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SOIL SURVEY

Dale County Alabama

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

HOW TO USE THE SOIL SURVEY REPORT

THIS SURVEY of Dale County will serve several groups of readers. It will help farmers in planning the kind of management that will protect their soil and provide good yields; it will assist engineers in selecting sites for roads, buildings, ponds, and other structures; and it will add to soil scientists' knowledge.

In making this survey, soil scientists walked over the fields and woodlands. They dug holes and examined surface soils and subsoils; measured slopes with a hand level; noticed differences in the growth of crops, weeds, and brush; and, in fact, recorded all things about the soil that they believed might affect suitability for farming, engineering, forestry, and related uses.

The scientists plotted the boundaries of the soils on aerial photographs. Then cartographers prepared from aerial photographs the detailed soil map in the back of the report. Fields, woods, roads, and many other landmarks can be seen on the map.

Locating the Soils

Use the index to map sheets to locate areas on the large map. The index is a map of the county on which numbered rectangles have been drawn to show that section of the county represented by each sheet. When the correct sheet of the large map is found, it will be seen that boundaries of the soil are outlined, and that there is a symbol for each kind of soil, wherever it appears on the map. Suppose, for example, an area located on the map has the symbol LaB. The legend on the detailed map shows that this symbol stands for Lakeland loamy fine sand, 0 to 5 percent slopes. This soil and all others mapped in the county are described in the subsection, Soil Series, Types, and Phases.

Finding Information

Few readers will be interested in all the report, for it has special sections for different groups. The section, General Nature of the Area, which discusses climate, geology, water supply, and other subjects, will be of interest mainly to those not familiar with the county.

Farmers and those who work with farmers will want to learn about soils in the subsection, Soil Series, Types, and Phases, and then go to the section, Use and Management of Soils. In this way they first identify the soils on their farm and then learn how these soils can be managed and what yields can be expected. The soils are grouped in capability units; that is, groups of soils that need similar management and respond to this management in about the same way. For example, in the subsection, Soil Series, Types, and Phases, Lakeland loamy fine sand, 0 to 5 percent slopes, is shown to be in capability unit IIIs–1. The management needed for this soil, therefore, will be found under the heading, Capability Unit IIIs–1, in the subsection, Capability Units in Dale County.

Soil Scientists will find information about how soils were formed and how they are classified in the section, Formation, Classification, and Morphology.

Foresters will find information on the suitability of the soils for trees in the section, Use and Management of Soils and in the subsection, Soil Series, Types, and Phases. Table 1 gives the site index of three kinds of pines for each soil in the county, and table 4 gives the acreage in woodland for each soil.

Students, teachers, and other users will find information about the soils and their management in various parts of the report, depending on their particular interest. Those interested in general soil areas will want to read the section, General Soil Map. This section tells about the principal kinds of soils, where they are found, and how they differ from each other.

* * * * *

Fieldwork for this survey was completed in 1956. Unless otherwise indicated, all statements in the report refer to conditions in the county at that time. This survey was made as a part of the technical assistance furnished the Wiregrass Soil Conservation District, of which Dale County is a part. Help in farm management can be obtained from members of the Soil Conservation Service in the county, the county agricultural agent, and the staff of the State Agricultural Experiment Station.

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BY R. E. HENRY, IN CHARGE, T. L. TURNER AND C. B. LAWRENCE, SOIL CONSERVATION SERVICE

CORRELATION BY I. L. MARTIN, SOIL CONSERVATION SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE IN COOPERATION WITH THE ALABAMA DEPARTMENT OF

crumbly. Consistence indicates how difficult it is to keep the soil open and porous during cultivation.

Other characteristics observed in the field and considered in classifying the soil include the following: The depth of the soil over bedrock or compact layers; the presence of gravel or stones in amounts that will impede cultivation; the steepness and pattern of the slopes; the degree of erosion; the nature of the underlying parent material from which the soil has developed; and the acidity or alkalinity of the soil as measured by chemical tests.

CLASSIFICATION: On the basis of the characteristics observed by the survey team or determined by laboratory tests, soils are classified in phases, types, and series. The soil type is the basic classification unit; it may consist of several phases. Types that resemble each other in most of their characteristics are grouped into soil series.

Soil type.—Soils similar in kind, thickness, and arrangement of soil layers are classified as one soil type.

Soil phase.—Because of differences other than those of kind, thickness, and arrangement of the layers, some soil types are divided into two or more phases. In Dale County, soil types are divided into phases on the basis of range of slope, degree of erosion, local alluvium, shallowness, thickness of surface soil, or poor drainage, or a combination of these characteristics. Many types are divided into eroded phases and severely eroded phases, and into several different slope ranges. Eroded phases have had one-fourth to three-fourths of their surface soil removed; severely eroded phases have had more than three-fourths of their surface soil removed and generally part of their subsoil. Soils that have been more than severely eroded are called Gullied land, which is a miscellaneous land type.

The soil phase (or the soil type if it has not been subdivided) is the unit shown on the soil map. It is the unit that has the narrowest range of characteristics. Use and management, therefore, can be specified more easily for soil phases than for soil series or yet broader groups that allow more variation.

Soil series.—Two or more soil types that differ in texture of the surface soil, but are otherwise similar in kind, thickness, and arrangement of soil layers, are normally designated as a soil series. The names of the soil series are generally chosen from place names near where the series was first found. For example, Americus is the name of a series of excessively drained, very friable to loose, medium acid to strongly acid, deep, dark-brown, loamy sandy soils. These soils are widely distributed throughout the Coastal Plain on gentle to strong slopes. They were first analyzed and named near Americus, Georgia.

Miscellaneous land types.—Areas that have little true soil are not classified in types and series, but are identified by descriptive names, such as Gullied land or Sandy alluvial land, poorly drained.

Undifferentiated soil groups.—This kind of mapping unit has two or more similar soils that do not occur in regular geographic association. Cuthbert, Boswell, and Eustis soils, eroded sloping phases, is an undifferentiated soil group in Dale County.

SOIL CORRELATION: This is the process of assigning uniform names to soils of various areas in a nationwide system of mapping and classifying soils. The purpose of soil correlation is to show similarities and differences among the soils in each surveyed area and in the rest of the United States. To do this, the same combination of soil characteristics is given the same name, wherever found.

* * * * *

A more detailed discussion of the methods used in soil surveying can be found in the Soil Survey Manual.[1] Fuller definition of some of the foregoing terms and definitions of unfamiliar terms used in this report can be found in the glossary.

General Soil Map

Near the back of this report is a general soil map that shows the broad areas, or soil associations, in the county. Each association consists of soils that occur in a fairly definite pattern and proportion. The individual soils in any one association are not necessarily similar; they may be quite different.

The four soil associations are described in the following pages, and their broad agricultural uses are discussed. These descriptions, with the general soil map, are useful to those who want only a general idea of the nature and distribution of the soil resources of the county. This information is useful in determining the suitability of large areas in the county for some general type of agriculture or other broad land use.

Norfolk-Ruston-Red Bay Association

This association consists of deep, well-drained soils that occur on broad, smooth uplands. It has broad flats, undulating areas with sinkholes containing Grady soils, and gently sloping to sloping side slopes. The soils are dominantly fine sandy loams and have developed largely from beds of sands, sandy clay loams, and sandy clays.

This association, which has four separate areas, covers about 20 percent of the county. The largest area is in the southeastern part of the county, and another large area is in the southwestern corner. Smaller areas are near Daleville and Clopton.

The Norfolk, Ruston, and Red Bay soils are on flats and gently sloping ridges. They make up about 55 percent of the association. These well-drained soils have a friable fine sandy clay loam subsoil. The subsoil is brownish yellow to yellowish brown in the Norfolk soil, strong brown to yellowish red in the Ruston soil, and dark reddish brown to dark red in the Red Bay soils.

Tifton, Marlboro, Magnolia, and Faceville soils occur on the more nearly level areas and make up about 20 percent of the association. The Tifton and Marlboro soils have a yellow to yellowish-brown sandy clay loam or sandy clay subsoil, and the Magnolia soils have a red sandy clay subsoil. The subsoil of the Faceville soils is strong-brown to yellowish-red sandy clay loam.

Lakeland, Eustis, and Americus soils make up about 10 percent of the association. They have somewhat excessively drained profiles. These soils occur with the Red Bay soils on the gently sloping to moderately steep slopes. The remaining 10 percent of the association consists of poorly drained alluvium along drainways.

[1] SOIL SURVEY STAFF. SOIL SURVEY MANUAL. U.S. Dept. Agr. Handbook 18, 503 pp., illus. 1951.

About 70 percent of this association is cultivated. The rest consists of about equal acreages of pasture, woodland, and idle land. Most of the cultivated acreage consists of soils in capability classes I, II, and III.

This association is well suited to farming. Most of the acreage is easy to work and to conserve and responds very well to good management, especially fertilization. All types of farm machinery can be used easily. The soils are well suited to cotton, corn, and peanuts, which are extensively grown. They are also well suited to truck crops and small grain. Suitable pasture plants are coastal bermudagrass, bahiagrass, crimson clover, vetch, sericea lespedeza, and millet.

