis, Troup, Bowie, and McLaurin soils. They are more gravelly than those soils. They are coarser textured than the Bowie soils.

Guin and Bowie soils, 6 to 10 percent slopes (GbC).—These are deep, excessively drained and well-drained soils on uplands of the Coastal Plain. They do not occur in a uniform pattern; both occur in some areas, and only one occurs in others. Included in mapping are small areas where the surface layer is loamy sand and fine sandy loam; small areas of Saffell, McLaurin, and Ruston soils; and a few small areas where slopes are less than 6 percent.

The profile of the Guin soil is similar to the one described as typical for the series. The Bowie soil is 10 to 25 percent gravel and has soft plinthite at a depth of 20 to 30 inches. Bowie soils are described under the heading "Bowie Series."

Surface runoff is medium, and the erosion hazard is moderate to high.

These soils are suited to permanent sod crops for pasture or hay or to trees. In some areas they are used for crops commonly grown in the county. (Capability unit IVs–11; woodland suitability group 4f2)

Guin and Bowie soils, 10 to 25 percent slopes (GbE).—These are deep, excessively drained and well-drained soils on highly dissected uplands of the Coastal Plain. They do not occur in a uniform pattern; both are in some areas, and only one in others. Slopes range from 10 to 25 percent but are dominantly 15 to 25 percent. Included in mapping are small areas where the surface layer is gravelly loamy sand or fine sandy loam, small areas of Saffell, Troup, McLaurin, Luverne, Ruston, and Toccoa soils, and small areas where slopes are more than 25 percent.

The Guin soil has the profile described as typical for the series. The Bowie soil has a thinner surface layer than that described as typical for the series. It has soft plinthite at a depth of 20 to 30 inches and is 10 to 35 percent gravel.

Surface runoff is medium to rapid, and the erosion hazard is high.

These soils are poor for crops, but they are suited to trees. Nearly all the acreage is mixed hardwood forest. There are a few pines. (Capability unit VIIe–19; woodland suitability group 4f2)

Gullied Land

Gullied land (Gu).—This land type is widely distributed throughout the southwestern quarter of the county. Areas range from 2 to 10 acres in size. Slopes are 5 to 15 percent.

Most areas are dissected by deep, cave-in gullies that have cut into the profile and exposed friable to loose, infertile soil material. These gullies generally form where gently sloping to moderately steep soils on ridgetops are adjacent to moderately steep soils in rough, wooded areas. These areas of Gullied land adjoin the Eustis, McLaurin, or Ruston soils.

In other areas the exposed, infertile soil material is friable to firm and is compact. In the small, uneven areas between these gullies, the soil material is similar to that of the Ruston, Ora, or Luverne soils.

Gullied land is very low in natural fertility and organic-matter content. Surface runoff is very rapid. Infiltration and permeability are very slow. The available water capacity is low.

Gullied land is not suited to row crops. It can be used for trees. Good management is needed in establishing a stand. (Capability unit VIIe–19; no woodland suitability group)

Harleston Series

The Harleston series consists of deep, moderately well drained soils on uplands of the Coastal Plain. These soils formed in thick beds of medium-textured sediments. The gradient ranges from 0 to 6 percent.

In a typical profile the surface layer is very dark grayish-brown sandy loam about 5 inches thick. The next 30 inches in light olive-brown sandy loam that is mottled in the lower part. Below a depth of 35 inches is mottled loam.

These soils are low in natural fertility and content of organic matter and are strongly acid to very strongly acid. Water enters the soil at a moderately slow to rapid rate and moves through the profile at a moderate to moderately rapid rate. The available water capacity is medium.

Harleston soils are easy to work and can be worked over a fairly wide range of moisture content. They are easy to keep in good tilth.

The native vegetation is mixed hardwood forest. There are a few pines. Most of the acreage has been cleared and used for corn, cotton, pasture, and hay. Some of the cleared acreage is now idle.

Profile of Harleston sandy loam, 0 to 2 percent slopes, in a moist, cultivated area, 3 miles west of Clanton, SW¼ NW¼ sec. 33, T. 22 N., R. 14 E.:

Ap—0 to 5 inches, very dark grayish-brown (2.5Y 3/2) sandy loam; weak, fine, granular structure; very friable; common fine roots; strongly acid; abrupt, smooth boundary.

B21t—5 to 25 inches, light olive-brown (2.5Y 5/4) sandy loam; weak, fine, subangular blocky structure; very friable; sand grains bridged and coated with clay; few fine roots; 2 to 3 percent rounded gravel less than ¼ inch in diameter; strongly acid; clear, smooth boundary.

B22t—25 to 35 inches, mottled light olive-brown (2.5Y 5/4), light yellowish-brown (2.5Y 6/4), yellowish-brown

(10YR 5/4), light brownish-gray (2.5Y 6/2), and gray to light-gray (10YR 6/1) sandy loam; weak to moderate, fine and medium, subangular blocky structure; friable when moist, slightly brittle when dry; slightly compact in place; thin, patchy clay films; 2 to 3 percent rounded gravel less than ¼ inch in diameter; very strongly acid; gradual, smooth boundary.

B23t—35 to 60 inches +, mottled strong-brown (75YR 5/6), brownish-yellow (10YR 6/6), light olive-brown (2.5Y 5/4), light yellowish-brown (2.5Y 6/4), and gray to light-gray (10YR 6/1) loam; moderate, medium, subangular blocky structure; friable; compact in place; thin, patchy clay films; 2 to 3 percent rounded gravel less than ¼ inch in diameter; very strongly acid.

The Ap horizon ranges from very dark grayish brown to dark grayish brown or black. The Bt horizon ranges from sandy loam to loam and from light olive brown to yellowish brown. In places the Bt horizon is mottled with yellow and brown. At a depth of 20 to 30 inches it is mottled with gray. It is more than 50 inches thick.

Harleston soils are adjacent to the McLaurin, Bowie, and Ruston soils. They are not so well drained as those soils. They have a coarser textured B horizon than Bowie and Ruston soils.

Harleston sandy loam, 0 to 2 percent slopes (HoA).—This soil has the profile described as typical for the series. Included in mapping are small areas where the surface layer is loam.

Surface runoff is slow, and the erosion hazard slight.

This soil is suited to most crops commonly grown in the county. Drainage is needed in places. (Capability unit IIw–31; woodland suitability group 2w8)

Harleston sandy loam, 2 to 6 percent slopes (HoB).—The surface layer of this soil is 5 to 8 inches thick, and depth to mottles is 18 to 30 inches.

Surface runoff is slow, and the erosion hazard is slight to moderate. This soil is suited to most crops commonly grown in the county. (Capability unit IIe–15; woodland suitability group 2w8)

Hartsells Series

The Hartsells series consists of well-drained soils of the uplands. These soils formed in material weathered from sandstone. Slopes range from 2 to 10 percent.

In a typical profile the surface layer is yellowish-brown sandy loam about 3 inches thick. The next layer, about 3 inches thick, is yellowish-brown sandy loam. Below this layer is about 7 inches of yellowish-brown sandy clay loam and 13 inches of strong-brown heavy sandy clay loam. Under this is brownish-yellow clay loam. Bedrock is at a depth of 52 inches.

These soils are low in natural fertility and content of organic matter and are strongly acid to very strongly acid. Water enters the soil at a rapid rate and moves through the profile at a moderate to moderately rapid rate. The available water capacity is medium.

Hartsells soils are well suited to the crops commonly grown in the county. They are easy to work and can be worked throughout a fairly wide range of moisture content. They are easy to keep in good tilth.

The native vegetation is mixed hardwood and pine forest. Most of the acreage is now used for cotton, peaches, corn, pasture, and truck crops.

Profile of Hartsells sandy loam, 2 to 6 percent slopes, in a moist, cultivated area, 1 mile southeast of Union Grove fire tower, NE¼NE¼ sec. 20, T. 23 N., R. 14 E.:

Ap—0 to 3 inches, very dark grayish-brown (10YR 3/2) sandy loam; weak, fine, granular structure; very friable; many fine roots; 5 to 10 percent angular sandstone fragments ¼ inch to 3 inches in diameter; strongly acid; clear, smooth boundary.

A2—3 to 6 inches, yellowish-brown (10YR 5/4) sandy loam; weak, fine, granular structure; very friable; many fine roots; 10 percent angular sandstone fragments ¼ to 1 inch in diameter, a few fragments 1 inch to 3 inches; strongly acid; gradual, wavy boundary.

B21t—6 to 13 inches, yellowish-brown (10YR 5/6) sandy clay loam; weak, medium, subangular blocky structure; friable; patchy clay films; few fine and medium roots; 10 to 15 percent angular sandstone fragments ¼ to 1 inch in diameter, a few fragments 1 inch to 3 inches; strongly acid; gradual, wavy boundary.

B22t—13 to 26 inches, strong-brown (7.5YR 5/6) heavy sandy clay loam; moderate, medium, subangular blocky structure; friable; patchy clay films on most peds; few fine and medium roots; 15 percent angular sandstone fragments ¼ to 1 inch in diameter, a few fragments 1 inch to 3 inches; strongly acid; gradual, wavy boundary.

B23t—26 to 52 inches, brownish-yellow (10YR 6/8) clay loam; common, medium, faint mottles of light yellowish brown (10YR 6/4) and strong brown (7.5YR 5/6); moderate, medium, subangular blocky structure; friable; thin patchy clay films on some peds; few medium roots; 15 percent angular sandstone fragments ¼ to 1 inch in diameter, a few fragments 1 inch to 3 inches; very strongly acid.

R—52 inches, sandstone bedrock.

The A horizon ranges from 4 to 10 inches in thickness. The Ap horizon ranges from very dark grayish brown to light yellowish brown. The Bt horizon ranges from sandy clay loam to heavy sandy loam or clay loam and from yellowish brown to brownish yellow or strong brown. Faint mottles of brown or yellow occur in many places at a depth of more than 20 inches. Sandstone bedrock is at a depth of 40 to 55 inches. The profile is commonly 3 to 15 percent angular fragments, mostly less than 1 inch in diameter. The Hartsells soils in this county are slightly deeper than is appropriate to the series, but this difference does not alter their usefulness and behavior.

Hartsells soils are adjacent to the Linker and Bodine soils. They have a yellowish-brown B horizon in contrast to the yellowish-red B horizon of the Linker soils. Hartsells soils do not have the content of chert fragments characteristic of the Bodine soils.

Hartsells sandy loam, 2 to 6 percent slopes (HeB).—This soil has the profile described as typical for the series. Included in mapping are very small areas where the surface layer is loam and the subsoil is yellowish-red sandy loam, loam, silty clay, or sandy clay; very small areas where slopes are 0 to 2 percent; and areas of rock outcrop.

Surface runoff is slow, and the erosion hazard is slight to moderate.

This soil can be used somewhat intensively for all crops commonly grown in the county. (Capability unit IIe–12; woodland suitability group 4o1)

Hartsells sandy loam, 6 to 10 percent slopes (HeC).—This soil has a profile similar to the one described as typical for the series. Included in mapping are very small areas where the surface layer is loam and the subsoil is sandy loam, silty clay, or sandy clay; areas of shallow rills, some of which expose the yellowish-brown subsoil; very small areas where slope is 10 to 15 percent; and areas where rock outcrops are common.

Surface runoff is slow to medium, and the erosion hazard is moderate. (Capability unit IIIe–12; woodland suitability group 4o1)

Hiwassee Series

The Hiwassee series consists of deep, well-drained, dark-colored soils of the uplands. These soils formed in material weathered from basic rocks. Slopes range from 2 to 15 percent.

In a typical profile the surface layer is dark reddish-brown clay loam about 4 inches thick. Below this to a depth of about 65 inches is dark-red clay.

These soils are low in natural fertility and content of organic matter and are strongly acid. Water enters the soil at a moderately slow to rapid rate and moves through the profile at a moderate to moderately rapid rate. The available water capacity is medium to high.

Hiwassee soils are good for farming and are well suited to all crops commonly grown. They are fairly easy to work and can be worked within a moderate range of moisture content. They are easy to keep in good tilth.

The native vegetation is mixed oak, hickory, and pine forest. Most of the acreage has been used for cultivated crops. Now most areas are in pasture. Some are used for corn and cotton, and others have reseeded to loblolly and shortleaf pines.

Profile of Hiwassee clay loam, 2 to 6 percent slopes, eroded, in a moist pasture, 9 miles northwest of Jemison at Sawyers cave, SE¼NE¼ sec. 24, T. 24 N., R. 14 E.:

Ap—0 to 4 inches, dark reddish-brown (2.5YR 3/4) clay loam; weak, fine, subangular blocky structure; friable; common fine roots; 4 percent rounded and angular fragments less than half an inch in diameter; strongly acid; abrupt, smooth boundary.

B21t—4 to 30 inches, dark-red (2.5YR 3/6) clay; moderate, medium, subangular blocky structure; firm, sticky, plastic; continuous clay films on most peds; very few manganese concretions less than one-eighth of an inch in diameter; strongly acid; gradual, wavy boundary.

B22t—30 to 65 inches +, dark-red (2.5YR 3/6) clay; moderate, medium, subangular blocky structure; firm, sticky, plastic; thin continuous clay films on many peds; 5 percent manganese concretions, mostly less than one-eighth of an inch in diameter; very few angular quartz and schist fragments less than one-eighth of an inch in diameter; strongly acid.

The Ap horizon ranges from dark reddish brown to dark red in color and from 3 to 7 inches in thickness. The Bt horizon ranges from clay to silty clay or heavy clay loam in texture, and from dark red to dusky red in color. It is more than 50 inches thick. In places bedrock is at a depth of more than 5 feet. Some profiles have faint to distinct mottles of red, brown, or yellow at a depth of more than 30 inches. Some profiles contain few to common mica flakes. In some areas the soil material is less than 15 percent angular fragments up to 3 inches in diameter. Manganese concretions in the subsoil range from few to common.

Hiwassee soils are adjacent to Lucedale and Madison soils. They are finer textured than Lucedale soils and are deeper and darker colored throughout the profile. They do not have the high mica content that is characteristic of Madison soils.

Hiwassee clay loam, 2 to 6 percent slopes, eroded (HsB2).—This soil has the profile described as typical for the series. Shallow rills or gullies are common and in places expose the dark-red subsoil. Included in mapping are small areas where the surface layer is reddish-brown loam, areas where the subsoil is red, and small areas where the soil is gravelly.

Surface runoff is medium, and the erosion hazard is moderate.

This soil can be farmed intensively to all the crops commonly grown in the county. (Capability unit IIe–14; woodland suitability group 4c2)

Hiwassee clay loam, 6 to 10 percent slopes, eroded (HsC2).—The surface layer of this soil is 3 to 6 inches thick. Shallow rills or gullies are common and in places expose the dark-red subsoil. Included in mapping are areas where the surface layer is dark-brown or reddish-brown loam, areas where the subsoil is red clay loam, and small areas where the soil is gravelly or stony.

Surface runoff is medium to rapid, and the erosion hazard is moderate to high.

This soil is well suited to all the crops commonly grown in the county. (Capability unit IIIe–14; woodland suitability group 4c2)

Hiwassee clay loam, 10 to 15 percent slopes, eroded (HsD2).—The surface layer of this soil is 3 to 6 inches thick. Shallow rills or gullies are common and in places expose the dark-red subsoil. Included in mapping are areas where the surface layer is reddish brown or dark brown and the subsoil is red or yellowish red, small areas where the subsoil is less than 50 inches thick, and small areas where the soil is gravelly or stony.

Surface runoff is medium to rapid, and the erosion hazard is high.

This soil is suited to grass and legume sod crops. It should be cultivated only occasionally. (Capability unit IVe–14; woodland suitability group 4c2)

Iredell Series

The Iredell series consists of moderately well drained, moderately deep, neutral or slightly acid soils on the Piedmont Uplands. These soils formed in material weathered from schist. Slopes are 0 to 10 percent.

In a typical profile the surface layer is dark-brown gravelly loam about 5 inches thick. The subsoil, extending to a depth of 28 inches, is yellowish-brown gravelly silty clay and clay and is mottled at a depth of 18 inches. The underlying material is partly weathered schist. Schist bedrock is at a depth of 35 inches.

These soils are moderate to low in natural fertility and are low in content of organic matter. Water enters the soil at a moderately rapid to moderate rate and moves through the profile at a moderate to slow rate. The available water capacity is medium.

Iredell soils are generally poorly suited to row crops. Tilth is good to poor. The native vegetation is mixed hardwood and pine forest. Most of the acreage has been cleared, but it now has reverted to pine forest or is used as pasture.

The Iredell soils in this county are mapped only with Wilkes soils.

Profile of Iredell gravelly loam (2 to 10 percent slopes) in a moist pasture, 4 miles north of Clanton, NE¼SW¼ sec. 12, T. 22 N., R. 14 E.:

Ap—0 to 5 inches, dark-brown (10YR 3/3) gravelly loam; weak, fine, granular structure; very friable; many fine roots; 20 percent schist fragments less than a quarter of an inch in diameter; slightly acid; abrupt, smooth boundary.

B21t—5 to 11 inches, yellowish-brown (10YR 5/6) gravelly silty clay; moderate, medium, subangular blocky structure; firm; continuous clay films on most ped faces; slightly sticky and plastic; common fine roots; 20 percent schist fragments and manganese concre-

tions less than a quarter of an inch in diameter; neutral; clear, smooth boundary.

B22t—11 to 18 inches, yellowish-brown (10YR 5/6) clay; strong, medium, angular and subangular blocky structure; firm, sticky, plastic; thin continuous clay films on many ped faces; common fine roots; 5 percent schist fragments and manganese concretions less than a quarter of an inch in diameter; neutral; clear, smooth boundary.

B23t—18 to 28 inches, mottled yellowish-brown (10YR 5/6) and gray to light-gray (1YR 6/1) clay; very firm, very sticky, plastic; few medium pressure faces; few fine roots; neutral; abrupt, smooth boundary.

C—28 to 35 inches, partly weathered schist.

R—35 inches, massive schist.

The A horizon ranges from loam to silt loam or fine sandy loam and in places is gravelly. It is less than 10 inches thick. Its color ranges from dark brown to very dark brown or pale brown. The Bt horizon ranges from yellowish brown to strong brown or brown. It is clay or silty clay in texture and ranges from 15 to 35 inches in thickness. At a depth of more than 15 inches, it is mottled in many places with yellow, brown, red, or gray. Partly weathered rock is between depths of 20 and 30 inches, and hard rock occurs between depths of 30 and 40 inches.

The Iredell soils are associated with Wilkes, Madison, and Tatum soils. They are deeper than Wilkes soils. They are not so well drained as Madison or Tatum soils.

Iredell-Wilkes complex, 0 to 2 percent slopes (IwA).—This complex occurs on uplands of the Piedmont Plateau. It is about 65 percent Iredell soils and 35 percent Wilkes soils. Both soils occur in an intricate pattern in each mapped area. Both have profiles similar to those described as typical for their respective series except that the surface layer is thicker and in places is paler in color. Included in the mapping are areas of a soil that formed in material weathered from limestone and that is more than 40 inches deep over bedrock.

The Iredell soil is moderately well drained and moderately deep. The Wilkes soil is well drained and shallow over bedrock. It is described under the heading "Wilkes Series."

The soils in this complex are suited to permanent sod crops for pasture or hay. The acreage is used mainly for pasture, but small areas are used for corn and cotton.

The soils in the complex are not suited as sites for residential developments. They are poorly suited or only fairly well suited as sites for camps, playgrounds, picnic areas, or other recreational areas. They are well suited to development of hunting areas. (Capability unit IIw–34; woodland suitability group 4c2)

Iredell-Wilkes complex, 2 to 10 percent slopes (IwC).—This complex occurs on uplands of the Piedmont Plateau. It is about 55 percent Iredell soils and 45 percent Wilkes soils. Both soils occur in an intricate pattern in each mapped area. Both have profiles described as typical for their respective series.

The Iredell soil is moderately well drained and moderately deep over bedrock. The Wilkes soil is well drained and shallow over bedrock.

Throughout the complex, surface runoff is medium to rapid and the erosion hazard moderate to high.

The soils in the complex are suited to trees and to permanent sod crops for pasture or hay. Most of the acreage has been used as cropland, but about half is now in pasture. Some areas are loblolly pine forest. (Capability unit IVe–34; woodland suitability group 4c2)

Linker Series

The Linker series consists of deep, well-drained, acid soils. These soils formed in material weathered from sandstone. Slopes range from 2 to 15 percent.

In a typical profile the surface layer is yellowish-brown sandy loam. Below the surface layer is 39 inches of strong-brown, yellowish-red, and red sandy clay loam, in sequence from the top. Underlying this is sandstone bedrock.

These soils are low in natural fertility and content of organic matter and are strongly acid to very strongly acid. Water enters the soil at a rapid rate and moves through the profile at a moderate to moderately rapid rate. The available water capacity is medium.

Linker soils are well suited to crops commonly grown in the county, but gravel and cobblestones interfere with tillage in most areas. The soils can be worked throughout a fairly wide range of moisture content. They are easy to keep in good tilth.

The native vegetation is mixed hardwood forest. There are a few pines. Some areas are used for corn, cotton, peaches, and apples. Others are in pasture.

Profile of Linker sandy loam, 2 to 6 percent slopes, in a moist, cultivated area, one-half mile west-northwest of State Route 145, at Yellowleaf Creek, SW¼NE¼ sec. 36, T. 23 N., R. 14 E.:

Ap—0 to 5 inches, yellowish-brown (10YR 5/4) sandy loam; weak, fine, granular structure; very friable; many fine roots; strongly acid; clear, smooth boundary.

B21t—5 to 9 inches, strong-brown (7.5YR 5/6) sandy clay loam to light clay loam; weak, medium, subangular blocky structure; friable; thin continuous clay films; many fine and few medium roots; very strongly acid; clear, smooth boundary.

B22t—9 to 21 inches, yellowish-red (5YR 5/8) sandy clay loam; common, medium, distinct mottles of yellowish red (5YR 4/6), reddish yellow (7.5YR 6/6), and light yellowish brown (10YR 6/4); moderate, medium, subangular blocky structure; friable; patchy clay films on most ped faces; few medium roots; very strongly acid; gradual, wavy boundary.

B23t—21 to 44 inches, red (2.5YR 4/8) sandy clay loam; common, medium, distinct mottles of strong brown (7.5YR 5/8) and light yellowish brown (10YR 6/4); moderate, medium, subangular blocky structure; friable; thin patchy clay films on some ped faces; few medium roots; very strongly acid.

R—44 inches, sandstone bedrock.

The Ap horizon is sandy loam, fine sandy loam, and cobbly or gravelly sandy loam. Where the horizon is cobbly or gravelly, it is 14 to 40 percent sandstone fragments. Its color ranges from yellowish brown or dark grayish brown to very dark gray, very dark grayish brown, or pale brown. It is from 4 to 15 inches thick. The Bt horizon is sandy clay loam, heavy loam, heavy sandy loam, or light clay loam. Its color ranges from strong brown and yellowish red to red. Red, brown, or yellow mottles occur in many places below a depth of 20 inches. Sandstone bedrock begins at a depth of 40 to 50 inches.

Linker soils are adjacent to Hartsells and Bodine soils. They have a dominantly yellowish-red and red B horizon in contrast to the yellowish-brown, strong-brown, and brownish-yellow B horizon of the Hartsells soils and to the very pale brown B horizon of the Bodine soils. Linker soils do not have the high chert content that is characteristic of the Bodine soils.

Linker sandy loam, 2 to 6 percent slopes (LeB).—This soil has the profile described as typical for the series. Included in mapping are very small areas where the subsoil is strong-brown sandy loam or sandy clay, small areas where slopes are 0 to 2 percent, areas where a few shallow

rills expose the yellowish-red subsoil, and small areas where the soil is gravelly and there are a few rock outcrops.

Surface runoff is slow, and the erosion hazard is slight to moderate.

This soil can be used intensively for all crops commonly grown in the county. It is very easy to work and keep in good tilth. It responds well to management. (Capability unit IIe–12; woodland suitability group 4o1)

Linker gravelly sandy loam, 6 to 10 percent slopes (LgC).—This soil has a surface layer 5 to 10 inches thick and in many places is 15 to 30 percent angular sandstone fragments, mostly less than 3 inches in diameter. Sandstone bedrock begins at a depth of 40 to 50 inches. Included in mapping are areas where the subsoil is strong-brown gravelly sandy loam or sandy clay, areas where a few shallow rills expose the yellowish-red subsoil, areas where the soil material is less than 15 percent fragments or is free of fragments, and a few areas of rock outcrops.

Surface runoff is slow to medium, and the erosion hazard is moderate.

Fragments on the surface and throughout the profile interfere with tillage. Otherwise, this soil is fairly easy to work and keep in good tilth. It is well suited to all crops commonly grown in the county. It responds well to management. Capability unit IIIe–12; woodland suitability group 4o1)

Linker cobbly sandy loam, 6 to 15 percent slopes (LkD).—This deep, well-drained soil is 15 to 40 percent sandstone fragments that are up to 10 inches in diameter. Unlike the soil described as typical for the series, the surface layer is cobbly and is 5 to 15 inches thick. Sandstone bedrock begins at a depth of 40 to 50 inches. Included in mapping are areas where the subsoil is strong-brown cobbly sandy loam or sandy clay, areas where fragments are less than 3 inches in diameter, small areas of a stony soil, and areas of rock outcrops. In about 60 percent of the mapping unit, slopes are 10 to 15 percent.

Surface runoff is slow to medium, and the erosion hazard is moderate to high.

This soil is suited to trees, fruits, or grass and legume sod crops. It is difficult to work because of the high content of sandstone fragments. Most of the acreage is forest. (Capability unit IVe–11; woodland suitability group 4o1)

Lucedale Series

The Lucedale series consists of deep, well-drained, acid soils on uplands of the Coastal Plain. These soils are widely distributed throughout the central part of the county. They formed in sandy clay loam and sandy clay marine sediments. The landscape is smooth. Slopes are 0 to 10 percent.

In a typical profile the surface layer is dark reddish-brown fine sandy loam about 7 inches thick. The next 65 inches is friable sandy clay loam that is dark red in the upper part and red in the lower part.

These soils are low to moderate in natural fertility, low in content of organic matter, and medium acid to very strongly acid. Water enters the soil at a moderately slow to moderate rate and moves through the profile at a moderate to moderately rapid rate. The available water capacity is medium to high.

Lucedale soils are very good for farming. They are easy to work and can be worked throughout a moderately wide range of moisture content. They are easy to keep in good tilth. Their response to management is excellent.

The native vegetation is mixed hardwood and pine forest. Most of the acreage is used for all crops commonly grown in the county.

Profile of Lucedale fine sandy loam, 0 to 2 percent slopes, in a moist pasture, one-half mile northwest of Verbena, NW¼SW¼ sec. 36, T. 21 N., R. 15 E.:

Ap—0 to 7 inches, dark reddish-brown (2.5YR 3/4) fine sandy loam; moderate, medium, crumb structure; very friable; many fine roots; medium acid; clear, wavy boundary.

B21t—7 to 55 inches, dark-red (2.5YR 3/6) sandy clay loam; moderate, medium, subangular blocky structure; friable; thin continuous clay films on many ped faces; few fine roots; very strongly acid; gradual, wavy boundary.

B22t—55 to 72 inches +, red (2.5YR 4/8) sandy clay loam; moderate, medium, subangular blocky structure; friable; thin patchy clay films on many ped faces; very strongly acid.

The Ap horizon ranges from dark reddish brown to dark red and dusky red in color and from 5 to 12 inches in thickness. The Bt horizon ranges from sandy clay loam to heavy sandy loam, heavy loam, or light clay loam in texture and from dark red or red to reddish brown in color. It is more than 50 inches thick. Brown and yellow mottles are below a depth of 40 inches in some areas. Manganese concretions range from few to common in the B22t horizon.

Lucedale soils are adjacent to Hiwassee, Ruston, and Eustis soils. They are not so red throughout the profile nor so fine textured as Hiwassee soils. They are redder throughout the profile than Ruston soils. They are redder and finer textured than Eustis soils.

Lucedale fine sandy loam, 0 to 2 percent slopes (LuA).—This soil has the profile described as typical for the series. Included in mapping are areas where the surface layer is reddish-brown or dark-brown loam.

Surface runoff is slow, and the erosion hazard is slight.

This is one of the best soils in the county for farming. It can be used intensively for all the crops commonly grown. The response to management is excellent. (Capability unit I–12; woodland suitability group 2o1)

Lucedale fine sandy loam, 2 to 6 percent slopes (LuB).—This soil has a profile similar to that described as typical for the series, but in places shallow rills or gullies expose the dark-red subsoil. Included in mapping are areas where the surface layer is reddish-brown or dark-brown loam.

Surface runoff is slow to medium, and the erosion hazard slight to moderate.

This is one of the best soils in the county for farming. It can be used somewhat intensively for all the crops commonly grown. The response to management is excellent. (Capability unit IIe–12; woodland suitability group 2o1)

Lucedale fine sandy loam, 6 to 10 percent slopes (LuC).—Shallow rills or gullies expose the dark-red subsoil in some places. Included in mapping are areas where the surface layer is dark brown or reddish brown; areas where the subsoil is sandy loam; and areas making up about 15 percent of the unit that have slopes of 10 to 15 percent.

Surface runoff is medium, and the erosion hazard is moderate.

This is one of the better soils in the county for farming. It is well suited to all the crops commonly grown. The response to management is excellent. (Capability unit IIIe–12; woodland suitability group 2o1)

Luverne Series

The Luverne series consists of well-drained, acid soils that are moderately deep and deep over stratified sand and shale. These soils are on uplands of the Coastal Plain, mainly in the west-central part of the county. They formed in beds of stratified marine sediments. Slopes are 2 to 15 percent.

In a typical profile the surface layer is brown fine sandy loam about 5 inches thick. The next 11 inches is yellowish-red clay. Below this is 10 inches of red clay loam and 7 inches of yellowish-red sandy clay loam. Between depths of 33 and 41 inches is yellowish-red shaly clay. Extending to a depth of 72 inches is yellowish-red, stratified micaceous sand and shale.

These soils are low in natural fertility and content of organic matter. They are strongly acid and very strongly acid. Water enters the soil at a moderately slow to moderate rate and moves through the profile at a moderate to moderately slow rate. The available water capacity is medium.

Luverne soils are good for farming, and they are suited to most crops commonly grown in the county. They are fairly easy to keep in good tilth. They are fairly easy to work and can be worked throughout a moderate range of moisture content. Clods form if the soil is plowed when wet. The response to management is good.

The native vegetation is mixed hardwood and pine forest. About half the acreage has been cultivated, but many areas have reverted to forest, mainly loblolly pine.

Profile of Luverne fine sandy loam, 6 to 10 percent slopes, in a moist, wooded area (old field) 2¼ miles northwest of Isabella on State Route 191, NW¼SE¼ sec. 30, T. 22 N., R. 13 E.:

Ap—0 to 5 inches, brown (10YR 4/3) fine sandy loam; weak, fine, granular structure; very friable; many fine roots; strongly acid; abrupt, smooth boundary.

B21t—5 to 16 inches, yellowish-red (5YR 4/6) clay; strong, medium, subangular blocky structure breaking to strong, fine, angular blocky; firm; continuous clay films on all ped faces; common fine roots; very strongly acid; few mica flakes; gradual, smooth boundary.

B22t—16 to 26 inches, red (2.5YR 4/6) clay loam; moderate, fine and medium, subangular blocky structure; firm; clay films on most ped faces; common fine roots; very strongly acid; few mica flakes that become common with depth; gradual, wavy boundary.

B3—26 to 33 inches, yellowish-red (5YR 4/6) sandy clay loam; weak, medium and coarse, subangular blocky structure; friable; common fine roots; clay films on coarse ped faces; common mica flakes; scattered fragments of gray soft shale, approximately 2 millimeters thick, that are hard when dry; very strongly acid; gradual, wavy boundary.

C1—33 to 41 inches, shaly clay; yellowish red (5YR 4/6) on shale faces, dark-gray (10YR 4/1) interiors; common mica flakes; few fine roots; very strongly acid; clear, smooth boundary.

C2—41 to 72 inches, yellowish-red (5YR 4/8), stratified micaceous sand and shale dominated by fine sandy loam texture; very strongly acid.

The Ap horizon ranges from 3 to 12 inches in thickness and from brown to yellowish brown, dark brown, or very dark grayish brown in color. The darker colored surface layer is less than 6 inches thick. The Bt horizon ranges from silty clay or clay to sandy clay, heavy silty clay loam, or clay loam in texture and from red to yellowish red or reddish brown in color. Stratified marine sediments of sand, silt, and clay are between depths of 20 and 50 inches. The B3 and C horizons are mottled in many places. There are few to many mica flakes throughout the profile.

Luverne soils are adjacent to Ruston, Saffell, and Lucedale soils. They are finer textured than those soils. They are not so deep as Ruston and Lucedale soils. They do not have the high gravel content of Saffell soils. They are not so red throughout the profile as Lucedale soils.

Luverne fine sandy loam, 2 to 6 percent slopes (LvB).—This soil has a profile similar to that described as typical of the series. Included in mapping are areas where the surface layer is loam and areas where the subsoil is strong-brown silty clay loam or sandy clay loam.

Surface runoff is slow to moderate, and the erosion hazard slight to moderate.

This soil can be farmed moderately intensively to the crops commonly grown in the county. Only a small acreage has been cultivated. (Capability unit IIe–14; woodland suitability group 3c2)

Luverne fine sandy loam, 2 to 6 percent slopes, eroded (LvB2).—This soil has common shallow rills or gullies that in places expose the red subsoil. Included in mapping are severely eroded areas where the surface layer is strong brown to yellowish red, areas where the subsoil is strong brown, areas where the subsoil is silty clay loam or sandy clay loam, and areas where it is mottled within a depth of 30 inches. Also included are areas where a few deep gullies have formed.

Surface runoff is medium, and the erosion hazard moderate.

This soil is suited to most of the crops commonly grown in the county. Most of the acreage has been cultivated, but many areas have reverted to forest, mainly loblolly pine. (Capability unit IIe–14; woodland suitability group 3c2)

Luverne fine sandy loam, 6 to 10 percent slopes (LvC).—This soil has the profile described as typical for the series. Included in mapping are areas where the subsoil is strong brown and areas where it is silty clay loam or sandy clay loam.

Surface runoff is medium, and the erosion hazard is moderate.

This soil is suited to the crops commonly grown in the county. Only a small acreage has been cultivated. (Capability unit IIIe–14; woodland suitability group 3c2)

Luverne fine sandy loam, 6 to 10 percent slopes, eroded (LvC2).—This soil has common shallow rills or gullies that in places expose the red subsoil. Included in mapping are areas where the surface layer is silty clay loam or heavy silt loam and is strong brown or yellowish red in eroded spots, areas where the subsoil is strong-brown to yellowish-brown silty clay loam or sandy clay loam, and spots where it is mottled within a depth of 30 inches. Also included are a few deep gullies.

Surface runoff is medium to rapid, and the erosion hazard is moderate to high.

This soil is suited to the crops commonly grown in the county. Most of the acreage was once cultivated, but many areas have reverted to forest, mainly loblolly pine. (Capability unit IIIe–14; woodland suitability group 3c2)

Luverne fine sandy loam, 10 to 15 percent slopes, eroded (LvD2).—This soil has common shallow rills and gullies that in places expose the red subsoil. Included in mapping are areas where the surface layer is silty clay loam or heavy silt loam, eroded areas where it is strong brown or yellowish red, and areas where the subsoil is mottled within a depth of 30 inches. Also included are a few deep gullies.

Surface runoff is rapid, and the erosion hazard is high.

This soil is suited to trees or permanent sod crops. Less than half the acreage has been cultivated, and most of this acreage has reverted to loblolly pine forest. (Capability unit IVe–14; woodland suitability group 3c2)

Luverne-Boswell complex, 2 to 10 percent slopes, eroded (LwC2).—This complex occurs on uplands of the Coastal Plain. It is 60 percent Luverne soils and 25 percent Boswell soils. The rest is minor soils, mainly Ruston and the McLaurin soils. Both of the dominant soils occur in each mapped area. They are generally on side slopes or foot slopes. Slopes range from 2 to 10 percent but are dominantly 6 to 10 percent. Included in mapping are a few small areas of a severely eroded soil.

Luverne soils are well drained and are moderately deep and deep over sand and shale. Boswell soils are deep and moderately well drained. They are described under the heading "Boswell Series."

Surface runoff is medium to rapid, and the erosion hazard is moderate to high.

The soils in this complex are suited to trees or to permanent sod crops for hay or pasture. Most of the acreage has been cultivated, but most areas now are loblolly pine forest. A few small areas are pasture. (Capability unit IVe–14; woodland suitability group 4c2)

Luverne-Boswell complex, 10 to 15 percent slopes, eroded (LwD2).—This complex occurs on uplands of the Coastal Plain. It is dissected by many intermittent streams. It is 55 percent Luverne soils and 30 percent Boswell soils. The rest is minor soils, mainly Ruston and McLaurin soils. Both of the dominant soils occur in each mapped area.