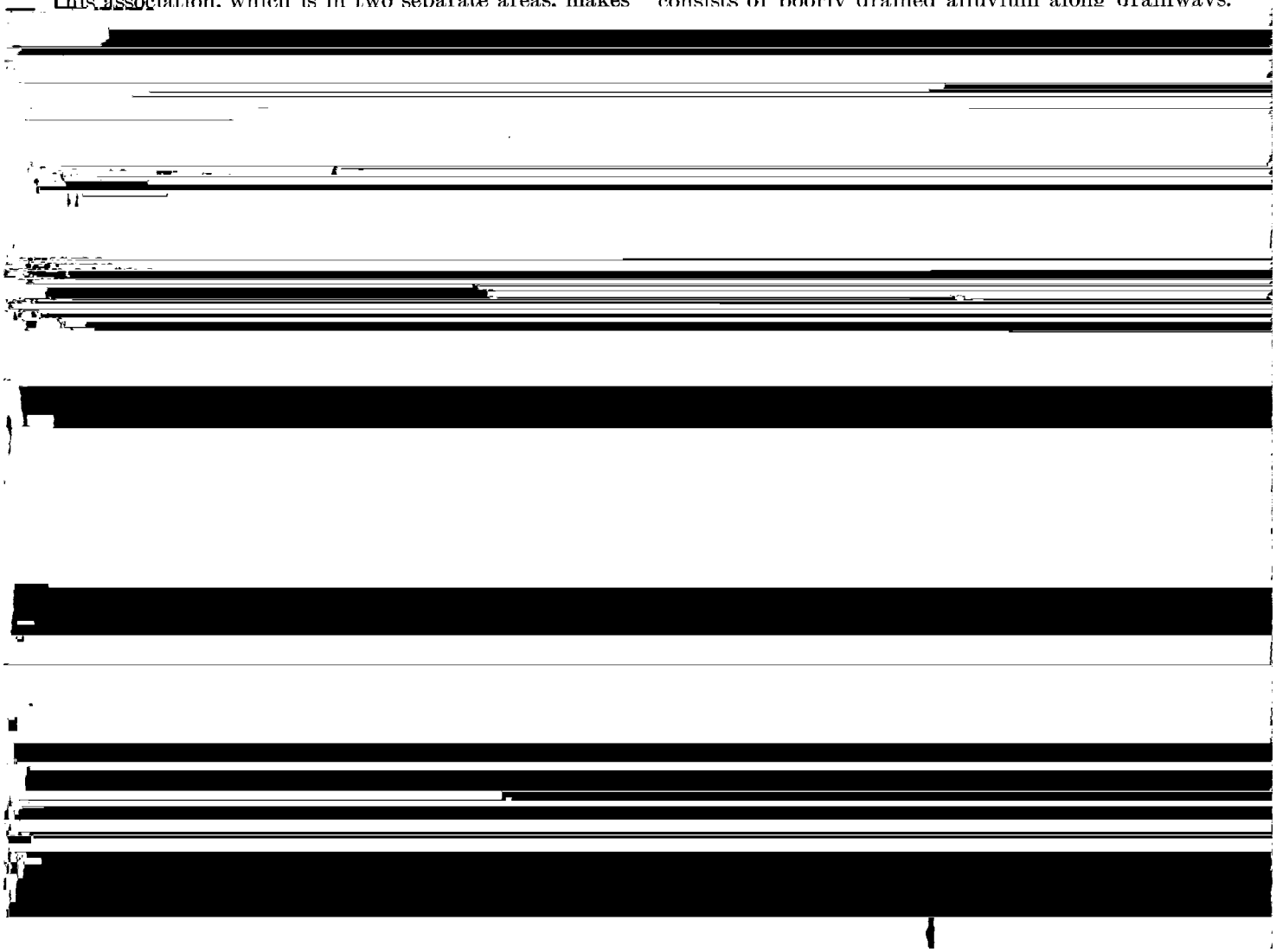
Norfolk-Ruston-Shubuta Association

This soil association consists of well drained and moderately well drained soils, most of which are deep. It has long, narrow, very gently sloping ridgetops, steeper side slopes, and narrow strips of alluvium in draws. The soils have a sandy loam to loamy sand surface soil and were developed from unconsolidated beds of sand, sandy clay, and clay.

This association, which is in two separate areas, makes ing ridgetops, steep or moderately steep side slopes, and narrow strips of poorly drained alluvium in draws.

This association, the most extensive in the county, covers about 40 percent of the total acreage. It has two separate areas. The larger area is a strip, 6 to 8 miles wide, that extends from Clayhatchee eastward to Henry County. The smaller area extends from an area south of Skipperville northward to Barbour County.

In addition to the Lakeland and Eustis soils, this association has Norfolk, Ruston, and Cuthbert soils. The Lakeland and Eustis soils make up about 60 percent of the association. They occur on steep side slopes. They have a loose loamy sand subsoil that is pale yellow to light yellowish brown in the Lakeland soils and yellowish brown in the Eustis soils. The Norfolk and Ruston soils make up about 10 percent of the association and are in small areas on ridgetops. They have a loamy sand or fine sandy loam surface soil and a sandy clay loam subsoil. The Cuthbert soils make up about 20 percent of the association and occur with the Lakeland soils on the steep side slopes. They are moderately well drained to somewhat poorly drained and have a yellowish red sandy clay or clay subsoil. About 10 percent of the association consists of poorly drained alluvium along drainways.



About 20 percent of this association is cultivated, 10 percent is idle, 5 percent is in pasture, and 65 percent is woodland. Much of the cultivated acreage consists of soils in capability classes III and IV.

The more gentle slopes of this association are used for cultivated crops, but generally the soils are only moderately well suited to row crops. The association is more valuable for the production of timber than it is for other uses.

Use and Management of Soils

This section consists of three main parts. In the first part, after the nationwide system of capability classification is described, the soils of the county are grouped in capability units, or management groups, and management is suggested for each group of soils. The second part consists of a table that gives estimated yields for crops and pasture under two levels of management and also the site indexes for species of pines. The third part discusses general practices of good soil management.

Capability Grouping

Capability grouping is a system of classification used to show the relative suitability of soils for crops, grazing, forestry, and wildlife. It is a practical grouping based on the needs and limitations of the soils, the risks of damage to them, and also their response to management. There are three levels above the soil mapping unit in this grouping. They are the capability unit, subclass, and class.

The capability unit, which can also be called a management group, is the lowest level of soil capability grouping. A capability unit is made up of soils similar in kind of management they need, in risk of damage, and in general suitability for use.

The next broader grouping, the subclass, is used to indicate the dominant kind of limitation. The letter symbol "e" indicates that the main limiting factor is risk of erosion if the plant cover is not maintained; "w" means that excess water retards plant growth or interferes with cultivation; and "s" shows that the soils are shallow, droughty, or usually low in fertility. In some areas Other soils in class II may be slightly droughty or slightly wet, or somewhat limited in depth.

Class III soils can be cropped regularly but have a narrower range of use than class II soils. They need even more careful management.

In class IV are soils that should be cultivated only occasionally or only under very careful management.

In classes V, VI, and VII are soils that normally should not be cultivated for annual or short-lived crops, but they can be used for pasture or range, for woodland, and for wildlife habitats.

Class V soils are nearly level and gently sloping but are droughty, wet, low in fertility, or otherwise unsuitable for cultivation.

Class VI soils are not suitable for crops because they are steep or droughty or otherwise limited, but they give fair yields of forage or forest products. Some soils in class VI can, without damage, be cultivated enough so that fruit trees or forest trees can be set out or pasture crops seeded.

Class VII soils provide only poor to fair yields of forage or forest products and have characteristics that limit them severely for these uses.

In class VIII are soils that have no agricultural use. Some of them have value as watersheds, wildlife habitats, and recreation sites. Dale County has no class VIII soils.

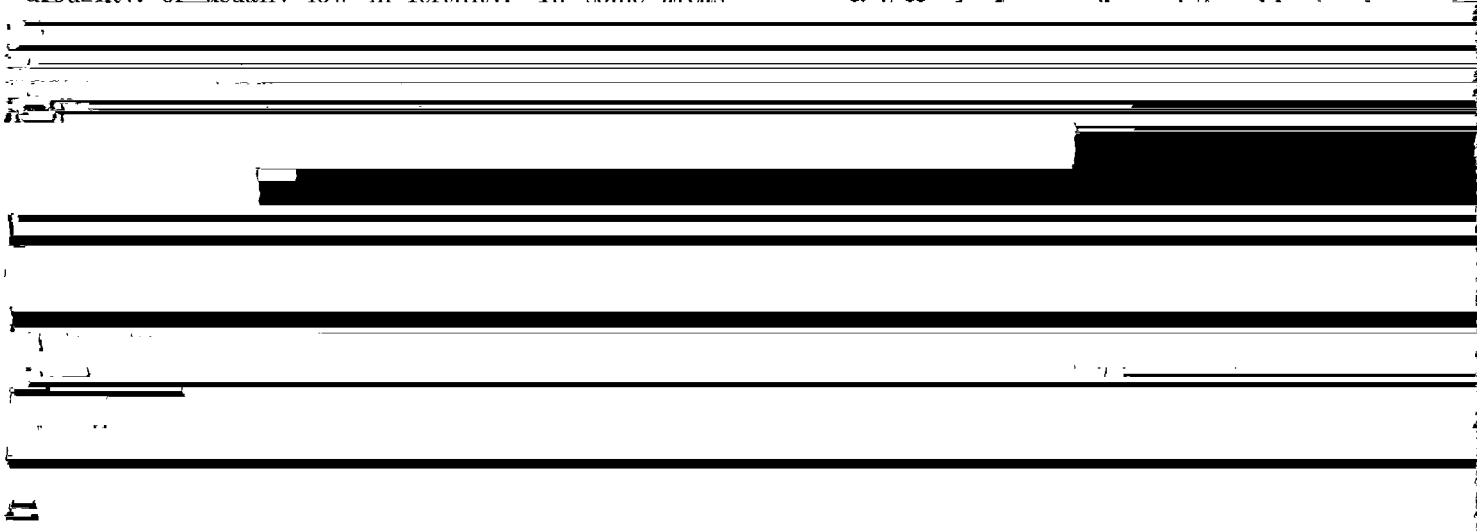
The soils of Dale County have been placed in the following capability classes, subclasses, and units:

Class I.—Level or nearly level, productive soils that are very good for crops and have few limitations.
- Unit I–1.—Deep, well-drained soils that have a friable sandy clay loam subsoil.
- Unit I–2.—Deep, well-drained soils that have a firm to friable sandy clay to sandy clay loam subsoil.