Luverne soils are well drained and are moderately deep and deep over sand and shale. Boswell soils are deep and moderately well drained. Their surface layer is up to 6 inches thicker than is typical, and the depth to gray mottles is 20 to 35 inches. They are described under the heading "Boswell Series."

Surface runoff is rapid, and the erosion hazard is high.

The soils in this complex are suited to trees. Some areas are suited to permanent sod crops for pasture or hay. Only a small acreage has been used as cropland. Practically all of it has reverted to loblolly pine forest. (Capability unit VIe–19; woodland suitability group 4c2)

Luverne-Boswell complex, 15 to 45 percent slopes (LwF).—This complex occurs on uplands of the Coastal Plain. It is dissected by many intermittent streams and a few permanent streams. It is 55 percent Luverne soils and 30 percent Boswell soils. The rest is minor soils, mainly Ruston, McLaurin, and Toccoa soils. Both of the dominant soils occur in each mapped area.

Luverne soils are well drained and are moderately deep and deep over sand and shale. Boswell soils are deep and moderately well drained. They are described under the heading "Boswell Series."

Surface runoff is rapid to very rapid, and the erosion hazard is high.

The soils in this complex are better suited to woodland than to any other use. All the acreage is in native mixed hardwood and pine forest. (Capability unit VIIe–19; woodland suitability group 4r2)

McLaurin Series

The McLaurin series consists of well-drained, deep, acid soils on uplands of the Coastal Plain. These soils are mainly in the south-central part of the county. They formed in thick beds of sandy marine sediments. Slopes range from 2 to 15 percent.

In a typical profile the surface layer is dark grayish-brown sandy loam about 6 inches thick. The next layers, extending to a depth of 56 inches, are fine sandy loam. The upper part is dark brown to strong brown, and the lower part yellowish red. The underlying material is yellowish-red loamy sand. At a depth of about 80 inches, it grades to reddish-yellow loamy sand or sand.

These soils are low in natural fertility and content of organic matter and are medium acid to very strongly acid. Water enters the soil at a moderate to rapid rate and moves through the profile at a moderately rapid to rapid rate. The available water capacity is medium to low.

McLaurin soils are good for farming. They are easy to work and can be worked throughout a wide range of moisture content. They are easy to keep in good tilth, and they respond well to management.

The native vegetation is mixed hardwood and pine forest. More than half the acreage is used for the crops commonly grown in the county. Some areas have reverted to loblolly pine forest, and some small areas are idle.

Profile of McLaurin sandy loam, 2 to 6 percent slopes, in a moist, cultivated area, 3 miles south of Chilton County Training School, NE¼NE¼ sec. 4, T. 20 N., R. 14 E.:

Ap—0 to 6 inches, dark grayish-brown (10YR 4/2) sandy loam; single grain; loose; many fine and few medium roots; medium acid; clear, smooth boundary.

B1—6 to 12 inches, brown to dark-brown (7.5YR 4/2) fine sandy loam; weak, fine, granular structure; very friable; many fine and few medium roots; medium acid; clear, smooth boundary.

B21t—12 to 31 inches, strong-brown (7.5YR 5/6) fine sandy loam; weak, fine, subangular blocky structure; very friable; common fine and medium roots; sand grains coated and bridged with clay; medium acid; gradual, wavy boundary.

B22t—31 to 56 inches, yellowish-red (5YR 5/6) fine sandy loam; very weak, fine, granular and subangular blocky structure; very friable; sand grains coated and bridged with clay; very strongly acid; gradual, wavy boundary.

C1—56 to 80 inches, yellowish-red (5YR 4/8) loamy sand; single grain; loose; very strongly acid; gradual, wavy boundary.

IIC2—80 inches +, reddish-yellow (7.5YR 6/6) gravelly loamy sand or sand; common, medium, distinct mottles of pale brown (10YR 6/3) and light gray (10YR 7/1); single grain; loose; 40 to 50 percent rounded gravel less than 2 inches in diameter; strongly acid:

The Ap horizon is 4 to 15 inches thick. It ranges from dark grayish brown to pale brown, yellowish brown, or very dark grayish brown. The darker colored layer is less than 6 inches thick. The Bt horizon ranges from fine sandy loam to sandy loam or light loam in texture and from yellowish red to red and strong brown in color. It is more than 40 inches thick. Strata of loamy sand or sand and gravel are at a depth of more than 50 inches; the gravel content ranges up to 50 percent.

McLaurin soils are adjacent to the Eustis, Ruston, and Saffell soils. They are finer textured than Eustis soils and are coarser textured than Ruston or Saffell soils. They do not have the high gravel content characteristic of Saffell soils.

McLaurin sandy loam, 2 to 6 percent slopes (McB).—This soil has the profile described as typical for the series.

Included in mapping are small areas where the surface layer is loamy sand, areas where the subsoil is sandy clay loam to a depth of more than 30 inches, areas where the subsoil is strong brown or yellowish brown, small areas of a gravelly soil, and areas where slopes are 0 to 2 percent.

Surface runoff is slow to medium, and the erosion hazard slight to moderate.

This soil is suited to the crops commonly grown in the county, and it can be farmed somewhat intensively. About half the acreage has been cultivated. (Capability unit IIs–11; woodland suitability group 3o1)

McLaurin sandy loam, 6 to 10 percent slopes (McC).—The surface layer of this soil is 6 to 15 inches thick. Otherwise the profile is similar to that described as typical for the series. Included in mapping are small areas of a soil that has a loamy sand surface layer and a subsoil of sandy clay loam that extends to a depth of more than 30 inches, areas where the subsoil is strong brown or yellowish red, areas where shallow rills or gullies have formed, and small areas of a gravelly soil.

Surface runoff is medium, and the erosion hazard is moderate.

This soil is suited to the crops commonly grown in the county. About half the acreage has been cultivated. (Capability unit IIIe–12; woodland suitability group 3o1)

McLaurin sandy loam, 10 to 15 percent slopes (McD).—The surface layer of this soil is 6 to 15 inches thick. Otherwise the profile is similar to that described as typical for the series. Included in mapping are small areas where the surface layer is loamy sand 15 to 40 inches thick, small areas where the subsoil is strong brown to yellowish brown, areas where the subsoil is less than 40 inches thick, areas where shallow rills or gullies have formed, and small areas of a gravelly soil.

Surface runoff is medium to rapid, and the erosion hazard is moderate to high.

This soil is suited to permanent sod crops or trees. Less than half the acreage has been cultivated. Some areas have reverted to loblolly pine forest. (Capability unit IVe–11; woodland suitability group 3o1)

Madison Series

The Madison series consists of moderately deep and deep, well-drained, acid, micaceous soils of the Piedmont Uplands. These soils are in the southeastern quarter of the county. They formed in material weathered from mica schist. Slopes range from 2 to 15 percent.

The surface layer in a typical profile is dark-brown gravelly loam about 5 inches thick. The next layer, extending to a depth of 30 inches, is red clay. Below this is about 6 inches of red clay loam and 12 inches of red silt loam. The underlying material is partly weathered mica schist.

These soils are low in natural fertility and content of organic matter and are strongly acid to very strongly acid. Water enters the soil at a rapid rate and moves through the profile at a moderate to moderately rapid rate. The available water capacity is medium.

Madison soils are well suited to all crops commonly grown in the county, but they are difficult to till because of the number of fragments on and in the surface layer. They can be worked throughout a moderate range of moisture content and are fairly easy to keep in good tilth.

The native vegetation is mixed hardwood and pine forest. Much of the acreage has been cultivated, but some areas have reverted to forest, mainly loblolly pine.

Profile of Madison gravelly loam, 2 to 6 percent slopes, eroded, in a moist, idle area, 1¾ miles southwest of Mitchell Dam, NE¼SE¼ sec. 21, T. 21 N., R. 16 E.:

Ap—0 to 5 inches, dark-brown (7.5YR 4/4) gravelly loam; weak, fine, granular structure; very friable; many fine roots; many fine mica flakes; 20 percent angular fragments, mostly less than half an inch in diameter; strongly acid; abrupt, smooth boundary.

B21t—5 to 30 inches, red (2.5YR 4/6) clay; strong, medium, subangular blocky structure; firm, very sticky, slightly plastic; many fine roots; many mica flakes; 6 to 8 percent angular fragments, mostly less than half an inch in diameter; thin continuous clay films on most ped faces; very strongly acid; gradual, wavy boundary.

B22t—30 to 36 inches, red (2.5YR 4/6) clay loam; few, medium, distinct, reddish-yellow (7.5YR 6/6) mottles; moderate, medium, subangular blocky structure; friable, slightly sticky, slightly plastic; many mica flakes; common roots; 5 percent angular fragments, mostly less than half an inch in diameter; patchy clay films on many ped faces; very strongly acid; clear, wavy boundary.

B&C—36 to 48 inches, red (2.5YR 4/6) heavy silt loam; moderate, medium, subangular blocky structure; friable; many mica flakes; 5 percent angular fragments; very strongly acid; clear, wavy boundary.

C—48 to 55 inches + partly weathered mica schist.

The Ap horizon ranges from dark brown to dark yellowish brown or reddish brown. The A horizon is 15 to 30 percent fragments, mostly less than an inch in diameter. The Bt horizon ranges from silty clay or clay to clay loam in texture and from yellowish red to dark red in color. This horizon is 5 to 15 percent fragments, mostly less than an inch in diameter. Mica flakes throughout the profile range from common to many. Depth to lenses of partly weathered bedrock ranges from 20 to 50 inches.

Madison soils are adjacent to Iredell, Wilkes, Hiwassee, and Tallapoosa soils. They are not so deep nor so red throughout the profile as Hiwassee soils. They are deeper and finer textured than Tallapoosa soils. They are better drained than Iredell or Wilkes soils.

Madison gravelly loam, 2 to 6 percent slopes, eroded (MdB2).—This soil has the profile described as typical for the series. Shallow rills and gullies are common, and in places the red subsoil is exposed. Included in mapping are areas where the surface layer is gravelly fine sandy loam or silt loam, areas where the surface layer is dark reddish brown, and areas where the subsoil is heavy loam or light clay loam.

Surface runoff is medium, and the erosion hazard is moderate.

This soil is well suited to all locally grown crops. Most of the acreage has been cultivated, but many areas have reverted to loblolly pine forest. (Capability unit IIe–14; woodland suitability group 3o7)

Madison gravelly loam, 6 to 10 percent slopes, eroded (MdC2).—On this soil shallow rills or gullies are common, and in places the red subsoil is exposed. Included in mapping are areas where the surface layer is dark reddish-brown gravelly loam and areas where the subsoil is heavy loam or light clay loam.

Surface runoff is medium to rapid, and the erosion hazard is moderate to high.

This soil is well suited to all crops commonly grown in the county. Most of the acreage has been cultivated, but many areas have reverted to forest, mainly loblolly pine.

(Capability unit IIIe–14; woodland suitability group 3o7)

Madison gravelly loam, 10 to 15 percent slopes, eroded (MdD2).—On this soil shallow rills or gullies are common, and in places the red subsoil is exposed. Included in mapping are areas where the surface layer is dark reddish brown, areas where the subsoil is clay loam, loam, or silt loam, and areas where the surface layer is less than 3 inches thick and moderately deep gullies have formed.

Surface runoff is rapid, and the erosion hazard is high.

About half the acreage has been cultivated, but many areas have reverted to forest. (Capability unit IVe–14; woodland suitability group 3o7)

Masada Series

The Masada series consists of well-drained, moderately deep and deep, acid soils along streams that are subject to occasional flooding. These soils are widely distributed throughout the eastern half of the county. They formed in sediments washed from the surrounding Piedmont Uplands. Slopes are 0 to 2 percent.

In a typical profile the surface layer is dark grayish-brown silt loam about 4 inches thick. Below this is about 44 inches of yellowish-brown silty clay loam that is mottled in the lower part. Bedrock begins at a depth of 48 inches.

These soils are low in natural fertility and content of organic matter and are strongly acid. Water enters the soil at a moderate to rapid rate and moves through the profile at a moderate to moderately rapid rate. The available water capacity is medium.

Masada soils are good for farming, and they are suited to the crops commonly grown in the county. They are fairly easy to work and can be worked throughout a moderate range of moisture content. They are easy to keep in good tilth.

The native vegetation is oak, gum, pine, and hickory forest. More than half the acreage has been cultivated, but much of this acreage is now loblolly pine forest. Some areas are pasture, and some are idle.

Profile of Masada silt loam, 0 to 2 percent slopes, in a moist, idle area, a quarter of a mile northeast of Archers Chapel Church, NE¼NE¼ sec. 2, T. 23 N., R. 14 E.:

Ap—0 to 4 inches, dark grayish-brown (10YR 4/2) silt loam; weak, fine, crumb structure; very friable; many fine roots; strongly acid; abrupt, smooth boundary.

B21t—4 to 17 inches, yellowish-brown (10YR 5/6) silty clay loam; moderate, medium, subangular blocky structure; friable; patchy clay films on many ped faces; few fine roots; strongly acid; clear, smooth boundary.

B22t—17 to 33 inches, mottled light yellowish-brown (2.5Y 6/4), yellowish-brown (10YR 5/6), and yellowish-red (5YR 4/6) silty clay loam; moderate, medium, subangular blocky structure; friable; patchy clay films on most ped faces; few fine roots; strongly acid; clear, wavy boundary.

B23t—33 to 48 inches, mottled light olive-brown (2.5Y 5/4), light brownish-gray (2.5Y 6/2), brownish-yellow (10YR 6/6), and yellowish-red (5YR 4/8) silty clay loam; moderate to strong, medium, subangular blocky structure; friable; patchy thin to thick clay films on many ped faces; few manganese stains; common (3 percent) angular schist fragments less than half an inch in diameter; strongly acid; abrupt, smooth boundary.

R—48 inches, massive slate.

The Ap horizon ranges from dark grayish brown to yellowish brown or very dark brown and is 4 to 10 inches thick. The darker colored layer is less than 6 inches thick. The Bt horizon ranges from silty clay loam to clay loam, heavy silt loam, or heavy loam. It is yellowish brown to strong brown, pale brown, brownish yellow, or light brownish gray and is generally mottled at varying depths with red, brown, or yellow. At a depth of more than 30 inches it is mottled with gray. In places a thin layer that is 50 percent fragments overlies bedrock, which begins at a depth between 30 and 50 inches.

Masada soils are adjacent to the Angie, Wickham, Altavista, and Myatt soils. They are better drained and coarser textured than Angie soils. They are not so deep nor so red as Wickham soils. They are not so deep as Altavista soils but are better drained. They are much better drained than the gray, poorly drained Myatt soils.

Masada silt loam, 0 to 2 percent slopes (MsA).—This is the only Masada soil mapped in the county. Included in the mapping are small areas where the surface layer is loam or fine sandy loam, small areas where the soil is mottled with gray within a depth of 30 inches, areas where the subsoil is silty clay or heavy clay loam, small areas where depth to bedrock is more than 50 inches, and small areas where slopes are 2 to 6 percent.

Surface runoff is slow, and the erosion hazard is slight. (Capability unit IIw–31; woodland suitability group 3o7)

Myatt Series

The Myatt series consists of poorly drained, deep, acid soils on stream terraces. These soils are widely distributed throughout the western half of the county. They formed in material washed from surrounding uplands of the Coastal Plain. Slopes are 0 to 2 percent. Some areas are subject to occasional flooding or ponding.

In a typical profile the surface layer is about 3 inches of dark grayish-brown loam. The subsurface layer is about 4 inches of mottled very dark grayish-brown, dark-brown, and grayish-brown loam. The next 55 inches is mottled gray silty clay loam. Below a depth of 62 inches is 10 inches of mottled gray silty clay, 13 inches of mottled gray loam, and 15 inches of mottled gray silty clay loam.

These soils are low in natural fertility and content of organic matter and are strongly acid to very strongly acid. Water enters the soil at a moderately slow to moderate rate and moves through the profile at a moderate to moderately slow rate. The available water capacity is medium.

These soils have a seasonal high water table, and water stands on the surface for long periods during wet seasons. They are suited to pasture or trees but can be used for cultivated crops if a drainage system is installed.

The native vegetation consists of oak, gum, hickory, and hay. Less than half the acreage is used for pasture. Some areas are idle.

Profile of Myatt loam (0 to 2 percent slopes) in a moist, wooded area, 1.5 miles southwest of Isabella, NE¼NE¼ sec. 7, T. 21 N., R. 13 E.:

A1—0 to 3 inches, dark grayish-brown (10YR 4/2) loam; weak, fine, granular structure; very friable; many fine roots; few fine mica flakes; strongly acid; abrupt, smooth boundary.

A3—3 to 7 inches, mottled very dark grayish-brown (10YR 3/2), dark-brown (10YR 4/3), and grayish-brown (10YR 5/2) loam; moderate, fine, granular structure and weak, medium, subangular blocky structure; very friable; common fine roots; few fine mica flakes; common manganese stains; very strongly acid; clear, smooth boundary.

B21tg—7 to 35 inches, gray (10YR 6/1) silty clay loam; common, medium, distinct, yellowish-brown (10YR 5/6) mottles; weak, medium, subangular blocky structure; friable; patchy clay films on most ped faces; few medium roots; few fine mica flakes; very strongly acid; gradual, wavy boundary.

B22tg—35 to 62 inches, gray (10YR 6/1) silty clay loam; common, fine, distinct, yellowish-brown (10YR 5/8) mottles; moderate, medium, subangular blocky structure; friable; thin continuous clay films on many ped faces; few fine mica flakes; very strongly acid; gradual, wavy boundary.

B23tg—62 to 72 inches, gray (10YR 6/1) silty clay; common, fine, distinct, yellowish-brown (10YR 5/6) mottles; moderate, medium, subangular blocky structure; friable to firm; thin patchy clay films on some ped faces; few fine mica flakes; very strongly acid; gradual, wavy boundary.

B31g—72 to 85 inches, gray (10YR 6/1) loam; few, fine, distinct, brownish-yellow (10YR 6/6) mottles; massive; friable; few fine mica flakes; very strongly acid; gradual, wavy boundary.

B32g—85 to 100 inches +, gray (N 6/0) silty clay loam; common, medium, distinct, yellowish-brown (10YR 5/6) and brownish-yellow (10YR 6/6) mottles; massive; friable to firm; common manganese stains; few fine mica flakes; very strongly acid.

The A horizon ranges from 5 to 15 inches in thickness and from dark grayish brown or gray to dark brown in color. The darker colored layer is less than 6 inches thick. In many places the horizon is faintly to distinctly mottled with brown, yellow, or gray. The B horizon ranges from silty clay to sandy loam in texture and from gray to light gray in color. It is generally distinctly mottled with brown or yellow. The horizon is more than 50 inches thick. Manganese concretions and mica flakes range from few to common throughout the profile.

Myatt soils are adjacent to the Angie, Wickham, Altavista, and Masada soils. They are grayer and more poorly drained than any of those soils. In addition, they are coarser textured than Angie soils and are deeper over bedrock than Masada soils.

Myatt loam (Mt).—This Myatt soil has slopes of 0 to 2 percent. Included in the mapping are small areas where the surface layer is silt loam and sandy loam and areas where the subsoil is heavy clay loam or silty clay.

Surface runoff is slow, and the erosion hazard is slight. (Capability unit IVw–11; woodland suitability group 2w9)

Myatt-Bibb association, level (MyA).—This association is about 50 percent Myatt soils and 30 percent Bibb soils. It occurs along most streams in the western half of the county. It is generally wet or swampy and is occasionally flooded. Areas are 200 to 3,000 feet wide. Slopes are 0 to 2 percent. Included in the mapping are areas of Toccoa, Angie, Wickham, and Wehadkee soils.

The composition of this mapping unit is more variable than that of most units in the county, but it was controlled well enough that reliable interpretations can be made for all intended uses.

Myatt soils are on low stream terraces between the steep uplands and the stream flood plains. They are poorly drained. Their surface layer is dark grayish-brown loam. Their subsoil is gray silty clay loam more than 50 inches thick. Natural fertility and the content of organic matter are low, and the soils are strongly acid to very strongly acid. Permeability is moderate to moderately slow. The available water capacity is medium.

Bibb soils are described under the heading "Bibb Series." They occur on flood plains adjacent to streams and are poorly drained. Their surface layer is gray sandy loam. The subsurface layer is gray to light-gray sandy loam. Natural fertility and the content of organic matter are low to medium. Permeability is moderate to rapid. The available water capacity is low to medium.

These soils are not suited to row crops because of poor drainage, a high water table, and the hazard of flooding or ponding. They are well suited to trees. In some areas they are suited to grasses and legumes for pasture. Woodland covers nearly all the acreage, and there are beaver ponds throughout. (Capability unit IVw–11; woodland suitability group 2w9)

Ora Series

The Ora series consists of deep, moderately well drained, acid soils that have a fragipan in the lower part of the subsoil. These soils are on uplands of the Coastal Plain. They formed in marine-deposited beds of unconsolidated sandy loam and sandy clay loam. Slopes are 0 to 10 percent.

The surface layer in a typical profile is about 6 inches of brown sandy loam. The next layer is about 9 inches of dark yellowish-brown loam. Below this is 14 inches of yellowish-red sandy clay loam. The fragipan begins at a depth of about 29 inches and is mottled and compact. It is loam in the upper part and sandy clay loam in the lower part.

These soils are low in natural fertility and content of organic matter and are medium acid to very strongly acid. Water enters the soil at a moderately slow to moderate rate, moves at a moderate rate downward to the fragipan, and moves at a moderately slow rate through the pan. The available water capacity is medium. The root zone is moderately deep.

Ora soils are good for farming, and they are suited to the crops commonly grown in the county. They are easy to work and can be worked throughout a moderately wide range of moisture content. They are easy to keep in good tilth, and they respond well to management.

The native vegetation is mixed hardwood and pine forest. Most of the acreage is used for corn, cotton, peaches, truck crops, pasture, and hay.

Profile of Ora sandy loam, 2 to 6 percent slopes, in a moist pasture a half mile northeast of Clanton, NE¼NE¼ sec. 16, T. 21 N., R. 15 E.:

Ap—0 to 6 inches, brown (10YR 4/3) sandy loam; weak, fine, granular structure; very friable; many fine roots; 5 to 10 percent iron crust fragments, mostly less than an inch in diameter; medium acid; abrupt, smooth boundary.

B1—6 to 15 inches, dark yellowish-brown (10YR 4/4) loam; weak, medium, subangular blocky structure; friable; sand grains coated and bridged with clay; common fine roots; 5 to 10 percent iron crust fragments mostly less than an inch in diameter; medium acid; clear, smooth boundary.

B2t—15 to 29 inches, yellowish-red (5YR 4/6) sandy clay loam; weak, medium, subangular blocky structure; friable; thin patchy clay films; few fine roots; 5 to 10 percent iron crust fragments, mostly less than an inch in diameter; very strongly acid; clear, wavy boundary.

Bx1—29 to 52 inches, mottled yellowish-red (5YR 4/6), dark-red (2.5YR 3/6), yellowish-brown (10YR 5/6), and pale-brown (10YR 6/3) heavy loam; moderate, medium, subangular blocky structure; friable; patchy clay films on some ped faces; 5 to 10 percent iron crust fragments, mostly less than an inch in diameter; compact in places, brittle if disturbed; very strongly acid; clear, wavy boundary.

Bx2—52 to 72 inches +, yellowish-red (5YR 4/6) sandy clay loam; many medium, prominent mottles of dark red (2.5YR 3/6), yellowish brown (10YR 5/8), and light brownish gray (10YR 6/2); moderate to strong, coarse, subangular blocky structure; friable; thin continuous clay films on most ped faces; many fine mica flakes; compact in place; very strongly acid.

The Ap horizon ranges from 3 to 15 inches in thickness and from brown to yellowish brown, grayish brown, or very dark grayish brown in color. The darker colored layer is less than 6 inches thick. The B horizon ranges from sandy clay loam to heavy sandy loam in texture and from dark yellowish brown or yellowish red to red or reddish brown in color. Depth to the fragipan is 25 to 35 inches. The pan is compact in place but is brittle if disturbed. It ranges from sandy clay loam to loam or sandy loam and is mottled red, brown, yellow, or gray.

Ora soils are adjacent to the Ruston, Saffell, and Luverne soils. In contrast with those soils, they have a fragipan. They do not have the gravel content that is characteristic of the Saffell soils. They have a less clayey B horizon and are deeper than Luverne soils.

Ora sandy loam, 0 to 2 percent slopes (OrA).—The profile of this soil is similar to that described as typical for the series. Included in mapping are areas where the subsoil is light loam or sandy loam, areas where it is strong brown or yellowish brown, small areas where the soil is gravelly, and small areas where the surface layer is fine sandy loam.

Surface runoff is slow, and the erosion hazard is slight.

If well managed, this soil can be farmed intensively. All the acreage is used for the crops commonly grown in the county. (Capability unit IIs–11; woodland suitability group 3o1)

Ora sandy loam, 2 to 6 percent slopes (OrB).—This soil has the profile described as typical for the series. Included in mapping are areas where the subsoil is light loam or sandy loam, areas where it is strong brown or yellowish brown, and small areas where the soil is gravelly.

Surface runoff is slow, and the erosion hazard is slight to moderate.

This soil can be farmed somewhat intensively. Most of the acreage is used for the crops commonly grown in the county. (Capability unit IIe–15; woodland suitability group 3o1)

Ora sandy loam, 2 to 6 percent slopes, eroded (OrB2).—The surface layer of this soil is 3 to 6 inches thick. Included in the mapping are areas where the subsoil is light loam or sandy loam, areas where it is strong brown or yellowish brown, and small areas where the soil is gravelly.

Surface runoff is slow to medium, and the erosion hazard is slight to moderate.

Most of the acreage is used for the crops commonly grown in the county. (Capability unit IIe–15; woodland suitability group 3o1)

Ora sandy loam, 6 to 10 percent slopes (OrC).—The profile of this soil is similar to that described as typical for the series. Included in the mapping are areas where the subsoil is light loam or sandy loam, areas where the subsoil is strong brown or yellowish brown, and small areas where the soil is gravelly.

Surface runoff is medium, and the erosion hazard is moderate.

Most of the acreage has been used for the crops commonly grown in the county. Some areas have reverted to loblolly pine forest. (Capability unit IIIe–15; woodland suitability group 3o1)

Ora sandy loam, 6 to 10 percent slopes, eroded (OrC2).—Shallow rills and gullies have formed in this soil, and in places the yellowish-red subsoil is exposed. Included in the mapping are areas where the subsoil is light loam or sandy loam, areas where it is strong brown or yellowish brown, small areas where the soil is gravelly, and areas of moderately deep to deep gullies.

Surface runoff is medium, and the erosion hazard is moderate to rapid.

Most of the acreage has been used for the crops commonly grown in the county. Some areas have reverted to loblolly pine forest. Good crop rotations and moderate to intensive management are needed if this soil is used for row crops. (Capability unit IIIe–15; woodland suitability group 3o1)

Rock Land

Rock land (Ro) occurs as areas that are more than 50 percent sandstone boulders, rocks, and rock outcrops. Hartsells soils are adjacent to many of these areas and are included in mapping those areas around boulders and between rock outcrops. The depth to bedrock and the content of fragments vary greatly from place to place. Slopes mainly range from 6 to 15 percent.

This land type is very low in natural fertility and content of organic matter and is strongly acid to very strongly acid. The available water capacity is low to very low. Surface runoff is rapid.

Rock land is not suited to cultivated crops. It is fairly well suited to trees. Small areas are suited to pasture. Most of the acreage supports fair to good stands of mixed hardwoods and pine. (Capability unit VIIs–31; no woodland suitability group)

Ruston Series

The Ruston series consists of well-drained, deep, acid soils on uplands of the Coastal Plain. These soils are widely distributed throughout the western half of the county. They formed in thick, marine-deposited beds of unconsolidated sandy loam to sandy clay loam. Slopes range from 0 to 15 percent.

In a typical profile the surface layer is brown fine sandy loam about 7 inches thick. Below this layer is yellowish-red, friable sandy clay loam 10 inches thick. The next layer, between depths of 17 and 29 inches, is red, friable clay loam. Below this to a depth of 66 inches is red sandy clay loam that is mottled in the lower part.

These soils are low in natural fertility and content of organic matter and are strongly acid to vey strongly acid. Water enters the soil at a moderate to rapid rate and moves through the profile at a moderate rate. The available water capacity is medium to high.

Ruston soils are good for farming, and they are suited to the crops commonly grown in the county. They can be worked throughout a wide range of moisture content. They are easy to keep in good tilth. The response to management, including fertilization, is good to excellent.

The native vegetation is mixed hardwood and pine forest. Most of the acreage is used for corn, cotton, peaches, truck crops, pasture, and hay. Some areas have reverted to loblolly pine forest, and some small areas are idle.

Profile of Ruston fine sandy loam, 0 to 2 percent slopes,

in a moist, wooded area (old field) a mile south-southwest of Verbena, SE¼SW¼ sec. 1, T. 20 N., R. 15 E.:

Ap—0 to 7 inches, brown (7.5YR 5/4) fine sandy loam; weak, fine, granular structure; very friable; many fine roots; strongly acid; clear, wavy boundary.

B21t—7 to 17 inches, yellowish-red (5YR 4/6) sandy clay loam; moderate, medium, subangular blocky structure; friable; thin patchy clay films on some ped faces; many fine roots; very strongly acid; gradual, wavy boundary.

B22t—17 to 29 inches, red (2.5YR 4/6) clay loam; moderate, medium, subangular blocky structure; friable; patchy clay films on most ped faces; few fine and medium roots; very strongly acid; gradual, wavy boundary.

B23t—29 to 47 inches, red (2.5YR 4/6) sandy clay loam; moderate, medium, subangular blocky structure; friable; patchy to continuous clay films on many ped faces; 5 percent gravel up to an inch in diameter; very strongly acid; gradual, wavy boundary.

B24t—47 to 66 inches +, red (2.5YR 4/6) sandy clay loam; few, medium, distinct, yellowish-brown (10YR 5/6) mottles; moderate, medium, subangular blocky structure; friable; patchy to continuous clay films on some ped faces; 20 percent gravel up to an inch in diameter; very strongly acid.

The Ap horizon is dominantly 3 to 10 inches thick but ranges to 20 inches. It ranges from dark grayish brown to dark brown or brown. The darker colored layer is less than 6 inches thick. The Bt horizon ranges from sandy clay loam to light clay loam, heavy loam, or heavy sandy loam and from yellowish red to red. It is more than 50 inches thick. Red, brown, or yellow mottles occur in places at a depth of more than 20 inches. At a depth of more than 30 inches, the soil material is up to 20 percent gravel and iron-crust fragments. Below the Bt horizon is sandy loam or loamy sand that is mottled with red, brown, or yellow and contains varying amounts of rounded gravel. Mica flakes range from few to common in some profiles.

Ruston soils are adjacent to the McLaurin, Lucedale, Ora, Saffell, and Luverne soils. They are finer textured than McLaurin soils. They are not so red throughout the profile as Lucedale soils. They do not have the fragipan that is characteristic of the Ora soils. They are deeper than Saffell soils and do not have the gravel content that is characteristic of those soils. They are deeper and coarser textured than Luverne soils.

Ruston fine sandy loam, 0 to 2 percent slopes (RsA).—This soil has the profile described as typical for the series. Included in mapping are small areas where the surface layer is loam, areas where the subsoil is heavy clay loam or sandy clay, areas where it is dark red, strong brown, or yellowish brown, and small areas where the soil is gravelly.

Surface runoff is slow, and the erosion hazard is slight.

This soil is well suited to corn, cotton, peaches, pasture, and hay (fig. 4). Most of it has been cultivated. It is easy to work and responds well to management. (Capability unit I-12; woodland suitability group 3o1)

Ruston fine sandy loam, 2 to 6 percent slopes (RsB).—The profile of this soil is similar to that described as typical for the series. Included in mapping are areas where the subsoil is heavy clay loam, sandy clay, light loam, or

Figure 4.—Coastal bermudagrass on Ruston fine sandy loam, 0 to 2 percent slopes.

sandy loam; areas where it is dark red, strong brown, or yellowish brown; and areas where it is less than 50 inches thick. Also included are shallow rills, gullies, a few deep gullies, and small areas where the soils are gravelly and the surface layer is loam.

Surface runoff is slow to medium, and the erosion hazard is slight to moderate.

This soil is well suited to the crops commonly grown in the county. It is easy to work and can be farmed somewhat intensively.

Most of the acreage has been cultivated. Some areas have reverted to loblolly pine forest, and some small areas are idle. (Capability unit IIe–12; woodland suitability group 3o1)

Ruston fine sandy loam, 6 to 10 percent slopes (RsC).—The surface layer of this soil is 6 to 12 inches thick. Included in mapping are areas where the surface layer is brown to reddish brown; areas where the subsoil is heavy clay loam, sandy clay, light loam, or sandy loam; areas where it is dark red, strong brown, or yellowish brown; and a few areas where it is less than 50 inches thick. Also included are small areas where the soil is gravelly.

Surface runoff is medium, and the erosion hazard is moderate.

This soil is well suited to the crops commonly grown in the county and is easy to work. About half the acreage has been cultivated, but part of this has reverted to loblolly pine forest. (Capability unit IIIe–12; woodland suitability group 3o1)

Ruston fine sandy loam, 6 to 10 percent slopes, eroded (RsC2).—The surface layer of this soil is 4 to 7 inches thick. Shallow rills or gullies are common, and the yellowish-red subsoil is exposed in many places. There are a few deep gullies.

Included in the mapping are areas where the subsoil is sandy clay, heavy clay loam, light loam, or sandy loam; areas where it is dark red, strong brown, or yellowish brown; and areas where it is less than 50 inches thick. Also included are small areas where the soil is gravelly.

Surface runoff is medium to rapid, and the erosion hazard is moderate to high.

This soil is fairly well suited to the crops commonly grown in the county. It is easy to work. Most of the acreage has been used for corn, cotton, peaches, pasture, and hay. Some areas have reverted to loblolly pine forest, and some small areas are idle. (Capability unit IIIe–12; woodland suitability group 3o1)

Ruston fine sandy loam, 10 to 15 percent slopes, eroded (RsD2).—The surface layer of this soil is 3 to 6 inches thick. Shallow rills or gullies are common, and in many places the yellowish-red subsoil is exposed. A few deep gullies have formed.

Included in mapping are areas where the surface layer is reddish brown; areas where the subsoil is sandy clay, heavy clay loam, light loam, or sandy loam; areas where it is dark red, strong brown, or yellowish brown; and areas where it is less than 50 inches thick. Also included are small areas where the soil is gravelly.

Surface runoff is rapid, and the erosion hazard is high.

This soil is suited to permanent sod crops, but it is somewhat difficult to work because of the strong slopes. Most of the acreage has been used for corn, cotton, pasture, and hay. Many areas have reverted to loblolly pine forest, and small areas are idle. (Capability unit IVe-11; woodland suitability group 3o1)

Ruston-Shubuta-Troup association, hilly (RtE).—This association is about 50 percent Ruston soils, 25 percent Shubuta soils, and 15 percent Troup soils. It is in the western part of the county. The soils are loamy, clayey, sandy, and well drained to excessively drained. They occur in a fairly uniform pattern in the landscape, and they are highly dissected. Slopes range from 10 to 25 percent but are dominantly 15 to 25 percent. Included in mapping are areas of Toccoa and Wehadkee soils and areas of an unnamed soil.

The composition of this mapping unit is more variable than that of most units in the county, but it was controlled well enough that reliable interpretations can be made for all intended uses.

Ruston soils occupy upper slopes. They are moderately fine textured and well drained. The surface layer is brown fine sandy loam or sandy loam. The subsoil is yellowish-red to red sandy clay loam more than 50 inches thick.

Shubuta soils occupy side slopes. They have a fine-textured subsoil and are well drained. The surface layer is dark grayish-brown sandy loam. The subsoil is red clay or sandy clay that is mottled with brown, yellow, or gray at a depth of more than 30 inches.

Troup soils are coarse textured and well drained. The surface layer is grayish-brown or dark grayish-brown loamy fine sand to loamy sand 40 to 70 inches thick. The subsoil is strong-brown sandy loam.

These soils are not suited to row crops, because slopes are too steep and the erosion hazard is too high. They are suited to trees, and in small areas they are suited to permanent sod crops for pasture or hay. Nearly all the acreage is mixed hardwood and pine forest. Small areas have been cultivated, but most of these have reverted to loblolly pine forest. (Capability unit VIe–19; woodland suitability group 4r2)

Ruston-Shubuta-Troup association, steep (RtF).—This association is 40 percent Ruston soils, 30 percent Shubuta soils, and 15 percent Troup soils. It is in the western part of the county. The soils are loamy, clayey, sandy, and well drained to excessively drained. They occur in a fairly uniform pattern in the landscape and are highly dissected. Slopes range from 25 to 45 percent. Included in the mapping are areas of Toccoa and Wehadkee soils and areas of an unnamed soil.

The composition of this unit is more variable than that of most mapped units in the county, but it was controlled well enough that reliable interpretations can be made for all intended uses.

Ruston soils occupy upper slopes. They are moderately fine textured and well drained. The surface layer is brown fine sandy loam or sandy loam. The subsoil is yellowish-red to red sandy clay loam that is more than 50 inches thick.

Shubuta soils occupy the middle parts of slopes. They have a fine-textured subsoil and are well drained. The surface layer is dark grayish-brown sandy loam. The subsoil is red clay or sandy clay that is mottled with brown, yellow, or gray at a depth of more than 30 inches.

Troup soils occupy lower slopes. They are coarse textured and well drained. The surface layer is grayish-brown or dark grayish-brown loamy fine sand or loamy sand 40 to 70 inches thick. The subsoil is strong-brown sandy loam.

These soils are not suited to row crops or to pasture, be-

cause slopes are too steep and the erosion hazard is too high. All the acreage is mixed hardwood and pine forest. It is better suited to trees than to other uses. (Capability unit VIIe–19; woodland suitability group 4r2)

Saffell Series

The Saffell series consists of deep, well-drained, acid soils that are more than 35 percent gravel. These soils occur on uplands of the Coastal Plain. They are widely distributed throughout the county but are dominantly in the south-central part. Slopes are 2 to 15 percent.

The surface layer in a typical profile is dark grayish-brown sandy loam about 5 inches thick. The subsurface layer is about 8 inches of yellowish-brown gravelly sandy loam. The next layer, about 17 inches thick, is reddish-brown gravelly sandy clay loam. Below this is 15 inches of yellowish-red gravelly sandy loam. Between depths of 45 and 85 inches is mottled loamy sand to sand.

These soils are low in natural fertility and content of organic matter and are medium acid to very strongly acid. Water enters the soil at a rapid rate and moves through the profile at a moderate to rapid rate. The available water capacity is medium to low. The root zone is thick.

Saffell soils are good for farming, and they are suited to the crops commonly grown in the county. They are easy to keep in good tilth and can be worked throughout a wide range of moisture content. The response to management is excellent.

The native vegetation is mixed hardwood and pine forest. Much of the acreage has been used for corn, cotton, peaches, truck crops, pasture, and hay, for which the soils are well suited. Some areas have reverted to loblolly pine forest, and some areas are idle.

Profile of Saffell gravelly sandy loam, 6 to 10 percent slopes, in a moist, idle area, 2.75 miles southwest of Verbena, NE¼NW¼ sec. 10, T. 20 N., R. 15 E.:

Ap—0 to 5 inches, dark grayish-brown (10YR 4/2) gravelly sandy loam; weak, fine, granular structure; very friable; many fine roots; 20 to 25 percent rounded gravel less than an inch in diameter; medium acid; abrupt, smooth boundary.

A2—5 to 13 inches, light yellowish-brown (2.5Y 6/4) gravelly sandy loam; weak, fine, granular structure; very friable; few to common, fine and medium roots; 20 to 25 percent rounded gravel less than an inch in diameter; strongly acid; clear, smooth boundary.

B21t—13 to 30 inches, reddish-brown (5YR 4/4) gravelly sandy clay loam; weak to moderate, fine, subangular blocky structure; friable to very friable; patchy clay films on some ped faces; few fine roots; 45 percent gravel less than an inch in diameter; very strongly acid; clear, smooth boundary.

B22t—30 to 45 inches, yellowish-red (5YR 4/6) gravelly sandy loam; weak, fine, subangular blocky structure; very friable; sand grains bridged and coated with clay; few thin patchy clay films on some ped faces; 60 percent rounded gravel less than an inch in diameter; few fine roots; very strongly acid; clear, irregular boundary.

C—45 to 85 inches +, very pale brown (10YR 7/4) and yellow (10YR 7/8) gravelly loamy sand to sand; lenses and pockets of red (2.5Y 4/6) and yellowish red (5YR 4/6); single grain; loose; few fine roots in upper 20 inches; 50 percent gravel less than 3 inches in diameter; strongly acid.

The Ap horizon ranges from dark grayish brown to brown, light yellowish brown, or very dark grayish brown. It is dominantly 5 to 10 inches thick but ranges to as much as 20 inches. The darker colored layer is less than 6 inches thick. The Bt horizon ranges from gravelly sandy clay loam to gravelly sandy loam, loam, or light clay loam in texture and from red to yellowish brown in color. It is less than 50 inches thick. Red, brown, or yellow mottles occur in places below a depth of 20 inches. Content of gravel below the A horizon is more than 35 percent. The gravel is mainly less than 2 inches in diameter. Strata of loamy sand, sand, or sand and gravel generally are at a depth of more than 40 inches. There are a few mica flakes in some profiles.

Saffell soils are adjacent to the McLaurin, Bowie, Ruston, Luverne, and Guin soils. They contain more gravel than McLaurin, Bowie, Ruston, and Luverne soils. They are not so deep over bedrock as McLaurin, Bowie, or Ruston soils. They are not so fine textured as Luverne soils and are not so coarse textured as Guin soils. They have a redder subsoil than Bowie soils and lack the soft plinthite that is characteristic of those soils.

Saffell gravelly sandy loam, 2 to 6 percent slopes (SaB).—The surface layer of this soil is 5 to 10 inches thick. Included in mapping are areas where the surface layer is gravelly loamy sand; areas where the subsoil is heavy clay loam, sandy clay, light sandy loam, or loamy sand; areas where the soils are less than 35 percent gravel; and small areas where slopes are 0 to 2 percent. Also included are shallow rills and gullies.

Surface runoff is slow to medium, and the erosion hazard is slight to moderate.

This soil is well suited to crops commonly grown in the county. It is fairly easy to work and can be farmed somewhat intensively. Most of the acreage has been used for corn, cotton, peaches, pasture, and hay. Some areas have reverted to loblolly pine forest, and small areas are idle. (Capability unit IIe–12; woodland suitability group 4f2)

Saffell gravelly sandy loam, 6 to 10 percent slopes (SaC).—This soil has a profile similar to that described as typical for the series. Included in mapping are areas where the surface layer is gravelly loamy sand and the subsoil is heavy clay loam, sandy clay, light sandy loam, or loamy sand, and areas where the soils are less than 35 percent gravel. Also included are shallow rills or gullies.

Surface runoff is medium, and the erosion hazard is moderate.

This soil is suited to the crops commonly grown in the county and is fairly easy to work. More than half the acreage has been used for corn, cotton, peaches, pasture, and hay. Some areas have reverted to loblolly pine forest, and small areas are idle. (Capability unit IIIe–12; woodland suitability group 4f2)

Saffell gravelly sandy loam, 10 to 15 percent slopes (SaD).—This soil has a surface layer 10 to 20 inches thick. Included in the mapping are areas where the surface layer is gravelly loamy sand and the subsoil is heavy clay loam, sandy clay, light sandy loam, or loamy sand, and areas of soils that are less than 35 percent gravel. Also included are shallow rills or gullies.

Surface runoff is medium to rapid, and the erosion hazard is moderate to high.

This soil is suited to permanent sod crops or trees. Because of the moderately steep to steep slopes, it is somewhat difficult to work. Less than half the acreage has been used for the crops commonly grown in the county. Some areas have reverted to loblolly pine forest, and small areas are idle. (Capability unit IVe–11; woodland suitability group 4f2)

Shubuta Series

The Shubuta series consists of well-drained, deep, acid soils on uplands of the Coastal Plain. These soils are widely distributed throughout the extreme western part of the county, west of Maplesville. They formed in stratified, fine-textured marine sediments. Slopes are 2 to 15 percent.

The surface layer in a typical profile is about 3 inches of dark grayish-brown sandy loam. The subsurface layer is 7 inches of yellowish-brown sandy loam. Below this is 60 inches of firm, red sandy clay that is mottled in the lower part.

These soils are low in natural fertility and content of organic matter and are strongly acid and very strongly acid. Water enters the soil at a moderate to rapid rate and moves through the profile at a moderately slow to moderately rapid rate. The available water capacity is medium.

Shubuta soils are good for farming and are suited to the crops commonly grown in the county. They are fairly easy to somewhat difficult to work. They can be worked throughout a fairly wide range of moisture content, but clods form if they are worked when wet. The response to management is good.

The native vegetation is mainly mixed hardwoods. There are a few pines. More than half the acreage has been cultivated, but most of this has reverted to loblolly pine forests.

Profile of Shubuta sandy loam, 2 to 15 percent slopes, eroded, in a moist, wooded area, 2 miles northwest of Perry Mountain Fire Tower, NE¼NE¼ sec. 29, T. 21 N., R. 11 E.:

A1—0 to 3 inches, dark grayish-brown (10YR 4/2) sandy loam; weak, fine, granular structure; very friable; many fine roots; 10 percent gravel and iron-crust fragments up to an inch in diameter; strongly acid; clear, smooth boundary.

A2—3 to 10 inches, yellowish-brown (10YR 5/4) sandy loam; weak, fine, granular structure; very friable; common fine roots: 4 percent gravel and iron-rust fragments up to a half inch in diameter; strongly acid; abrupt, smooth boundary.

B21t—10 to 20 inches, red (2.5YR 4/6) sandy clay; strong, medium, subangular blocky structure; firm, slightly sticky, plastic; continuous clay films on many ped faces; few fine roots; few mica flakes; very strongly acid; gradual, wavy boundary.

B22t—20 to 33 inches, red (2.5YR 4/6) sandy clay; few, fine to medium mottles of yellowish brown and strong brown; strong, medium, subangular blocky structure; firm, slightly sticky, plastic; continuous clay films on most ped faces; few mica flakes; very strongly acid; gradual, wavy boundary.

B23t—33 to 70 inches +, mottled red (2.5YR 4/6), yellowish-brown (10YR 5/6) and light brownish-gray (10YR 6/2) sandy clay or clay; strong, angular and subangular blocky structure; firm, sticky, plastic; thin patchy clay films on many ped faces; common mica flakes; very strongly acid.

The A horizon ranges from dark grayish brown to light yellowish brown or very dark grayish brown. It is dominantly 3 to 10 inches thick. The darkest colored layer is less than 6 inches thick. The Bt horizon ranges from silty clay to clay, sandy clay, heavy clay loam, or heavy silty clay loam in texture and from red to yellowish red or reddish brown in color. Mottles of red, brown, yellow, or gray are normally at a depth of more than 20 inches. The Bt horizon is more than 50 inches thick. In most places the profile is no more than 10 percent gravel and iron-crust fragments. Mica flakes range from few to common in most profiles.

Shubuta soils are adjacent to Luverne, Boswell, and Ruston soils. They are thicker and have a finer textured subsoil than Ruston and Luverne soils. They are not so sticky and plastic as Boswell soils.

Shubuta sandy loam, 2 to 15 percent slopes, eroded (ShD2).—Shallow rills or gullies have formed in most areas of this soil, and there are a few deep gullies.

Included in mapping are areas where the subsoil is strong brown or yellowish brown, areas where it is light clay loam, sandy clay loam, or silty clay loam, and areas where it is less than 50 inches thick.

Surface runoff is moderate to rapid, and the erosion hazard is moderate to high.

In the less sloping parts, this soil is suited to the crops commonly grown in the county. Where slopes are 10 to 15 percent, it is best suited to permanent sod crops or to trees. (Capability unit IVe–14; woodland suitability group 3c2)

Talladega Series

The Talladega series consists of well-drained, moderately deep, acid soils on the Piedmont Uplands. These soils occupy the northeast corner of the county. They formed in material weathered from schist and are more than 35 percent coarse fragments. Slopes range from 6 to 45 percent.

In a typical profile the surface layer is dark-brown channery silt loam about 4 inches thick. The subsoil, about 18 inches thick, is friable channery silty clay loam that is strong brown in the upper part and yellowish red in the lower part. The underlying material is weathered schist. Bedrock is at a depth of 38 inches.

These soils are very low in natural fertility, are low in content of organic matter, and are strongly acid. Water enters the surface at a moderate to rapid rate and moves downward at a moderate rate. The available water capacity is medium.

Talladega soils are fairly well suited to woodland. Generally they are poorly suited to cropland. Because of very low fertility, a generally high erosion hazard, and steep slopes, they are unsuited to cultivated crops. Small areas can be used for permanent sod crops or pasture.

The native vegetation is mixed hardwood and pine forest. Only a small acreage has been cleared and cultivated; most of this has reverted to pine trees.

Typical profile of Talladega channery silt loam, 15 to 45 percent slopes, in a moist, wooded area, 1.3 miles north-northwest of Lay Dam, SE¼SW¼ sec. 12, T. 23 N., R. 15 E.:

A1—0 to 4 inches, dark-brown (10YR 3/3) channery silt loam; weak, fine, granular structure; very friable; many fine roots; 30 percent schist fragments up to half an inch in diameter; strongly acid; abrupt, smooth boundary.

B21t—4 to 7 inches, strong-brown (7.5YR 5/6) channery silty clay loam; weak to moderate, fine, subangular blocky structure; friable; patchy clay films on many ped faces; common, fine and medium roots; 45 percent schist fragments up to half an inch in diameter; strongly acid; clear, smooth boundary.

B22t—7 to 22 inches, yellowish-red (5YR 5/8) channery silty clay loam; weak to moderate, medium, subangular block structure; friable; patchy clay films on most ped faces; few, fine and medium roots; 50 percent schist fragments up to an inch in diameter; strongly acid; clear, wavy boundary.

C—22 to 38 inches, weathered schist.

R—38 inches, schist.

The A1 horizon ranges from dark brown to brown, yellowish brown, or black in color and is less than 10 inches thick. The Bt horizon ranges from channery silty clay loam to channery silt loam, loam, or light clay loam in texture, from yellowish red to reddish brown, strong brown, or yellowish brown in color, and dominantly from 15 to 35 inches in thickness. The B horizon is more than 35 percent coarse fragments. Depth to bedrock in most places ranges from 20 to 40 inches. In some places ledges of rock outcrop are less than 25 feet apart. The Talladega soils in this survey area are a few degrees warmer than the defined range for the Talladega series, but this difference does not alter their usefulness and behavior.

Talladega soils are adjacent to Tallapoosa and Tatum soils. They are deeper and contain more coarse fragments than Tallapoosa soils. They are coarser textured and contain many more coarse fragments than Tatum soils.

Talladega channery silt loam, 6 to 15 percent slopes (TaD).—This soil has a profile similar to that described as typical for the series except that in places its surface layer is as much as 10 inches thick. Included in mapping are areas where the subsoil is silty clay or clay, areas of soils that are less than 35 percent coarse fragments, areas where depth to bedrock is less than 20 inches, areas where there are only a few stones on the surface or throughout the soil, and small areas of stony soils.

Surface runoff is medium to rapid, and the erosion hazard is moderate to high.

This soil is suited to woodland. Generally it is poorly suited to cropland. Some areas are suited to permanent sod crops or to pasture. Less than a third of the acreage has been cleared and cultivated; most of this has reverted to pine forest. (Capability unit VIe-34; woodland suitability group 4c2)

Talladega channery silt loam, 15 to 45 percent slopes (TaF).—This soil has the profile described as typical for the series. Included in mapping are areas where the surface layer is channery loam or channery fine sandy loam, areas where the subsoil is silty clay or clay, areas of soils that are less than 35 percent coarse fragments, areas where depth to bedrock is less than 20 inches, areas where there are only a few stones on the surface or throughout the soils, small areas of stony soils, and areas where slopes are more than 45 percent.

Surface runoff is rapid, and the erosion hazard is high.

This soil is poorly suited to farm crops. The steep slopes, poor fertility, and high erosion hazard make the soil more suitable for woodland than for cropland. Except for widely scattered, isolated spots, the acreage is in native forest. (Capability unit VIIe-32; woodland suitability group 4r2)

Tallapoosa Series

The Tallapoosa series consists of shallow, well-drained, acid soils of the Piedmont Upland. These soils formed in material weathered from mica schist. Slopes range from 15 to 45 percent.

In a typical profile the surface layer is brown loam about 4 inches thick. The subsoil, about 6 inches thick, is yellowish-red silty clay loam. The underlying material, to a depth of 19 inches, is reddish-yellow and yellowish-red loam. Below this is reddish, yellowish, and brownish, soft mica schist.

Tallapoosa soils are low in natural fertility and in content of organic matter. They are very strongly acid. Permeability is moderate, and the available water capacity is medium to low.

The native vegetation is mostly pine and some mixed hardwoods.

In this county Tallapoosa soils are mapped only with Madison soils.

Typical profile of a Tallapoosa loam in a moist, wooded area, 3 miles east of Providence Church, NW¼SE¼ sec. 29, T. 22 N., R. 16 E.:

A1—0 to 4 inches, brown (10YR 4/4) loam; weak, fine, granular structure; very friable; common fine roots; few gravel-sized fragments of quartz and schist; very strongly acid; clear, smooth boundary.

B2t—4 to 10 inches, yellowish-red (5YR 4/6) light silty clay loam; weak to moderate, fine, subangular blocky structure; friable; many fine roots; few gravel-sized fragments; thin clay films on some ped faces; very strongly acid; common mica flakes; gradual, broken boundary.

C1—10 to 19 inches, irregular bands of loam; reddish yellow (7.5YR 6/6) and 20 percent yellowish red (5YR 4/6); platy structure; few roots; discontinuous clay coatings on some rock faces; very strongly acid; many mica flakes; gradual, broken boundary.

C2—19 to 60 inches, reddish-yellow (5YR 6/6), yellowish-red (5YR 4/8), and brownish-yellow (10YR 6/6) soft schist containing many mica flakes that give a slick feel; platy structure; very strongly acid.

The A1 horizon ranges from very dark brown to brown or reddish brown in color and from loam to silt loam or fine sandy loam in texture. In some places it is gravelly and is less than 10 inches thick. The A2 horizon, where present, is dark grayish brown or dark yellowish brown and is as much as 5 inches thick. The B2t horizon ranges from silty clay loam to loam or silt loam in texture and from yellowish red to red, strong brown, or yellowish brown in color. It is as much as 10 inches thick. Partly weathered mica schist or quartz mica schist is at a depth of 10 to 20 inches and in many places contains lenses of soil material from the B2t horizon. The lenses are as much as 7 inches thick. In most places hard rock is at a depth of 50 inches. Common to many mica flakes are throughout the profile.

Tallapoosa soils are adjacent to Madison and Hiwassee soils. They are shallower and coarser textured than those soils.

Tallapoosa-Madison association, steep (TmF).—This association consists of steep soils on the highly dissected Piedmont Upland in the southeastern part of Chilton County. Slopes range from 15 to 45 percent but are dominantly 25 to 45 percent. About 60 percent of the association is Tallapoosa soils, about 30 percent Madison soils, and the rest Hiwassee and Congaree soils.

The Tallapoosa soils are mainly on upper side slopes. They are shallow, medium textured, and well drained. The surface layer is brown loam and typically is less than 10 inches thick. The subsoil is yellowish-red silty clay loam to loam and also is less than 10 inches thick. Partly weathered rock is at a depth of 10 to 20 inches. There are common to many mica flakes throughout the profile.

The Madison soils are mainly on ridgetops and lower side slopes. They are similar to the soil described as typical of the Madison series except that generally their slopes are more than 15 percent. The surface layer is dark-brown gravelly loam. The subsoil is red clay or silty clay. Schist bedrock is at a depth of 21 to 48 inches.

These soils are low in natural fertility and in content of organic matter. They are very strongly acid. Water enters the surface at a moderate to rapid rate and moves at a moderate rate downward through the profile. Available water capacity is medium to low.

All the acreage is original forest of mixed hardwoods and pine. The soils are better suited to woodland than to cropland. They are not suited to farm crops or pasture be-

cause of the steep slopes, the high erosion hazard, and the medium to low available water capacity. (Capability unit VIIe–32; woodland suitability group 4r2)

Tatum Series

The Tatum series consists of well-drained, moderately deep, acid soils of the Piedmont Uplands. These soils are distributed throughout the northeast corner of the county. They formed in material weathered from Talladega Schist. Slopes range from 2 to 15 percent.

The surface layer in a typical profile is very dark brown gravelly loam about 3 inches thick. The subsurface layer is very pale brown gravelly silt loam about 5 inches thick. Below the subsurface layer is 24 inches of red, firm clay. The underlying material is slightly weathered schist.

These soils are low in natural fertility and content of organic matter and are strongly acid. Water enters the soil at a moderate to rapid rate and moves through the profile at a moderate rate. The available water capacity is medium.

These are fair soils for farming, and they are suited to most of the crops commonly grown. They can be worked throughout a moderate rate of moisture content and are fairly easy to work. Tilth is only fair but is easy to maintain. The response to management is good.

The native vegetation is mixed oak, hickory, and pine forest. Much of the acreage has been cultivated. Most of it has reseeded to loblolly and shortleaf pines. A small acreage is used for pasture, hay, corn, cotton, and peaches.

Profile of Tatum gravelly loam, 6 to 15 percent slopes, in a moist, wooded area, half a mile southwest of New Hope Church, SE¼SW¼ sec. 34, T. 23 N., R. 15 E.:

A1—0 to 3 inches, very dark brown (10YR 2/2) gravelly loam; weak, fine, crumb structure; very friable; many fine roots; 25 percent angular quartz fragments up to an inch in diameter; strongly acid; abrupt boundary.

A2—3 to 8 inches, very pale brown (10YR 7/3) gravelly silt loam; weak, fine, crumb structure; very friable; many fine roots; 20 percent angular quartz fragments, mostly less than a quarter of an inch in diameter, some as much as 1 inch; strongly acid; abrupt, smooth boundary.

B2t—8 to 32 inches, red (2.5YR 4/6) clay; moderate, medium, subangular blocky structure; firm; thin continuous clay films on most ped faces; few fine roots between peds; few quartz and schist fragments less than a quarter inch in diameter; 10 to 15 percent very thin lenses and small fragments (less than a quarter of an inch in diameter) of partly weathered saprolite; strongly acid; gradual, wavy boundary.

C1—32 to 38 inches, partly weathered saprolite that has lenses of red (2.5YR 4/6) clay.

C2—38 to 45 inches +, slightly weathered schist.

The A1 horizon ranges from very dark brown to yellowish brown or pale brown. The Bt horizon ranges from silty clay to clay, heavy clay loam, or heavy silty clay loam in texture and from 15 to 30 inches in thickness. Its color is red. Mottles of red, brown, or yellow are in some profiles at varying depths. The percentage of fragments, mostly less than an inch in diameter, on and in the A1 horizon ranges from 15 to 25. In the B horizon the percentage of fragments mostly less than half an inch in diameter, ranges to as much as 15. Partly weathered rock is at a depth of 20 to 40 inches, and hard rock is at a depth of 35 to 60 inches.

Tatum soils are adjacent to Iredell, Wilkes, Talladega, and Madison soils. They are more uniform in depth than Talladega soils and do not have the content of coarse fragments and ledges of bedrock that are characteristic of those soils. They do not have the mica content that is characteristic of Madison soils. They are better drained than Iredell soils. They are deeper over bedrock than Wilkes soils.

Tatum gravelly loam, 2 to 6 percent slopes (TnB).—This soil has a profile similar to that described as typical for the series. Included in the mapping are areas where the surface layer is gravelly silt loam and in places less than 15 percent fragments; areas where the subsoil is yellowish red, strong brown, or yellowish brown; and areas where it is silty clay loam or loam. Also included are small areas where slopes are 0 to 2 percent and areas where shallow rills or gullies have formed and the red subsoil is exposed.

Surface runoff is medium, and the erosion hazard is moderate.

This soil is suited to most of the crops commonly grown in the county. Most of the acreage has been cultivated but is now in loblolly and shortleaf pines. (Capability unit IIe–14; woodland suitability group 4o1)

Tatum gravelly loam, 6 to 15 percent slopes (TnD).—This soil has the profile described as typical for the series. Slopes are dominantly 6 to 10 percent. Included in the mapping are areas where the surface layer is gravelly silt loam and in places is less than 15 percent fragments; areas where the subsoil is yellowish red, strong brown, or yellowish brown; and areas where it is silty clay loam or loam. Also included are a few areas where partly weathered rock is at a depth of less than 20 inches, and areas where shallow rills and a few deep gullies have formed and the red subsoil is exposed.

Surface runoff is medium to rapid, and the erosion hazard is moderate to high.

This soil is suited to most of the crops commonly grown in the county. Some of the acreage has been cultivated, but these areas are now in loblolly and shortleaf pines. (Capability unit IIIe–14; woodland suitability group 4o1)

Toccoa Series

The Toccoa series consists of well-drained, deep, acid soils adjacent to streams or at the heads of and along drainageways. These soils are widely distributed throughout the western part of the county. They are flooded occasionally for 1 to 3 days after prolonged or heavy rainfall. Slopes are 0 to 2 percent.

In a typical profile the surface layer is dark-brown fine sandy loam about 4 inches thick. It overlies 24 inches of dark yellowish-brown fine sandy loam. Below this is 8 inches of yellowish-brown and strong-brown loam. At a depth of about 36 inches is sandy loam that is mottled with shades of brown and yellowish brown.

These soils are low to moderate in natural fertility and content of organic matter and are strongly acid to very strongly acid. Water enters the soil at a moderate to rapid rate and moves through the profile at a moderately rapid rate. The available water capacity is medium.

These are very good soils for farming, and they are well suited to most crops commonly grown in the county. They are easy to work and keep in good tilth, and they can be worked throughout a fairly wide range of moisture content. The response to management is excellent. Occasional flooding is a hazard in some areas.

The native vegetation is mainly mixed hardwoods. There are a few pines. Less than half the acreage has been cleared. It is used for corn, cotton, hay, and pasture.

Profile of Toccoa fine sandy loam (0 to 2 percent slopes) in a moist, wooded area, 1.5 miles south-southeast of Maplesville, SE¼SE¼ sec. 28, T. 21 N., R. 12 E.:

A1—0 to 4 inches, dark-brown (10YR 3/3) fine sandy loam; moderate, medium, granular structure; very friable; many fine and medium roots; common fine mica flakes; few worm casts; strongly acid; clear, irregular boundary.

C1—4 to 28 inches, dark yellowish-brown (10YR 4/4) fine sandy loam; common, medium, distinct mottles of brownish yellow (10YR 6/6) and few, fine, faint mottles of light yellowish brown (10YR 6/4); weak, fine, granular structure; very friable; common fine roots and few medium roots; common fine mica flakes; few worm casts; very strongly acid; clear, wavy boundary.

C2—28 to 36 inches, yellowish-brown (10YR 5/6) and strong-brown (7.5YR 5/6) loam; common, medium, distinct mottles of dark yellowish brown (10YR 4/4), light yellowish brown (10YR 6/4), and light brownish gray (10YR 6/2); weak, fine, granular and subangular blocky structure; very friable to friable; few fine roots; common fine mica flakes; very strongly acid; clear, wavy boundary.

C3—36 to 60 inches +, mottled dark-brown (7.5YR 4/4), dark yellowish-brown (10YR 4/4), yellowish-brown (10YR 5/6), light yellowish-brown (10YR 6/4), and pale-brown (10YR 6/3) sandy loam; very weak, fine, granular structure to single grain; very friable to loose; common fine mica flakes; very strongly acid.

The A1 horizon ranges from fine sandy loam to loam, silt loam, sandy loam, or loamy sand in texture and from dark brown to yellowish brown or very dark grayish brown in color. It is less than 20 inches thick. The C horizon ranges from sandy loam to light silt loam in texture and from yellowish brown to dark brown, reddish yellow, or very pale brown in color. At a depth of more than 20 inches, it is generally mottled with red, brown, yellow, or gray. Thin bands of finer textured material are at varying depths in some profiles. Mica flakes throughout the profile range from few to many. Gravelly textures are at a depth of more than 30 inches in some profiles.

Toccoa soils are adjacent to the Congaree, Bibb, and Wehadkee soils. They have coarser textured A, C1, and C2 horizons than Congaree soils. They are not so gray nor so poorly drained as Bibb and Wehadkee soils.

Toccoa fine sandy loam (To).—This soil has the profile described as typical for the series. Slopes are 0 to 2 percent. Included in mapping are areas where the subsurface layer is loam, heavy silt loam, or sandy clay loam, and areas where it is strong brown or yellowish red. Also included are areas where gray mottles are at a depth of less than 20 inches.

Surface runoff is slow, and the erosion hazard is slight.

This soil is well suited to most crops commonly grown in the county. It can be farmed extensively. The main crops are corn, cotton, pasture grasses, and hay. Occasional flooding is a hazard in most areas. (Capability unit IIw–45; woodland suitability group 1o7)

Toccoa soils, local alluvium (Tr).—These soils are at the heads of and along small drainageways. Its surface layer is 4 to 10 inches thick. Slopes are 0 to 2 percent. Depth to the seasonal high water table is 20 to 40 inches.

Included in mapping are areas where the subsurface layer is heavy loam, silt loam, sandy clay loam, or silty clay loam, and areas where it is strong brown or yellowish red. Also included are areas where gray mottles are within a depth of 20 inches.

Surface runoff is slow, and the erosion hazard is slight.

These soils are well suited to most crops commonly grown in the county. They can be farmed intensively. Occasional ponding of short duration damages crops in some years. Less than half the acreage has been cleared. It is used for corn, pasture, truck crops, and hay. Small areas are idle. The response to management is good. (Capability unit IIw–45; woodland suitability group 1o7)

Troup Series

The Troup series consists of deep, well-drained, acid soils on uplands of the Coastal Plain. These soils are widely distributed throughout the western half of the county. They formed in thick beds of sand to sandy loam sediments. Slopes range from 0 to 15 percent.

In a typical profile the surface layer is grayish-brown loamy fine sand about 5 inches thick. The next layer is pale-brown loamy sand about 30 inches thick. Below this is pale-brown loamy sand or sand. At a depth of 58 inches is strong-brown sandy loam.

These soils are low in natural fertility and content of organic matter and are strongly acid. Water enters the soil at a rapid rate and moves through the subsoil at a moderately rapid to rapid rate. The available water capacity is low to medium. Surface runoff is slow to very slow.

These are fair soils for farming, and they are suited to most crops commonly grown in the county. They can be worked throughout a very wide range of moisture content and are easy to keep in good tilth. The response to management is fair to good.

The native vegetation is mixed hardwood and pine forest. More than half the acreage is used for corn, cotton, peaches, truck crops, hay, and pasture.

Profile of Troup loamy fine sand, 0 to 6 percent slopes, in a moist, cultivated area, 2.75 miles southeast of Enterprise School, NW¼SE¼ sec. 17, T. 20 N., R. 15 E.:

Ap—0 to 5 inches, grayish-brown (10YR 5/2) loamy fine sand; single grain; very friable; common fine roots; 5 percent gravel less than half an inch in diameter; strongly acid; clear, smooth boundary.

A21—5 to 35 inches, pale-brown (10YR 6/3) loamy sand; single grain; very friable to loose; few fine roots; 2 percent gravel less than half an inch in diameter; strongly acid; gradual, wavy boundary.

A22—35 to 58 inches, pale-brown (10YR 6/3) loamy sand or sand; single grain; loose; 2 percent gravel less than half an inch in diameter; strongly acid; clear, wavy boundary.

B2t—58 to 75 inches +, strong-brown (7.5YR 5/6) sandy loam; weak, fine and medium, subangular blocky structure; friable; sand grains coated and bridged with clay; strongly acid.

The Ap horizon ranges from grayish brown to very dark grayish brown, pale brown, or yellow. The darker colored layer is less than 6 inches thick. The Bt horizon ranges from sandy loam to loam or sandy clay loam in texture and from strong brown and yellowish brown to yellowish red or red in color. The gravel content throughout the profile is less than 10 percent.

Troup soils are adjacent to Eustis and McLaurin soils. They have a much thicker surface layer than either of those soils.

Troup loamy fine sand, 0 to 6 percent slopes (TuB).—This soil has the profile described as typical for the series. Slopes are dominantly 2 to 6 percent. Included in the mapping are areas where the surface layer is light sandy loam and sand, some areas where it is less than 40 inches thick, and other areas where it is more than 70 inches thick. Also included are areas where the soil is gravelly.

This soil is very easy to work. The hazard of erosion is slight.

This Troup soil is fairly well suited to most crops grown in the area, and it can be farmed somewhat intensively. Nearly all the acreage is used for corn, cotton, peaches, truck crops, pasture, and hay. (Capability unit IIIs–11; woodland suitability group 3s2)

Troup loamy fine sand, 6 to 10 percent slopes (TuC).—This soil has a profile similar to that described as typical for the series. Included in the mapping are areas where the surface layer is less than 40 inches thick and areas where it is more than 70 inches thick. Also included are small areas where the soil is gravelly and areas where a few shallow to deep gullies have formed.

This soil is easy to work. The hazard of erosion, mainly gullying, is slight to moderate.

This Troup soil is fairly well suited to the crops commonly grown in the county. Crop rotation and moderately good management are needed in cultivated areas. More than half the acreage is used for corn, cotton, truck crops, pasture, and hay. Some areas have reverted to loblolly pine forest. (Capability unit IVs–11; woodland suitability group 3s2)

Troup loamy fine sand, 10 to 15 percent slopes (TuD).—This soil has a profile similar to that described as typical for the series. Included in the mapping are areas where the surface layer is less than 40 inches thick and areas where it is more than 70 inches thick. Also included are areas where the soil is gravelly and areas where a few shallow to deep gullies have formed.

This soil is only fairly easy to work. The hazard of erosion, mainly gullying, is moderate to high.

Because of the strong slopes, poor moisture conditions, and erosion hazard, this soil is best suited to trees or to permanent sod crops for pasture or hay. Less than half the acreage has been cleared and used for crops commonly grown in the county. Most of it has reverted to loblolly pine forest. (Capability unit VIs–11; woodland suitability group 3s2)

Wehadkee Series

The Wehadkee series consists of poorly drained, deep, acid soils on flood plains adjacent to streams. These soils are widely distributed throughout the county. They formed in moderately fine textured alluvium. They are subject to frequent flooding. The water table is at or near the surface for long periods. Slopes are 0 to 2 percent.

The surface layer in a typical profile is about 8 inches of grayish-brown loam. The next layer is 9 inches of mottled light brownish-gray heavy sandy loam. Below this is 13 inches of dark-gray silt loam mottled with yellowish brown and very dark brown. The next layer is 18 inches of mottled gray to light-gray, light yellowish-brown, and strong-brown silty clay loam. At a depth of 48 inches is light yellowish-brown gravelly sandy loam.

These soils are low in natural fertility, low to moderate in content of organic matter, and very strongy acid. Water enters the soil at a moderate to rapid rate and moves through the profile at a moderately rapid to rapid rate. The available water capacity is medium. Surface runoff is slow, and there is little or no erosion hazard.

Wehadkee soils are well suited to most crops commonly grown in the area. They are easy to work and easy to keep in good tilth. They can be worked within a moderate range of moisture content. The response to management is good. Occasional flooding and ponding are hazards. Drainage is needed in most areas.

Less than half the acreage has been cleared. It is used for corn, pasture, and hay.

Profile of Wehadkee loam (0 to 2 percent slopes) in a moist, cultivated area, 2.3 miles northwest of Isabella, SW¼SW¼ sec. 30, T. 22 N., R. 13 E.:

Ap—0 to 8 inches, grayish-brown (10YR 5/2) loam; common, medium, distinct mottles of gray (10YR 5/1), grayish brown (2.5Y 5/2), and very dark grayish brown (10YR 3/2); weak, medium, subangular blocky structure; very friable; many fine roots; very strongly acid; gradual, wavy boundary.

B1g—8 to 17 inches, light brownish-gray (10YR 6/2) heavy sandy loam; common, medium, prominent mottles of yellow (10YR 7/6) and yellowish red (5YR 5/8); very weak, medium, subangular blocky structure; many fine roots; common fine mica flakes; very strongly acid; gradual, wavy boundary.

B2g—17 to 30 inches, dark-gray (10YR 4/1) silt loam; few, fine, faint, yellowish-brown (10YR 5/8) and very dark brown (10YR 2/2) mottles; weak, medium, subangular blocky structure; very friable; very strongly acid; common fine mica flakes; gradual, wavy boundary.

B3g—30 to 48 inches, mottled gray to light-gray (10YR 6/1), light yellowish-brown (10YR 6/4), and strong-brown (7.5YR 5/8) silty clay loam; weak, medium, subangular blocky structure; friable; few fine mica flakes; very strongly acid; clear, wavy boundary.

C—48 to 60 inches +, light yellowish-brown (10YR 6/4) gravelly sandy loam; common, medium, distinct mottles of gray (10YR 5/1) and dark yellowish brown (10YR 4/4); structureless; very friable; many fine mica flakes; 25 percent gravel less than an inch in diameter; very strongly acid.