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

Subclass IIe.—Level to very gently sloping soils that are likely to erode if not protected.
- Unit IIe–1.—Very gently sloping, deep, well-drained soils that have a friable sandy clay loam subsoil.
- Unit IIe–2.—Very gently sloping, deep, well-drained soils that have a firm to friable sandy clay to sandy clay loam subsoil.
- Unit IIe–3.—Level to very gently sloping, moderately well drained soils that have a slowly permeable subsoil.

Subclass IIw.—Level and nearly level soils in which water restricts the choice of crops.



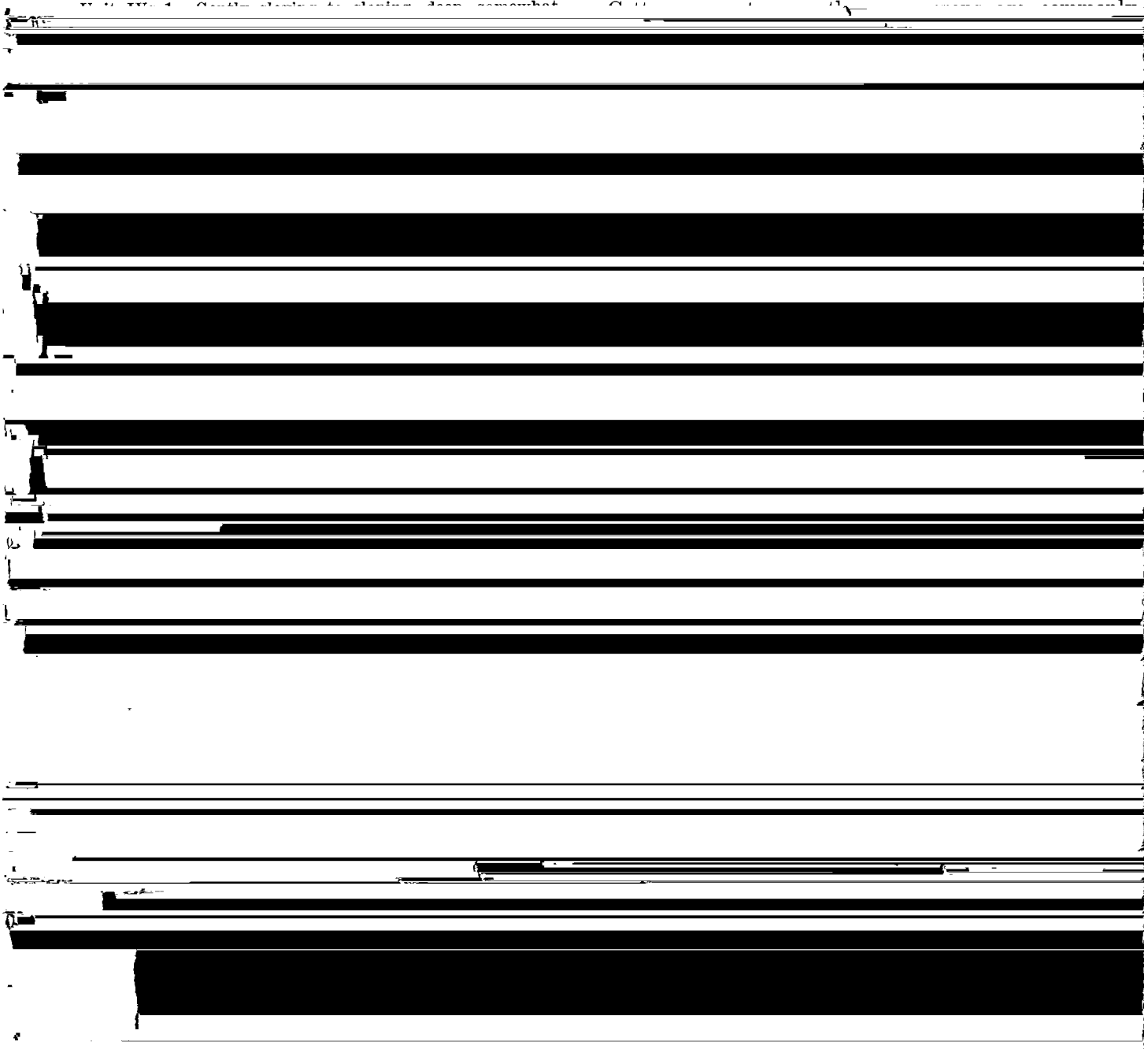
Class IV.—Soils that have very severe limitations that restrict the choice of plants or require careful management, or both.
Subclass IVe.—Soils that will erode if not protected.
Unit IVe–1.—Sloping, deep, well-drained soils that have a friable sandy clay loam subsoil.
Unit IVe–2.—Gently sloping to sloping, deep, well-drained soils that have a firm to friable sandy clay to sandy clay loam subsoil.
Unit IVe–3.—Very gently sloping severely eroded and gently sloping moderately eroded, moderately deep, moderately well drained soils that have a slowly permeable subsoil.
Subclass IVw.—Soils severely limited by excess water.
Unit IVw–2.—Nearly level, poorly drained soils that have a slowly permeable subsoil.
Subclass IVs.—Soils severely limited by lack of plant nutrients and droughtiness.

moisture and are permeable to depths of 3 to 5 feet. They are easy to work and to conserve and can be intensively cultivated.

The soils in this unit are:

Kalmia fine sandy loam, level phase.
Norfolk fine sandy loam, level phase.
Red Bay fine sandy loam, level phase.
Ruston fine sandy loam, level phase.

These soils are well suited to cotton, corn, small grain, truck crops, and, especially, peanuts. They can also be used for pasture, hay, and woodland, and they provide good wildlife habitats. Coastal bermudagrass, bahiagrass, crimson clover, vetch, sericea lespedeza, and millet are suitable pasture plants. Pine trees grow rapidly.



CAPABILITY UNIT IIe-1

Very gently sloping, deep, well-drained soils that have a friable sandy clay loam subsoil

These medium acid soils contain small amounts of plant nutrients and organic matter but respond well to fertilizer. They have a very friable fine sandy loam surface soil. Their capacity for available moisture is moderate, and they are permeable to depths of 3 to 5 feet. These productive soils are easy to work and moderately easy to conserve. They are suited to moderately intensive cultivation.

The soils in this unit are:

Kalmia fine sandy loam, very gently sloping phase.
Norfolk fine sandy loam, very gently sloping phase.
Norfolk fine sandy loam, eroded very gently sloping phase.
Red Bay fine sandy loam, very gently sloping phase.
Red Bay fine sandy loam, eroded very gently sloping phase.
Ruston fine sandy loam, very gently sloping phase.
Ruston fine sandy loam, eroded very gently sloping phase.

These soils are well suited to cotton, corn, small grain, truck crops, and, especially, peanuts. They are also well suited to pasture, hay, and woodland, and they provide good habitats for wildlife. Suitable pasture plants are coastal bermudagrass, bahiagrass, crimson clover, sericea lespedeza, and millet. Pine trees grow rapidly.

Crop rotations that keep close-growing crops on the soil at least half of the time should be used. A suitable rotation consists of 2 years of coastal bermudagrass or bahiagrass followed by 2 years of row crops. In another suitable rotation, after oats are planted in fall and followed by native grasses in summer, winter legumes are planted in fall and followed by a row crop.

To insure high yields, both cultivated crops and pasture should receive yearly applications of phosphate and potash and occasional applications of lime. Nonlegumes require one or more applications of nitrogen yearly unless they follow or are grown with a legume.

Because these soils are susceptible to moderate erosion, they need terraces and vegetated waterways to remove

Figure 2.—**Water-disposal area on Ruston fine sandy loam, eroded very gently sloping phase.**

are coastal bermudagrass, bahiagrass, crimson clover, and sericea lespedeza. Pine trees grow rapidly.

Crop rotations that keep close-growing crops on the soil at least one-half of the time ought to be used. A suitable rotation consists of 2 years of coastal bermudagrass or bahiagrass followed by 2 years of row crops. In another suitable rotation, after oats are planted in fall and followed by native grasses in summer, winter legumes are planted in fall and followed by a row crop.

To insure high yields, both cultivated crops and pasture should receive yearly applications of phosphate and potash and occasional applications of lime. Nonlegumes require one or more applications of nitrogen yearly unless they follow or are grown with a legume.

If these soils are cultivated, they are susceptible to moderate erosion. They need terraces and vegetated waterways.

CAPABILITY UNIT IIe-3

respond moderately well to fertilizer. They have a very friable fine sandy loam surface soil and a firm to friable, compact sandy clay to clay subsoil. Their capacity for available moisture is moderate, and they are slowly permeable. These moderately productive soils are more difficult to work and to conserve than the soils in capability units IIe–1 and IIe–2. They are suited to moderately intensive cultivation.

The soils in this unit are:

Flint fine sandy loam, level phase.
Shubuta and Angie very fine sandy loams, very gently sloping phases.

These soils are well suited to pasture, hay, and woodland, and they furnish good habitats for wildlife. They are moderately well suited to cotton, corn, small grain, peanuts, and truck crops. Suitable pasture plants are bahiagrass, coastal bermudagrass, crimson clover, vetch, and sericea lespedeza. On the Flint soil, intermediate white clover can be used instead of crimson clover.