The Ap horizon ranges from grayish brown to brown, very dark grayish brown, or dark gray, and in many places is mottled with brown or yellow. The B horizon ranges from silt loam to heavy sandy loam, loam, sandy clay loam, or silty clay loam. In color it ranges from dark gray to gray or light gray and is mottled with brown or yellow. Thin bands of varying textures occur throughout the profile. Mica flakes throughout the profile range from few to many. In many places sandy loam or loamy sand that is up to 40 percent gravel is at a depth of more than 40 inches.

Wehadkee soils are adjacent to Congaree, Toccoa, and Bibb soils. They are much grayer and more poorly drained than Congaree and Toccoa soils. They are finer textured than Toccoa and Bibb soils.

Wehadkee loam (We).—This is the only Wehadkee soil mapped in the county. Occasional flooding and ponding occur after periods of prolonged or heavy rainfall. Slopes are 0 to 2 percent.

Included in mapping are areas where the surface layer is silt loam and fine sandy loam and areas where the subsoil is sandy loam, light loam, or silt loam and is dominantly yellow or brown mottled with gray. Also included are areas where the soil is gravelly throughout.

Because of poor drainage, a high water table, and the hazard of flooding and ponding, this soil is better suited to permanent sod crops and trees than to row crops. (Capability unit IVw–11; woodland suitability group 1w9)

Wickham Series

The Wickham series consists of deep, well-drained, acid soils on stream terraces. These soils are in the southwestern part of the county. They formed in old alluvial sedi-

ments. Some areas are occasionally flooded in winter and early in spring. Slopes range from 0 to 6 percent.

In a typical profile the surface layer is dark-brown and brown fine sandy loam about 7 inches thick. The next layer, about 5 inches thick, is strong-brown loam that has a few mottles. Between depths of 12 and 40 inches, in sequence, is yellowish-red and reddish-brown to strong-brown sandy clay loam to silty clay loam that is mottled in the lower part. At a depth of 40 inches is a 10-inch layer of dark-brown sandy loam. Below this is 10 inches of massive silty clay.

These soils are low in natural fertility and content of organic matter and are slightly acid to very strongly acid. Permeability in the subsoil is moderate. Available water capacity is medium.

The native vegetation is mainly mixed hardwoods. There are a few pines. Most of the acreage is used for corn, pasture, cotton, and hay.

The Wickham soils in this county are mapped only with the Angie soils.

Profile of Wickham fine sandy loam, 0 to 2 percent slopes, in a moist, idle area, 2 miles southwest of Isabella, NE¼SE¼ sec. 7, T. 21 N, R. 13 E.:

Ap—0 to 7 inches, dark-brown (10YR 4/3) and brown (10YR 5/3) fine sandy loam; weak, fine, granular structure; very friable; common fine roots; slightly acid; abrupt, smooth boundary.

B1—7 to 12 inches, strong-brown (7.5YR 5/6) loam; common, medium, distinct mottles of dark brown (10YR 4/3) and yellowish red (5YR 5/6); weak, fine, subangular blocky structure; friable to very friable; few fine roots; sand grains bridged and coated with clay; common fine mica flakes; root channels and krotovina filled with soil material from the A horizon; strongly acid; clear, smooth boundary.

B21t—12 to 20 inches, yellowish-red (5YR 4/6) heavy sandy clay loam; moderate to strong, medium, subangular blocky structure; friable; few fine roots; moderate clay films; common fine mica flakes; root channels and krotovina filled with soil material from the A horizon; thin patchy clay films on some ped faces; strongly acid; gradual, smooth boundary.

B22t—20 to 30 inches, reddish-brown (5YR 4/4) sandy clay loam; moderate, medium, subangular blocky structure; friable; moderate clay films; common fine mica flakes; some root channels filled with soil material from the A horizon; thin continuous clay films on most ped faces; strongly acid; clear, smooth boundary.

B23t—30 to 40 inches, strong-brown (7.5YR 5/6) silty clay loam; common, medium, distinct mottles of yellowish red and light yellowish brown; moderate, medium, subangular blocky structure; friable; patchy to continuous clay films on most ped faces; common fine mica flakes; very strongly acid; clear, smooth boundary.

A'&B—40 to 50 inches, dark-brown (7.5YR 4/4) light sandy loam; few, medium, distinct mottles of light yellowish brown; single grain; loose; common fine mica flakes; very strongly acid; abrupt, smooth boundary.

B'—50 to 60 inches +, mottled strong-brown (7.5YR 5/6), yellowish-brown (10YR 5/6), pale-brown (10YR 6/3), and light brownish-gray (10YR 6/2) silty clay; massive; firm; common fine mica flakes; very strongly acid.

The A horizon ranges from dark brown to dark grayish brown or yellowish brown in color and from 5 to 10 inches in thickness. It is dominantly fine sandy loam but ranges to loam and silt loam. The Bt horizon is dominantly sandy clay loam but ranges to silty clay loam, heavy sandy loam, or light clay loam. In most places at a depth of more than 30 inches, the soil is mottled. Mica flakes range from common to many throughout the profile.

The Wickham soils are adjacent to Angie, Masada, and Altavista soils. They are deeper over bedrock than Masada soils. They are better drained than Angie and Altavista soils.

Wilkes Series

The Wilkes series consists of well-drained, shallow soils on uplands. These soils formed in material weathered from schist. Slopes range from 0 to 10 percent.

The surface layer in a typical profile is about 5 inches of dark-brown gravelly loam. Below this is about 8 inches of strong-brown, yellowish-brown, and brownish yellow silty clay or clay. Schist is at a depth of about 13 inches.

These soils are low in fertility and organic-matter content and are slightly acid. Permeability is moderate in the subsoil. Available water capacity is medium.

The native vegetation is mixed hardwood and pine forest. Most of the acreage has been cleared and is now in pasture. Some areas are loblolly pine forest, and small areas are used for corn and cotton.

The Wilkes soils in this county are mapped only with Iredell soils.

Profile of a Wilkes gravelly loam, 2 to 10 percent slopes, in a moist pasture, 4 miles north of Clanton, NE¼SW¼ sec. 12, T. 22 N., R. 14 E.:

Ap—0 to 5 inches, dark-brown (10YR 3/3) gravelly loam; weak, fine, granular structure; very friable to friable; many fine roots; 20 percent schist fragments less than a quarter of an inch in diameter; neutral; clear, smooth boundary.

B21t—5 to 9 inches, mixed strong-brown (7.5YR 5/6) and yellowish-brown (10YR 5/6) gravelly silty clay; weak, fine and medium, subangular blocky structure; friable to firm; patchy to continuous clay films on most ped faces; slightly acid; common fine roots; 20 to 25 percent schist fragments and manganese concretions less than a quarter inch in diameter.

B22t—9 to 13 inches, brownish-yellow (10YR 6/6) clay; strong, medium, angular and subangular blocky structure; firm, sticky, and plastic; thin continuous clay films; slightly acid; common fine roots; 5 percent schist fragments and manganese concretions less than a quarter of an inch in diameter.

R—13 inches, schist.

The Ap horizon ranges from loam to silt loam and is gravelly in some places. It is less than 10 inches thick. In color it ranges from dark brown to very dark grayish brown. The Bt horizon is less than 10 inches thick. It ranges from clay to silt loam in texture and from brownish yellow to strong brown in color. Partly weathered schist or hard bedrock begins at a depth of 10 to 20 inches.

These soils are adjacent to Iredell, Madison, and Tatum soils. They are shallower than those soils. They contain more fragments throughout the profile than Madison soils.

Use of the Soils for Crops and Pasture [2]

This section explains the capability classification in which the soils are grouped according to their suitability for most kinds of farming. It defines the capability groups in Chilton County and describes management of the soils by capability units. It also gives estimates of yields of crops for all soils in the county and suggests the management needed to obtain such yields.

[2] LEWIS D. WILLIAMS, conservation agronomist, Soil Conservation Service, assisted in preparing this section.

Capability Grouping

Capability grouping shows, in a general way, the suitability of soils for most kinds of field crops. The groups are made according to the limitations of the soils when used for field crops, the risk of damage when they are used, and the way they respond to treatment. The grouping does not take into account major and generally expensive land-forming that would change slope, depth, or other characteristics of the soils; does not take into consideration possible but unlikely major reclamation projects; and does not apply to rice, cranberries, horticultural crops, or other crops requiring special management.

Those familiar with the capability classification can infer from it much about the behavior of soils when used for other purposes, but this classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for range, for forest trees, or engineering.

In the capability system, all kinds of soil are grouped at three levels, the capability class, subclass, and unit. These levels are described in the following paragraphs.

Capability Classes, the broadest groups, are designated by Roman numerals I through VIII. The numerals indicate progressively greater limitations and narrower choices for practical use, defined as follows:

Class I soils have few limitations that restrict their use.

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

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

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

Class V soils are not likely to erode but have other limitations, impractical to remove, that limit their use largely to pasture or range, woodland, or wildlife habitat. (No class V soils in Chilton County)

Class VI soils have severe limitations that make them generally unsuited to cultivation and limit their use largely to pasture or range, woodland, or wildlife habitat.

Class VII soils have very severe limitations that make them unsuited to cultivation and that restrict their use largely to pasture or range, woodland, or wildlife habitat.

Class VIII soils and landforms have limitations that preclude their use for commercial crop production and restrict their use to recreation, wildlife habitat, or water supply, or to esthetic purposes. (No class VIII soils in Chilton County)

Capability Subclasses are soil groups within one class; they are designated 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* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial 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 United States, shows 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 limitations. Class V can contain, at the most, only the subclasses indicated by *w*, *s*, and *c*, because the soils in class V are subject to little or no erosion, though they have other limitations that restrict their use largely to pasture or range, woodland, wildlife habitat, or recreation.

Capability Units are soil groups within the subclasses. The soils in one capability unit are 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. Capability units are generally designated by adding an Arabic numeral to the subclass symbol, for example, IIe–14 or IIIe–15. Thus, in one symbol, the Roman numeral designates the capability class, or degree of limitation; the small letter indicates the subclass, or kind of limitation, as defined in the foregoing paragraph; and the Arabic numeral specifically identifies the capability unit within each subclass.

Capability unit numbers generally are assigned locally but are part of a statewide system. All of the units in the system are not represented by the soils in Chilton County; therefore, the numbers are not consecutive. The names of all soils in any given capability unit in the county are noted in the "Guide to Mapping Units" at the back of this survey.

Management by Capability Units

The soils of Chilton County have been grouped in 24 capability units. In the following pages each of the units is described, and suggestions for use and management are given.

Specific statements about the amount of lime and the kinds and amounts of fertilizer to be used cannot be given in the suggestions for management, because the present needs of a soil depend on its previous use and management. Therefore, lime and fertilizer should be applied according to the results of soil tests.

Further information about specific management can be obtained from the local representative of the Soil Conservation Service, the Extension Service, or the Agricultural Experiment Station.

Capability unit I–12

This unit consists of well-drained, deep soils on uplands of the Coastal Plain. Slopes are 0 to 2 percent. The surface layer is fine sandy loam, and the subsoil is friable sandy clay loam. In some areas the soils are 5 to 15 percent soft plinthite at a depth of 20 to 60 inches.

These soils are low to moderate in natural fertility and content of organic matter and are medium acid to very strongly acid. Surface runoff is slow to rapid, and the erosion hazard is slight. Water moves at a moderate to moderately rapid rate through the profile, and the available water capacity is medium to high. Tilth is good to excellent. Roots penetrate easily.

About 80 percent of the acreage is cultivated, 15 percent

is pastured, and the rest is wooded. Cotton, corn, soybeans, small grain, truck crops, and the locally grown grasses and legumes are suitable crops.

The soils in this unit can be tilled throughout a moderately wide to wide range of moisture content. The surface layer is easy to keep in good tilth. Row crops can be grown each year. Row arrangement insures suitable drainage and helps control erosion. Crop residue left on the soil helps preserve tilth. A trafficpan, or plowpan, is likely to form if the soils are continuously row cropped with heavy equipment. Varying the depth of plowing and using minimum tillage reduce the risk of pan formation.

Capability unit IIe-12

This unit consists of well-drained, deep soils on uplands. Slopes are 2 to 6 percent. The surface layer of these soils is fine sandy loam or sandy loam; in places it is gravelly. The subsoil is sandy clay loam. In some areas these soils have sandstone bedrock at a depth of 40 to 55 inches. In others they are gravelly throughout. In some areas soft plinthite is at a depth of 20 to 60 inches.

These soils are low in natural fertility and content of organic matter and are medium acid to very strongly acid. Surface runoff is slow to medium, and the erosion hazard is slight to moderate. Water moves at a moderate to rapid rate through the profile. The available water capacity is low to high. Tilth is good to excellent.

About 50 percent of the acreage is cultivated, 30 percent is wooded, and the rest is pastured. Suitable crops include cotton, corn, soybeans, small grain, and truck crops (fig. 5).

These soils respond well to management and are easy to work. They can be tilled throughout a wide range of moisture content, and they are easy to keep in good tilth. Under good management, crops can be grown each year. Terraces, grass waterways, contour farming, and crop residue are needed. A cover crop should be planted after a crop that produces only a small amount of residue. Cropping systems that include perennial grasses and legumes and minimum tillage reduce the amount of soil and water lost. Minimum tillage also reduces the risk of trafficpan formation.

The soils in this unit are well suited to pecans and peaches. They are also suited to all locally grown hay and pasture crops, including clover, alfalfa, sericea lespedeza, bermudagrass, bahiagrass, tall fescue, and summer annuals. Fertilization, weed control, and protection against overgrazing are needed for good growth of most legumes.

Figure 5.—**Watermelons on Saffell gravelly sandy loam, 2 to 6 percent slopes.**

Capability unit IIe–14

This unit consists of moderately well drained and well drained soils on stream terraces of the Coastal Plain and the Piedmont Uplands. Slopes are 2 to 6 percent. The surface layer is fine sandy loam, gravelly loam, or friable clay loam. The subsoil is firm silty clay to clay or sandy clay loam. The underlying material is stratified, marine-deposited sandy clay loam to sandy loam. Bedrock is at a depth of 20 to 65 inches or more.

These soils are low in natural fertility and content of organic matter and are medium acid to very strongly acid. Surface runoff is slow to moderate, and the erosion hazard is slight to moderate. Water moves at a slow to moderately rapid rate through the profile. The available water capacity is medium to high. Tilth is fair to good.

About 65 percent of the acreage is wooded, 25 percent is cultivated, and the rest is pastured. Corn, cotton, soybeans, small grain, truck crops, and pecans are suitable crops.

A good cropping system is 2 years of close-growing crops and 2 years of row crops. Contour farming, terraces, grass waterways, and crop residue are needed for control of erosion and runoff. A cover crop should be planted after a low-residue producing crop. The range of moisture content within which these soils can be worked is moderate.

Suitable sod crops include clover, sericea lespedeza, bermudagrass, bahiagrass, and summer annuals. Tall fescue and alfalfa grow fairly well. Fertilization, weed control, and protection against overgrazing are needed for good growth of hay crops and pasture.

Capability unit IIe–15

This unit consists of moderately well drained soils on the Coastal Plain. Slopes are 2 to 6 percent. The surface layer is sandy loam. The subsoil is friable sandy clay loam and sandy loam. In many areas there is a fragipan at a depth of 25 to 35 inches. The pan is compact in place but brittle if disturbed.

These soils are low in natural fertility and content of organic matter and are medium acid to very strongly acid. Surface runoff is slow to medium, and the erosion hazard is slight to moderate. The available water capacity is medium. Water and roots easily penetrate as far down as the fragipan but are greatly restricted in the pan. Tilth is good.

About 60 percent of the acreage is cultivated, 20 percent is pastured, and the rest is idle or wooded. Corn, cotton, soybeans, small grain, and truck crops grow well.

These soils can be tilled throughout a wide range of moisture content. A good cropping system is 2 years of small grain or other close-growing crops followed by 2 years of row crops. Crop residue should be shredded and left on the surface until the soils are plowed in spring. Drainage ditches are needed in some areas. Contour farming, terraces, and grass waterways are needed for control of runoff and erosion.

Suitable grasses and legumes include clover, bermudagrass, bahiagrass, and tall fescue. Alfalfa and sericea can be grown, but stands are usually short lived. Weed control and protection against overgrazing are needed.

Capability unit IIw–31

This unit consists of deep to moderately deep, moderately well drained and well drained soils on stream terraces and upland flats of the Coastal Plain and the Piedmont Plateau. Slopes are 0 to 2 percent. Most areas are occasionally flooded. The surface layer is sandy loam to silt loam. The subsoil is silty clay, silty clay loam, sandy clay loam, or sandy loam. In some areas bedrock is at a depth of 30 to 50 inches.

These soils are low in natural fertility and content of organic matter and are medium acid to very strongly acid. Surface runoff is slow to moderate, and the erosion hazard is slight. Water moves at a slow to rapid rate through the profile. The available water capacity is medium to high. Tilth is good.

About 55 percent of the acreage is wooded, 35 percent is cultivated, and the rest is pastured. Suitable crops include pecans, corn, cotton, small grain, soybeans, truck crops, and most grasses and legumes.

These soils can be tilled throughout a wide range of moisture content, and they are fairly easy to keep in good tilth. The supply of organic matter can be replenished by returning crop residue to the soil or by growing and turning under green-manure crops. Minimum tillage reduces the risk of compaction. Crop damage from flooding can be expected. Most grasses and legumes grow well, but some annuals are damaged by overflow or ponding. Drainage ditches are needed in some places.

Capability unit IIw–34

The Iredell-Wilkes complex, 0 to 2 percent slopes, is in this unit. It consists of moderately deep to shallow, moderately well drained to well drained soils of the Piedmont Uplands. Slopes are 0 to 2 percent. The surface layer is loam. The subsoil is firm, plastic and sticky clay. Depth to bedrock is 10 to 40 inches.

These soils are low in natural fertility and content of organic matter and are slightly acid to neutral in reaction. Surface runoff is medium to slow, and the erosion hazard is slight. Water moves at a slow to moderate rate through the profile. The available water capacity is medium to high. Tilth is fair to poor.

About 70 percent of the acreage is pastured, 20 percent is cultivated, and the rest is wooded. Suitable crops are corn, small grain, soybeans, and many grasses and legumes.

Row crops can be grown each year. Heavy fertilization and good crop residue management are needed to maintain the supply of organic matter. A suggested cropping system is 2 years of row crops and 2 years of grasses and legumes. In some areas contour farming or row arrangement is needed to help control erosion. Surface field ditches are needed.

Suitable grasses and legumes include clover, bahiagrass, bermudagrass, and tall fescue. Fertilization, weed control, and protection against overgrazing are needed for good stands.

Capability unit IIw–45

This unit consist of deep, well-drained soils on first bottoms that are subject to occasional flooding. The surface layer of these soils is fine sandy loam to silt loam. The subsoil is friable to very friable sandy loam to silt loam. There are lenses of sand throughout. In some places there are strata of gravel below a depth of 40 inches.

These soils are low to moderate in natural fertility and in content of organic matter. They are medium acid to very strongly acid. Surface runoff is slow, and the erosion

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hazard is none to slight. Water moves downward through the profile at a moderate to moderately rapid rate, and the available water capacity is medium to high. Tilth is good to excellent.

The soils are flooded two to four times a year, mainly late in winter or early in spring, for the duration of 1 to 3 days after periods of moderate to heavy rainfall. Occasional scouring by floodwater is a hazard in areas that are continuously clean tilled.

About 90 percent of the acreage is forest, and the rest is pasture. These soils are well suited to most locally grown grasses and legumes, including clover, sericea, bahiagrass, bermudagrass, and tall fescue, and they are suited to most row crops commonly grown in the area. Occasional overflow damages cotton, soybeans, and vegetable crops.

Capability unit IIs–11

This unit consists of well drained and moderately well drained soils on uplands of the Coastal Plain. Slopes are 0 to 6 percent. The surface layer of these soils is sandy loam. The subsoil is friable to very friable sandy loam or friable sandy clay loam. In some areas there is a fragipan. The pan occurs at a depth of 25 to 35 inches. It is compact in places but is brittle if disturbed.

These soils are low in natural fertility and in content of organic matter. They are medium acid to very strongly acid. Surface runoff is slow to medium, and the erosion hazard is slight to moderate. The available water capacity is medium to low. Water and roots penetrate easily where there is no fragipan, but they are restricted in the pan.

About 70 percent of the acreage is cultivated, 20 percent is wooded, and the rest is pastured or idle. These soils are well suited to bermudagrass, bahiagrass, sericea, and other such pasture plants, but are not well suited to alfalfa and tall fescue. They are suited to corn, cotton, sorghum, soybeans, and some small grains and truck crops. They are fairly well suited to pecans and peaches.

Cultivated crops can be grown each year. Residue from cultivated crops and green-manure crops should be returned to the soil. Contour farming and terracing are generally needed for control of erosion in the more sloping areas. If fields are terraced, grass waterways and field borders are needed. Large amounts of fertilizer are required for best results. The more sandy soils in the unit may respond to split applications.

Capability unit IIIe–12

This unit consists of well-drained, deep soils of the Coastal Plain and the Piedmont Uplands. Slopes are 6 to 10 percent. The surface layer is fine sandy loam or sandy loam. The subsoil is very friable to firm sandy clay loam or sandy loam. In some areas the soils in the unit are gravelly throughout; in some, soft plinthite is at a depth of 20 to 60 inches; and in others, sandstone is at a depth of 40 to 55 inches.

These soils are low in natural fertility and content of organic matter and are medium acid to very strongly acid. Surface runoff is medium, and the erosion hazard is moderate. Water moves at a moderate to rapid rate through the profile. The available water capacity is low to high. Tilth is fair to good. Roots penetrate easily.

About 40 percent of the acreage is cultivated, 40 percent is wooded, and the rest is pastured. Suitable crops are cotton, corn, sorghum, soybeans, small grain, truck crops, most grasses and legumes, peaches, and pecans.

These soils can be tilled throughout a wide range of moisture content, and they are fairly easy to keep in good tilth. A good cropping system is 2 years of perennial sod followed by 1 year of a row crop, or 2 years of sod followed by 1 year of a row crop and 1 year of a small grain. The response to large amounts of fertilizer, lime, and organic matter is good. The organic matter can be kept at a satisfactory level by growing perennial sods in the cropping system and returning all crop residue to the soil. Minimum tillage, terraces, grass waterways (fig. 6), contour farming, contour stripcropping, and field borders help in controlling runoff and erosion. Minimum tillage also helps in preserving tilth.

These soils are suited to all the locally grown grasses and legumes. Cool-season plants, such as tall fescue, grow well under good management. Heavy fertilization, weed control, and protection against overgrazing are needed for all hay crops and pasture.

Capability unit IIIe–14

This unit consists of well-drained, moderately deep and deep soils of the Coastal Plain and the Piedmont Upland. Slopes are 6 to 15 percent. The surface layer is fine sandy loam and clay loam or gravelly loam. The subsoil is silty clay loam to clay and sandy clay that is firm, sticky, and plastic. In some areas the soils are underlain by strata of sand, silt, and clay marine sediments at a depth of 25 to 50 inches. In other areas bedrock is at a depth of about 40 inches.

These soils are low in natural fertility and content of organic matter. They are strongly acid to very strongly acid. Surface runoff is medium to rapid, and the erosion hazard is moderate to high. Water moves through the soil at a moderately slow to moderately rapid rate. The available water capacity is medium to high. Tilth is fair to good.

These soils are well suited to small grain and are fairly well suited to cotton, corn, soybeans, and some truck crops. About 85 percent of the acreage is wooded, 10 percent is pastured, and 5 percent is cultivated.

A suitable cropping system is 2 years of perennial sod and 1 year of a row crop, or 3 or 4 years of sod and 2 years of row crops. Protection against erosion is essential. Terraces, contour farming, contour stripcropping, grass waterways, and field borders are needed to help control runoff and erosion. All crop residue should be returned to the soil.

Bermudagrass, bahiagrass, and sericea lespedeza are well suited hay and pasture crops. Adequate fertilization, weed control, and protection from overgrazing are needed.

Capability unit IIIe–15

This unit consists of moderately well drained soils on uplands of the Coastal Plain. Slopes are 6 to 10 percent. The surface layer is sandy loam, and the subsoil is friable sandy clay loam. A fragipan is at a depth of 25 to 35 inches; it is compact in place but is brittle if disturbed.

These soils are low in natural fertility and content of organic matter. They are medium acid to very strongly acid. Surface runoff is medium, and the erosion hazard is moderate. The available water capacity is medium. Water and roots easily penetrate as far down as the fragipan but are greatly restricted in the pan. Tilth is good.

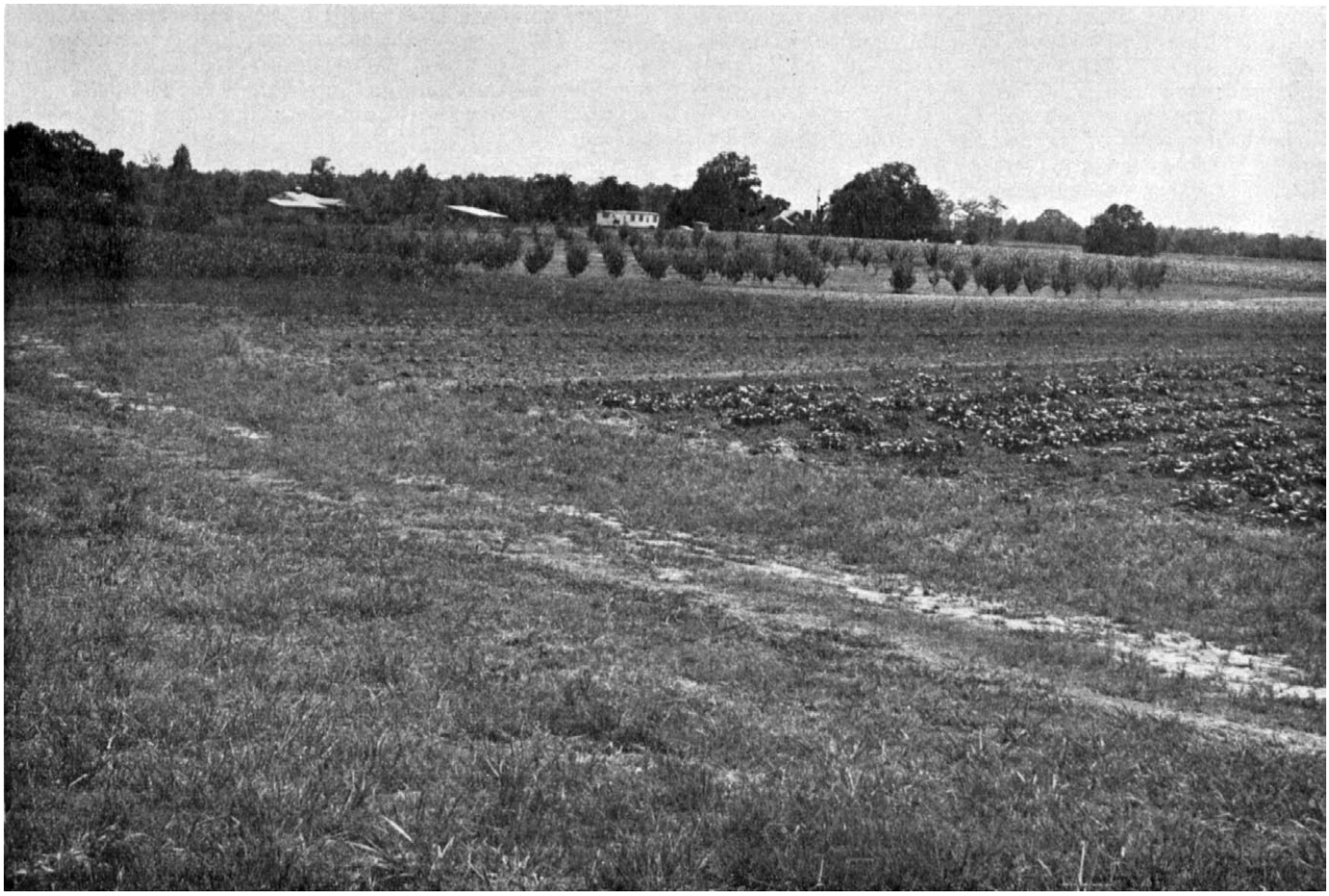

Figure 6.—**Meadow outlet in foreground established on Ruston and Saffell soils. Apple orchard in background.**

About 50 percent of the acreage is cultivated, 30 percent is wooded, and the rest is pastured. Suitable crops are corn, cotton, soybeans, truck crops, small grain, and many grasses and legumes. The most suitable plants for hay and pasture are bermudagrass, bahiagrass, and sericea lespedeza.

These soils can be tilled throughout a moderately wide range of moisture content. They respond to irrigation but do not hold a large amount of available water. They require and respond to large amounts of fertilizer. A good cropping system is 2 years of perennial sod crops and 1 year of a row crop. Contour farming, terraces, grassed waterways, and field borders are needed in cultivated areas. All crop residue should be returned to the soil to help maintain the content of organic matter.

Capability unit IIIe–43

This unit consists of deep, well-drained soils in the Limestone Valley. Slopes are 2 to 10 percent. These soils are about 35 percent chert fragments. The surface layer is cherty silt loam, and the subsoil is cherty silty clay loam to clay.

These soils are low in natural fertility and in content of organic matter. They are strongly acid to very strongly acid. Surface runoff is slow to medium, and the hazard of erosion is slight to moderate. Water moves at a moderate to moderately rapid rate through the profile, and the available water capacity is low. Tilth is poor to very poor.

About 90 percent of the acreage is woodland. The rest is mainly pasture. Small patches are used for cultivated crops.

The number of chert fragments on the surface and in the soil make these soils more suitable for woodland than for cropland. Because of the chert, the small amount of available water, and the low natural fertility, the soils are more suitable for pasture and hay crops than for row crops. Chert fragments make tillage difficult.

Bermudagrass, bahiagrass, and sericea lespedeza are suitable hay and pasture plants. Good fertilization, adequate weed control, and regulated grazing are essential. Although the erosion hazard is only slight to moderate, erosion control is needed because of the high chert content.

Capability unit IIIs–11

This unit consists of well-drained to excessively drained deep soils on uplands of the Coastal Plain. Slopes are 0 to 6 percent. The surface layer is loamy sand or loamy fine sand, and the subsoil is very friable to friable loamy sand to sandy clay loam.

These soils are very low in natural fertility and content

of organic matter. They are strongly acid to very strongly acid. Surface runoff is slow, and the erosion hazard is slight. Water moves through the profile at a moderately rapid to rapid rate. The available water capacity is medium to low.

About 70 percent of the acreage is wooded, and 30 percent is cultivated. Corn, cotton, soybeans, small grain, peaches, truck crops, and grasses and legumes are fairly well suited. Alfalfa, sericea lespedeza, dallisgrass, and tall fescue are not suited.

These soils are easy to work. Controlling erosion is not a serious problem. If row cropped, the more sloping areas should be farmed on the contour. Maintaining the supply of organic matter is important to the production of cultivated crops. Green manure crops should be grown and turned under and all crop residue should be returned to the soil. The soils are likely to be highly leached. Fertilizer should be applied frequently.

Capability unit IVe-11

This unit consists of well-drained, deep and moderately deep soils of the Coastal Plain and Piedmont Uplands. Slopes are 6 to 15 percent. The surface layer is generally sandy loam or fine sandy loam, and the subsoil is sandy clay loam to sandy loam. In some areas the soils are gravelly throughout; in others they are cobbly and are underlain by sandstone at a depth of 40 to 50 inches.

These soils are low in natural fertility and content of organic matter. They are medium acid to very strongly acid. Surface runoff is medium to rapid, and the erosion hazard is moderate to severe. Water moves through the soil at a rapid to moderate rate. The available water capacity is high to low. Tilth is fair to good except in cobbly areas.

About 60 percent of the acreage is wooded, 20 percent is cultivated, and the rest is pastured or idle.

The soils are better suited to pasture and hay crops than to row crops. Cultivated crops should not be grown more than 1 year out of 5. All tillage should be on the contour, and waterways should be left in sod. Stripcropping reduces the erosion hazard.

Bermudagrass, bahiagrass, and sericea lespedeza are the most suitable hay and pasture crops. Adequate fertilization, effective weed control, and protection from overgrazing are needed.

Peaches and pecans are suitable crops.

Capability unit IVe-14

This unit consists of well drained and moderately well drained, moderately deep and deep soils of the Coastal Plain and Piedmont Uplands. Slopes are 2 to 15 percent. The surface layer is sandy loam, fine sandy loam, clay loam, or gravelly loam. The subsoil is silty clay to clay that is firm and plastic. In some areas the soils are underlain by strata of sand, silt, and clay marine sediments at a depth of 20 to 50 inches. In other areas bedrock is at a depth of about 40 inches.

These soils are low in natural fertility and content of organic matter. They are strongly acid to very strongly acid. Surface runoff is medium to rapid, and the erosion hazard is severe. Water moves through the soil at a moderately rapid to very slow rate. The available water capacity is medium to high. Tilth is fair to good.

About 90 percent of the acreage is wooded, some areas are pastured, and small patches are cultivated or idle.

These soils are better suited to pasture and hay crops than to row crops. Cultivated crops should not be grown more than 1 year out of 6. In cultivated areas, all tillage should be on the contour and waterways should be left in sod. Contour stripcropping helps in reducing the erosion hazard.

Bermudagrass, bahiagrass, and sericea lespedeza are the most suitable pasture and hay crops. Adequate fertilization and good management are essential.

Peaches and pecans are suitable crops.

Capability unit IVe-34

The Iredell-Wilkes complex, 2 to 10 percent slopes, is in this unit. It consists of moderately well drained to excessively drained, moderately deep to shallow soils of the Piedmont Uplands. Slopes are 2 to 10 percent. The surface layer is gravelly loam, and the subsoil is firm, plastic and sticky clay. Depth to bedrock ranges from 10 to 40 inches.

These soils are low in natural fertility and content of organic matter. They are slightly acid to neutral. Surface runoff is medium, and the erosion hazard is moderate. Water moves through the subsoil at a slow to moderate rate. The available water capacity is medium to high. Tilth is fair to poor.

About 50 percent of the acreage is pastured, 40 percent is wooded, and the rest is cultivated or is idle.

These soils can be tilled within only a narrow range of moisture content. A suitable cropping system is 2 years of perennial sod and 1 year of a row crop. Terraces, grassed waterways, contour farming, and field borders are needed for control of runoff and erosion. Returning crop residue to the soil replenishes the supply of organic matter. Adequate fertilization is needed for pasture and hay crops. Weed control and protection from overgrazing are needed for good stands.

Capability unit IVw-11

This unit consists of poorly drained, nearly level, deep soils. These soils are on low stream terraces and flood plains adjacent to streams and around the heads of drainageways. They are subject to occasional flooding and ponding after periods of prolonged or heavy rainfall. The surface layer is loam, silt loam, or sandy loam. The subsoil is friable to very friable sand to silty clay. During most of the year, depth to the water table is 10 to 30 inches.

These soils are low in natural fertility and low to medium in content of organic matter. They are strongly acid to very strongly acid. Surface runoff is slow, and the erosion hazard is slight. Water moves through the soil at a moderately slow to rapid rate. The available water capacity is medium to low.

About 90 percent of the acreage is wooded, and the rest is pastured. The soils are suited to water-tolerant pasture and hay crops. Suitable plants are bahiagrass, tall fescue, and white clover. Under good management, some areas are suitable for corn, sorghums, soybeans, and truck crops.

Flooding and ponding are hazards late in winter and in spring and are common during periods of wetness. A system of drainage ditches is generally needed.

Capability unit IVs-11

This unit consists of excessively drained to well drained, deep soils on uplands of the Coastal Plain. Slopes are 6 to 10 percent. The surface layer is loamy fine sand or sandy

loam. The subsoil is loose to friable loamy sand, sandy loam, or sandy clay loam. In some areas the surface layer is loamy sand more than 40 inches thick. In others, the soils are gravelly throughout. In some areas soft plinthite is at a depth of 30 to 60 inches.

These soils are very low in natural fertility and content of organic matter. They are very strongly acid to medium acid. Surface runoff is slow to medium, and the erosion hazard is slight to moderate. Water moves through the soil at a rapid to moderate rate. The available water capacity is low to medium.

About 85 percent of the acreage is wooded, 10 percent is pastured, and 5 percent is cultivated. The soils are too droughty for most cultivated crops, but if adequately fertilized, they are fairly well suited to small grain, peaches, and truck crops. They are suited to bahiagrass and are fairly well suited to bermudagrass and to some of the annual reseeding clovers.

Cultivated crops should not be grown more than 1 year out of 5 or 6. All residue should be returned to the soil. Contour farming and grass waterways help to control erosion. Fertilization is needed frequently. Leaching is a serious problem.