Crop rotations should be used that keep close growing

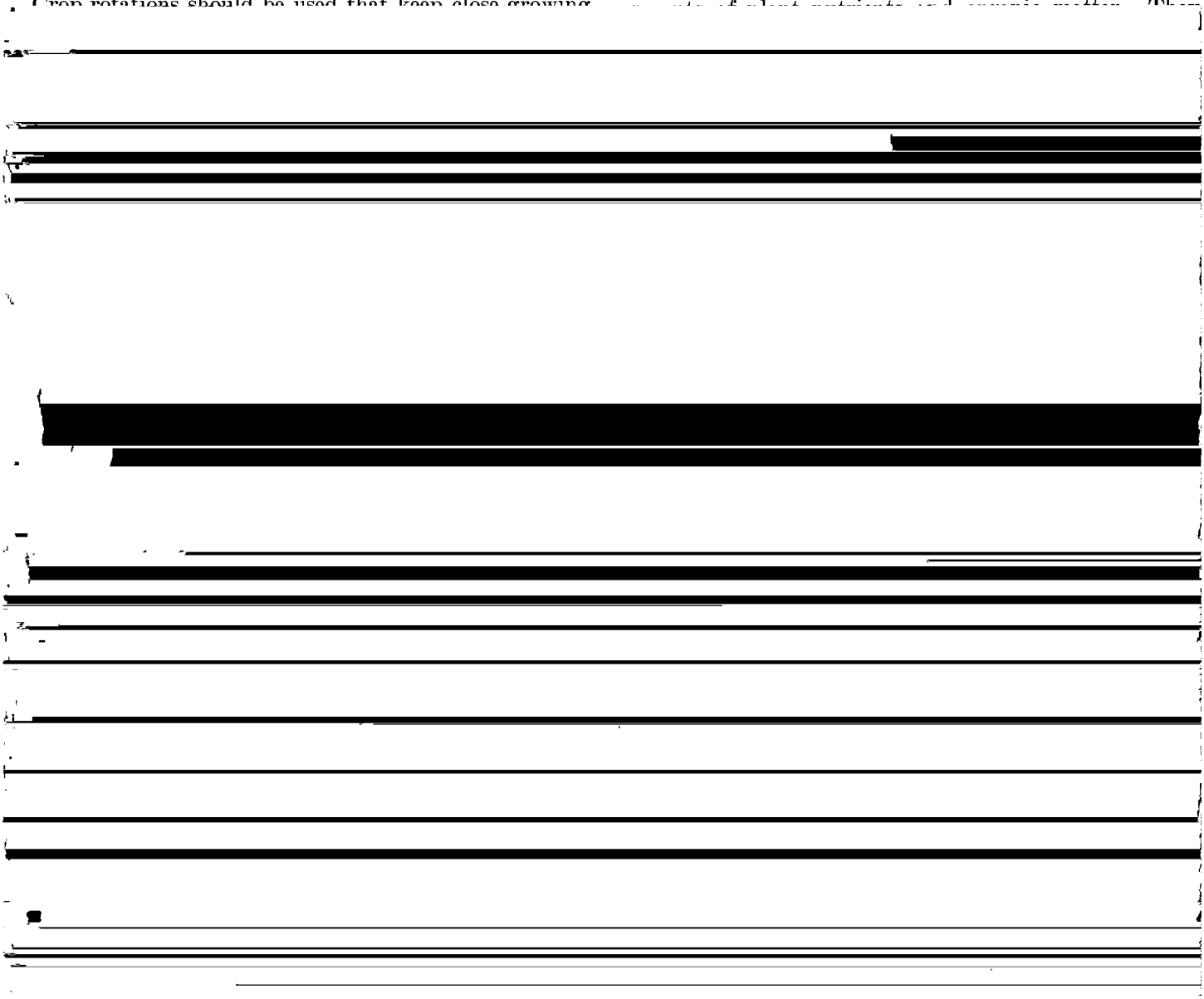
To insure high yields, both cultivated crops and pasture should receive yearly applications of phosphate and potash and occasional applications of lime. Nonlegumes require one or more applications of nitrogen yearly unless they follow or are grown with a legume.

The soils from local alluvium often cannot be tilled so early in spring as the surrounding soils, for the prolonged heavy rains cause temporary ponding. Most of the acreage in this unit can be improved by artificial drainage, diversion ditches, and proper arrangement of crop rows. Because these soils often occur along the natural drainways, they can be seeded to permanent vegetation and thus provide excellent areas for water disposal.

CAPABILITY UNIT IIs–2

Level to very gently sloping, somewhat excessively drained loamy sands

These deep, medium acid soils occur on the upland and on stream terraces. They contain very small



sandy clay loam. These soils have a moderate capacity for available moisture and are permeable to depths of 3 to 5 feet. They are moderately productive and easy to work but are moderately difficult to conserve. They have moderately severe limitations to use for cultivated crops.

The soils in this unit are:

Norfolk fine sandy loam, eroded gently sloping phase.
Red Bay fine sandy loam, eroded gently sloping phase.
Ruston fine sandy loam, eroded gently sloping phase.

These soils are moderately well suited to peanuts, cotton, corn, small grain, and truck crops. They are well suited to pasture, hay, and woodland, and they furnish good habitats for wildlife. Suitable pasture plants are sericea lespedeza, bahiagrass, coastal bermudagrass, and crimson clover. Pine trees grow well.

Rotations that keep these soils in close-growing crops at least two-thirds of the time ought to be used. A suitable rotation consists of 4 years of coastal bermudagrass or bahiagrass followed by 2 years of row crops. Also suitable is oats the first year and then legumes that are allowed to reseed the second year and grow with native grass, which is followed the third year by a row crop.

To insure high yields, both cultivated crops and pasture should receive yearly applications of phosphate and potash and occasional applications of lime. Nonlegumes require one or more applications of nitrogen yearly unless they follow or are grown with a legume.

These soils are susceptible to moderately severe erosion if they are cultivated. They need terraces that have vegetated waterways.

CAPABILITY UNIT IIIe–3

Very gently sloping and gently sloping, moderately deep, moderately well drained soils that have a slowly permeable subsoil

These soils are medium acid to strongly acid. They have a very friable fine sandy loam surface soil and a friable to firm, compact sandy clay to clay subsoil. The very gently sloping soils are moderately eroded, and the gently sloping soils are slightly eroded. The soils contain small amounts of plant nutrients and organic matter and respond moderately well to fertilizer. The capacity for available moisture is moderate. These soils are generally moderately low in productivity and are somewhat difficult to work and to conserve. They have moderately severe limitations to use for cultivated crops.

The soils in this unit are:

Boswell very fine sandy loam, eroded very gently sloping moderately shallow phase.
Bowie fine sandy loam, eroded very gently sloping phase.
Flint fine sandy loam, eroded very gently sloping phase.
Shubuta and Angie very fine sandy loams, eroded very gently

Figure 4.—**Cattle grazing bahiagrass on Eustis loamy sand, 0 to 5 percent slopes.**

The soils in this unit are:

Izagora very fine sandy loam, level phase.
Izagora very fine sandy loam, very gently sloping phase.

These soils are more suitable for pasture, hay, woodland, and wildlife cover than they are for corn, sorghum, soybeans, and oats. Yields are medium to low. Sericea lespedeza, bahiagrass, and whiteclover are suitable pasture plants. Pine trees grow rapidly.

The cropping system most commonly used consists of row crops that are grown in the same place year after year and are followed each year by a winter legume or small grain to provide organic matter and to improve tilth. A more suitable rotation, however, is 2 years of a sod crop followed by 2 years of row crops.

To insure high yields, both cultivated crops and pasture should receive yearly applications of phosphate and potash and occasional applications of lime. Nonlegumes require one or more applications of nitrogen yearly unless they follow or are grown with a legume.

Drainage systems for the removal of surface water would probably improve most of these soils.

CAPABILITY UNIT IIIs–1

Level to gently sloping, deep, somewhat excessively drained loamy sands and loamy fine sands

These loamy sands occur on uplands and on stream terraces. They are very low in fertility and organic matter and are medium acid. Their surface soil and subsoil are loose loamy sand. This loamy sand is underlain by sandy clay loam at various depths. These soils have a low capacity for available moisture and do not retain plant nutrients long. They are easy to work and moderately easy to conserve.

The soils in this unit are:

Americus loamy fine sand, 2 to 8 percent slopes.
Eustis loamy sand, 0 to 5 percent slopes.
Lakeland loamy fine sand, 0 to 5 percent slopes.
Norfolk loamy sand, gently sloping thick surface phase.
Ruston loamy sand, gently sloping thick surface phase.

Except in the Norfolk and Ruston soils, the loamy sand extends to a depth of more than 30 inches, where it is underlain by sandy clay loam. In the Norfolk and Ruston soils, the finer textured material occurs at depths of 18 to 30 inches.

The soils of this unit are used for most crops grown in the county, but they are probably best suited to peanuts and early truck crops. They are also well suited to coastal bermudagrass and to bahiagrass grown for pasture or hay and to woodland (fig. 4). They furnish good habitats for wildlife. Growth of pine trees is moderately rapid.

Large amounts of organic matter are needed to reduce leaching and to improve the water-holding capacity. Rotations should keep close-growing crops on the soil at least two-thirds of the time. A suitable rotation is 4 years of bahiagrass followed by 2 years of row crops.

To insure high yields, both cultivated crops and pasture should receive yearly applications of phosphate and potash and occasional applications of lime. Nonlegumes require one or more applications of nitrogen yearly unless they follow or are grown with a legume.

CAPABILITY UNIT IVe–1

Sloping, deep, well-drained soils that have a friable sandy clay loam subsoil

These medium acid soils contain a small amount of plant nutrients and organic matter but respond well to fertilizer. They have a very friable fine sandy loam surface soil, 3 to 7 inches thick. They have a low to medium capacity for available moisture and are permeable to depths of 3 to 4 feet. These soils are easy to work but are difficult to conserve because of the high rate of surface runoff. They have severe limitations to use for cultivated crops.

The soils in this unit are:

Norfolk fine sandy loam, eroded sloping phase.
Ruston fine sandy loam, eroded sloping phase.