Capability unit VIe–19

This unit consists of well drained and moderately well drained, moderately deep and deep soils of the Coastal Plain and the Limestone Valley Uplands. Slopes are 10 to 25 percent. In most places the surface layer is cherty silt loam, loamy sand, or sandy loam. Below the surface layer is friable sandy loam, sandy clay loam, firm silty clay, cherty silty clay loam, or clay that is plastic and sticky. Some areas are underlain by strata of sand, silt, and clay at a depth of 20 to 50 inches. In some areas the surface layer is loamy sand more than 40 inches thick. In others, the soils are more than 35 percent chert.

These soils are low in natural fertility and content of organic matter. They are strongly acid to very strongly acid. Surface runoff is medium to rapid, and the erosion hazard is severe. Water moves through the soil at a rapid to very slow rate. The available water capacity is high to low.

More than 95 percent of the acreage is wooded, a small acreage is pastured, and patches are cultivated. The soils are well suited to woodland. Some areas can be used for pasture. Suitable pasture plants include bahiagrass, bermudagrass, and sericea lespedeza. Under good management, reseeding winter annuals, such as ball clover and crimson clover, are also suitable. Adequate fertilization, weed control, and protection against overgrazing are needed to maintain good stands.

These soils are not suited to row crops. Controlling erosion is a serious problem. Permanent vegetation is needed.

Capability unit VIe–34

The one soil in this unit, Talledega channery silt loam, 6 to 15 percent slopes, is a well-drained, moderately deep soil of the Piedmont Uplands. Slopes are dominantly 10 to 15 percent but range from 6 to 15 percent. This soil is more than 35 percent rock fragments. The surface layer is channery silt loam. The subsoil is friable channery silt loam to channery silty clay loam. Bedrock is at a depth of 20 to 40 inches.

This soil is low to very low in natural fertility and in content of organic matter and is strongly acid. Surface runoff is medium to rapid, and the hazard of erosion is moderate to high. Water moves at a moderate rate downward through the soil, and the available water capacity is medium. Tilth is fair to poor.

About 95 percent of the acreage is forest, and the rest is pasture or idle. Suitable pasture plants are bermudagrass, bahiagrass, and sericea lespedeza.

Capability unit VIs–11

This unit consists of deep, well-drained to excessively drained soils on uplands of the Coastal Plain. Slopes are 6 to 15 percent. The surface layer is loamy sand or loamy fine sand, and the subsoil is very friable to friable loamy sand to sandy clay loam. In some places the surface layer is loamy sand and is more than 40 inches thick.

These soils are very low in natural fertility and content of organic matter. They are strongly acid to very strongly acid. Surface runoff is slow. The hazard of erosion, mainly gullying, is moderate to severe. Water moves through the profile at a moderately rapid to rapid rate. The available water capacity is low to medium.

More than 90 percent of the acreage is woodland. Only a small part is in cultivated crops and pasture. The soils are well suited to woodland and to bahiagrass for pasture.

The soils in the unit are highly leached and droughty. Split applications of fertilizer are beneficial for pasture crops.

Capability unit VIIe–19

This unit consists dominantly of cave-in gullies 10 to 40 feet deep and 2 to 10 acres in size. It also includes many other areas dissected by many small gullies. In all of these areas the soil profile has been destroyed and infertile soil material has been exposed.

The soils are deep and moderately deep and moderately well drained to excessively drained. They are dominantly steep and moderately steep. In places, slopes are only 10 to 15 percent.

The surface layer is loamy sand, or fine sandy loam. The subsoil is loose to friable loamy sand, sandy loam, sandy clay loam, or firm silty clay or clay that is plastic and sticky. In some places the soils are more than 35 percent gravel. In other places the surface layer is loamy sand more than 40 inches thick.

These soils are low in natural fertility and content of organic matter. They are medium acid to very strongly acid. Surface runoff is medium to very rapid, and the erosion hazard is severe to very severe. Water moves through the profile at a rapid to slow rate. The available water capacity is very low to high.

Most of the acreage is woodland to which the soils are well suited. Under good management some small areas are suitable for grass and legume sod crops.

Capability unit VIIe–32

This unit consists of well-drained, shallow to moderately deep soils of the Piedmont Uplands. Slopes are 15 to 45 percent. The surface layer is silt loam to fine sandy loam, and the subsoil is friable silt loam, loam, silty clay, loam, or clay. In some places the soils are more than 35 percent rock fragment. Bedrock is at a depth of 10 to 50 inches.

These soils are low to very low in natural fertility and content of organic matter. They are strongly acid to very

strongly acid. Surface runoff is rapid, and the erosion hazard is severe. Water moves through the soil at a moderate rate. The available water capacity is low to medium.

All the acreage is woodland, to which the soils are suited. Some small areas are suitable for permanent sod crops of grass or grass-legume mixtures.

Capability unit VIIs–31

This unit consists of Rock land on the Piedmont Uplands. This land is in areas where sandstone boulders, rocks, and rock outcrops cover more than 50 percent of the surface. Slopes are 6 to 15 percent. The soil material between the boulders and rock outcrops is very friable and is generally less than 30 inches deep.

About 90 percent of the acreage is wooded, and the rest is pastured.

This rocky land is very low in natural fertility and content of organic matter. Surface runoff is slow to rapid, and the erosion hazard is moderate. The available water capacity is low to very low.

Some areas can be developed for recreational uses and wildlife habitat.

Estimated Yields

Table 2 shows estimated yields of the principal crops grown in Chilton County under high-level management. Yields depend chiefly on tilth and fertility and on a sufficient supply of moisture at the time of planting and throughout the growing season. Consistently favorable yields indicate that fertility has been kept high, good tilth has been maintained, and rainwater has been held and stored in the soil.

At a high level of management, (1) soil-improving crops, cover crops, and crops that leave a large amount of residue are grown in the rotation; (2) crop residue is kept on the surface to help control erosion; (3) water is conserved by using all the practices needed, including terraces and contour farming; and (4) fertilizer is applied according to crop requirements and soil tests. Under high-level management, farming operations are carried out at the best possible time. Terraces and waterways are well maintained; crop residue is used to improve tilth as well as to control erosion; and a good program is followed for controlling insects.

Use of the Soils for Woodland [3]

Originally, Chilton County was entirely covered with woodland. Now, about 71 percent of the county, or 320,000 acres, is wooded. (*10*). This acreage is about 80 percent upland forest types of pine and of mixed pine and hardwoods. Hardwoods are predominant on stream bottoms and lower slopes. There are a few scattered pines.

Wood-using industries are important sources of employment in the county. The potential production of wood crops could be three times as great as production is now (*10, 11*). Establishment of desirable trees is needed on approximately 65,000 acres, and some type of stand improvement on 210,000 acres. Existing stands, on the average, are understocked.

Suggestions for woodland management are given in the pages that follow.

Management of woodland can be planned more effectively if soils are grouped according to those characteristics that affect growth of trees and management of the stands. The soils of Chilton County have been assigned to 15 woodland groups. Each group consists of soils that are about the same in suitability for wood crops, potential productivity, and required management. Each group is identified by a three-part symbol, for example, 1o7, 1w9, 3c2, or 3s2.

The first part of the symbol, a numeral, indicates relative potential productivity: *1* means very high, *2* means high, *3* means moderately high, and *4* means moderate. These ratings are based on field determinations of site index. Site index is the average height of the dominant trees in a natural, unmanaged stand, at age 30 for cottonwoods and at age 50 for other species.

The second part of the symbol identifying a woodland group is a small letter. This letter indicates an important soil property that imposes a slight, moderate, or severe hazard or limitation in managing the soils of the group for wood crops. A letter *c* shows that the main limitation is the kind or amount of clay in the upper part of the soils in the group; *o* shows that the soils have few limitations that restrict their use for trees; *r* shows that the main limitation is steep slopes; *s* shows that the soils are sandy and dry, have little or no difference in texture between surface layer and subsoil, have low available water capacity, and generally have a low supply of plant nutrients; *w* shows that water in or on the soils, either seasonally or year round, is the chief limitation.

The third part of the symbol is a numeral that indicates the degree of hazard or limitation and the general suitability of the soils for certain kinds of trees.

The *numeral 1* indicates soils that have no limitations or only slight limitations and are best suited to pines.

The *numeral 2* indicates soils that have one or more moderate limitations and are best suited to pines.

The *numeral 3* indicates soils that have one or more severe limitations and are best suited to pines.

The *numeral 4* indicates soils that have no limitations or only slight limitations and are best suited to hardwoods.

The *numeral 5* indicates soils that have one or more moderate limitations and are best suited to hardwoods.

The *numeral 6* indicates soils that have one or more severe limitations and are best suited to hardwoods.

The *numeral 7* indicates soils that have no limitations or only slight limitations and are suited to both pines and hardwoods.

The *numeral 8* indicates soils that have one or more moderate limitations and are suited to pines and hardwoods.

The *numeral 9* indicates soils that have one or more severe limitations and are suited to pines and hardwoods.

The *numeral 0* indicates that the soils are not suitable for commercial production of wood crops.

[3] W. C. AIKEN, woodland conservationist, Soil Conservation Service, assisted in the preparation of this section.

TABLE 2.—*Estimated average yields per acre of principal crops under high level management*

[Absence of figure indicates the crop is not suited to or is not commonly grown on the soil specified]

Soil	Corn	Cotton (lint)	Peaches	Tomatoes	Watermelons	Hay			Pasture		
						Coastal bermudagrass	Sericea lespedeza	Bahiagrass and legumes	Coastal bermudagrass	Common bermudagrass	Fescue and legumes
	Bu.	*Lbs.*	*Bu.*	*Tons*	*Tons*	*Tons*	*Tons*	*A.U.M.*[1]	*A.U.M.*[1]	*A.U.M.*[1]	*A.U.M.*[1]
Altavista fine sandy loam, 0 to 2 percent slopes	80	500						8.0	8.0	6.0	5.0
Angie-Wickham complex, 0 to 2 percent slopes	70	650			6.0	5.0		7.0	7.5	6.0	5.5
Angie-Wickham complex, 2 to 6 percent slopes	65	600			6.0	4.5		6.5	7.0	5.5	5.0
Bibb soils								7.0			5.5
Bodine cherty silt loam, 2 to 10 percent slopes	40		300				1.3	6.5	6.5	5.0	
Bodine complex, 2 to 10 percent slopes	40		300			4.0	1.7	6.0	6.0	4.0	
Bodine complex, 10 to 25 percent slopes											
Bowie fine sandy loam, 0 to 2 percent slopes	75	700	450	10.0	5.0	5.0		8.0	8.0	6.0	6.5
Bowie fine sandy loam, 2 to 6 percent slopes	70	650	400	10.0	5.0	4.7		7.0	8.0	5.5	6.0
Bowie fine sandy loam, 6 to 10 percent slopes	65	550	350		4.7	4.5		6.5	7.5	5.3	5.8
Congaree silt loam	90	700				4.5	2.5	7.0	6.5	5.0	7.0
Eustis loamy sand, 2 to 6 percent slopes	50	400	300		5.0	4.0		5.5	6.0	4.0	
Eustis loamy sand, 6 to 15 percent slopes					4.0	3.5		6.0	5.0	3.0	
Guin and Bowie soils, 6 to 10 percent slopes	40	250	300	6.0	4.0	3.0	2.0	5.0	4.0	3.0	
Guin and Bowie soils, 10 to 25 percent slopes									3.5	2.5	
Gullied land											
Harleston sandy loam, 0 to 2 percent slopes	75				5.0	4.5	3.0	6.5	7.0	4.3	6.2
Harleston sandy loam, 2 to 6 percent slopes	70				5.0	4.0	3.0	6.0	6.5	4.5	4.5
Hartsells sandy loam, 2 to 6 percent slopes	70	650	400	4.0	5.0	5.5	3.2	7.5	8.0	4.5	5.0
Hartsells sandy loam, 6 to 10 percent slopes	65	600	400	4.0	5.0	4.0	3.0	7.0	8.0	4.5	5.0
Hiwassee clay loam, 2 to 6 percent slopes, eroded	85	750	400			6.0	3.5	7.0	7.0	5.0	6.0
Hiwassee clay loam, 6 to 10 percent slopes, eroded	70	700	400			6.0	3.0	7.0	7.0	4.0	5.0
Hiwassee clay loam, 10 to 15 percent slopes, eroded	60	450	300			5.0	2.5	6.0	6.0	3.0	
Iredell-Wilkes complex, 0 to 2 percent slopes	60							7.5			6.0
Iredell-Wilkes complex, 2 to 10 percent slopes	50	400				4.0	2.0	6.0	6.0	4.0	4.7
Linker sandy loam, 2 to 6 percent slopes	75	650	300			5.0	3.0	6.0	7.0	4.0	
Linker gravelly sandy loam, 6 to 10 percent slopes	70	600	275			4.0		6.0	7.0	4.0	
Linker cobbly sandy loam, 6 to 15 percent slopes			250					6.0	7.0	4.0	
Lucedale fine sandy loam, 0 to 2 percent slopes	80	800	400	4.0	6.0	7.5	3.0	8.0	8.0	6.5	6.0
Lucedale fine sandy loam, 2 to 6 percent slopes	70	750	375	4.0	5.0	6.0	3.0	7.5	8.0	6.0	6.0
Lucedale fine sandy loam, 6 to 10 percent slopes	60	650	350	3.0	4.0	5.0	2.5	6.8	8.0	5.5	5.0
Luverne fine sandy loam, 2 to 6 percent slopes	70	700	450		5.0	5.0	2.5	7.1	7.5	5.7	4.8
Luverne fine sandy loam, 2 to 6 percent slopes, eroded	65	600	400		3.0	4.5	2.5	7.0	7.5	5.4	4.5
Luverne fine sandy loam, 6 to 10 percent slopes	55	550	400		3.0	4.5	2.5	6.7	7.5	5.4	4.5

See footnote at end of table.

TABLE 2.—*Estimated average yields per acre of principal crops under high level management*—Continued

Soil	Corn	Cotton (lint)	Peaches	Tomatoes	Watermelons	Hay			Pasture		
						Coastal bermudagrass	Sericea lespedeza	Bahiagrass and legumes	Coastal bermudagrass	Common bermudagrass	Fescue and legumes
	Bu.	*Lbs.*	*Bu.*	*Tons*	*Tons*	*Tons*	*Tons*	*A.U.M.*[1]	*A.U.M.*[1]	*A.U.M.*[1]	*A.U.M.*[1]
Luverne fine sandy loam, 6 to 10 percent slopes, eroded	45	300	350	-------	3.0	4.5	2.0	6.3	7.0	5.0	4.2
Luverne fine sandy loam, 10 to 15 percent slopes, eroded	45	-------	300	-------	-------	4.0	2.0	6.3	6.0	4.0	-------
Luverne-Boswell complex, 2 to 10 percent slopes, eroded	------	-------	-------	-------	-------	-------	2.0	6.5	-------	4.0	-------
Luverne-Boswell complex, 10 to 15 percent slopes, eroded	------	-------	-------	-------	-------	-------	-------	6.0	-------	4.0	-------
Luverne-Boswell complex, 15 to 45 percent slopes	------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
McLaurin sandy loam, 2 to 6 percent slopes	65	600	400	-------	5.0	4.5	-------	7.0	7.0	5.0	-------
McLaurin sandy loam, 6 to 10 percent slopes	55	550	350	-------	5.0	4.0	-------	7.0	7.0	4.5	-------
McLaurin sandy loam, 10 to 15 percent slopes	------	-------	-------	-------	4.0	3.8	-------	6.7	6.5	4.2	-------
Madison gravelly loam, 2 to 6 percent slopes, eroded	75	700	500	4.0	-------	5.5	3.0	7.5	7.5	4.5	5.0
Madison gravelly loam, 6 to 10 percent slopes, eroded	65	600	500	3.5	-------	5.0	3.0	7.5	7.5	4.5	5.0
Madison gravelly loam, 10 to 15 percent slopes, eroded	55	475	500	-------	-------	4.0	2.5	7.0	7.0	4.0	-------
Masada silt loam, 0 to 2 percent slopes	75	700	-------	-------	-------	-------	-------	7.0	-------	-------	6.0
Myatt loam	------	-------	-------	-------	-------	-------	-------	7.0	-------	-------	5.0
Myatt-Bibb association, level	------	-------	-------	-------	-------	-------	-------	7.0	-------	-------	6.0
Ora sandy loam, 0 to 2 percent slopes	75	700	450	5.0	-------	6.0	-------	7.5	8.5	5.7	6.0
Ora sandy loam, 2 to 6 percent slopes	70	600	600	5.0	-------	6.0	-------	7.1	8.0	5.4	5.7
Ora sandy loam, 2 to 6 percent slopes, eroded	60	500	500	5.0	-------	5.0	-------	7.0	7.0	5.2	5.5
Ora sandy loam, 6 to 10 percent slopes	45	575	500	4.5	-------	4.0	-------	6.7	7.0	5.1	5.4
Ora sandy loam, 6 to 10 percent slopes, eroded	45	500	450	4.0	-------	4.0	-------	6.0	6.0	5.0	5.0
Rock land	------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
Ruston fine sandy loam, 0 to 2 percent slopes	85	750	500	6.0	5.0	5.5	3.0	7.5	7.5	6.0	5.5
Ruston fine sandy loam, 2 to 6 percent slopes	75	700	500	5.0	4.0	5.3	3.0	7.3	7.0	5.8	5.5
Ruston fine sandy loam, 6 to 10 percent slopes	65	600	500	4.0	4.0	5.0	2.5	7.0	7.0	5.5	5.0
Ruston fine sandy loam, 6 to 10 percent slopes, eroded	55	500	450	4.0	3.0	4.0	2.5	7.0	6.0	4.5	4.0
Ruston fine sandy loam, 10 to 15 percent slopes, eroded	------	-------	400	-------	2.5	4.0	2.0	6.7	6.0	4.0	4.0
Ruston-Shubuta-Troup association, hilly	------	-------	-------	-------	-------	-------	-------	6.0	6.0	4.0	-------
Ruston-Shubuta-Troup association, steep	------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
Saffell gravelly sandy loam, 2 to 6 percent slopes	65	450	500	5.0	5.0	5.5	3.0	6.0	8.0	5.2	5.0
Saffell gravelly sandy loam, 6 to 10 percent slopes	55	400	450	4.0	4.5	5.0	2.5	5.5	7.2	4.8	5.0
Saffell gravelly sandy loam, 10 to 15 percent slopes	------	-------	400	-------	3.5	4.0	2.0	5.2	6.8	4.5	-------
Shubuta sandy loam, 2 to 15 percent slopes, eroded	------	-------	-------	-------	-------	4.0	1.5	6.5	7.0	5.0	-------
Talladega channery silt loam, 6 to 15 percent slopes	------	-------	-------	-------	-------	3.0	1.5	6.0	5.0	4.0	3.0
Talladega channery silt loam, 15 to 45 percent slopes	------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
Tallapoosa-Madison association, steep	------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
Tatum gravelly loam, 2 to 6 percent slopes	50	450	-------	-------	-------	-------	3.0	6.0	6.0	3.0	5.0

See footnote at end of table.

TABLE 2.—*Estimated average yields per acre of principal crops under high level management*—Continued

Soil	Corn	Cotton (lint)	Peaches	Tomatoes	Watermelons	Hay			Pasture		
						Coastal bermudagrass	Sericea lespedeza	Bahiagrass and legumes	Coastal bermudagrass	Common bermudagrass	Fescue and legumes
	Bu.	*Lbs.*	*Bu.*	*Tons*	*Tons*	*Tons*	*Tons*	*A.U.M.*[1]	*A.U.M.*[1]	*A.U.M.*[1]	*A.U.M.*[2]
Tatum gravelly loam, 6 to 15 percent slopes	40	400					2.7	5.0	5.0	3.0	4.0
Toccoa fine sandy loam	80					5.5	2.5	7.5	7.5	6.0	8.0
Toccoa soils, local alluvium	80					4.5	2.5	7.5	7.5	5.0	6.5
Troup loam fine sand, 0 to 6 percent slopes	60				4.0	5.0		7.0	7.0	4.5	
Troup loamy fine sand, 6 to 10 percent slopes	50				3.0	4.0		7.0	7.0	4.0	
Troup loamy fine sand, 10 to 15 percent slopes			300		3.0	3.5		6.0	5.0	3.0	
Wehadkee loam								7.0	0	0	5.5

[1] Animal-unit-months. Number of months in a year that an acre will provide grazing for one animal unit (one cow, steer, or horse, or seven sheep or goats) without injury to pasture.

Table 3 shows, by woodland group, the average site index and yearly growth rate in cords and board feet (*6*, *9*) of important trees. Gullied land (Gu) and Rock land (Ro) have not been placed in a woodland suitability group.

Woodland suitability group 1o7

Soils of the Congaree and Toccoa series are in this group. They are very highly productive of pines and hardwoods. They are subject to overflow. Trees grow rapidly, and site indexes are high. Management problems are only slight.

Preferred species are yellow-poplar, loblolly pine, sweetgum, cottonwood, sycamore, black walnut, and oak.

Species suitable for planting are loblolly pine, yellow-poplar, sweetgum, cottonwood, black walnut, and cherrybark oak.

Woodland suitability group 1w9

The one soil in this group, Wehadkee loam, is very highly productive of hardwoods and pines. Hardwoods are dominant. Erosion is a slight hazard, and windthrow a moderate hazard. The equipment limitation, seedling mortality, and plant competition are severe.

Preferred species are loblolly pine, yellow-poplar, sweetgum, sycamore, ash, and oak.

Species suitable for planting are loblolly pine, yellow-poplar, sweetgum, cottonwood, and sycamore.

Woodland suitability group 2o1

Soils of the Lucedale series are in this group. They are highly productive of pines. They are easy to manage. Soil-related problems for production of wood crops are only slight.

Preferred species are loblolly pine, shortleaf pine, longleaf pine, and red oak.

Species suitable for planting are loblolly pine and slash pine.

Woodland suitability group 2w8

Soils of the Altavista, Angie, Harleston, and Wickham series are in this group. They are highly productive of pines and hardwoods. Plant competition is moderate, and the equipment limitation is moderate. All other management problems are slight.

Preferred species are loblolly pine, yellow-poplar, sweetgum, cottonwood, ash, sycamore, black walnut, and oak.

Trees suitable for planting are loblolly pine, yellow-poplar, sweetgum, cottonwood, black walnut, sycamore, and cherrybark oak.

Woodland suitability group 2w9

Poorly drained soils of the Bibb and Myatt series are in this group. They are highly productive of pines and hardwoods. Hardwoods are dominant. Erosion is a slight hazard, and windthrow a moderate hazard. The equipment limitation, seedling mortality, and plant competition are severe. Roots are damaged in some places if heavy equipment is used.

Preferred species are loblolly pine, cottonwood, sweetgum, sycamore, ash, yellow-poplar, blackgum, cherrybark oak, and white oak.

Species suitable for planting are loblolly pine, cottonwood, sycamore, ash, yellow-poplar, sweetgum, and cherrybark oak.

Woodland suitability group 3o1

Soils of the Bowie, McLaurin, Ora, and Ruston series are in this group. They are moderately high in production of pines. All soil-related management problems are slight.

Preferred species are loblolly pine, shortleaf pine, longleaf pine, and Virginia pine.

Species suitable for planting are loblolly pine and slash pine.

Woodland suitability group 3o7

Soils of the Madison and Masada series are in this group. They are moderately high in production of pines and hardwoods. The better yields are harvested from stands of pine. Soil-related management problems are only slight.

Preferred species are loblolly pine, shortleaf pine, longleaf pine, yellow-poplar, and oak.

TABLE 3.—*Woodland suitability groups, average site indexes, and yearly growth per acre of important trees*

Woodland group and soil symbols	Important trees	Average site index	Yearly growth rate per acre	
			Cords	*Board feet (Doyle rule)*
Group 1o7: Co, To, Tr.	Yellow-poplar	110	1. 8	520
	Sweetgum	100	1. 6	420
	Cottonwood	107	2. 5	500
	Water oak	95	1. 4	360
	Loblolly pine	90	1. 5	370
Group 1w9: We.	Loblolly pine	100	1. 8	490
	Yellow-poplar	110	1. 8	520
	Sweetgum	100	1. 6	420
	Red oak	90	1. 3	300
Group 2o1: LuA, LuB, LuC.	Loblolly pine	90	1. 5	370
	Shortleaf pine	80	1. 5	280
	Longleaf pine	75	1. 1	150
Group 2w8: AaA, AwA, AwB, HaA, HaB.	Loblolly pine	90	1. 5	370
	Yellow-poplar	100	1. 6	420
	Sweetgum	90	1. 5	360
	Red oak	85	1. 2	220
Group 2w9: Bb, Mt, MyA.	Loblolly pine	90	1. 5	370
	Shortleaf pine	80	1. 5	280
	Sweetgum	90	1. 5	360
	Cottonwood	100	2. 4	500
	Water oak	90	1. 3	300
Group 3o1: BwA, BwB, BwC, McB, McC, McD, OrA, OrB, OrB2, OrC, OrC2. RsA, RsB, RsC, RsC2, RsD2.	Loblolly pine	85	1. 4	270
	Shortleaf pine	75	1. 4	260
		85	1. 4	270
Group 3o7: MdB2, MdC2, MdD2, MsA,	Loblolly pine	70	1. 3	210
	Shortleaf pine	80	1. 1	240
	Sweetgum			
Group 3c2: LvB, LvB2, LvC, LvC2, LvD2, ShD2.	Loblolly pine	85	1. 4	270
	Shortleaf pine	75	1. 4	260
	Longleaf pine	65	. 8	160
Group 3s2: TuB, TuC, TuD.	Loblolly pine	80	1. 3	260
	Shortleaf pine	70	1. 3	210
Group 3s3: EuB, EuD.	Loblolly pine	80	1. 3	260
	Shortleaf pine	70	1. 3	210
Group 4o1: HeB, HeC, LeB, LgC, LkD, TnB, TnD.	Loblolly pine	70	1. 2	170
	Shortleaf pine	60	1. 1	130
	Longleaf pine	60	. 7	120
Group 4c2: HsB2, HsC2, HsD2, IwA, IwC, LwD2, LwC2, TaD.	Loblolly pine	70	1. 2	170
	Shortleaf pine	60	1. 1	130
	Longleaf pine	55	. 7	100
Group 4f2: BdC, BoC, BoE, GbC, GbE, SaB, SaC, SaD.	Loblolly pine	70	1. 2	170
	Shortleaf pine	60	1. 1	130
	Longleaf pine	60	. 7	120
Group 4r2: LwF, RtE, RtF, TaF, TmF.	Loblolly pine	70	1. 2	170
	Shortleaf pine	60	1. 1	130
	Longleaf pine	60	. 7	120

Species suitable for planting are loblolly pine and slash pine.

Woodland suitability group 3c2

Clayey soils of the Luverne and Shubuta series are in this group. They are moderately high in production of pines. Plant competition, the equipment restriction, and seedling mortality are moderate. The hazard of erosion or windthrow is only slight.

Preferred species are loblolly pine, shortleaf pine, longleaf pine, and Virginia pine.

Species suitable for planting are loblolly pine, slash pine, and Virginia pine.

Woodland suitability group 3s2

Deep and moderately deep, well-drained to excessively drained, loamy and sandy soils of the Troup series are in this group. They are moderately high in production of pines. Production is higher in areas where water seeps down from adjacent higher elevations. Plant competition, the equipment limitation, and seedling mortality are moderate. The hazard of erosion or windthrow is only slight.

Preferred species are loblolly pine, longleaf pine, shortleaf pine, and Virginia pine.

Species suitable for planting are loblolly pine, slash pine, and Virginia pine.

Woodland suitability group 3s3

Soils of the Eustis series are in this group. They are moderately high in production of pines. The equipment restriction is moderate. Seedling mortality is severe. In some areas replanting is needed in order to establish a stand, and if seeding is direct, extra seed is needed. All other soil-related management problems are slight.

Preferred species are loblolly pine, shortleaf pine, Virginia pine, and longleaf pine.

Species suitable for planting are loblolly pine, slash pine, Virginia pine, and longleaf pine.

Woodland suitability group 4o1

Soils of the Hartsells, Linker, and Tatum series are in this group. They are moderately productive of pines. Plant competition, seedling mortality, and the equipment limitation are only slight. The erosion hazard is moderate on the steeper slopes of Linker and Tatum soils but is only slight on other soils of the group.

Preferred species are loblolly pine, shortleaf pine, Virginia pine, longleaf pine, and yellow-poplar.

Species suitable for planting are loblolly pine, slash pine, Virginia pine, and longleaf pine.

Woodland suitability group 4c2

Soils of the Boswell, Hiwassee, Iredell, Luverne, Talladega, and Wilkes series are in this group. They are moderately productive of pines. The erosion hazard and the equipment limitation are only slight. The windthrow hazard and plant competition are slight to moderate. Seedling mortality is moderate.

Preferred species are loblolly pine, shortleaf pine, longleaf pine, and Virginia pine.

Species suitable for planting are loblolly pine, Virginia pine, and longleaf pine.

Woodland suitability group 4f2

Deep, well-drained to excessively drained, loamy, gravelly, and cherty soils of the Bodine, Bowie, Guin, and Saffell series are in this group. They are moderately productive of pines. Plant competition and the hazard of windthrow are only slight. The erosion hazard is moderate. Seedling mortality and the equipment limitation are moderate to severe.

Preferred species are loblolly pine, shortleaf pine, longleaf pine, and Virginia pine.

Species suitable for planting are loblolly pine, slash pine, and Virginia pine.

Woodland suitability group 4r2

Steep, generally eroded, and excessively drained to moderately well drained soils of the Boswell, Madison, Luverne, Ruston, Shubuta, Talladega, Tallapoosa, and Troup series are in this group. They are moderately productive of pines. Plant competition is only slight. Seedling mortality is moderate. The erosion hazard and the equipment limitation are moderate to severe. The hazard of windthrow is moderate on the Tallapoosa-Madison association, steep, but is only slight on other soils in the group. The hazard of gully erosion should be considered in locating roads and trails needed for harvesting standing timber on steep slopes.

Preferred species are loblolly pine, shortleaf pine, longleaf pine, and Virginia pine.

Species suitable for planting are loblolly pine and Virginia pine.

Use of the Soils for Wildlife[4]

The wildlife population in any area depends on the availability of food, cover, and water in suitable combination. The habitat is created, improved, or maintained by establishing desirable vegetation and by developing water supply in suitable places.

In table 4 each of the soils in Chilton County is rated according to its suitability for eight elements of wildlife habitat and three kinds of wildlife. These ratings are based only on the suitability of the soil; the climate, the present land use, and the distribution and density of wildlife and human populations are not considered. The suitability of individual sites must be determined by onsite inspection.

The numerical ratings used in table 4 are defined as follows: 1 means well suited; 2 means suited; 3 means poorly suited; and 4 means unsuited. *Well suited* indicates that wildlife habitat is easily created, improved, or maintained; that the soil has few or no limitations that affect management; and that satisfactory results can be expected. *Suited* indicates that wildlife habitat can be created, improved, or maintained in most places; that the soil has moderate limitations that affect management; and that moderately intense management may be needed to obtain satisfactory results. *Poorly suited* indicates that wildlife habitat can be created, improved, or maintained in most places; that the soil has moderately severe limitations; that habitat management is difficult and expensive and requires intensive effort; and that results are not always satisfactory. *Unsuited* indicates that creating, improving, or maintaining wildlife habitat is impractical or impossible and that unsatisfactory results are probable.

Grain and seed crops refer to grain-producing or seed-producing annual plants, such as corn, sorghum, wheat, oats, millet, and soybeans.

Grasses and legumes are domestic perennial grasses and herbaceous legumes that have been established by planting and that furnish food and cover. Among these grasses are barley, fescue, ryegrass, rescuegrass, johnsongrass, and rye. Among the legumes are clover, annual lespedezas, bicolor lespedeza, sericea lespedeza, and vetch.

Wild herbaceous upland plants are native or introduced perennial grasses and forbs or weeds that provide food and cover for upland wildlife. Among these plants are blackberry, butterfly pea, common ragweed, dewberry, milkpeas, partridge peas, and beggarweed.

Hardwood woody plants are nonconiferous trees, shrubs, and woody vines that produce fruits, nuts, buds, catkins, twigs (browse), or foliage that is used extensively as wildlife food. Generally, these hardwood plants become established through natural processes, but they may be planted. They include oak, beech, cherry, hawthorn, hickory, flowering dogwood, grapes, and Japanese honeysuckle.

Coniferous woody plants are cone-bearing trees and shrubs that are used mainly as cover for wildlife, but they also furnish food in the form of browse, seeds, or fruitlike cones. These plants commonly are established through natural processes, but they may be planted. They include pine, cedar, and cypress.

Wetland food and cover plants are annual and perennial wild herbaceous plants that grow on moist to wet sites. They include smartweed, wild millet, bulrush, sedges, cutgrass, and cattails. They do not include submerged and floating aquatics.

Shallow water developments are impoundments or excavations generally not more than 6 feet deep. Control structures include low dikes and levees, shallow dugouts, level ditches, and devices for controlling water levels on bottom land in marshy streams, or in drainage ditches.

Excavated ponds are dugout ponds or combinations of dugout ponds and low dikes or dams that hold enough water of suitable quality and depth to support fish or wildlife.

Openland wildlife includes bobwhite quail, meadowlarks, mourning doves, cardinals, mockingbirds, cottontail rabbits, fox, and other mammals and birds that normally live on cropland, pasture, meadow, lawns, and other openland areas where grasses, herbs, and shrubby plants grow.

Woodland wildlife includes wild turkeys, thrush, vireos, tanagers, woodpeckers, raccoons, white-tailed deer, gray squirrels, and other mammals and birds that normally live in wooded areas where both hardwood and coniferous trees and shrubs grow.

Wetland wildlife includes ducks, geese, rails, herons, shore birds, mink, muskrats, beavers, and other mammals and birds that normally live in ponds, marshes, swamps, and other wet areas.

[4] ROBERT E. WATERS, biologist, Soil Conservation Service, assisted in the preparation of this section.

TABLE 4.—*Suitability of the soils for elements of wildlife habitat and kinds of wildlife*

[Numeral 1 means well suited, 2 means suited, 3 means poorly suited, and 4 means unsuited]

Soil series and map symbols	Elements of wildlife habitat								Kinds of wildlife		
	Grain and seed crops	Grasses and legumes	Wild herbaceous upland plants	Hardwood woody plants	Coniferous woody plants	Wetland food and cover plants	Shallow water developments	Excavated ponds	Openland	Woodland	Wetland
Altavista: AaA	1	1	1	1	2	3	2	3	2	1	3
Angie-Wickham complex:											
AwA	1	1	1	1	1	3	2	2	1	1	4
AwB	1	1	1	1	1	3	3	2	1	1	4
Bibb: Bb	3	2	3	1	2	1	1	1	3	1	1
Bodine:											
BdC	2	2	2	3	2	4	4	4	2	2	4
BoC	2	2	2	3	2	4	4	4	2	2	4
BoE	2	2	2	3	2	4	4	4	2	2	4
Bowie:											
BwA	1	1	1	1	1	4	3	2	1	2	4
BwB	1	1	1	1	1	4	4	2	1	2	4
BwC	1	1	1	1	1	4	4	2	1	2	4
Congaree: Co	1	1	1	1	1	2	3	3	1	2	3
Eustis:											
EuB	2	2	2	2	2	4	4	4	2	2	4
EuD	2	2	2	2	2	4	4	4	2	2	4
Guin and Bowie soils:											
GbC	2	2	1	2	2	4	4	3	2	1	4
GbE	3	3	2	2	2	4	4	3	2	1	4
Gullied land: Gu	4	3	3	3	3	4	4	4	3	2	4
Harleston:											
HaA	2	1	1	1	1	3	3	1	1	1	4
HaB	1	1	1	1	1	3	3	1	1	1	4
Hartsells:											
HeB	1	1	1	1	1	4	4	2	1	1	4
HeC	1	1	1	1	1	4	4	2	1	2	4
Hiwassee:											
HsB2	1	1	1	2	2	4	4	2	1	1	4
HsC2	1	1	1	2	2	4	4	2	1	1	4
HsD2	2	2	2	2	2	4	4	2	1	2	4
Iredell-Wilkes complex:											
IwA	2	2	2	2	2	4	4	4	1	2	4
IwC	2	2	2	2	2	4	4	4	2	2	4
Linker:											
LeB	1	1	1	1	1	4	4	2	1	1	4
LgC	1	1	1	1	1	4	4	2	1	1	4
LkD	2	2	1	2	2	4	4	3	1	2	4
Lucedale:											
LuA	1	1	1	1	1	4	4	2	1	1	4
LuB	1	1	1	1	1	4	4	2	1	1	4
LuC	2	2	1	1	1	4	4	2	1	1	4
Luverne:											
LvB	1	1	1	1	1	4	4	3	1	1	4
LvB2	1	1	1	1	1	4	4	3	1	1	4
LvC	2	2	1	1	1	4	4	3	1	1	4
LvC2	2	2	1	1	1	4	4	3	1	1	4
LvD2	2	2	2	1	1	4	4	3	1	1	4

TABLE 4.—*Suitability of the soils for elements of wildlife habitat and kinds of wildlife*—Continued

Soil series and map symbols	Elements of wildlife habitat								Kinds of wildlife		
	Grain and seed crops	Grasses and legumes	Wild herbaceous upland plants	Hardwood woody plants	Coniferous woody plants	Wetland food and cover plants	Shallow water developments	Excavated ponds	Openland	Woodland	Wetland
Luverne-Boswell complexes:											
LwC2	2	2	2	1	1	4	4	2	1	1	4
LwD2	3	3	2	1	1	4	4	2	1	1	4
LwF	3	2	2	2	2	4	4	3	1	2	4
McLaurin:											
McB	1	1	1	1	1	4	4	3	1	1	4
McC	1	1	1	1	1	4	4	3	1	1	4
McD	2	2	2	1	1	4	4	3	1	1	4
Madison:											
MdB2	1	1	1	1	2	4	4	1	1	1	4
MdC2	1	1	1	1	2	4	4	1	1	1	4
MdD2	2	2	2	1	2	4	4	2	1	1	4
Masada: MsA	1	1	1	1	1	3	3	3	1	1	3
Myatt: Mt	3	2	3	1	2	1	1	1	2	1	1
Myatt-Bibb association: MyA	3	2	3	1	2	1	1	1	2	1	1
Ora:											
OrA	1	1	1	1	1	4	4	1	1	1	4
OrB	1	1	1	1	1	4	4	1	1	1	4
OrB2	1	1	1	1	1	4	4	1	1	1	4
OrC	1	1	1	1	1	4	4	2	1	1	4
OrC2	2	2	1	1	1	4	4	2	1	1	4
Rock land: Ro	3	3	2	2	3	4	4	4	2	2	4
Ruston:											
RsA	1	1	1	1	1	4	4	1	1	1	4
RsB	1	1	1	1	1	4	4	2	1	1	4
RsC	1	1	1	1	1	4	4	2	1	1	4
RsC2	2	2	1	1	1	4	4	2	1	1	4
RsD2	2	2	1	1	1	4	4	2	2	1	4
Ruston-Shubuta-Troup association:											
RtE	2	2	1	1	1	4	4	3	1	1	4
RtF	2	3	1	1	1	4	4	3	1	1	4
Saffell:											
SaB	1	1	1	1	1	4	4	3	1	1	4
SaC	1	2	1	1	1	4	4	3	1	1	4
SaD	2	3	1	1	1	4	4	4	1	1	4
Shubuta: ShD2	2	2	1	1	1	4	4	2	1	1	4
Taladega channery:											
TaD	2	3	1	1	1	4	4	3	2	1	4
TaF	3	4	2	1	1	4	4	4	2	1	4
Tallapoosa-Madison association:											
TmF	3	3	2	2	2	4	4	4	2	1	4
Tatum:											
TnB	1	2	1	1	1	4	4	2	1	1	4
TnD	2	3	1	1	1	4	4	2	1	1	4
Toccoa:											
To	1	1	1	1	1	2	3	2	1	1	3
Tr	1	1	1	1	1	3	2	2	1	1	3

TABLE 4.—*Suitability of the soils for elements of wildlife habitat and kinds of wildlife*—Continued

Soil series and map symbols	Elements of wildlife habitat								Kinds of wildlife		
	Grain and seed crops	Grasses and legumes	Wild herbaceous upland plants	Hardwood woody plants	Coniferous woody plants	Wetland food and cover plants	Shallow water developments	Excavated ponds	Openland	Woodland	Wetland
Troup:											
TuB	2	3	2	2	2	4	4	3	2	2	4
TuC	2	3	2	2	2	4	4	3	2	2	4
TuD	3	3	2	2	2	4	4	4	2	2	4
Wehadkee: We	3	2	3	1	1	1	1	1	2	1	2

Use of the Soils in Engineering [5]

Some soil properties are of special interest to engineers because they affect the construction and maintenance of roads, airports, pipelines, building foundations, facilities for water storage, erosion control structures, drainage systems, and sewage disposal systems. Among the properties most important to engineers are shear strength, permeability, compaction characteristics, shrink-swell behavior, water-holding capacity, grain size, plasticity, and soil reaction. Also important are topograpyh, the depth to the water table, the depth to bedrock, and stratification within the profile.

Information concerning these and related soil properties is furnished in tables 5, 6, and 7. The estimates and interpretations in these tables can be used to—

1. Make soil and land use studies that will aid in selecting and developing industrial, business, residential, and recreational sites.
2. Make preliminary estimates of the engineering properties of soils in designing drainage and irrigation structures and in planning dams and other structures for conserving water and soil.
3. Make preliminary evaluations that will aid in selecting locations for highways, airports, pipelines, and cables and in planning detailed investigations at the selected locations.
4. Locate probable sources of sand and gravel.
5. Correlate performance with soil mapping units to develop information that will be useful in planning engineering practices and in designing and maintaining engineering structures.
6. Determine the suitability of soils for cross-country movement of vehicles and construction equipment.
7. Supplement other publications, such as maps, reports, and aerial photographs, that are used in preparation of engineering reports for a specific area.
8. Develop other preliminary estimates for construction purposes pertinent to the particular area.

[5] MARLYN F. HESTER, civil engineer, Soil Conservation Service, assisted in the preparation of this section.

The engineering interpretations reported in tables 5, 6, and 7 do not eliminate the need for sampling and testing at the site of specific engineering works involving heavy loads or excavations deeper than the depths reported. Even in these situations, however, the soil map is useful in planning more detailed field investigations and in indicating the kinds of problems that may be expected.

Some of the terms used by soil scientists have special meanings in soil science that may not be familiar to engineers. These terms are defined in the Glossary.

Engineering Classification Systems

The engineering classification systems most widely used are the system approved by the Association of State Highway Officials (AASHO) (*2*) and the Unified system (*12*).

The AASHO system is used to classify soils according to those properties that affect use of soils in highway construction. In this system all soil material is classified in seven principal groups. The groups range from A–1, which consists of soils that have the highest bearing capacity, to A–7, which consists of soils that have the lowest strength when wet. Within each group, the relative engineering value of the soil material is indicated by a group index number. The numbers range from 0, for the best material, to 20, for the poorest. The group index number is shown in parentheses following the soil group symbol (see table 5). Highly organic soils, such as peat and muck, are not included in this classification because this material is not suitable for use as construction or foundation material.

In the Unified system soils are identified according to particle-size distribution, plasticity and liquid limit. Eight classes are identified as coarse grained, six classes as fine grained, and one class as highly organic.

Soil scientists use the USDA textural classification (*7*). In this, the texture of the soil is determined according to the proportion of soil particles smaller than 2 millimeters in diameter, that is, the proportion of sand, silt, and clay.

Table 5 shows the AASHO and Unified classification of specified soils in the county as determined by laboratory tests. Table 6 shows the estimated classification of all the soils in the county according to all three systems of classification.

Engineering Test Data

Samples of selected layers taken from 10 soil profiles representing 6 extensive soil series in Chilton County were tested in the laboratory of the Alabama State Highway Department, Bureau of Materials and Tests. Results of these tests are given in table 5. All samples were obtained at a depth of less than 8 feet. Therefore, the data presented in table 5 may not be adequate for estimating characteristics of soil material in deeper cuts.

Table 5 also gives compaction, or moisture-density, data for the tested soils. If soil material is compacted at 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 moisture content at which maximum dry density is obtained is the optimum moisture content. Moisture-density data 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 is at approximately the optimum moisture content.

The engineering soil classifications given in table 5 are based on data obtained by mechanical analyses and by tests to determine the liquid limits and plastic limits. Mechanical analyses were made by combined sieve and hydrometer methods. The percentages of clay obtained by the hydrometer methods should not be used in naming textural classes of soils.

The tests for liquid limit and plastic limit measure the effect 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. The plasticity index is the numerical difference between the liquid limit and the plastic limit. It indicates the range of moisture content within which a soil material is in a plastic condition.

Soil Properties Significant in Engineering

Estimates of soil properties that are significant in engineering are given in table 6. They are based on data shown in table 5, on past experience in engineering construction with soils in the county, or on observations of similarly classified soils in other areas.

The depth to bedrock and the depth to the seasonal high water table are based on field observation. The depth from the surface is for a modal profile and may vary slightly in other profiles of the same series.

The USDA texture is estimated on the basis of field examination and laboratory data. Also listed are the Unified and the AASHO classifications.

Permeability is the estimated rate at which water moves downward through undisturbed soil material. The estimates are based on soil structure, consistence, and porosity, and on field observation.

Available water capacity is the capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field capacity and the amount at plant wilting point. It is commonly expressed as inches of water per inch of soil.

The pH value, or soil reaction, is based on field and laboratory tests.

The shrink-swell potential is an indication of the volume change to be expected of the soil material with changes in moisture content. It is estimated primarily on the amount and types of clay a soil contains. For example, the soil material from the B horizon of Iredell is high in montmorillonite clay. Therefore, it is very sticky when wet and develops extensive shrinkage cracks when the wet material becomes dry. Hence it has a high shrink-swell potential. In contrast, the material from Troup loamy fine sand is structureless, nonplastic, and contains very little clay. Therefore, it has a low shrink-swell potential. In general soils classified as CH and A–7 have a high shrink-swell potential. Sandy soils and soils that contain only a small amount of clay have a low shrink-swell potential.

Engineering Interpretations

In table 7 are interpretations of soil features that may affect suitability for use of the soils in engineering. The information given is based on the estimated data in table 6, on the actual tests reported in table 5, and on field experience.

The suitability of the soil as a source of topsoil is based on its suitability for plant growth on embankments, slopes, and ditches along highways. Except for soils that have a surface layer of silty clay or clay, the rating is "fair" or "good."

For farm pond embankments and road fill, the easily erodible, fine-textured, highly silty or clayey soils that are highly plastic and that have high shrink-swell potential are rated "poor." The moderately fine textured soils that contain medium amounts of clay are rated "fair." The medium-textured and the coarse-textured soils that contain small amounts of clay are rated "good."

Many of the soils in the county have a perched water table during part of the year. Wetness is likely to decrease the bearing strength of the foundation soil below the pavement and cause deterioration of the pavement.

Preventing seepage in the sides of cuts is a problem if the soil has a fragipan or if permeable material is underlain by impermeable material. Seepage may result in the slumping or sliding of overlying material.

In some low wet areas where the soil material is high in organic matter, it may be necessary to undercut and then backfill in order to provide a more stable foundation.

The subsoil of Boswell soils and of other soils that are high in expanding lattice clay are not suitable for road fill. This material has low shear strength, and if wet, is likely to slide and cause deterioration of the pavement.

Detailed onsite investigation is important in much of the county because of the nature of the underlying material. The texture is extremely variable; highly permeable material overlies or is underlain by slowly permeable material.

Because of the high water content, the high organic-matter content, perched water tables, and flooding, the soils on low stream terraces and first bottoms require extensive study and investigation if their use is considered for major construction purposes.

TABLE 5.—*Engineering*

[Tests were performed by the Alabama State Highway Department, Bureau of Materials and Tests, in

Soil name and location of sample	Parent material	Report number S65A1a–11–	Depth from surface	Moisture-density data [1]	
				Maximum dry density	Optimum moisture content
			In.	*Lb./cu. ft.*	*Pct.*
Boswell loam:					
6.5 miles west-southwest of Clanton, 100 feet south of northeast corner of section 14. (Modal)	Coastal Plain clay and silty clay marine deposits.	10–1	4–16	89	27
		10–2	40–70	97	23
		10–3	70–90	98	23
Hiwasse clay loam:					
1.5 miles southeast of Mitchell Dam at site of old beacon light. (Modal)	Quartz-hornblende gneiss.	1–1	0–5	92	28
		1–2	5–32	96	24
		1–3	32–60	100	22
McLaurin sandy loam:					
3 miles south of Chilton County Training School. (Modal)	Thick beds of Coastal Plain sandy loam and loamy sand.	3–1	0–9	119	11
		3–2	9–29	120	11
		3–3	29–62	121	11
		3–4	62–83	124	9
1⅝ miles southwest of Maple Springs Baptist Church and 5 miles south-southwest of Clanton. Yellowish-brown B2t horizon; thinner than modal.	Thick beds of Coastal Plain sandy loam and loamy sand.	2–1	0–7	121	10
		2–2	7–22	127	8
		2–3	22–65	121	9
		2–4	65–80	121	10
Saffell gravelly fine sandy loam:					
0.65 mile southeast of Peach fire tower. (Modal)	Coastal Plain sandy clay loam and sandy loam marine deposits high in gravel content.	5–1	0–6	122	11
		5–2	16–24	111	15
		5–3	39–60	99	21
		5–4	60–76	----------	----------
2.2 miles southeast of Enterprise School. Coarser textured and thicker surface layer than modal.	Coastal Plain sandy clay loam and sandy loam marine deposits high in gravel content.	6–1	0–5	116	9
		6–2	11–18	127	9
		6–3	26–39	115	14
		6–4	39–60	114	13
		6–5	60–75	108	19
Luverne fine sandy loam:					
5.5 miles northwest of Isabella. (Modal)	Coastal Plain silty clay and clay marine deposits.	4–1	1–7	109	12
		4–2	7–21	89	27
		4–3	30–40	90	29
		4–4	48–62	94	24
		4–5	62–80	94	21
		4–6	80–100	----------	----------
3.5 miles northeast of Isabella. Coarser textured B horizon than modal.	Coastal Plain silty clay and clay marine deposits.	7–1	0–3	122	12
		7–2	7–20	103	18
		7–3	20–30	91	24
		7–4	36–48	102	18
		7–5	48–61	94	23
		7–6	61–86	104	18
Talladega channery silt loam:					
11 miles northeast of Jemison; 0.7 mile southwest of Leigh's Fishing Camp. (Modal)	Talladega slate and talcose schist.	9–1	2–10	92	26
		9–2	10–30	96	21
2.9 miles northwest of Lay Dam. Moderately thick profile.	Talladega slate and talcose schist.	8–1	1–7	84	26
		8–2	7–18	105	20

[1] Based on AASHO Designation: T 99–57, Method A (*2*).

[2] Mechanical analysis according to AASHO Designation: T 88–57 (*2*). Results by this procedure may differ somewhat from results 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 analysis data used in this table are not suitable for naming textural classes for soils.

test data

accordance with standard procedures of the American Association of State Highway Officials (AASHO)]

Mechanical analysis [2]							Liquid limit	Plasticity index	Classification	
Percentage passing sieve—						Percentage smaller than 0.005 mm.			AASHO	Unified [3]
2-in.	1-in.	No. 4 (4.7 mm.)	No. 8 (2.4 mm.)	No. 40 (0.42 mm.)	No. 200 (0.074 mm.)					
							Pct.			
----------	100	99	99	99	93. 5	83	82	39	A–7–5(20)	MH
----------	----------	----------	100	99	95	81	72	38	A–7–5(20)	MH
----------	----------	----------	100	99	92	61	55	18	A–7–5(14)	MH
----------	----------	100	99	89	70	44	40	10	A–4(7)	ML
----------	----------	100	98	92	75	53	46	15	A–7–5(11)	ML–CL
----------	100	99	98	87	68	60	45	11	A–7–5(8)	ML
----------	----------	100	99	79	28	15	14	0	A–2–4(0)	SM
----------	----------	100	99	80	42	26	24	6	A–4(1)	SM–SC
----------	100	99	99	79	30	20	20	2	A–2–4(0)	SM
----------	----------	100	99	76	25	17	13	0. 0	A–2–4(0)	SM
----------	----------	100	99	70	31	18	17	0. 6	A–2–4(0)	SM
----------	----------	100	99	71	32	20	15	0. 0	A–2–4(0)	SM
----------	100	97	96	65	20	10	[4] NP	----------	A–2–4(0)	SM
95	78	63	59	40	20	14	22	4	A–1–B(0)	SM
100	96	76	72	54	22	9	15	0. 0	A–2–4(0)	SM
----------	----------	93	89	71	45	37	35	7	A–4(2)	SM
----------	----------	100	99	78	54	44	47	7	A–5(4)	ML
----------	94	59	49	36	19	12	38	6	A–1–B(0)	SM
100	97	86	84	63	17	12	[4] NP	----------	A–2–4(0)	SM
100	80	41	39	28	12	8	12	0. 0	A–1–A(0)	SM
100	99	94	90	55	27	23	36	9	A–2–4(0)	SM–SC
100	99	79	70	41	22	15	46	17	A–2–7(1)	SM–SC
----------	100	85	81	55	32	28	43	14	A–2–7(1)	SM–SC
100	99	98	97	98	72	29	20	0. 0	A–4(7)	ML
----------	100	100	99	98	91	71	70	28	A–7–5(19)	MH
----------	100	99	97	98	76	39	56	10	A–5(11)	MH
----------	100	99	97	96	50	30	42	3	A–5(3)	ML–SM
----------	100	98	93	87	36	13	37	0. 0	A–4(0)	SM
----------	100	99	98	99	25	17	35	0. 0	A–2–4(0)	SM
----------	100	97	95	91	35	19	14	0. 0	A–2–4(0)	SM
100	96	96	93	85	49	57	42	11	A–7–5(3)	ML
----------	----------	100	100	98	77	61	57	14	A–7–5(13)	MH
----------	100	97	90	86	36	25	32	0. 7	A–4(0)	SM
100	73	38	30	30	20	12	40	6	A–2–4(0)	ML
----------	100	96	92	85	33	16	31	1	A–2–4(0)	SM
----------	100	75	67	59	56	40	46	9	A–5(5)	ML
100	65	24	18	14	13	10	48	14	A–2–7(0)	SM
100	95	75	56	42	36	18	62	10	A–5(0)	SM
100	93	69	58	44	37	24	49	14	A–7–5(1)	SM

[3] SCS and BPR have agreed to consider that all soils having plasticity indexes within two points of A-line are to be given a borderline classification. Examples of borderline classifications obtained by this use are SM–SC and ML–SM.

[4] Nonplastic.

TABLE 6.—*Estimates of soil properties*

[An asterisk in the first column indicates that at least one mapping unit in this series is made up of two or more kinds of soil. The soils in referring to other series that appear in the first column of

Soil series and map symbols	Depth to bedrock	Depth to seasonal high water table	Depth from surface	Classification: Dominant USDA texture
	In.	*In.*	*In.*	
Altavista: AaA	>60	20–30	0–5	Fine sandy loam
			5–50	Sandy clay loam; silty clay loam
			50–60	Loamy sand
			60–70	Silty clay loam
*Angie: AwA, AwB	>60	20–30	0–7	Fine sandy loam
			7–23	Silty clay
			23–53	Silty clay loam; sandy clay loam
For Wickham part of AwA and AwB, refer to Wickham series.				
Bibb: Bb	>60	0–12	0–34	Sandy loam
			34–65	Loamy sand or sand
Bodine: BdC, BoC, BoE	>60	>60	0–18	Cherty silt loam
			18–60	Cherty silty clay loam
Boswell	>60	>60	0–4	Loam
			4–70	Clay
			70–90	Silty clay
Mapped only with Luverne soils.				
Bowie: BwA, BwB, BwC	>60	>60	0–10	Fine sandy loam
			10–36	Sandy clay loam
			36–60	Sandy clay loam
Congaree: Co	>60	40–60	0–23	Silt loam or loam
			23–41	Sandy loam
Eustis: EuB, EuD	>60	>60	0–115	Loamy sand
*Guin: GbC, GbE	>60	>60	0–12	Gravelly sandy loam
			12–55	Gravelly loamy sand
For Bowie part of GbC and GbE, refer to Bowie series.				
Gullied land: Gu.				
No valid estimates can be made.				
Harleston: HaA, HaB	>60	20–30	0–35	Sandy loam
			35–60	Loam
Hartsells: HeB, HeC	40–55	>60	0–6	Sandy loam
			6–52	Sandy clay loam; clay loam
			52	Sandstone.
Hiwassee: HsB2, HsC2, HsD2	>60	>60	0–4	Clay loam
			4–65	Clay
*Iredell: IwA, IwC	30–40	12–24	0–5	Gravelly loam
			5–28	Clay-silty clay
			28	Schist.
For Wilkes part of IwA and IwC, refer to Wilkes series.				
Linker:				
LeB	40–50	>60	0–5	Sandy loam
			5–44	Sandy clay loam
			44	Sandstone.
LgC	40–50	>60	0–7	Gravelly sandy loam
			7–39	Sandy clay loam or clay loam
LkD	40–50	>60	0–13	Cobbly sandy loam
			13–44	Sandy clay loam

significant in engineering

such mapping units may have different properties and limitations, and for this reason it is necessary to follow carefully the instructions for this table. The symbol > means more than; < means less than]

Classification—Continued		Percentage passing sieve—			Permeability	Available water capacity	Reaction	Shrink-swell potential
Unified	AASHO	No. 4 (4.7 mm.)	No. 8 (2.4 mm.)	No. 200 (0.074 mm.)				
					In./hr.	*In./in. of soil*	*pH*	
SM, ML	A-2, A-4	95-100	90-100	30-60	2. 0-6. 3	0. 13	4. 5-5. 0	Low.
SM, ML or CL	A-4, A-6	98-100	90-100	40-65	0. 63-2. 0	. 14	4. 5-5. 0	Low.
SM	A-2, A-4	70-100	60-90	20-50	>6. 3	. 10	4. 5-5. 0	Low.
CL	A-7	95-100	90-100	70-85	0. 63-2. 0	. 12	4. 5-5. 0	Low to moderate.
SM, ML	A-2, A-4	95-100	90-100	35-75	0. 63-2. 0	. 14	5. 5-6. 0	Low.
CH	A-7	95-100	90-100	80-90	0. 06-0. 2	. 18	5. 1-5. 5	Moderate.
CL	A-6, A-7	95-100	90-100	80-90	0. 06-0. 2	. 18	5. 1-5. 5	Moderate.
SM	A-2, A-4	95-100	90-100	30-50	2. 0-6. 3	. 11	4. 5-5. 5	Low.
SM	A-2	50-90	40-85	10-30	>6. 3	. 07	4. 5-5. 5	Low.
GM	A-2, A-4	60-90	50-85	15-45	2. 0-6. 3	. 07	4. 5-5. 5	Low.
GM, GC	A-4, A-2	40-90	30-75	10-40	0. 63-2. 0	. 07	4. 5-5. 0	Low.
ML	A-4, A-6	95-100	90-100	55-95	0. 63-2. 0	. 12	4. 5-5. 0	Low.
MH, CH	A-7	95-100	90-100	90-100	0. 06-0. 2	. 14	4. 5-5. 0	High.
CL, MH	A-6, A-7	95-100	90-100	85-95	0. 06-0. 2	. 13	4. 5-5. 0	High.
ML, SM	A-4, A-2	95-100	90-100	30-65	2. 0-6. 3	. 12	5. 1-6. 0	Low.
SC, CL	A-4, A-6	95-100	90-100	40-70	0. 63-2. 0	. 14	4. 5-5. 0	Low.
SM, ML	A-2, A-4	95-100	90-100	30-55	2. 0-6. 3	. 12	5. 1-5. 5	Low.
ML, SM	A-4	95-100	95-100	45-90	0. 63-2. 0	. 18	5. 1-6. 0	Low.
SM, ML	A-2, A-4	95-100	90-100	30-70	2. 0-6. 3	. 16	5. 1-5. 5	Low.
SM	A-2	95-100	90-100	15-25	2. 0-6. 3	. 07	4. 5-5. 5	Low.
SM, GM	A-2	60-85	50-80	15-35	2. 0-6. 3	. 08	5. 1-5. 5	Low.
GM, SM	A-1	50-75	45-70	5-25	>6. 3	<. 07	4. 5-5. 0	Low.
SM, SC	A-2, A-4	95-100	90-100	20-50	0. 63-6. 3	. 12	4. 5-5. 5	Low.
ML, CL, SC	A-4, A-6	95-100	90-100	40-70	0. 63-2. 0	. 15	4. 5-5. 0	Low.
SM, CL	A-2, A-4	85-100	75-90	30-65	2. 0-6. 3	. 12	5. 1-5. 5	Low.
ML	A-4, A-6	90-100	80-95	60-80	0. 63-2. 0	. 13	4. 5-5. 5	Low.
ML	A-4	98-100	98-100	60-80	0. 63-6. 3	. 13	5. 1-5. 5	Low.
ML-CL	A-7	98-100	90-98	65-80	0. 63-2. 0	. 16	5. 1-5. 5	Moderate.
ML, SC	A-4	80-100	75-90	40-65	0. 63-2. 0	. 14	6. 6-7. 3	Low.
CH	A-7	95-100	95-100	70-95	<0. 2	. 16	6. 1-7. 3	High.
SM, ML	A-4	95-100	80-95	40-65	2. 0-6. 3	. 14	5. 1-5. 5	Low.
ML, CL, SC	A-4, A-6	95-100	90-100	45-75	0. 63-2. 0	. 15	4. 5-5. 0	Low.
SM	A-2, A-4	80-95	70-90	25-50	2. 0-6. 3	. 12	5. 1-5. 5	Low.
ML, CL	A-4, A-7	80-95	75-95	45-80	0. 63-2. 0	. 15	4. 5-5. 0	Low.
GM, SM	A-2, A-4	60-90	55-90	10-45	2. 0-6. 3	. 11	5. 1-5. 5	Low.
ML-CL	A-4, A-7	70-95	60-90	20-55	2. 0-6. 3	. 15	4. 5-5. 5	Low.

TABLE 6.—*Estimates of soil properties*

Soil series and map symbols	Depth to bedrock	Depth to seasonal high water table	Depth from surface	Classification: Dominant USDA texture
	In.	*In.*	*In.*	
Lucedale: LuA, LuB, LuC	>60	>60	0–7	Fine sandy loam
			7–72	Sandy clay loam
*Luverne: LvB, LvB2, LvC, LvC2, LvD2, LwC2, LwD2, LwF. For Boswell part of LwC2, LwD2, and LwF, refer to Boswell series.	>60	>60	0–5	Fine sandy loam
			5–26	Clay or clay loam
			26–33	Sandy clay loam
McLaurin: McB, McC, McD	>60	>60	0–56	Sandy loam or fine sandy loam
			56–80	Loamy sand
Madison: MdB2, MdC2, MdD2	20–50	>60	0–5	Gravelly loam
			5–36	Clay or clay loam
			36–48	Silt loam
			48	Schist.
Masada: MsA	30–50	>60	0–4	Silt loam
			4–48	Silty clay loam
			48	Slate.
*Myatt: Mt, MyA For Bibb part of MyA, refer to Bibb series.	>60	0–12	0–7	Loam
			7–62	Silty clay loam
			62–100	Loam, silty clay, or silty clay loam
Ora: OrA, OrB, OrB2, OrC, OrC2	>60	>60	0–15	Sandy loam; loam
			15–29	Sandy clay loam
			29–72	Loam or sandy clay loam (fragipan)
Rock land: Ro. No valid estimates can be given.				
*Ruston: RsA, RsB, RsC, RsC2, RsD2, RtE, RtF For Shubuta and Troup parts of RtE and RtF, refer to Shubuta and Troup series.	>60	>60	0–7	Fine sandy loam
			7–66	Sandy clay loam or clay loam
Saffell: SaB, SaC, SaD	>60	>60	0–13	Gravelly sandy loam
			13–30	Gravelly sandy clay loam
			30–45	Gravelly sandy loam
			45–85	Gravelly loamy sand or sand
Shubuta: ShD2	>60	>60	0–10	Sandy loam
			10–33	Sandy clay
			33–70	Sandy clay or clay
Talladega: TaD, TaF	20–40	>60	0–4	Channery silt loam
			4–22	Channery silty clay loam
			22	Schist.
*Tallapoosa: TmF For Madison part of TmF, refer to Madison series.	10–20	>60	0–4	Loam
			4–10	Silty clay loam
			10–19	Loam
			19–60	Weathered schist.
Tatum: TnB, TnD	20–40	>60	0–8	Gravelly loam; gravelly silt loam
			8–32	Clay
			32	Saprolite schist.
Toccoa: To, Tr	>60	40–60	0–60	Fine sandy loam, sandy loam, loam
Troup: TuB, TuC, TuD	>60	>60	0–58	Loamy sand; loamy fine sand
			58–75	Sandy loam
Wehadkee: We	>60	0–12	0–17	Loam or sandy loam
			17–48	Silt loam or silty clay loam
			48–60	Gravelly sandy loam

significant in engineering—Continued

Classification—Continued		Percentage passing sieve—			Permeability	Available water capacity	Reaction	Shrink-swell potential
Unified	AASHO	No. 4 (4.7 mm.)	No. 5 (2.4 mm.)	No. 200 (0.074 mm.)				
					In./hr.	*In./in. of soil*	*pH*	
SM, ML	A–4, A–6	95–100	90–100	45–75	2. 0–6. 3	. 12	5. 1–6. 0	Low.
ML, CL	A–6	95–100	90–100	55–85	0. 63–2. 0	. 16	4. 5–5. 5	Low.
SM, CL	A–2, A–4	95–100	90–100	20–80	0. 63–2. 0	. 13	5. 1–5. 5	Low.
ML, MH, SC	A–6, A–7	95–100	90–100	40–95	0. 2–0. 63	. 14	4. 5–5. 0	Moderate to high.
SM, ML	A–4, A–2	95–100	90–100	30–80	0. 63–2. 0	. 12	4. 5–5. 0	Low.
SM, SC	A–2, A–4	97–100	95–100	20–45	2. 0–6. 3	. 12	4. 5–6. 0	Low.
SM, SP	A–2	60–100	55–95	20–35	>6. 3	. 08	4. 5–5. 0	Low.
SM, ML	A–4	80–100	75–90	35–55	2. 0–6. 3	. 11	5. 1–5. 5	Low.
CL, MH	A–7, A–6	95–100	90–100	65–95	0. 63–2. 0	. 13	4. 5–5. 0	Moderate.
ML	A–4, A–6	90–100	80–95	50–80	2. 0–6. 3	. 11	4. 5–5. 0	Low.
CL	A–4, A–6	90–100	85–100	60–90	2. 0–6. 3	. 12	5. 1–5. 5	Low.
CL, ML	A–6, A–7	95–100	90–100	70–90	0. 63–2. 0	. 13	5. 1–5. 5	Moderate.
ML	A–4	95–100	90–100	65–90	0. 63–2. 0	. 14	4. 5–5. 5	Low.
CL	A–4, A–6	95–100	90–100	70–90	0. 2–0. 63	. 14	4. 5–5. 0	Low.
ML, CH	A–4, A–6, A–7	95–100	80–95	50–90	0. 63–2. 0	. 13	4. 5–5. 0	Low.
ML	A–4	95–100	90–100	50–75	0. 63–2. 0	. 13	5. 6–6. 0	Low.
CL, SC	A–4, A–6	95–100	90–100	40–65	0. 63–2. 0	. 14	4. 5–5. 0	Low.
CL	A–6	95–100	90–100	50–80	0. 20–0. 63	. 11	4. 5–5. 0	Low.
SM, ML	A–4, A–2	95–100	90–100	25–65	0. 63–2. 0	. 14	5. 1–5. 5	Low.
ML, SM	A–4, A–6	95–100	90–100	35–70	0. 63–2. 0	. 16	4. 5–5. 0	Low.
SM	A–2	40–90	35–85	10–30	>6. 3	. 07	5. 1–6. 0	Low.
SM, SC	A–2, A–4	75–95	65–90	20–50	0. 63–2. 0	. 12	4. 5–5. 0	Low.
SM, SC	A–2, A–4	70–95	60–90	15–40	2. 0–6. 3	. 07	4. 5–5. 0	Low.
SM	A–1, A–2	50–80	35–60	10–30	>6. 3	. 05	5. 1–5. 5	Low.
SM, ML	A–2, A–4	95–100	90–100	40–85	2. 0–6. 3	. 11	5. 1–5. 5	Low.
CL, CH	A–6, A–7	95–100	95–100	50–95	0. 2–0. 63	. 13	4. 5–5. 5	Moderate.
CH	A–7	95–100	95–100	60–95	0. 2–0. 63	. 12	4. 5–5. 0	Moderate.
GM, GC	A–4, A–2	50–90	40–70	30–60	0. 63–2. 0	. 12	5. 1–5. 5	Low.
GM, ML	A–2, A–4, A–6	55–90	40–80	12–60	0. 63–2. 0	. 14	5. 1–5. 5	Low.
SM	A–4	80–85	65–75	35–50	0. 63–2. 0	. 11	4. 5–5. 0	Low.
ML, CL	A–4, A–6	90–100	90–100	45–65	0. 63–2. 0	. 12	4. 5–5. 0	Low.
ML	A–4	80–90	75–85	40–55	0. 63–2. 0	. 07	4. 5–5. 0	Low.
SM, ML	A–2, A–4	80–95	70–90	30–55	2. 0–6. 3	. 11	5. 1–5. 5	Low.
MH	A–7	90–100	80–95	60–90	0. 63–2. 0	. 14	5. 1–5. 5	Moderate.
SM	A–2, A–4	95–100	90–100	20–65	2. 0–6. 3	. 13	4. 5–5. 5	Low.
SM	A–2, A–4	80–100	65–90	20–45	>6. 3	. 07	5. 1–5. 5	Very low.
SM, ML	A–2, A–4	95–100	90–100	30–55	2. 0–6. 3	. 12	5. 1–5. 5	Low.
SM, ML	A–4	95–100	90–100	35–70	2. 0–6. 3	. 12	4. 5–5. 0	Low.
SM, ML	A–4	95–100	90–100	40–80	2. 0–6. 3	. 14	4. 5–5. 0	Low.
SM	A–2, A–4	60–95	40–90	20–50	>6. 3	. 10	4. 5–5. 0	Low.

TABLE 6.—*Estimates of soil properties*

Soil series and map symbols	Depth to bedrock	Depth to seasonal high water table	Depth from surface	Classification: Dominant USDA texture
	In.	*In.*	*In.*	
Wickham Mapped only with Angie soils.	>60	>60	0–12 12–50 50–60	Fine sandy loam or loam Sandy clay loam; silty clay loam; sandy loam. Silty clay loam or silty clay
Wilkes Mapped only with Iredell soils.	10–20	>60	0–5 5–13 13	Gravelly loam Silty clay or clay Schist.

TABLE 7.—*Engineering*

[An asterisk in the first column indicates that at least one mapping unit in this series is made up of two or more kinds of soil. The soils in referring to other series that appear

Soil series and map symbols	Suitability as a source of—			Soil features affecting—
	Topsoil (surface layer)	Sand and gravel	Road fill material	Highway location
Altavista: AaA	Fair: thickness of suitable material.	Poor: no sand or gravel available.	Fair: moderate traffic-supporting capacity	Moderate traffic-supporting capacity.
*Angie: AwA, AwB For Wickham part of AwA and AwB, refer to Wickham series.	Fair: thickness of suitable material.	Poor: no sand or gravel available.	Fair: moderate traffic-supporting capacity.	Moderate traffic-supporting capacity; moderate shrink-swell potential.
Bibb: Bb	Fair: high water table; flooding.	Poor: no sand or gravel available.	Poor: high water table; flooding.	High water table; flooding.
Bodine: BdC, BoC, BoE	Poor: cherty	Poor: no sand or gravel available.	Good	Slopes of more than 15 percent; other features favorable.
Boswell Mapped only with Luverne soils.	Poor: clayey	Poor: no sand or gravel available.	Poor: low shear strength.	Highly plastic; sloughs when wet; poor traffic-supporting capacity.
Bowie: BwA, BwB, BwC	Good	Poor: no sand or gravel available.	Good	Features favorable
Congaree: Co	Good	Poor: no sand or gravel available.	Fair to good	Occasional flooding

significant in engineering—Continued

Classification—Continued		Percentage passing sieve—			Permeability	Available water capacity	Reaction	Shrink-swell potential
Unified	AASHO	No. 4 (4.7 mm.)	No. 5 (2.4 mm.)	No. 200 (0.074 mm.)				
					In./hr.	*In./in. of soil*	*pH*	
SM, ML	A–2, A–4	95–100	90–100	30–55	2. 0–6. 3	. 13	6. 1–6. 5	Low.
ML	A–4, A–6	95–100	90–100	35–70	0. 63–2. 0	. 14	4. 5–5. 5	Moderate.
CL, ML	A–6, A–7	90–100	80–95	55–80	0. 63–2. 0	. 14	4. 5–5. 0	Moderate.
ML, SM	A–4	80–100	75–90	40–65	2–0–6. 3	. 12	6. 1–6. 5	Low.
CL	A–6	95–100	90–100	60–90	0. 63–2. 0	. 15	6. 1–6. 5	Moderate.

interpretations

such mapping units may have different properties and limitations, and for this reason it is necessary to follow carefully the instructions for in the first column of this table]

Soil features affecting—Continued					
Farm ponds		Agricultural drainage	Irrigation	Terraces and diversions	Waterways
Reservoir areas	Embankments				
Moderate seepage	Moderate shear strength; fair stability.	Excess surface water.	Slopes of 0 to 2 percent; medium available water capacity; moderate intake.	No terraces or diversions needed.	No waterways needed.
Moderate seepage	Low shear strength; poor stability.	Excess surface water.	Slopes of 0 to 6 percent; moderate intake; moderate to slow permeability; medium to high available water capacity.	Slopes of 0 to 6 percent; moderate intake; moderate erodibility.	Little shaping needed; vegetation not easily established.
Moderate seepage	Low resistance to piping.	High water table; moderate to rapid permeability.	Moderate intake; medium to low available water capacity.	No terraces or diversions needed.	No waterways needed.
Moderate to rapid seepage.	Moderate shear strength; fair stability.	No drainage needed	Poor soil for crops; moderately rapid permeability; low available water capacity; moderate intake.	Features unfavorable.	Chert.
Slow seepage	Low shear strength; poor stability.	No drainage needed	Poor soil for crops	Poor soil for crops.	High erodibility.
Moderate seepage	Features favorable	No drainage needed	Slopes 0 to 10 percent; rapid intake; medium available water capacity.	Moderate erodibility.	Moderate erodibility.
Moderate seepage	Low shear strength; poor stability.	No drainage needed; occasional flooding.	High available water capacity; moderate intake.	No terraces or diversions needed.	No waterways needed.