If these soils are intensely managed, they can be used for cotton, corn, peanuts, small grain, and truck crops. Better uses, however, are for pasture, hay, woodland, and wildlife habitats. Coastal bermudagrass, bahiagrass, crimson clover, and sericea lespedeza are suitable pasture plants. Growth of pine trees is moderately rapid.

If these soils are cultivated, rotations should be used that keep the soil in close-growing crops at least three-fourths of the time. A suitable rotation is 3 years of bahiagrass or coastal bermudagrass followed by 1 year of row crops, or sericea lespedeza and reseeding crimson clover for 3 years and followed by a row crop for 1 year.

To insure high yields, both cultivated crops and pasture should receive yearly applications of phosphate and potash and occasional applications of lime. Nonlegumes require one or more applications of nitrogen yearly unless they follow or are grown with a legume.

These soils are susceptible to severe erosion if they are cultivated. To remove excess surface water, terraces and vegetated waterways are needed.

CAPABILITY UNIT IVe–2

Gently sloping to sloping, deep, well-drained soils that have a firm to friable sandy clay to sandy clay loam subsoil

These medium acid soils contain small amounts of plant nutrients and organic matter but respond well to

Figure 5.—**Kudzu in water-disposal area. Gully has completely healed on Tifton sandy clay loam, severely eroded gently sloping phase.**

fertilizer. They are severely eroded, gently sloping sandy clay loams and eroded, sloping fine sandy loams. The severely eroded areas are difficult to work. These soils have a medium to low content of available moisture and are permeable to depths of 3 to 4 feet. They are difficult to conserve because of the rapid runoff. They have severe limitations to use for cultivated crops.

The soils in this unit are:

Magnolia sandy clay loam, severely eroded gently sloping phase.
Red Bay and Magnolia sandy clay loams, severely eroded gently sloping phases.
Red Bay and Magnolia fine sandy loams, eroded sloping phases.
Tifton sandy clay loam, severely eroded gently sloping phase.

If these soils are intensively managed, they can be used for cotton, corn, peanuts, small grain, and truck crops. They are, however, more suitable for pasture, hay, woodland, and habitats for wildlife. Bahiagrass, coastal bermudagrass, crimson clover, and sericea lespedeza are suitable pasture plants. Growth of pine trees is moderately rapid.

Because of the hazard of erosion, row crops should not be grown on these soils more than once in 4 years. The row crops should be grown in rotations with sericea lespedeza, kudzu, bahiagrass, coastal bermudagrass, or other deep-rooted perennials (fig. 5). These soils are suited to the same rotations as the soils of capability unit IVe–1.

To insure high yields, both cultivated crops and pasture should receive yearly applications of phosphate and potash and occasional applications of lime. Nonlegumes require one or more applications of nitrogen unless they follow or are grown with a legume.

These soils are susceptible to severe erosion if they are cultivated. They need terraces with vegetated waterways.

CAPABILITY UNIT IVe–3

Very gently sloping severely eroded and gently sloping moderately eroded, moderately deep, moderately well drained soils that have a slowly permeable subsoil

These soils are low in fertility and in organic matter and are medium acid to strongly acid. They have a loamy or clayey surface soil and a firm, compact sandy clay to clay subsoil. Permeability is slow to moderately slow, and the capacity for available moisture is moderate to low. The soils are difficult to work and to conserve. Cultivated areas and overgrazed pastures are very susceptible to erosion.

The soils in this unit are:

Boswell sandy clay, severely eroded very gently sloping moderately shallow phase.
Boswell very fine sandy loam, eroded gently sloping moderately shallow phase.
Bowie fine sandy loam, eroded gently sloping phase.
Shubuta and Angie sandy clay loams, severely eroded very gently sloping phases.
Shubuta and Angie very fine sandy loams, eroded gently sloping phases.

These soils are probably best suited to pasture, hay, and woodland. They furnish good wildlife habitats. Suitable crops are cotton, corn, peanuts, truck crops, bahiagrass, coastal bermudagrass, and crimson clover. Growth of pine trees is moderately rapid (fig. 6).

If these soils are used for row crops, they must be intensively managed. Coastal bermudagrass, bahiagrass, or another sod crop should be grown for 3 years before a row crop is planted. A complete system of water disposal is needed.

To insure high yields, both cultivated crops and pasture should receive yearly applications of phosphate and potash and occasional applications of lime. Nonlegumes require one or more applications of nitrogen yearly unless they follow or are grown with a legume.

CAPABILITY UNIT IVw–2

Nearly level, poorly drained soils that have a slowly permeable subsoil

These moderately deep to shallow soils occur on stream terraces and in depressions on the upland. They are moderately fertile and medium acid to strongly acid. They have a very fine sandy loam to silt loam surface soil and a mottled, plastic sandy clay to clay subsoil. Their capacity for available moisture is moderate, and they are slowly permeable. These soils are likely to be flooded occasionally, and water may stand in depressions for long periods.

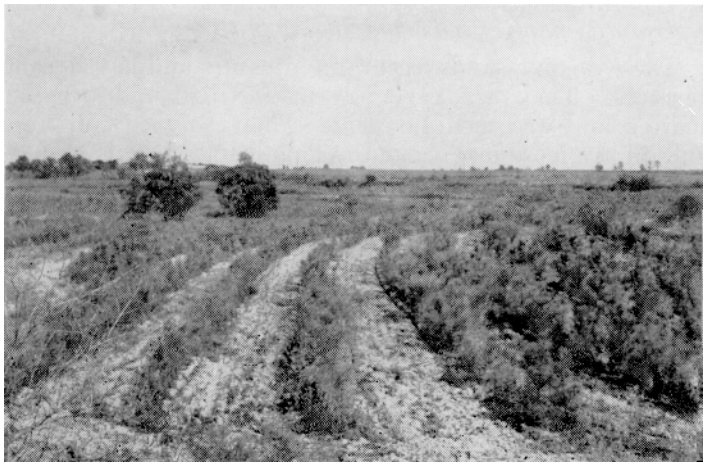


Figure 6.—**Three-year-old pines on Bowie fine sandy loam, eroded gently sloping phase.**

The soils in this unit are:

Grady soils.
Leaf very fine sandy loam.

These soils are well suited to pasture. Dallisgrass,

CAPABILITY UNIT VIIs–1

Sloping to moderately steep, somewhat excessively drained loamy sands

These deep, medium acid soils are slightly eroded and are highly susceptible to further erosion. Their surface soil and subsoil are loamy sand or loamy fine sand. They are very low in fertility and in content of organic matter. These soils are droughty and susceptible to severe leaching of plant nutrients.

The soils in this unit are:

Americus loamy fine sand, 8 to 17 percent slopes.
Eustis loamy sand, 12 to 25 percent slopes.
Lakeland loamy fine sand, 12 to 25 percent slopes.

The best use for these soils probably is for suitable

TABLE 1.—*Estimated acre yields of principal crops and carrying capacity of pasture under two levels of management, and site indexes for species of pine*

[In columns A are yields of crops and carrying capacity of pasture to be expected under management commonly practiced in the county; in columns B are those expected under the highest level of management thought to be feasible. Dashed lines indicate that crop is not commonly grown on the soil and is considered unsuited to it]

Soil	Capability unit	Peanuts		Cotton lint		Corn		Oats		Pasture		Pine trees (site index)		
		A	B	A	B	A	B	A	B	A	B	Loblolly	Slash and shortleaf	Longleaf
		Lb.	*Lb.*	*Lb.*	*Lb.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Cow-acre-days* [1]	*Cow-acre-days* [1]	*Ft.*	*Ft.*	*Ft.*
Americus loamy fine sand:														
2 to 8 percent slopes	IIIs-1	900	1,500	175	275	15	30	20	35	110	160	90	80	70
8 to 17 percent slopes	VIIs-1							15	27	80	140	90	80	70
Bibb soils [2] [3]	Vw-2									165	240	100	95	80
Bibb soils, local alluvium phases [2] [3]	Vw-2									165	240	100	95	80
Boswell very fine sandy loam:														
Eroded very gently sloping moderately shallow phase	IIIe-3	800	1,300	220	390	16	34	18	38	140	200	85	80	65
Eroded gently sloping moderately shallow phase	IVe-3	760	1,250	200	370	15	30	17	36	135	190	85	80	65
Eroded sloping moderately shallow phase	VIe-2							16	32	130	185	85	80	65
Boswell sandy clay:														
Severely eroded very gently sloping moderately shallow phase	IVe-3	650	1,150	160	310	13	26	14	28	115	160	70	60	60
Severely eroded gently sloping moderately shallow phase	VIe-2							16	32	110	170	70	60	60
Bowie fine sandy loam:														
Eroded gently sloping phase	IVe-3	790	1,320	210	390	18	38	20	40	120	210	85	80	75
Eroded very gently sloping phase	IIIe-3	825	1,375	235	410	22	42	24	44	140	230	85	80	75
Eroded sloping phase	VIe-2							16	34	100	180	85	80	75
Carnegie fine sandy loam, eroded very gently sloping phase	IIe-2	1,225	1,950	300	500	25	45	30	55	170	250	90	85	70
Cuthbert fine sandy loam:														
Eroded sloping phase	VIIe-2											80	75	70
Eroded, 12 to 30 percent slopes	VIIe-2											80	75	70
Cuthbert fine sandy clay, severely eroded, 8 to 30 percent slopes	VIIe-2											55	50	50
Cuthbert, Boswell, and Eustis soils:														
Eroded sloping phases	VIIe-2											80	75	70
12 to 30 percent slopes	VIIe-2											80	75	70
Eustis loamy sand:														
0 to 5 percent slopes	IIIs-1	900	1,500	175	275	15	30	20	35	100	160	90	80	70
5 to 12 percent slopes	IVs-1	800	1,400	150	240	13	25	18	32	90	150	90	80	70
12 to 25 percent slopes	VIIs-1											90	80	70
Faceville fine sandy loam:														
Eroded very gently sloping phase	IIe-2	1,225	1,950	300	500	25	45	30	55	170	260	85	80	75
Level phase	I-2	1,300	2,050	325	550	35	55	35	60	190	280	90	85	80
Flint fine sandy loam:														
Level phase	IIe-3	850	1,400	260	420	26	44	26	44	180	260	90	85	80
Eroded very gently sloping phase	IIIe-3	800	1,350	225	400	20	40	20	42	160	220	85	80	75
Grady soils [2] [3]	IVw-2					30	50	30	50	165	240	100	90	70
Gullied land	VIIe-1											(4)	(4)	(4)
Hannahatchee loam, local alluvium	IIw-1	1,300	2,050	325	550	38	60	38	60	210	300	115	105	95