TABLE 7.—*Engineering*

Soil series and map symbols	Suitability as a source of—			Soil features affecting—
	Topsoil (surface layer)	Sand and gravel	Road fill material	Highway location
Eustis: EuB, EuD	Poor: low fertility	Good to fair for sand; poor for gravel.	Good	No limitations except slopes.
Gullied land: Gu. No interpretations; properties too variable.				
*Guin: GbC: GbE For Bowie part of GbC and GbE, refer to Bowie series.	Poor: low fertility; gravelly.	Fair: sand contains gravel; gravel contains fines.	Good	No limitations except slopes.
Harleston: HaA, HaB	Fair	Poor: no sand or gravel available.	Fair to good: moderate traffic-supporting capacity.	Seasonal high water table; moderately well drained.
Hartsells: HeB, HeC	Fair to good	Poor: no sand or gravel available.	Good	Sandstone bedrock at a depth of 40 to 55 inches.
Hiwassee: HsB2, HsC2, HsD2	Fair: thin surface layer.	Poor: no sand or gravel available.	Fair: high clay content; very plastic.	Bedrock at a depth of more than 5 feet; fair traffic-supporting capacity.
*Iredell: IwA, IwC For Wilkes part of IwA and IwC, refer to Wilkes series.	Poor: clayey subsoil.	Poor: no sand or gravel available.	Poor: high shrink-swell potential; fair traffic-supporting capacity.	Bedrock at a depth of 30 to 40 inches; high shrink-swell potential.
Linker: LeB, LgC, LkD	Fair to good	Poor: no sand or gravel available.	Good	Bedrock at a depth of 40 to 50 inches.
Lucedale: LuA, LuB, LuC	Good	Poor: no sand or gravel available.	Good	No limitations
*Luverne: LvB, LvB2, LvC, LvC2, LvD2, LwC2, LwD2, LwF. For Boswell part of LwC2, LwD2, and LwF, refer to Boswell series.	Fair to good	Poor: no sand or gravel available.	Fair to poor: high clay content; very plastic.	Susceptible to sliding; fair traffic-supporting capacity; slopes.
McLaurin: McB, McC, McD	Fair	Fair to poor: sand at a depth of 50 inches; poor: no gravel available.	Good	No limitations except slopes.
Madison: MdB2, MdC2, MdD2	Fair to good	Poor: no sand or gravel available.	Fair to good	Bedrock at a depth of 20 to 50 inches.

interpretations—Continued

Soil features affecting—Continued					
Farm ponds		Agricultural drainage	Irrigation	Terraces and diversions	Waterways
Reservoir areas	Embankments				
Very rapid seepage.	Low shear strength; poor to fair stability.	No drainage needed.	Rapid intake; moderately rapid permeability; low available water capacity.	Slopes of 2 to 15 percent; rapid intake; susceptible to gullying.	Very rapid seepage; high erodibility.
Rapid seepage.	Low shear strength; fair stability.	No drainage needed.	Rapid intake; very rapid permeability; low available water capacity; poor soil for crops.	Slopes 6 to 15 percent.	Features unfavorable.
Slow seepage; moderate permeability.	Moderate shear strength; fair stability.	High water table; moderate permeability; outlets difficult to establish.	Slopes of 0 to 6 percent; seasonal high water table; moderate intake; moderate permeability.	No terraces or diversions needed.	No waterways needed.
Moderate to rapid seepage; excessive seepage where underlain by soft sandstone.	Fair shear strength; fair stability.	No drainage needed.	Slopes of 2 to 10 percent; moderate intake; medium available water capacity.	Moderate erodibility.	Moderate erodibility.
Features favorable.	Moderate shear strength; fair to good stability.	No drainage needed.	Slopes of 2 to 15 percent; moderate intake; medium available water capacity.	Moderate erodibility.	Moderate erodibility.
Slow seepage.	Fair stability; high shrink-swell potential.	Slow permeability; bedrock at a depth of 10 to 40 inches.	Moderate intake; slow permeability; medium to high available water capacity; slopes of 0 to 10 percent.	Moderate to high erodibility; poor soil for crops.	Shallow to bedrock.
Moderate seepage; excessive seepage where underlain by soft sandstone.	Fair stability.	No drainage needed.	Slopes of 2 to 15 percent; moderate intake; medium available water capacity.	Moderate erodibility.	Moderate erodibility.
Moderate seepage.	High shear strength; fair stability.	No drainage needed.	Slopes of 0 to 10 percent; moderate intake; medium available water capacity.	Moderate erodibility.	Moderate erodibility.
Moderate to slow seepage.	Low to moderate shear strength; poor stability.	No drainage needed.	Slopes of 2 to 15 percent; moderate intake; medium available water capacity.	High erodibility.	High erodibility.
Rapid seepage.	Moderate shear strength; fair stability.	No drainage needed.	Slopes of 2 to 15 percent; rapid intake; low to medium available water capacity.	Slight erodibility.	Moderate erodibility.
Slow to moderate seepage.	Moderate shear strength; fair stability.	No drainage needed.	Moderate intake; moderate permeability; medium available water capacity.	Slopes of 2 to 15 percent; moderate to high erodibility.	High erodibility.

TABLE 7.—*Engineering*

Soil series and map symbols	Suitability as a source of—			Soil features affecting—
	Topsoil (surface layer)	Sand and gravel	Road fill material	Highway location
Masada: MsA	Good to fair	Poor: no sand or gravel available.	Fair to good	Occasional flooding
*Myatt: Mt, MyA For Bibb part of MyA, refer to Bibb series.	Fair	Poor: no sand or gravel available.	Fair: high water table; flooding.	High water table
Ora: OrA, OrB, OrB2, OrC, OrC2	Good	Poor: no sand or gravel available.	Good	Seepage in cuts along the fragipan layer.
Rock land: Ro. No interpretations; properties too variable.				
*Ruston: RsA, RsB, RsC, RsC2, RsD2, RtE, RtF. For Shubuta and Troup parts of RtE and RtF, refer to Shubuta and Troup series.	Good	Poor: no sand or gravel available.	Good	No limitations except slopes.
Saffell: SaB, SaC, SaD	Fair to poor: gravelly.	Fair to poor: underlain by sand and gravel at a depth of 4 to 6 feet; gravel good for road construction material.	Good	No limitations except slopes.
Shubuta: ShD2	Fair to good	Poor: no sand or gravel available.	Fair: high clay content; very plastic.	Susceptible to sliding; seepage in cuts; moderate shrink-swell potential.
Talladega: TaD, TaF	Poor: rock fragments.	Poor: no sand or gravel available.	Poor: shallow to bedrock.	Schist bedrock at a depth more than 20 inches.
*Tallapoosa: TmF For Madison part of TmF, refer to Madison series.	Fair to poor: thickness of suitable material.	Poor: no sand or gravel available.	Fair: thickness of material.	Schist bedrock at a depth of 1 to 2 feet.
Tatum: TnB, TnD	Fair	Poor: no sand or gravel available.	Fair to good	Schist bedrock at a depth of 40 to 60 inches.
Toccoa: To, Tr	Good in uppermost 2 feet.	Poor: no sand or gravel available.	Good	Occasional flooding
Troup: TuB, TuC, TuD	Poor: low fertility	Fair for sand in uppermost 4 to 5 feet; no gravel available.	Good	No limitations except slopes.

interpretations—Continued

Soil features affecting—Continued					
Farm ponds		Agricultural drainage	Irrigation	Terraces and diversions	Waterways
Reservoir areas	Embankments				
Slow seepage	Fair stability	No drainage needed; bedrock at a depth of 30 to 50 inches.	Slopes of 0 to 2 percent; moderate intake; moderate available water capacity.	No terraces or diversions needed.	No waterways needed.
Slow seepage	Fair to good stability.	High water table; moderate to moderately slow permeability; outlets difficult to establish.	Slopes of 0 to 2 percent; moderate to slow intake; poor soil for crops.	No terraces or diversions needed.	No waterways needed.
Moderate seepage	Fair shear strength; fair stability.	No drainage needed	Slopes of 0 to 10 inches; moderate intake; moderately slow permeability; medium available water capacity.	Moderate erodibility.	Moderate erodibility; fragipan.
Moderate to rapid seepage.	Moderate shear strength; poor to fair stability.	No drainage needed	Slopes of 0 to 15 inches; moderate to rapid intake; medium available water capacity.	Moderate erodibility.	Moderate erodibility.
Rapid seepage	Poor to fair stability	No drainage needed	Slopes of 2 to 15 inches; moderate to rapid intake; medium to low available water capacity.	Moderate erodibility.	Gravelly; little moisture.
Slow seepage	Low shear strength; fair to poor stability.	No drainage needed	Slopes of 2 to 15 inches; moderate to slow intake; medium available water capacity.	High erodibility	High erodibility.
Moderate to rapid seepage.	High shear strength; fair stability.	No drainage needed	Slopes of 6 to 45 inches; poor soil for crops.	Poor soil for crops	Steep slopes; little moisture.
Moderate to rapid seepage.	Moderate shear strength; moderate stability.	No drainage needed	Slopes 10 to 45 inches; poor soil for crops.	Poor soil for crops	Steep slopes; little moisture.
Moderate seepage	Moderate to high shear strength; fair to poor stability.	No drainage needed	Moderate intake; moderate to slow permeability; medium available water capacity; slopes of 2 to 15 percent.	High erodibility	High erodibility.
Moderate seepage	Moderate to low shear strength; poor to fair stability.	No drainage needed; occasional flooding.	Slopes of 0 to 2 percent; moderate intake; medium available water capacity.	No terraces or diversions needed.	No waterways needed; flooding.
Very rapid seepage	Low shear strength; poor to fair stability.	No drainage needed	Slopes of 0 to 15 percent; rapid intake; rapid permeability; medium to low available water capacity.	Susceptible to gullying; rapid intake; slopes of 0 to 15 percent.	Moderate to rapid permeability; little moisture.

TABLE 7.—*Engineering*

Soil series and map symbols	Suitability as a source of—			Soil features affecting—
	Topsoil (surface layer)	Sand and gravel	Road fill material	Highway location
Wehadkee: We	Fair: high water table.	Poor: no sand or gravel available.	Fair to poor: flooding; high water table.	High water table; flooding.
Wickham Mapped only with Angie soils.	Fair	Poor: no sand or gravel available.	Fair to good	Features favorable
Wilkes Mapped only with Iredell soils.	Poor	Poor: no sand or gravel available.	Poor: traffic-supporting capacity; thickness of material.	Poor: traffic-supporting capacity; bedrock at a depth of 10 to 20 inches.

Town and Country Planning

Chilton County is near the cities of Montgomery and Birmingham and is readily accessible from major highways. Its population is steadily expanding into areas formerly used for farming. Along with this expansion is an increasing demand for housing, shopping centers, schools, parks, and other developments.

This section was prepared chiefly for planners, builders, landscape architects, zoning officials, private and potential landowners, and others interested in the use of soils for purposes other than farming. Table 8 shows the degree and kind of limitation of each soil in the county for specified nonfarm purposes.

The suitability of the soils must be determined in selecting a site for a residence, a highway, an industry, a recreational use, or any other nonfarm purpose. Among the important properties considered are texture, reaction, depth, shrink-swell potential, slope, permeability, depth to hard rock and to the water table, and the flood hazard.

The degrees of limitation shown in table 8 are noted as slight, moderate, and severe. Slight means that few or no adjustments are needed. Moderate means that some adjustment is needed to make the soil suitable for a specified use. Severe means that extensive adjustments are needed.

Flooding, as mentioned in table 8, refers to the hazard of steam overflow or to flooding caused by runoff or seepage. The degree of the limitation caused by flooding, as shown in table 8, expresses the frequency of flooding and the length of time that water remains on the surface.

In the paragraphs that follow, each nonfarm use is defined and the properties important in determining the limitations of the soils for such use are given. This information can be used along with table 7, with information in other parts of the survey, and with the soil map at the back of the survey, as a guide in planning the use of the soils for nonfarm purposes. Site investigation is needed before construction.

Residences and low buildings refer to buildings of no more than three stories. The soil properties considered most important are bearing capacity, shrink-swell potential, depth to seasonal high water table, flooding, slope, and depth to hard rock. The kind of sewage system required is not considered in the evaluation of a soil for a residential site. Soils that have slight limitations as sites for residences and low buildings have slopes of less than 6 percent, are well drained or moderately well drained, are free from flooding, are more than 40 inches deep over hard rock, have low or moderate shrink-swell potential, and are relatively free of stones and other coarse fragments. Soils that have severe limitations have slopes of more than 15 percent, are cobbly or stony, are less than 20 inches deep over hard rock, and are wet or are subject to flooding.

A septic tank filter field is a sewage system in which waste is distributed to a central tank and the effluent from the tank is dispersed over a fairly large area of filter field lines buried in the soil. The properties considered most important in the proper operation of such a system are shrink-swell potential, depth to the seasonal high water table, depth over hard rock, flood hazard, slope, and percolation rate. Soils that have slight limitations for septic tank filter fields have a percolation rate faster than 45 minutes per inch, a water table at a depth of more than 48 inches, slopes of less than 5 percent, hard rock at a depth of more than 48 inches, and no flood hazard. Soils that have severe limitations have a percolation rate slower than 75 minutes per inch, a water table within a depth of 24 inches throughout the year, hard rock at a depth of less than 48 inches, slopes of more than 10 percent, and a flood hazard.

A sewage lagoon consists of an impounded area and an embankment. The chief requirements of a soil for use as a floor for the basin of a lagoon are effective sealing against seepage, an even, fairly level surface, and little or no content of organic matter. The most important considerations are permeability, suitability of the soil as a site for a reservoir, suitability of the material at the site for an embankment, depth to hard rock, slope, content of organic matter, and content of coarse fragments. A sewage lagoon

interpretations—Continued

Soil features affecting—Continued					
Farm ponds		Agricultural drainage	Irrigation	Terraces and diversions	Waterways
Reservoir areas	Embankments				
Slow seepage	Fair to poor stability	High water table; flooding.	Slopes of 0 to 2 percent; moderate intake; medium available water capacity.	No terraces or diversions.	No waterways needed; flooding.
Moderate permeability.	Fair resistance to piping.	No drainage needed	Medium available water capacity.	No terraces or diversions needed.	No waterways needed.
Shallow to bedrock; moderate permeability.	Compressibility; shallow to bedrock.	No drainage needed	Poor soil for crops	Poor soil for crops	Shallow to bedrock.

should be planned so that no less than 2 feet and no more than 5 feet of liquid is held within the lagoon. In soils that have slight limitations, permeability is less than 0.63 inch per hour, depth to hard rock is more than 60 inches, slope is less than 2 percent, and coarse fragments are less than 6 inches in diameter. In soils that have severe limitations, permeability is greater than 2.5 inches per hour, depth to hard rock is less than 40 inches, and coarse fragments larger than 6 inches in diameter cover more than 15 percent of the surface.

The properties considered in determining the suitability of soils for recreational facilities are wetness, depth to the water table, flood hazard, slope, depth to hard rock, permeability, and number of stones, rocks, and other coarse fragments.

The chief requirement for picnic grounds is good trafficability. It is assumed that little site preparation is needed. Soils that have slight limitations are well drained, are free from flooding during periods of use, have slopes of less than 8 percent, and have good trafficability. Soils that have severe limitations are wet, are subject to flooding during the season of use, have slopes of more than 15 percent, or have poor trafficability because of stones on the surface.

The same kinds of limitations apply to soils used as campsites and intensive play areas, both of which are used frequently and intensively and should withstand heavy foot traffic.

Campsites are areas suitable for tents and small camp-trailers and for outdoor dining. Little site preparation is needed except in areas used for tents or for parking. Suitable soils are those that support heavy traffic by vehicles, as well as by campers. Soils that have slight limitations for campsites are well drained, have no flood hazard, and have rapid to moderate permeability. They also have slopes of less than 8 percent and a friable surface layer, of which no more than 20 percent is covered with coarse fragments. In contrast, soils that have severe limitations are wet or have water ponded during periods of use, are subject to flooding, have slopes of more than 15 percent, and have a surface layer that is loose, sandy, and plastic, or is 50 percent or more coarse fragments.

Intensive play areas are used for playgrounds and for baseball, football, tennis, badminton, and other organized games. Soils that have slight limitations for this use have slopes of no more than 2 percent, a surface layer free of coarse fragments, and hard rock at a depth of 40 inches or more. Soils that have severe limitations are wet or have water ponded during periods of use, are subject to flooding, have slopes of more than 15 percent, and have a surface layer that is loose, sandy, or plastic, or is 50 percent or more coarse fragments.

Paths and trails are used for cross-country hiking, bridle paths, and other nonintensive uses. It is assumed that the soils are to be used as they occur and that little excavation is needed. Soils that have slight limitations for paths and trails are well drained, have a seasonal water table at a depth below about 20 inches, and have no flood hazard. They also have slopes of less than 15 percent and have a surface layer that withstands trafficability; that is, it is not sticky, loose, or stony. Soils that have severe limitations are flooded during periods of use, have slopes of more than 25 percent, are wet, or have a surface layer that will not support foot traffic.

Local roads and streets are low-cost roads and residential streets that require limited cut and fill and subgrade preparation. The most important properties to be considered are slope, depth to hard rock, depth to the water table, flood hazard, erosion hazard, and traffic-supporting capacity. Soils that have slight limitations for trafficways are well drained, have slopes of less than 10 percent, are not subject to flooding or are flooded infrequently, have good traffic-supporting capacity, and are more than 36 inches deep over hard rock. Also, the seasonal high water table is at a depth of more than 30 inches for more than 9 months during the year and never rises higher than 15 inches below the surface. Soils that have severe limitations have slopes of more than 15 percent, are wet, or have poor traffic-supporting capacity.

TABLE 8.—*Soil limitations for*

[An asterisk in the first column indicates that at least one mapping unit in this series is made up of two or more kinds of soil. The soils in referring to other series that appear

Soil series and map symbols	Degree and kind of limitation for—		
	Residences and low buildings	Septic tank filter fields	Sewage lagoons
Altavista: AaA	Moderate: high water table	Moderate: high water table	Slight
*Angie:			
AwA	Moderate: moderate shrink-swell potential.	Severe: slow permeability	Slight
AwB	Moderate: moderate shrink-swell potential.	Severe: slow permeability	Moderate: slope
Bibb: Bb	Severe: flooding; high water table.	Severe: flooding	Severe: rapid permeability
Bodine:			
BdC	Moderate: slope	Moderate: slope	Severe: slope; moderately rapid and moderate permeability.
BoC	Moderate: slope	Moderate: slope	Severe: slope
BoE	Severe: slope	Severe: slope	Severe: slope
Boswell: Mapped only with Luverne soils and has same interpretations as Luverne soils for town and country planning.			
Bowie:			
BwA	Slight	Moderate: moderate permeability.	Moderate: moderate permeability.
BwB	Slight	Moderate: moderate permeability.	Moderate: slope; moderate permeability.
BwC	Moderate: slope	Moderate: slope; moderate permeability.	Severe: slope
Congaree: Co	Severe: flooding	Severe: flooding	Moderate: moderate permeability.
Eustis:			
EuB	Slight	Slight	Severe: moderately rapid permeability.
EuD	Moderate: slope	Slight	Severe: moderately rapid permeability; slope.
*Guin:			
GbC	Moderate: slope	Moderate: slope	Severe: slope; moderate to rapid permeability.
GbE	Severe: slope	Severe: slope	Severe: slope; moderately rapid and rapid permeability.
For Bowie part of GbC and GbE, see Bowie series.			
Gullied land: Gu. Variable. Onsite investigation is needed.			
Harleston:			
HaA	Moderate: wetness	Moderate: slope	Moderate: moderate permeability.
HaB	Moderate: wetness	Moderate: slope	Moderate: slope; moderate permeability.

town and country planning

such mapping units may have different properties and limitations, and for this reason it is necessary to follow carefully the instructions for in the first column of this table]

Degree and kind of limitation for—Continued				
Picnic grounds	Campsites	Intensive play areas	Paths and trails	Local roads and streets
Slight	Moderate: high water table; flooding.	Moderate: high water table; flooding.	Slight	Moderate: high water table; flooding.
Slight	Moderate: flooding; slow permeability.	Moderate: slow permeability.	Slight	Moderate: flooding; moderate traffic-supporting capacity.
Slight	Moderate: flooding; slow permeability.	Moderate: slope; slow permeability.	Slight	Moderate: moderate traffic-supporting capacity.
Severe: flooding or ponding; high water table.	Severe: flooding or ponding; high water table.	Severe: flooding or ponding; high water table.	Severe: flooding or ponding; high water table.	Severe: flooding; high water table.
Moderate: coarse fragments.	Moderate: coarse fragments.	Severe: coarse fragments; slope.	Moderate: coarse fragments.	Moderate: slope.
Moderate: coarse fragments.	Moderate: coarse fragments.	Severe: coarse fragments; slope.	Moderate: coarse fragments.	Moderate: slope.
Severe: slope; coarse fragments.	Severe: slope; coarse fragments.	Severe: slope; coarse fragments.	Moderate: coarse fragments.	Severe: slope.
Slight	Slight	Slight	Slight	Slight.
Slight	Slight	Moderate: slope	Slight	Slight.
Moderate: slope	Moderate: slope	Severe: slope	Slight	Moderate: slope.
Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding	Severe: flooding.
Moderate: coarse-textured surface layer.	Moderate: coarse-textured surface layer.	Moderate: slope; coarse-textured surface layer.	Moderate: coarse-textured surface layer.	Slight.
Moderate: slope; coarse-textured surface layer.	Moderate: slope; coarse-textured surface layer.	Severe: slope	Moderate: coarse-textured surface layer.	Moderate: slope.
Moderate: coarse fragments.	Moderate: coarse fragments.	Severe: coarse fragments.	Moderate: coarse fragments.	Moderate: slope.
Severe: slope	Severe: slope	Severe: slope	Moderate: slope; coarse fragments.	Severe: slope.
Slight	Slight	Slight	Slight	Moderate: wetness; moderate traffic-supporting capacity.
Slight	Slight	Slight	Slight	Moderate: wetness; moderate traffic-supporting capacity.

TABLE 8.—*Soil limitations for town*

Soil series and map symbols	Degree and kind of limitation for—		
	Residences and low buildings	Septic tank filter fields	Sewage lagoons
Hartsells:			
HeB	Slight	Severe: bedrock at a depth of 40 to 55 inches.	Moderate: slope; moderate permeability; bedrock at a depth of 40 to 55 inches.
HeC	Moderate: slope	Severe: bedrock at a depth of 40 to 55 inches.	Severe: slope
Hiwassee:			
HsB2	Slight	Moderate: moderate permeability.	Moderate: slope; moderate permeability.
HsC2	Moderate: slope	Moderate: moderate permeability; slope.	Severe: slope
HsD2	Moderate: slope	Severe: slope	Severe: slope
*Iredell:			
IwA	Moderate: moderate to high shrink-swell potential.	Severe: moderate to slow permeability.	Moderate: moderate to slow permeability.
IwC	Severe: shallow to bedrock; high shrink-swell potential.	Severe: moderate to slow permeability.	Severe: slope
Linker:			
LeB	Slight	Severe: bedrock at a depth of 40 to 50 inches.	Moderate: slope; moderate permeability.
LgC	Moderate: slope	Severe: bedrock at a depth of 40 to 50 inches.	Severe: slope
LkD	Moderate: slope	Severe: slope; bedrock at a depth of 40 to 50 inches.	Severe: slope
Lucedale:			
LuA	Slight	Slight	Moderate: moderate permeability.
LuB	Slight	Slight	Moderate: slope; moderate permeability.
LuC	Moderate: slope	Moderate: slope	Severe: slope
*Luverne:			
LvB	Moderate: moderate shrink-swell potential.	Severe: moderately slow permeability.	Moderate: slope; moderately slow permeability.
LvB2	Moderate: moderate shrink-swell potential.	Severe: moderately slow permeability.	Moderate: slope; moderately slow permeability.
LvC	Moderate: slope; shrink-swell potential.	Severe: moderately slow permeability; slope.	Severe: slope
LvC2	Moderate: slope; moderate shrink-swell potential.	Severe: moderately slow permeability; slope.	Severe: slope
LvD2	Moderate: slope; moderate shrink-swell potential.	Severe: slope	Severe: slope
LwC2	Severe: moderate to high shrink-swell potential.	Severe: slow permeability	Severe: slope
LwD2	Severe: moderate to high shrink-swell potential.	Severe: slow permeability; slope.	Severe: slope
LwF	Severe: slope; moderate to high shrink-swell potential.	Severe: slope; slow permeability.	Severe: slope

and country planning—Continued

Degree and kind of limitation for—Continued				
Picnic grounds	Campsites	Intensive play areas	Paths and trails	Local roads and streets
Slight	Slight	Moderate: slope	Slight	Moderate: moderate traffic-supporting capacity.
Moderate: slope	Slight to moderate: slope.	Severe: slope	Slight	Moderate: slope; moderate traffic-supporting capacity.
Moderate; clay loam surface layer.	Moderate: clay loam surface layer.	Moderate: slope; clay loam surface layer.	Moderate: clay loam surface layer.	Moderate: moderate traffic-supporting capacity.
Moderate: slope; clay loam surface layer.	Moderate: slope; clay loam surface layer.	Severe: slope	Moderate: clay loam surface layer.	Moderate: slope; moderate traffic-supporting capacity.
Moderate: slope; clay loam surface layer.	Moderate: slope; clay loam surface layer.	Severe: slope	Moderate: clay loam surface layer.	Moderate: slope; moderate traffic-supporting capacity.
Slight	Moderate: moderate to slow permeability.	Moderate: moderate to slow permeability; coarse fragments.	Slight	Severe: low traffic-supporting capacity; moderate to high shrink-swell potential; depth to bedrock.
Moderate: slope; gravelly surface layer.	Moderate: slope; moderate to slow permeability.	Severe: slope; depth to bedrock; coarse fragments.	Slight	Severe: low traffic-supporting capacity; high shrink-swell potential; depth to bedrock.
Slight	Slight	Moderate: slope	Slight	Moderate: moderate traffic-supporting capacity.
Moderate: coarse fragments.	Moderate: coarse fragments.	Severe: coarse fragments.	Moderate: coarse fragments; surface texture.	Severe: bedrock at a depth of 40 to 50 inches.
Moderate: slope; coarse fragments.	Moderate: slope; coarse fragments.	Severe: slope; coarse fragments.	Moderate: coarse fragments; surface texture.	Severe: bedrock at a depth of 40 to 50 inches.
Slight	Slight	Slight	Slight	Moderate: moderate traffic-supporting capacity.
Slight	Slight	Moderate	Slight	Moderate: moderate traffic-supporting capacity.
Moderate: slope	Moderate: slope	Severe: slope	Slight	Moderate: slope; moderate traffic-supporting capacity.
Slight	Moderate: moderately slow permeability.	Moderate: slope; moderately slow permeability.	Slight	Severe: low traffic-supporting capacity; moderate shrink-swell potential.
Slight	Moderate: moderately slow permeability.	Moderate: slope; moderately slow permeability.	Slight	Severe: low traffic-supporting capacity; moderate shrink-swell potential.
Moderate: slope	Moderate: slope; permeability.	Severe: slope	Slight	Severe: low traffic-supporting capacity; moderate shrink-swell potential.
Moderate: slope	Moderate: slope; moderately slow permeability.	Severe: slope	Slight	Severe: low traffic-supporting capacity; moderate shrink-swell potential.
Moderate: slope	Moderate: slope; moderately slow permeability.	Severe: slope	Slight	Severe: low traffic-supporting capacity; moderate shrink-swell potential.
Moderate: slope	Moderate: slope; permeability.	Severe: slope; permeability.	Slight	Severe: low traffic-supporting capacity; moderate to high shrink-swell potential.
Moderate: slope	Moderate: slope; permeability.	Severe: slope	Slight	Severe: low traffic-supporting capacity; moderate to high shrink-swell potential.
Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope; low traffic-supporting capacity; moderate to high shrink-swell potential.

TABLE 8.—*Soil limitations for town*

Soil series and map symbols	Degree and kind of limitation for—		
	Residences and low buildings	Septic tank filter fields	Sewage lagoons
McLaurin:			
McB	Slight	Slight	Severe: moderate to rapid permeability.
McC	Moderate: slope	Moderate: slope	Severe: slope; moderate to rapid permeability.
McD	Moderate: slope	Severe: slope	Severe: slope; moderate to rapid permeability.
Madison:			
MdB2	Slight	Moderate: moderate permeability.	Moderate: slope; moderate permeability; partly weathered bedrock at a depth of 21 to 48 inches.
MdC2	Slight	Moderate: moderate permeability; slope.	Severe: slope
MdD2	Moderate: slope	Severe: slope	Severe: slope
Masada: MsA	Severe: flood hazard	Severe: bedrock at a depth of 30 to 50 inches; flood hazard.	Moderate: moderate permeability; bedrock at a depth of 30 to 50 inches.
*Myatt:			
Mt	Severe: flooding; wetness	Severe: high water table; flooding.	Moderate: moderately slow permeability.
MyA For Bibb part of MyA, see Bibb series.	Severe: flooding; wetness	Severe: high water table; flooding.	Moderate to severe: moderately slow and rapid permeability.
Ora:			
OrA	Moderate: seasonal water table	Moderate to severe: moderate to moderately slow permeability.	Moderate: moderate to moderately slow permeability.
OrB	Moderate: seasonal water table.	Moderate to severe: moderate to moderately slow permeability.	Moderate: slope; moderate to moderately slow permeability.
OrB2	Moderate: seasonal water table.	Moderate to severe: moderate to moderately slow permeability.	Moderate: slope; moderate to moderately slow permeability.
OrC	Moderate: slope; seasonal water table.	Moderate to severe: moderate to moderately slow permeability	Severe: slope
OrC2	Moderate: slope; seasonal water table.	Moderate to severe: moderate to moderately slow permeability.	Severe: slope
Rock land: Ro. Variable. Onsite investigation is needed.			
*Ruston:			
RsA	Slight	Slight	Moderate: reservoir site material.
RsB	Slight	Slight	Moderate: slope; reservoir site material.
RsC	Moderate: slope	Moderate: slope	Severe: slope
RsC2	Moderate: slope	Moderate: slope	Severe: slope
RsD2	Moderate: slope	Severe: slope	Severe: slope
RtE For Shubuta part of RtE, see Shubuta series; for Troup part, see Troup series.	Severe: slope	Severe: slope	Severe: slope
RtF For Shubuta part of RtF, see Shubuta series; for Troup part, see Troup series.	Severe: slope	Severe: slope	Severe: slope

and country planning—Continued

Degree and kind of limitation for—Continued				
Picnic grounds	Campsites	Intensive play areas	Paths and trails	Local roads and streets
Slight	Slight	Moderate: slope	Slight	Slight.
Moderate: slope	Moderate: slope	Severe: slope	Slight	Moderate: slope.
Moderate: slope	Moderate: slope	Severe: slope	Slight	Moderate: slope.
Moderate: coarse fragments.	Moderate: coarse fragments.	Severe: coarse fragments.	Moderate: coarse fragments.	Moderate: moderate traffic-supporting capacity.
Moderate: slope; coarse fragments.	Moderate: slope; coarse fragments.	Severe: slope; coarse fragments.	Moderate: coarse fragments.	Severe: slope; partly weathered bedrock at a depth of 21 to 48 inches.
Moderate: slope; coarse fragments.	Moderate: slope; coarse fragments.	Severe: slope; coarse fragments.	Moderate: coarse fragments.	Severe: slope; partly weathered bedrock at a depth of 21 to 48 inches.
Moderate: flooding	Slight	Moderate: flooding	Slight	Moderate: flooding.
Severe: flooding; high water table.	Severe: flooding; high water table.	Severe: flooding; high water table.	Severe: flooding; high water table.	Severe: flooding; wetness.
Severe: flooding; high water table.	Severe: flooding; high water table.	Severe: flooding; high water table.	Severe: flooding; high water table.	Severe: flooding; wetness.
Slight	Slight	Slight	Slight	Moderate: moderate traffic-supporting capacity.
Slight	Slight	Moderate: slope	Slight	Moderate: moderate traffic-supporting capacity.
Slight	Slight	Moderate: slope	Slight	Moderate: moderate traffic-supporting capacity.
Moderate: slope	Moderate: slope	Severe: slope	Slight	Moderate: slope; moderate traffic-supporting capacity.
Moderate: slope	Moderate: slope	Severe: slope	Slight	Moderate: slope; moderate traffic-supporting capacity.
Slight	Slight	Slight	Slight	Moderate: moderate traffic-supporting capacity.
Slight	Slight	Moderate: slope	Slight	Moderate: moderate traffic-supporting capacity.
Moderate: slope	Moderate: slope	Severe: slope	Slight	Moderate: slope; moderate traffic-supporting capacity.
Moderate: slope	Moderate: slope	Severe: slope	Slight	Moderate: slope; moderate traffic-supporting capacity.
Moderate: slope	Moderate: slope	Severe: slope	Slight	Moderate: slope; moderate traffic-supporting capacity.
Severe: slope	Severe: slope	Severe: slope	Moderate: slope	Severe: slope.
Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope.

TABLE 8.—*Soil limitations for town*

Soil series and map symbols	Degree and kind of limitation for—		
	Residences and low buildings	Septic tank filter fields	Sewage lagoons
Saffell:			
SaB	Slight	Slight	Moderate: slope; coarse fragments; moderate to moderately rapid permeability.
SaC	Moderate: slope	Moderate: slope	Severe: slope
SaD	Moderate: slope	Severe: slope	Severe: slope
Shubuta: ShD2	Severe: slope; moderate shrink-swell potential.	Severe: slope; moderately slow permeability.	Severe: slope
Talladega:			
TaD	Severe: slope; shallow to bedrock.	Severe: slope	Severe: slope
TaF	Severe: slope; shallow to bedrock.	Severe: slope	Severe: slope
*Tallapoosa: TmF For Madison part of TmF, see Madison series.	Severe: slope; shallow to bedrock.	Severe: slope	Severe: slope
Tatum:			
TnB	Slight	Severe: moderate permeability; depth to bedrock.	Moderate: slope; partly weathered bedrock at a depth of 20 to 40 inches; moderate permeability.
TnD	Moderate: slope	Severe: slope	Severe: slope
Toccoa:			
To	Severe: flooding	Severe: flooding	Severe: moderately rapid permeability.
Tr	Severe: flooding	Severe: flooding	Severe: moderately rapid permeability.
Troup:			
TuB	Slight	Slight	Severe: rapid permeability
TuC	Moderate: slope	Moderate: slope	Severe: slope; rapid permeability.
TuD	Moderate: slope	Severe: slope	Severe: slope; rapid permeability.
Wehadkee: We	Severe: wetness; flooding	Severe: flooding	Severe: moderately rapid permeability.
Wickham: Mapped only with Angie soils.			
Wilkes: Mapped only with Iredell soils.			

and country planning—Continued

Degree and kind of limitation for—Continued				
Picnic grounds	Campsites	Intensive play areas	Paths and trails	Local roads and streets
Moderate: coarse fragments.	Moderate: coarse fragments.	Severe: coarse fragments.	Moderate: coarse fragments.	Moderate: moderate traffic-supporting capacity.
Moderate: slope; coarse fragments. Moderate: slope; coarse fragments.	Moderate: slope; coarse fragments. Moderate: slope; coarse fragments.	Severe: slope; coarse fragments. Severe: slope; coarse fragments.	Moderate: coarse fragments. Moderate: coarse fragments.	Moderate: slope; moderate traffic-supporting capacity. Moderate: slope; moderate traffic-supporting capacity.
Moderate: slope	Moderate: slope; moderately slow permeability.	Severe: slope	Slight	Severe: low traffic-supporting capacity; moderate shrink-swell potential.
Moderate: slope; coarse fragments. Severe: slope	Moderate: slope; coarse fragments. Severe: slope	Severe: slope; coarse fragments. Severe: slope	Moderate: coarse fragments. Severe: slope	Severe: slope; shallow to bedrock. Severe: slope; shallow to bedrock.
Severe: slope	Severe: slope	Severe: slope; shallow to bedrock.	Severe: slope	Severe: slope; shallow to bedrock.
Moderate: coarse fragments.	Moderate: moderate permeability; coarse fragments.	Severe: coarse fragments.	Moderate: coarse fragments.	Severe: moderate traffic-supporting capacity.
Moderate: slope; coarse fragments.	Moderate: slope; coarse fragments.	Severe: slope; coarse fragments.	Moderate: coarse fragments.	Severe: slope; partly weathered bedrock at a depth of 20 to 40 inches; moderate traffic-supporting capacity.
Moderate: flooding	Severe: flooding	Severe: flooding	Moderate: flooding	Severe: flood hazard.
Moderate: flooding	Severe: flooding	Severe: flooding	Moderate: flooding	Severe: flood hazard.
Moderate: sandy surface layer. Moderate: slope; sandy surface layer. Moderate: slope; sandy surface layer.	Moderate: sandy surface layer. Moderate: slope; sandy surface layer. Moderate: slope; sandy surface layer.	Moderate: sandy surface layer. Severe: slope Severe: slope	Moderate: sandy surface layer. Moderate: sandy surface layer. Moderate: sandy surface texture.	Slight. Moderate: slope. Moderate: slope.
Severe: wetness; flooding.	Severe: wetness; flooding.	Severe: wetness; flooding.	Severe: wetness; flooding.	Severe: wetness; flood hazard.

Formation and Classification of the Soils

This section describes the major factors of soil formation and tells how these factors have affected the soils of Chilton County. It also defines the current system for classifying soils.

Formation of the Soils

Soils form as the result of weathering forces acting on materials deposited or accumulated by geological agencies. The five major soil-forming factors are parent material, climate, plant and animal life, relief, or lay of the land, and time.

Climate and vegetation are active factors in soil formation. They act on the parent material and change it to a natural body that has definite soil characteristics. The effects of these two factors on the parent material are influenced by the relief, which affects surface drainage, the amount of water that passes through the soil, the rate of erosion, and the kind of vegetation that grows on the soil. The characteristics of the parent material determine the kind of soil that forms. Time is needed for changing the parent material into soil material, and a long period of time is normally required for development of distinct soil horizons.

The factors of soil formation are so closely interrelated in their effects on the soil that few generalizations can be made concerning the effects of any one factor acting alone. The interrelationship is so complex that many of the processes of soil development are unknown.

Parent material.—Parent material is the unconsolidated mass from which a soil forms. It is largely responsible for the chemical and mineralogical composition of soils. The parent material of the soils in Chilton County is of three main kinds: (1) material that is residual from the weathering of rocks in place; (2) material that is residual from the weathering of unconsolidated beds of sand, silt, and clay on the Coastal Plain; and (3) material transported by water or gravity and laid down as unconsolidated deposits of clay, silt, and sand.

The parent material that weathered in place consists of residuum from consolidated sedimentary, metamorphic, and igneous rocks of the Piedmont Plateau and from unconsolidated beds of sand, silt, and clay of the Coastal Plain. In the southeastern part of the county, the bedrock is mainly mica schist, quartz mica schist, and quartz hornblende gneiss estimated to be more than 10,000 feet thick (*1*). In the northeastern part of the county, the bedrock is mainly Talladega slate that is estimated to be 30,000 feet thick. In the western half of the county, the underlying material consists of thick beds of marine deposits of acid sand, silt, and clay.

The soils along the larger streams in the county formed in alluvium that has been transported and deposited by streams. Most of the alluvial material has weathered from sedimentary deposits of sand, silt, and clay on the uplands, but some of it has weathered from the slate, schist, and gneiss rocks of the uplands nearby. The soils on first bottoms, or flood plains, still receive new soil material, and therefore have a weakly developed profile. Soils in stream terrace positions have been in place long enough for distinct horizons to have developed. Narrow strips of local alluvium that has not been modified by soil-forming processes are along drainageways throughout the uplands.

Climate.—Climate affects the physical, chemical, and biological relationships in the soil, primarily through the influence of precipitation and temperature. Water dissolves minerals, supports biological activity, and transports mineral and organic residues through the soil profile. The amount of water that actually percolates through the soil over a broad area depends mainly on the amount and intensity of rainfall, on the relative humidity, and on the length of the frost-free period. The rate of downward percolation is also affected by the physiographic position and permeability of the soil. Temperature influences the kinds and growth of plants and animals in and on the soils and determines the speed of physical and chemical reactions in the soils.

Chilton County has a humid temperate climate. Summers are generally long and hot. From June 1 to September 30, the average daily maximum temperature is 89° F. and the average daily minimum temperature is 66°. Winters are fairly short, and freezing temperatures occur on an average of 67 days in the year. Severely cold weather seldom occurs and therefore has had little effect on soil-forming processes. The average length of the growing season is about 215 days, or from about April 1 to October 31.

The average annual rainfall is 56 inches and is well distributed throughout the year. The soils are moist and subject to leaching. As water moves through the profile, much of the soluble material is carried with it. Soil colloids are also translocated in the soil by the movement of water.

Plant and animal life.—Trees, grass, earthworms, micro-organisms, and other forms of plant and animal life on and in the soils are active agents in the soil-forming processes. The kind of plants and animals are determined largely by the climate and also, to a varying degree, by the kind of parent material, the relief, and the length of time the soil material has been in place.

Not much is known of the fungi and micro-organisms in the soils of this county except that they are largely confined to the uppermost few inches of soil material. Earthworms and other small invertebrates are most active in the surface layer, where they carry on a slow but continuous cycle of soil mixing.

Micro-organisms play an important part in the development of soils. Bacteria, fungi, and other micro-organisms aid in weathering rock and in decomposing organic matter. The larger plants supply the soils with organic matter and transfer elements from the subsoil to the surface layer.

The native vegetation in the county was deciduous forest, which stimulated leaching and accelerated the development of soils. The dominant hardwoods on well-drained uplands were oak and hickory, and in the drainageways, yellow-poplar, sweetgum, white oak, and red maple. On the better drained bottom land, the dominant trees were white oak, birch, ash, maple, yellow-poplar, and loblolly pine. Sweetgum, sweetbay, water oak, willow, and willow oak were dominant on the poorly drained bottom land. Loblolly and longleaf pines were the dominant species of pine in the southern half of the county, loblolly and shortleaf pines in the northwestern third, and Virginia pine in the northeastern corner of the county.

Man influences soil-forming activities as he changes the ground cover and mixes the upper few inches by cultivat-

ing and harvesting crops. Accelerated erosion and alteration in texture and thickness of the surface layer are common evidences of man's influence on soil formation.

Relief.—The relief, or topography, of the county is determined largely by the underlying bedrock and the effect of dissection by streams. Relief influences the processes of soil formation through its effect on moisture relations, erosion, temperature, and the vegetative cover. Runoff is more rapid on steep slopes than on nearly level areas. Consequently, less water enters and moves through the soil. The hazard of erosion increases as the slope increases. The influence of relief is modified by the other four soil-forming factors.

Slopes in Chilton County range from 0 to 45 percent. Upland soils, such as Ruston, Ora, Luverne, Tatum, and Madison, have slopes of less than 15 percent and have well-developed profiles that are deep to moderately deep. In the steeper areas soil material is removed about as fast as it accumulates. Talladega and Tallapoosa soils, for example, have steep slopes and thin, weakly expressed profiles. The nearly level relief along streams has caused deep soils to form from materials deposited by slow-moving floodwater.

Time.—The length of time required for soil development depends largely on the other factors of soil formation. Generally, less time is needed for a soil to develop in a humid, warm region than in a dry or cold region. Fine-textured parent material develops into soil more slowly than coarse-textured parent material.

The soils of Chilton County range from very young to very old. A young soil lacks well-developed, genetically related horizons but often has some characteristics of its parent material. Young soils in this county are on first bottoms and steep hillsides. Toccoa, Congaree, and Bibb soils are examples of young soils formed on first bottoms. These soils have been in place only a short time. They have not been changed enough by the soil-forming process to have developed well-defined, genetically related horizons. Material is still being deposited on these soils in most places.

Talladega and Tallapoosa soils are examples of young soils that formed on steep hillsides. They have thin, weakly developed horizons because the soil material is removed by geologic erosion about as fast as it accumulates.

An old soil is one that has been in place for a long time and is considered to have reached equilibrium with its environment. It has a well-developed profile of genetically related horizons. The soil material bears little resemblance to the material from which, or in which, the soils formed. Ruston, Ora, Madison, and Hiwassee soils are examples of mature soils on uplands. They range from nearly level to strongly sloping.

Classification of the Soils

Classification consists of an orderly grouping of soils according to a system designed to make it easier to remember soil characteristics and interrelationships. Classification is useful in organizing and applying the results of experience and research. Soils are placed in narrow classes for discussion in detailed soil surveys and for application of knowledge within farms and fields. The many thousands of narrow classes are then grouped into progressively fewer and broader classes in successively higher categories, so that information can be applied to large geographic areas.

Two systems of classifying soils have been used in the United States in recent years. The older system was adopted in 1938 (*3*) and revised later (*5*). The system currently used by the National Cooperative Soil Survey was developed in the early sixties (*4*) and was adopted in 1965 (*8*). It is under continual study.

The current system of classification has six categories. Beginning with the most inclusive, these categories are the order, the suborder, the great group, the subgroup, the family, and the series. The criteria for classification are soil properties that are observable or measurable, but the properties are selected so that soils of similar genesis are grouped together. The placement of some soil series in the current system of classification, particularly in families, may change as more precise information becomes available.

Table 9 shows the classification of each soil series of Chilton County by family, subgroup, and order, according to the current system.

Following are brief descriptions of each of the categories in the current system.

Order.—Ten soil orders are recognized in the current system. They are Entisols, Vertisols, Inceptisols, Aridisols, Mollisols, Spodosols, Alfisols, Ultisols, Oxisols, and Histosols. The properties used to differentiate the soil orders are those that tend to give broad climatic groupings of soils. Two exceptions are Entisols and Histosols, which occur in many different climates.

The four orders to which the soils in Chilton County belong are Alfisols, Entisols, Inceptisols, and Ultisols.

Alfisols have a light-colored surface layer, a clay-enriched B horizon, an accumulation of aluminum and iron, and a base saturation of more than 35 percent.

Entisols are mineral soils that formed either in recent alluvium or in older material consisting of almost pure quartz sand. They have little, if any, horizon development.

Inceptisols are mineral soils that formed in young but not recent material. They lack well-defined horizons. They have a slight accumulation of organic matter in the surface layer and weak, subangular blocky structure in the B2 horizon.

Ultisols are mineral soils that have a horizon of clay accumulation and a base saturation lower than 35 percent.

Suborder.—Each order is divided into suborders, primarily on the basis of soil characteristics that produce classes having genetic similarity. A suborder has a narrower climatic range than an order. The criteria for suborders reflect either the presence or absence of waterlogging or differences in climate or vegetation.

Great Group.—Each suborder is divided into great groups on the basis of uniformity in the kind and sequence of genetic horizons.

Subgroup.—Each great group is divided into subgroups, one representing the central (typic) segment of the group, and others, called intergrades, made up of soils that have mostly properties of one great group but also one or more properties of another great group.

Family.—Families are established within each subgroup, primarily on the basis of properties important to plant growth. Some of these properties are texture, mineralogy, reaction, soil temperature, permeability, consistence, and thickness of horizons.

TABLE 9.—*Soil series classified according to the current system of classification*

Series	Family	Subgroup	Order
Altavista	Fine-loamy, mixed, thermic	Aquic Hapludults	Ultisols.
Angie	Clayey, mixed, thermic	Aquic Paleudults	Ultisols.
Bibb	Coarse-loamy, siliceous, acid, thermic	Typic Haplaquents	Entisols.
Bodine	Loamy-skeletal, siliceous, thermic	Typic Paleudults	Ultisols.
Boswell	Fine, mixed, thermic	Vertic Paleudalfs	Alfisols.
Bowie	Fine-loamy, siliceous, thermic	Plinthic Paleudults	Ultisols.
Congaree	Fine-loamy, mixed, nonacid, thermic	Typic Udifluvents	Entisols.
Eustis	Sandy, siliceous, thermic	Psammentic Paleudults	Ultisols.
Guin [1]	Sandy-skeletal, siliceous, thermic	Typic Dystrochrepts	Inceptisols.
Harleston	Coarse-loamy, siliceous, thermic	Aquic Paleudults	Ultisols.
Hartsells [2]	Fine-loamy, siliceous, thermic	Typic Hapludults	Ultisols.
Hiwassee	Clayey, kaolinitic, thermic	Typic Rhodudults	Ultisols.
Iredell	Fine, montmorillonitic, thermic	Vertic Hapludalfs	Alfisols.
Linker	Fine-loamy, siliceous, thermic	Typic Hapludults	Ultisols.
Lucedale	Fine-loamy, siliceous, thermic	Rhodic Paleudults	Ultisols.
Luverne	Clayey, mixed, thermic	Typic Hapludults	Ultisols.
McLaurin	Coarse-loamy, siliceous, thermic	Typic Paleudults	Ultisols.
Madison	Clayey, kaolinitic, thermic	Typic Hapludults	Ultisols.
Masada	Fine-loamy, mixed, thermic	Typic Hapludults	Ultisols.
Myatt	Fine-loamy, mixed, thermic	Typic Ochraquults	Ultisols.
Ora	Fine-loamy, mixed, thermic	Typic Fragiudults	Ultisols.
Ruston	Fine-loamy, siliceous, thermic	Typic Paleudults	Ultisols.
Saffell	Loamy-skeletal, siliceous, thermic	Typic Hapludults	Ultisols.
Shubuta	Clayey, mixed, thermic	Typic Paleudults	Ultisols.
Talladega [3]	Loamy-skeletal, mixed, mesic	Ruptic Lithic Hapludults	Ultisols.
Tallapoosa	Loamy, micaceous, thermic, shallow	Ochreptic Hapludults	Ultisols.
Tatum	Clayey, mixed, thermic	Typic Hapludults	Ultisols.
Toccoa	Coarse-loamy, mixed, nonacid, thermic	Typic Udifluvents	Entisols.
Troup	Loamy, siliceous, thermic	Grossarenic Paleudults	Ultisols.
Wehadkee	Fine-loamy, mixed, nonacid, thermic	Fluventic Haplaquepts	Inceptisols.
Wickham	Fine-loamy, mixed, thermic	Typic Hapludults	Ultisols.
Wilkes	Loamy, mixed, thermic, shallow	Typic Hapludalfs	Alfisols.

[1] Classification at time of correlation. Series presently unclassified.

[2] The Hartsells soils in Chilton County are taxadjuncts to the Hartsells series. They are slightly deeper than is appropriate to the classification shown.

[3] The Talladega soils in Chilton County are taxadjuncts to the Talladega series. They are a few degrees warmer than is appropriate to the classification shown.

Series.—The series has the narrowest range of characteristics of the categories in the classification system. It is explained in the section "How This Survey Was Made."

A detailed description of each soil series in the county is given in the section "Descriptions of the Soils."

Climate [6]

The climate of Chilton County is temperate, and rainfall is well distributed throughout the year. In summer, tropical maritime air generally prevails and the climate borders on the subtropical. Temperature and precipitation data are given in table 10.

Spring is the most changeable season. In March the days are frequently cold, rainy, and windy, but early in May they are sunny, warm, and pleasant. Temperatures range from freezing, early in April, to daytime readings that soar into the 90's, in May. Severe local thunderstorms and tornadoes are most likely to occur in spring.

Summers are usually long; warm to hot weather begins in May and often continues well into October. There are few breaks in the heat in midsummer. Temperatures of 90° F. or higher are recorded on an average of 71 days per year. A maximum of 100° or higher is likely on an average of 1 day each month in summer. Thundershowers occur on an average of about 1 day in 3 during June, July, and August.

Fall is a transition season. The summerlike weather early in September changes to Indian summer and then to prewinter cold spells, which begin to be felt later in October and in November. Generally, fall is the most pleasant season. Rainfall is usually light and infrequent, skies are sunny during the day and clear at night, the humidity is low, and extremes in temperature are rare. In 6 out of 10 years, the temperature drops to 32° or lower by the end of October. Table 11 shows the probability of the last low temperature in spring and the first in fall.

In winter, the county is subjected alternately to moist, warm air from the Gulf of Mexico and dry, cold air moving southward from Canada. The interaction between these contrasting air masses results in considerable cloudiness and precipitation. Most of the precipitation is in the form of rain. Snow is infrequent. Measurable rainfall of 0.01 inch or more can be expected on an average of 27 days. Freezing temperatures occur on an average of 67 days; temperatures seldom remain below 32° throughout the day, however, even on the coldest day. Severely cold weather seldom occurs, and then only for a day or two. Temperatures dropped to below 10° on only 8 days during the period 1947 through 1966.

[6] Prepared by C. C. WOODEN, State climatologist, National Weather Service, Montgomery, Ala.

TABLE 10.—*Temperature and precipitation*

[All data based on records kept at Clanton, Chilton County, 1947–66. Elevation 590 feet]

Month	Temperature				Precipitation			
	Average daily maximum	Average daily minimum	Two years in 10 will have at least 4 days with—		Average monthly total	One 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.	In.	In.	In.	In.
January	55.6	33.3	72	17	5.07	2.4	7.0	0.5
February	59.3	35.9	75	20	5.60	2.2	9.4	.3
March	64.7	40.9	81	27	6.96	4.2	10.1	.1
April	74.7	50.0	85	35	5.85	2.0	12.0	(1)
May	83.4	58.3	92	47	3.68	1.1	7.5	0
June	88.9	65.5	98	55	4.22	1.9	7.7	0
July	91.8	68.6	97	63	5.07	1.8	10.5	0
August	90.8	67.7	97	61	3.72	1.5	6.6	0
September	85.8	62.1	95	50	3.73	.8	6.5	0
October	76.3	49.6	87	34	2.46	.4	5.4	0
November	65.0	38.7	79	24	4.02	.9	6.8	.1
December	56.6	32.9	71	20	5.25	2.3	8.7	.2
Year	74.0	50.0	[2] 99	[3] 12	55.62	46.7	69.2	1.1

[1] Trace (less than 0.05 inch). [2] Average annual maximum. [3] Average annual minimum.

TABLE 11.—*Probability of low temperatures in spring and fall*

[All data based on records kept at Clanton, 1931–60. Elevation, 590 feet]

Probability	Dates for given probability and temperature						
	16° F. or lower	20° F. or lower	24° F. or lower	28° F. or lower	32° F. or lower	36° F. or lower	40° F. or lower
Spring:							
1 year in 10 later than.	February 3	February 16	March 18	March 30	April 15	April 21	May 7
1 year in 4 later than.	January 23	February 10	March 5	March 16	April 8	April 18	May 1
1 year in 3 later than.	January 22	February 7	March 1	March 15	April 6	April 15	April 21
2 years in 3 later than.	January 12	January 23	February 11	February 27	March 22	April 2	April 16
3 years in 4 later than.	January 10	January 18	February 7	February 19	March 20	March 31	April 13
9 years in 10 later than.	January 7	January 9	January 29	February 9	March 16	March 21	April 8
Fall:							
1 year in 10 earlier than.	----------	December 8	November 20	October 30	October 18	October 15	October 7
1 year in 4 earlier than.	----------	December 11	November 28	November 6	October 29	October 20	October 10
1 year in 3 earlier than.	----------	December 13	November 30	November 8	November 2	October 24	October 12
2 years in 3 earlier than.	----------	December 20	December 15	November 23	November 11	November 4	October 22
3 years in 4 earlier than.	----------	December 21	December 17	November 25	November 14	November 7	October 26
9 years in 10 earlier than.	----------	December 22	December 20	December 1	November 24	November 11	November 4

Precipitation is generally well distributed throughout the year. It is heaviest in winter and early in spring. March is the wettest month. October is the driest; rainfall measuring 0.10 inch or more can be expected on only 1 day out of 5. The sun shines for about 59 percent of the daylight hours during the year.

Chilton County is subject to drought. By definition, a drought occurs when there is no water in the soil available to plants. The severity of drought depends on the duration and the amount of moisture deficiency. A mild drought, which affects yields but does not cause total crop failure, occurs on an average of about 3 months each year. During 1 month of the growing season, a mild drought can be expected in 2 years out of 3 and a moderate drought in 1 year out of 5. A severe drought more than once in 15 years is unlikely. For an accepted method for determining the drought index, see "Agricultural Drought in Alabama" (*13*).

Wind and humidity records are not available for Chilton County, but records from the nearby station at Montgomery, in Montgomery County, show that prevailing winds are northwesterly in winter at 8 miles per hour, southerly in spring at 8 miles per hour, southerly in summer at 6 miles per hour, and northeasterly in fall at 6 miles per hour. The average relative humidity at noon ranges from near 50 pecent in May to 64 percent in July and August. The average relative humidity for the year is 73 percent.

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Glossary

Alluvium. Soil material, such as sand, silt, or clay, that has been deposited on land by streams.

Available water capacity (also termed available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil.

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.

Consistence, soil. The feel of the soil and the ease with which a lump can be crushed by the fingers. Terms commonly used to describe consistence are—

Loose.—Noncoherent when dry or moist; does not hold together in a mass.

Friable.—When moist, crushes easily under gentle pressure between thumb and forefinger and can be pressed together into a lump.

Firm.—When moist. crushes under moderate pressure between thumb and forefinger, but resistance is distinctly noticeable.

Plastic.—When wet, readily deformed by moderate pressure but can be pressed into a lump; will form a "wire" when rolled between thumb and forefinger.

Sticky—When wet, adheres to other material, and tends to stretch somewhat and pull apart, rather than to pull free from other material.

Hard.—When dry, moderately resistant to pressure; can be broken with difficulty between thumb and forefinger.

Soft.—When dry, breaks into powder or individual grains under very slight pressure.

Cemented.—Hard and brittle; little affected by moistening.

Drainage class (natural). Refers to the conditions of frequency and duration of periods of saturation or partial saturation that existed during the development of the soil, as opposed to 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. Seven different classes of natural soil drainage are recognized.

Excessively drained soils are commonly very porous and rapidly permeable and have a low water-holding capacity.

Somewhat excessively drained soils are also very permeable and are free from mottling throughout their profile.

Well-drained soils are nearly free from mottling and are commonly of intermediate texture.

Moderately well drained soils commonly have a slowly permeable layer in or immediately beneath the solum. They have uniform color in the A and upper B horizons and have mottling in the lower B and the C horizons.

Somewhat poorly drained soils are wet for significant periods but not all the time, and in Podzolic soils commonly have mottlings below 6 to 16 inches, in the lower A horizon and in the B and C horizons.

Poorly drained soils are wet for long periods and are light gray and generally mottled from the surface downward, although mottling may be absent or nearly so in some soils.

Very poorly drained soils are wet nearly all the time. They have a dark-gray or black surface layer and are gray or light gray, with or without mottling, in the deeper parts of the profile.

Erosion. The wearing away of the land surface by wind (sandblast), running water, and other geological agents.

Fertility, soil. The quality of a soil that enables it to provide compounds, in adequate amounts and in proper balance, for the growth of specified plants, when other growth factors such as 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 type. A term used to describe stands that are similar in composition and development because of ecological factors. A forest type is temporary if its character has been caused by logging, fire, or other passing influences; it is permanent if no appreciable change is expected and its character is the result of ecological factors alone.

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, it is hard or very hard 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.

Genesis, soil. The manner in which a soil originates. Refers especially to the processes initiated by climate and organisms that are responsible for the development of the solum, or true soil, from the unconsolidated parent material, as conditioned by relief and age of landform.

Gravelly soil material. From 15 to 50 percent of material, by volume, consists of rounded or angular rock fragments that are not prominently flattened and are up to 3 inches in diameter.

Green-manure crop. A crop grown for the purpose of being turned under in an early stage of maturity or soon after maturity for soil improvement.

Horizon, soil. A layer of soil, approximately parallel to the surface, that has distinct characteristics produced by soil-forming processes. These are the major horizons:

O horizon.—The layer of organic matter on the surface of a mineral soil. This layer consists of decaying plant residues.

A horizon.—The mineral horizon at the surface or just below an O horizon. This horizon is the one in which living organisms are most active and therefore is marked by the accumulation of humus. The horizon may have lost one or more of soluble salts, clay, and sesquioxides (iron and aluminum oxides).

B horizon.—The mineral horizon below an A horizon. The B horizon is in part a layer of change from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics caused (1) by accumulation of clay, sesquioxides, humus, or some combination of these; (2) by prismatic or blocky structure; (3) by redder or stronger colors than the A horizon; or (4) by some combination of these. Combined A and B horizons are usually called the solum, or true soil. If a soil lacks a B horizon, the A horizon alone is the solum.

C horizon.—The weathered rock material immediately beneath the solum. In most soils this material is presumed to be like that from which the overlying horizons were formed. If the material is known to be different from that in the solum, a Roman numeral precedes the letter C.

R layer.—Consolidated rock beneath the soil. The rock usually underlies a C horizon but may be immediately beneath an A or B horizon.

Infiltration. The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

Irrigation. Application of water to soils to assist in production of crops. Methods of irrigation are—

Furrow.—Water is applied in small ditches made by cultivation implements used for tree and row crops.

Sprinkler.—Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

Leaching. The removal of soluble materials from soils or other material by percolating water.

Mottling, soil. 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*. The size measurements are these: *fine*, less than 5 millimeters (about 0.2 inch) in diameter along the greatest dimension; *medium*, ranging from 5 millimeters to 15 millimeters (about 0.2 to 0.6 inch) in diameter along the greatest dimension; and *coarse*, more than 15 millimeters (about 0.6 inch) in diameter along the greatest dimension.

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*.

Plinthite. The sesquioxide-rich, humus-poor, highly weathered mixture of clay with quartz and other dilutents that commonly shows as red mottles, usually in platy, polygonal, or reticulate patterns. Plinthite changes irreversibly to hardpan or to irregular aggregates on repeated wetting and drying, or it is the hardened relicts of the soft, red mottles. It is a form of the material that has been called laterite.

Profile, soil. A vertical section of the soil through all its horizons and extending into the parent material.

Reaction, soil. 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		*pH*
Extremely acid	Below 4.5	Neutral	6.6 to 7.3
Very strongly acid	4.5 to 5.0	Mildly alkaline	7.4 to 7.8
Strongly acid	5.1 to 5.5	Moderately alkaline	7.9 to 8.4
Medium acid	5.6 to 6.0	Strongly alkaline	8.5 to 9.0
Slightly acid	6.1 to 6.5	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 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 that 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.

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 on earthy parent material, as conditioned by relief over periods of time.

Solum. The upper part of a soil profile, above the parent material, in which the processes of soil formation are active. The solum in mature soil includes the A and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the underlying material. The living roots and other plant and animal life characteristic of the soil are largely confined to the solum.

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. Technically, the B horizon; roughly, the part of the solum below plow depth.

Terrace. An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surplus runoff so that it may soak into the soil or flow slowly to a prepared outlet without harm. Terraces in fields are generally built so they can be farmed. Terraces intended mainly for drainage have a deep channel that is maintained in permanent sod.

Terrace (geological). An old alluvial plain, ordinarily flat or undulating, bordering a river, lake, or the sea. Stream terraces are frequently called second bottoms, as contrasted to flood plains, and are seldom subject to overflow. Marine terraces were deposited by the sea and are generally wide.

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, or one that responds to fertilization, ordinarily rich in organic matter, used to topdress roadbanks, lawns, and gardens.

GUIDE TO MAPPING UNITS

For complete information about a mapping unit, read both the description of the mapping unit and that of the soil series to which the mapping unit belongs. For complete information about a capability unit, read the introduction to "Use of the Soils for Crops and Pasture" and the discussion of the capability unit in this section. In referring to a woodland suitability group, read the introduction to the section it is in for general information about its management. Other information is given in tables as follows:

Acreage and extent, table 1, page 9.
Estimated yields, table 2, page 45.
Suitability of soils for elements of wildlife, table 4, page 50.

Engineering uses of the soils, tables 5, 6, and 7, pages 54 through 67.
Soil limitations for town and country planning, table 8, page 68.

Map symbol	Mapping unit	Described on page	Capability unit		Woodland suitability group	
			Symbol	Page	Number	Page
AaA	Altavista fine sandy loam, 0 to 2 percent slopes	10	IIw-31	39	2w8	47
AwA	Angie-Wickham complex, 0 to 2 percent slopes	11	IIw-31	39	2w8	47
AwB	Angie-Wickham complex, 2 to 6 percent slopes	11	IIe-14	39	2w8	47
Bb	Bibb soils	11	IVw-11	42	2w9	47
BdC	Bodine cherty silt loam, 2 to 10 percent slopes	13	IIIe-43	41	4f2	49
BoC	Bodine complex, 2 to 10 percent slopes	13	IIIe-43	41	4f2	49
BoE	Bodine complex, 10 to 25 percent slopes	13	VIe-19	43	4f2	49
BwA	Bowie fine sandy loam, 0 to 2 percent slopes	14	I-12	37	3o1	47
BwB	Bowie fine sandy loam, 2 to 6 percent slopes	14	IIe-12	38	3o1	47
BwC	Bowie fine sandy loam, 6 to 10 percent slopes	14	IIIe-12	40	3o1	47
Co	Congaree silt loam	16	IIw-45	39	1o7	47
EuB	Eustis loamy sand, 2 to 6 percent slopes	16	IIIs-11	41	3s3	48
EuD	Eustis loamy sand, 6 to 15 percent slopes	16	VIs-11	43	3s3	48
GbC	Guin and Bowie soils, 6 to 10 percent slopes	17	IVs-11	42	4f2	49
GbE	Guin and Bowie soils, 10 to 25 percent slopes	17	VIIe-19	43	4f2	49
Gu	Gullied land	17	VIIe-19	43	---	--
HaA	Harleston sandy loam, 0 to 2 percent slopes	18	IIw-31	39	2w8	47
HaB	Harleston sandy loam, 2 to 6 percent slopes	18	IIe-15	39	2w8	47
HeB	Hartsells sandy loam, 2 to 6 percent slopes	18	IIe-12	38	4o1	48
HeC	Hartsells sandy loam, 6 to 10 percent slopes	18	IIIe-12	40	4o1	48
HsB2	Hiwassee clay loam, 2 to 6 percent slopes, eroded	19	IIe-14	39	4c2	48
HsC2	Hiwassee clay loam, 6 to 10 percent slopes, eroded	19	IIIe-14	40	4c2	48
HsD2	Hiwassee clay loam, 10 to 15 percent slopes, eroded	19	IVe-14	42	4c2	48
IwA	Iredell-Wilkes complex, 0 to 2 percent slopes	20	IIw-34	39	4c2	48
IwC	Iredell-Wilkes complex, 2 to 10 percent slopes	20	IVe-34	42	4c2	48
LeB	Linker sandy loam, 2 to 6 percent slopes	20	IIe-12	38	4o1	48
LgC	Linker gravelly sandy loam, 6 to 10 percent slopes	21	IIIe-12	40	4o1	48
LkD	Linker cobbly sandy loam, 6 to 15 percent slopes	21	IVe-11	42	4o1	48
LuA	Lucedale fine sandy loam, 0 to 2 percent slopes	21	I-12	37	2o1	47
LuB	Lucedale fine sandy loam, 2 to 6 percent slopes	21	IIe-12	38	2o1	47
LuC	Lucedale fine sandy loam, 6 to 10 percent slopes	21	IIIe-12	40	2o1	47
LvB	Luverne fine sandy loam, 2 to 6 percent slopes	22	IIe-14	39	3c2	48
LvB2	Luverne fine sandy loam, 2 to 6 percent slopes, eroded	22	IIe-14	39	3c2	48
LvC	Luverne fine sandy loam, 6 to 10 percent slopes	22	IIIe-14	40	3c2	48
LvC2	Luverne fine sandy loam, 6 to 10 percent slopes, eroded	22	IIIe-14	40	3c2	48
LvD2	Luverne fine sandy loam, 10 to 15 percent slopes, eroded	22	IVe-14	42	3c2	48
LwC2	Luverne-Boswell complex, 2 to 10 percent slopes, eroded	23	IVe-14	42	4c2	48
LwD2	Luverne-Boswell complex, 10 to 15 percent slopes, eroded	23	VIe-19	43	4c2	48
LwF	Luverne-Boswell complex, 15 to 45 percent slopes	23	VIIe-19	43	4r2	49
McB	McLaurin sandy loam, 2 to 6 percent slopes	23	IIs-11	40	3o1	47
McC	McLaurin sandy loam, 6 to 10 percent slopes	24	IIIe-12	40	3o1	47
McD	McLaurin sandy loam, 10 to 15 percent slopes	24	IVe-11	42	3o1	47
MdB2	Madison gravelly loam, 2 to 6 percent slopes, eroded	24	IIe-14	39	3o7	47
MdC2	Madison gravelly loam, 6 to 10 percent slopes, eroded	24	IIIe-14	40	3o7	47
MdD2	Madison gravelly loam, 10 to 15 percent slopes, eroded	25	IVe-14	42	3o7	47
MsA	Masada silt loam, 0 to 2 percent slopes	25	IIw-31	39	3o7	47
Mt	Myatt loam	26	IVw-11	42	2w9	47
MyA	Myatt-Bibb association, level	26	IVw-11	42	2w9	47

GUIDE TO MAPPING UNITS--Continued

Map symbol	Mapping unit	Described on page	Capability unit		Woodland suitability group	
			Symbol	Page	Number	Page
OrA	Ora sandy loam, 0 to 2 percent slopes	27	IIs-11	40	3o1	47
OrB	Ora sandy loam, 2 to 6 percent slopes	27	IIe-15	39	3o1	47
OrB2	Ora sandy loam, 2 to 6 percent slopes, eroded	27	IIe-15	39	3o1	47
OrC	Ora sandy loam, 6 to 10 percent slopes	27	IIIe-15	40	3o1	47
OrC2	Ora sandy loam, 6 to 10 percent slopes, eroded	27	IIIe-15	40	3o1	47
Ro	Rock land	27	VIIs-31	44	---	--
RsA	Ruston fine sandy loam, 0 to 2 percent slopes	28	I-12	37	3o1	47
RsB	Ruston fine sandy loam, 2 to 6 percent slopes	28	IIe-12	38	3o1	47
RsC	Ruston fine sandy loam, 6 to 10 percent slopes	29	IIIe-12	40	3o1	47
RsC2	Ruston fine sandy loam, 6 to 10 percent slopes, eroded	29	IIIe-12	40	3o1	47
RsD2	Ruston fine sandy loam, 10 to 15 percent slopes, eroded	29	IVe-11	42	3o1	47
RtE	Ruston-Shubuta-Troup association, hilly	29	VIe-19	43	4r2	49
RtF	Ruston-Shubuta-Troup association, steep	29	VIIe-19	43	4r2	49
SaB	Saffell gravelly sandy loam, 2 to 6 percent slopes	30	IIe-12	38	4f2	49
SaC	Saffell gravelly sandy loam, 6 to 10 percent slopes	30	IIIe-12	40	4f2	49
SaD	Saffell gravelly sandy loam, 10 to 15 percent slopes	30	IVe-11	42	4f2	49
ShD2	Shubuta sandy loam, 2 to 15 percent slopes, eroded	31	IVe-14	42	3c2	48
TaD	Talladega channery silt loam, 6 to 15 percent slopes	32	VIe-34	43	4c2	48
TaF	Talladega channery silt loam, 15 to 45 percent slopes	32	VIIe-32	43	4r2	49
TmF	Tallapoosa-Madison association, steep	32	VIIe-32	43	4r2	49
TnB	Tatum gravelly loam, 2 to 6 percent slopes	33	IIe-14	39	4o1	48
TnD	Tatum gravelly loam, 6 to 15 percent slopes	33	IIIe-14	40	4o1	48
To	Toccoa fine sandy loam	34	IIw-45	39	1o7	47
Tr	Toccoa soils, local alluvium	34	IIw-45	39	1o7	47
TuB	Troup loamy fine sand, 0 to 6 percent slopes	34	IIIs-11	41	3s2	48
TuC	Troup loamy fine sand, 6 to 10 percent slopes	35	IVs-11	42	3s2	48
TuD	Troup loamy fine sand, 10 to 15 percent slopes	35	VIs-11	43	3s2	48
We	Wehadkee loam	35	IVw-11	42	1w9	47

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