TABLE 1.—*Estimated acre yields of principal crops and carrying capacity of pasture under two levels of management, and site indexes for species of pine*—Continued

Soil	Capability unit	Peanuts		Cotton lint		Corn		Oats		Pasture		Pine trees (site index)		
		A	B	A	B	A	B	A	B	A	B	Loblolly	Slash and shortleaf	Longleaf
		Lb.	*Lb.*	*Lb.*	*Lb.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Cow-acre-days* [1]	*Cow-acre-days* [1]	*Ft.*	*Ft.*	*Ft.*
Kalmia loamy fine sand, thick surface phase	IIs–2	950	1, 710	215	340	18	34	20	38	120	180	90	80	65
Lakeland loamy fine sand:														
0 to 5 percent slopes	IIIs–1	900	1, 500	175	275	15	30	20	35	100	160	90	80	70
5 to 12 percent slopes	IVs–1	800	1, 400	150	240	13	25	18	32	90	150	90	80	70
12 to 25 percent slopes	VIIs–1											90	80	70
Lakeland and Cuthbert soils:														
Eroded gently sloping phases	VIe–2							18	32	90	150	80	75	70
12 to 30 percent slopes	VIIe–2											80	75	70
Leaf very fine sandy loam [2] [3]	IVw–2					25	45	27	50	180	260	100	90	70
Magnolia fine sandy loam:														
Eroded very gently sloping phase	IIe–2	1, 225	1, 950	300	500	25	45	30	55	180	260	85	80	75
Level phase	I–2	1, 300	2, 050	325	550	35	55	35	60	190	280	90	85	80
Eroded gently sloping phase	IIIe–2	1, 125	1, 850	240	400	20	37	22	39	160	220	85	80	75
Magnolia sandy clay loam:														
Severely eroded gently sloping phase	IVe–2	850	1, 625	210	350	14	34	16	36	110	190	80	75	70
Severely eroded sloping phase	VIe–2							14	32	90	150	80	75	70
Marlboro fine sandy loam:														
Level phase	I–2	1, 300	2, 050	325	550	35	55	35	60	190	280	90	85	80
Eroded very gently sloping phase	IIe–2	1, 225	1, 950	300	500	25	45	30	55	170	260	85	80	75

TABLE 1.—*Estimated acre yields of principal crops and carrying capacity of pasture under two levels of management, and site indexes for species of pine*—Continued

Soil	Capability unit	Peanuts		Cotton lint		Corn		Oats		Pasture		Pine trees (site index)		
		A	B	A	B	A	B	A	B	A	B	Loblolly	Slash and shortleaf	Longleaf
Ruston loamy sand:		*Lb.*	*Lb.*	*Lb.*	*Lb.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Cow-acre-days* [1]	*Cow-acre-days* [1]	*Ft.*	*Ft.*	*Ft.*
Very gently sloping thick surface phase	IIs–2	1,000	1,750	225	360	22	37	24	40	150	210	90	80	65

bility units, several general practices of soil management should be followed on practically all soils of the county. These practices are:

1. The use of good crop varieties that are suited to the soils of the county.
2. The use of suitable rotations that make the best

6. The use of suitable measures to control weeds, insects, and disease.

PASTURE: In managing the soil so that it will produce good pasture, the seedbed needs to be thoroughly prepared and proper mixtures of suitable pasture plants should be seeded with care. The soil ought to be

Engineering Properties of Soils

This soil survey contains information about the soils of Dale County that will be helpful to engineers in selecting sites for buildings and other structures; in choosing locations for highways and airports; in determining how well soils can withstand traffic; in locating surfacing and other roadbuilding materials; and in planning dams, ponds, and other structures to control floods and conserve soil and water.

Although the soil maps and the text of this report are too general for some engineering purposes, they do other fields of engineering. Additional information useful to engineers is given in the sections, Soils of Dale County, and Formation, Classification, and Morphology.

Some terms used in this report may not be familiar to engineers. Other terms, although familiar, may have a meaning in soil science that differs from the meaning in engineering. These terms are defined in the sections, Soil Survey Methods and Definitions, and Glossary.

In table 2 the rates of infiltration are based on the capacity of the soils to take in water during periods of sustained rainfall. These rates are for the soil profile and the unconsolidated parent material combined. It is

TABLE 2.—*Soil properties important to engineering and*

Soil	Parent material or underlying material	Depth to water table [1]	Dominant texture	
			Surface soil	Subsoil
		Feet		
Eustis loamy sand, 5 to 12 percent slopes.	Sands and loamy sands at 30 inches to 10 feet.	10+	Loamy sand	Loamy sand
Faceville fine sandy loam, eroded very gently sloping phase.	Sands, sandy clays, and clays at 36 to 64 inches.	10+	Fine sandy loam	Sandy clay loam to sandy clay.
Flint fine sandy loam, level phase	Sandy clays and clays at more than 30 inches.	2–6	Fine sandy loam	Clay loam to clay
Grady soils	Loams, clays, and some sandy layers at 30 to 50 inches.	0–2	Fine sandy loam to clay loam.	Silty clay to clay
Gullied land	Variable: In most places sands or loamy sands at more than 6 feet.	10+	Loamy sand to sandy clay.	Loamy sand to clay
Hannahatchee loam, local alluvium phase.	Sandy clay loams, sandy clays, clays with layers of sand at more than 60 inches.	6–10	Fine sandy loam to silty clay loam.	Silty clay loam
Huckabee loamy fine sand, 0 to 5 percent slopes.	Sands at more than 6 feet	10+	Loamy fine sand	Loamy sand
Iuka fine sandy loam	Beds of sandy loams, sandy clay loams, and sandy clays at more than 28 inches.	2–6	Very fine sandy loam to silt loam.	Silty clay loam
Iuka soils, local alluvium phases	Sandy clay loams that have some layers of sand at more than 30 inches.	6–10	Loamy sand to fine sandy loam.	Sandy loam to sandy clay loam.
Izagora very fine sandy loam, level phase.	Sandy clay loam or sandy clay at more than 28 inches.	2–6	Loamy fine sand to very fine sandy loam.	Sandy clay loam
Kalmia fine sandy loam, level phase	Sandy clay at more than 36 inches	10+	Loamy fine sand to fine sandy loam.	Fine sandy clay loam.
Kalmia loamy fine sand, thick surface phase.	Sandy clay at more than 42 inches	10+	Loamy fine sand	Fine sandy clay loam.
Lakeland loamy fine sand, 0 to 5 percent slopes.	Sands and loamy sands at 6 to 10 feet	10+	Loamy fine sand	Loamy fine sand
Lakeland and Cuthbert soils, 12 to 30 percent slopes.	Variable: Layers of sands and clays at more than 4 feet.	10+	Loamy sand to fine sandy loam.	Loamy sand to clay
Leaf very fine sandy loam	Clays at more than 24 inches	2–6	Very fine sandy loam to silt loam.	Clay
Magnolia fine sandy loam, eroded very gently sloping phase.	Sandy clays and clays at more than 40 inches. In some places layers of sand.	10+	Fine sandy loam	Sandy clay loam to sandy clay.
Magnolia sandy clay loam, severely eroded sloping phase.	Sandy clays and clays at more than 26 inches.	10+	Sandy clay loam	Sandy clay loam to sandy clay.
Marlboro fine sandy loam, level phase	Beds of sands, sandy loams, and sandy clays at more than 36 inches.	10+	Fine sandy loam	Sandy clay
Myatt very fine sandy loam	Sandy loams at more than 24 inches. In some places layers of sand.	0–2	Very fine sandy loam to silt loam.	Sandy clay loam to silty clay loam.
Norfolk fine sandy loam, eroded very gently sloping phase.	Variable: Stratified sands, sandy loams, and sandy clay loams at more than 36 inches.	10+	Loamy sand to fine sandy loam.	Fine sandy loam to fine sandy clay loam.
Norfolk loamy sand, very gently sloping thick surface phase.	Variable: Stratified sands, sandy loams, and sandy clay loams at more than 56 inches.	10+	Loamy sand	Sandy loam to sandy clay loam.

See footnotes at end of table, p. 20.

suitability of soils for some agricultural structures—Continued

Permeability of subsoil [2]	Estimated rate of infiltration [3]	Drainage problems	Suitability for ponds	Suitability for terracing	Suitability for sprinkler irrigation	Other properties
	Inches per hour					

TABLE 2.—*Soil properties important to engineering and*

Soil	Parent material or underlying material	Depth to water table [1]	Dominant texture	
			Surface soil	Subsoil
Rains and Plummer soils, level phases	Sand or sandy clay loam at more than 30 inches.	0–2	Loamy fine sand or fine sandy loam.	Sand to sandy clay loam.
Red Bay fine sandy loam, very gently sloping phase.	Interstratified fine sand and compact sandy clay at more than 60 inches.	10+	Loamy sand to fine sandy loam.	Sandy clay loam
Red Bay and Magnolia fine sandy loams, eroded gently sloping phases.	Red Bay: Interstratified fine sand and compact sandy clay at more than 60 inches. Magnolia: Sandy clays and clays at more than 40 inches. In some places layers of sand.	10+	Loamy sand to fine sandy loam.	Sandy clay loam to sandy clay.
Red Bay and Magnolia sandy clay loams, severely eroded gently sloping phases.	Red Bay: Interstratified fine sand and compact sandy clay at more than 60 inches. Magnolia: Sandy clays and clays at more than 26 inches.	10+	Sandy clay loam	Sandy clay loam to sandy clay.
Ruston fine sandy loam, eroded gently sloping phase.	Stratified sands to sandy clays at more than 36 inches.	10+	Loamy sand to fine sandy loam.	Sandy loam to sandy clay loam.
Ruston loamy sand, very gently sloping thick surface phase.	Stratified sands to sandy clays at more than 56 inches.	10+	Loamy sand	Sandy loam or sandy clay loam.
Sandy alluvial land, poorly drained	Layers of sands, silts, and clays at more than 48 inches.	0–6	Variable	Variable
Shubuta and Angie very fine sandy loams, eroded very gently sloping phases.	Thinly bedded sandy clay and clay shales at more than 20 inches.	10+	Loamy sand to fine sandy loam.	Sandy clay loam to clay.
Shubuta and Angie sandy clay loams, severely eroded gently sloping phases.	Thinly bedded sandy clay and clay shales at 0 to 20 inches.	10+	Sandy clay loam	Sandy clay loam to sandy clay.
Tifton fine sandy loam, eroded very gently sloping phase.	Reticulated sandy clay at more than 36 inches.	10+	Loamy sand to fine sandy loam.	Sandy clay loam to fine sandy clay.
Tifton sandy clay loam, severely eroded gently sloping phase.	Reticulated sandy clay at 0 to 20 inches	10+	Sandy clay loam	Sandy clay loam to sandy clay.

[1] Minimum depths to water table during wettest periods.
[2] Rating according to the velocity at which water and air are transmitted in the subsoil.
[3] Inches of water taken into the soil per hour during periods of sustained rainfall.
[4] Terracing not needed.

The estimates on suitability of the soils for ponds are based on the compactability of soils and the porosity of the underlying material.

The estimates on suitability for sprinkler irrigation are based on the water-holding capacity of the soils and their capacity to take in and transmit water. Also considered in these estimates were the suitability of the soils for crops of high value.

Soils of Dale County

This section is divided into two main parts. In the first part important characteristics of the soil series are given in a table, and in the second part the individual soils and miscellaneous land types are described in detail.

Soil Series and Their Relations

To make full use of this survey, it is necessary to know the soils and to understand how they are related to one another. These relations are more easily understood if the soils are placed in groups according to their position in the landscape. In table 3 the soils of this county are placed in three physiographic groups: (1) Soils on uplands; (2) soils on stream terraces; and (3) soils on first bottoms and local alluvium.

The soils on the Coastal Plain uplands lie above the stream terraces and flood plains. They developed from material derived directly from the weathering of beds of sand, sandy clay, and clay. The soils on the stream terraces developed from old alluvium that was washed from the uplands. The terraces are benchlike areas bordering streams and are not likely to be flooded frequently. The soils on the first bottoms are developing

suitability of soils for some agricultural structures—Continued

Permeability of subsoil [2]	Estimated rate of infiltration [3]	Drainage problems	Suitability for ponds	Suitability for terracing	Suitability for sprinkler irrigation	Other properties
Moderate to rapid	0. 2–0. 8	Seepy areas; ditch banks may slough.	Fair		Poor	Has sandy layers.
Rapid	0. 7–1. 4	None	Poor, sandy sub-	Good	Good	Susceptible to gully erosion;

In describing soils, the scientist frequently assigns a letter symbol and a subscript, for example, "A_1," to the various layers. These symbols have a special meaning that concerns scientists and others who make a special study of soils. Most readers will need to remember only that all letter symbols beginning with "A" are for surface soil; those beginning with "B" are for subsoil; those beginning with "C" are for substratum, or parent material; and those beginning with "D" are for underlying material that is different from the material above.

The color of a soil can be described in words, such as yellowish brown; or can be stated in much more precise terms given by symbols for the hue, value, and chroma, such as 10YR 5/4. Precise symbols of this kind, called Munsell notations, are given along with descriptive words that tell the color of most of the soil horizons.

The location and distribution of the single soils are shown on the soil map at the back of this report. Their approximate acreage, proportionate extent, and acreage in cropland, woodland, pasture, and idle land are given in table 4. It will be helpful to refer to the section, Soil Survey Methods and Definitions, where "series," "types," "phases," and other special terms used in describing soils are listed. The glossary at the end of the report defines many other special terms.

TABLE 3.—*Soil series of Dale County, Ala., grouped according to topographic position, and important characteristics of each*

SOILS ON UPLANDS

Soil series	Parent material [1]	Surface soil and subsoil [2]	Drainage	Slope range	Degree of profile development
				Percent	
Americus	Moderately thick beds of acid loamy sands and sands.	Grayish-brown to dark reddish-brown loamy fine sand over reddish-brown to red loose loamy sand.	Somewhat excessive.	2–17+	Weak.
Angie	Thinly bedded clays and sandy clays.	Light-gray to dark grayish-brown loamy sand to fine sandy loam over yellow to brownish-yellow sandy clay that grades to mottled clay at depths of about 16 to 30 inches.	Moderately good to somewhat poor.	2–12	Medium.
Boswell	Acid clayey sediments	Gray to strong-brown loamy sand to fine sandy loam over red to reddish-brown clay; mottled clay at depth of about 16 inches.	Somewhat poor	2–12	Medium.
Bowie	Acid sandy clays	Grayish-brown to yellowish-brown fine sandy loam over light yellowish-brown to reddish-yellow compact sandy clay loam splotched with red; sandy clay loam or light sandy clay at depths of 26 to 40 inches.	Moderately good to good.	2–12	Strong.
Carnegie	Heavy sandy clays and clays	Dark-gray to brown fine sandy loam over yellowish-red to red sandy clay; iron concretions throughout profile; mottled clay at depth of more than 40 inches.	Good	2–5	Strong.
Cuthbert	Beds of clays with lenses of sand.	Light-brownish gray to pale-yellow loamy sand to fine sandy loam over yellowish-red clay; mottled clay at depths of 6 to 20 inches.	Moderately good to somewhat poor.	8–30	Weak.
Eustis	Thick beds of acid marine sands.	Brown loamy sand over strong-brown loose loamy sand; sandy clay loam at depths of 30 to 120 inches.	Somewhat excessive.	0–25	Weak.
Faceville	Unconsolidated marine sediments, such as sands, sandy clays, and clays.	Dark-gray to very dark grayish-brown fine sandy loam over strong-brown to yellowish-red sandy clay loam to sandy clay; mottled clay at depth of more than 36 inches.	Good	0–5	Strong.
Grady	Alluvium washed from acid loams and clays and, in places, small additions from impure limestone.	Gray to black fine sandy loam to clay loam over gray or intensely mottled gray silty clay to clay.	Poor	[3] 0–2	Weak.
Lakeland	Thick beds of sands	Grayish-brown to pale-brown loamy fine sand over pale-yellow to light yellowish-brown loamy fine sand; finer textured material at depths of 30 inches to several feet.	Somewhat excessive.	0–30	Weak.

See footnotes at end of table, p. 24.

TABLE 3.—*Soil series of Dale County, Ala., grouped according to topographic position, and important characteristics of each*—Continued

SOILS ON UPLANDS—Continued

Soil series	Parent material [1]	Surface soil and subsoil [2]	Drainage	Slope range	Degree of profile development
				Percent	
Magnolia	Thick beds of acid sandy clays, and clays.	Grayish-brown to dark-brown fine sandy loam over reddish-brown to red sandy clay loam to sandy clay; mottled sandy clay or clay at depth of more than 40 inches.	Good	0–12	Strong.
Marlboro	Thick beds of sandy loams and sandy clays.	Gray to dark grayish-brown fine sandy loam over yellow to yellowish-brown sandy clay; mottled sandy clay at depth of more than 40 inches.	Good	0–5	Strong.
Norfolk	Beds of unconsolidated sands and sandy clays.	Gray to dark grayish-brown loamy sand to fine sandy loam over browish-yellow to yellowish-brown fine sandy clay loam; variable stratified sands to sandy clays at depth of more than 36 inches.	Good	0–12	Medium.
Plummer	Thick beds of sands	Gray to black loamy fine sand to fine sandy loam over gray to white sand; finer textured material at depth of more than 36 inches.	Poor	[4] 0–2	Weak.
Rains	Thick beds of sandy loams and sandy clay loams.	Gray to very dark gray loamy fine sand to fine sandy loam over sandy loam to sandy clay loam.	Poor	[4] 0–2	Medium.
Red Bay	Unconsolidated sands and sandy clays.	Brown to dark reddish-brown loamy sand to fine sandy loam over dark reddish-brown to red sandy clay loam; interstratified sands to sandy clays at depth of more than 60 inches.	Good	0–8	Strong.
Ruston	Thick beds of acid sandy clay loams that have layers of sand, loamy sand, and sandy clay in places.	Grayish-brown loamy sand to fine sandy loam over yellowish red sandy clay loam; variable stratified sands to sandy clays at depth of more than 36 inches.	Good	0–17	Medium.
Shubuta	Thinly bedded clays, sandy clays, and clay shales.	Gray to dark grayish-brown loamy sand to fine sandy loam over yellowish-red to red sandy clay loam that grades to mottled clay at depth of 11 inches.	Moderately good	2–12	Medium.
Tifton	Sandy clay marine deposits	Grayish-brown loamy sand to fine sandy loam over yellow to yellowish-brown sandy clay loam to sandy clay; reticulated sandy clay at depth of more than 36 inches.	Good	0–8	Strong.
SOILS ON STREAM TERRACES					
Flint	Alluvium washed from sandy clays and clays.	Gray fine sandy loam over pale-brown to yellowish-red very firm clay loam to clay that is mottled at depth of 16 inches.	Moderately good to somewhat poor.	0–5	Medium.
Huckabee	Alluvium washed mainly from sands and loamy sands.	Gray to yellowish-brown loamy fine sand over pale-yellow to light-brown loamy sand; mottled sandy clay at depth of more than 36 inches.	Somewhat excessive.	0–5	Weak.
Izagora	Alluvium washed from sands, loamy sands, sandy loams, and sandy clay loams.	Gray to grayish-brown loamy fine sand to very fine sandy loam over yellowish-brown fine sandy loam to sandy clay loam that grades to mottled yellowish-brown sandy clay at depth of more than 18 inches.	Moderately good to somewhat poor.	0–5	Weak.

See footnotes at end of table, p. 24.

SOILS ON STREAM TERRACES—Continued

Soil series	Parent material [1]	Surface soil and subsoil [2]	Drainage	Slope range	Degree of profile development
Kalmia	Alluvium washed from loamy sands, sandy loams, and	Grayish-brown loamy fine sand to fine sandy loam over yellowish-brown fine	Good	0–5	Medium.

TABLE 4.—*Approximate acreage, proportionate extent, and acreage in cropland, woodland, pasture, and idle land*—Con.

Soil	Area	Extent of county	Area in—			
			Cropland	Woodland	Pasture	Idle land
	Acres	*Percent*	*Acres*	*Acres*	*Acres*	*Acres*
Cuthbert, Boswell, and Eustis soils:						
Eroded sloping phases	251	(1)	23	192		36
12 to 30 percent slopes	10, 550	3. 0	148	10, 174	68	160
Eustis loamy sand:						
0 to 5 percent slopes	11, 632	3. 2	4, 674	3, 582	165	3, 211
5 to 12 percent slopes	26, 835	7. 5	8, 044	13, 739	508	4, 544
12 to 25 percent slopes	6, 036	1. 7	256	5, 497	32	251
Faceville fine sandy loam:						
Eroded very gently sloping phase	316	. 1	251	50		15
Level phase	596	. 2	544	2	44	6
Flint fine sandy loam:						
Level phase	1, 432	. 4	425	832	20	155
Eroded very gently sloping phase	307	. 1	42	230	2	33
Grady soils	276	. 1	61	40	35	140
Gullied land	6, 105	1. 7	683	3, 272	61	2, 089
Hannahatchee loam, local alluvium phase	366	. 1	303	19	21	23

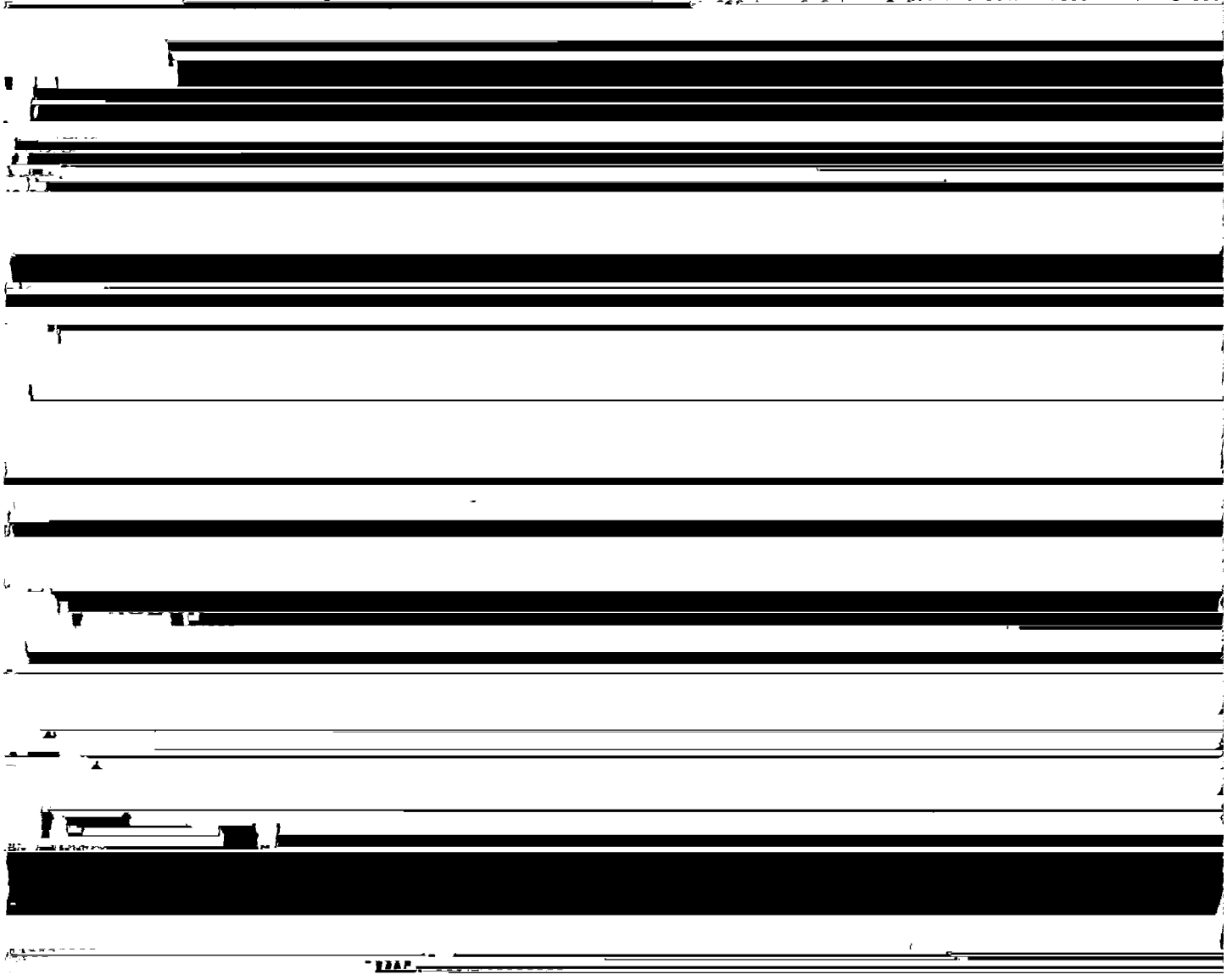


TABLE 4.—*Approximate acreage, proportionate extent, and acreage in cropland, woodland, pasture, and idle land—Con.*

Soil	Area	Extent of county	Area in—			
			Cropland	Woodland	Pasture	Idle land
	Acres	*Percent*	*Acres*	*Acres*	*Acres*	*Acres*
Ruston fine sandy loam:						
Eroded very gently sloping phase	9, 752	2. 7	8, 390	682	171	509
Level phase	4, 041	1. 1	3, 933	46	21	41
Very gently sloping phase	1, 666	. 5	1, 269	302	28	67
Eroded gently sloping phase	5, 021	1. 4	3, 552	727	180	562
Eroded sloping phase	1, 284	. 4	641	428	49	166
Strongly sloping phase	224	. 1	23	172	6	23
Ruston loamy sand:						
Very gently sloping thick surface phase	3, 599	1. 0	2, 954	291	55	299
Gently sloping thick surface phase	1, 402	. 4	987	186	46	183
Sandy alluvial land, poorly drained	35, 990	10. 0	91	35, 615	141	143
Shubuta and Angie very fine sandy loams:						
Eroded very gently sloping phases	8, 120	2. 3	3, 693	3, 030	175	1, 222
Very gently sloping phases	766	. 2	345	370	7	44
Gently sloping phases	554	. 2	109	439	1	5
Eroded gently sloping phases	12, 867	3. 6	4, 049	6, 908	341	1, 569

for crops, large amounts of green manure and crop residues ought to be mixed into the soil to build up organic matter and improve the moisture content. In a suitable rotation a deep-rooted perennial sod crop should be grown at least 3 out of 4 years. It is better to apply moderate amounts of fertilizer frequently than to apply large amounts only once or twice during the growing season. Capability unit IIIs–1.

Americus loamy fine sand, 8 to 17 percent slopes (AaE).—Runoff generally is greater on this soil than it is on Americus loamy fine sand, 2 to 8 percent slopes, and the soil is more susceptible to erosion, especially gully erosion. A few gullies occur; some of these are quite deep.

Use, suitability, and management.—Most of the acreage of this soil is in woodland. Because the soil is moderately steep, low in fertility, droughty, and highly susceptible to erosion, it needs to be kept in permanent vegetation, especially suitable species of pine. Capability unit VIIs–1.

Bibb series

In this series are moderately deep, poorly drained, strongly acid soils. These soils are on general alluvium on the flood plains along the larger streams and creeks of the Coastal Plain. They also are on local alluvium on foot slopes, at the heads of and along small drainways, and in depressions. Their parent materials were washed from the Norfolk, Ruston, Red Bay, Shubuta, and other soils of the Coastal Plain. The Bibb soils occur with the moderately well drained Iuka soils. The native vegetation was mainly water oak, sweetgum, beech, white oak, and cypress. Nearly all the acreage of the Bibb soils is in woodland.

Bibb soils (0 to 2 percent slopes) (Ba).—The Bibb soils are likely to be flooded from time to time. The following profile, which has a silt loam surface soil, was observed in a forest.

½ to 0 inch, loose partly decomposed forest litter.
0 to 2 inches, dark grayish-brown (2.5Y 4/2), very friable silt loam; slightly sticky when wet; weak, fine, granular structure; clear wavy boundary; strongly acid.
2 to 17 inches, gray (10YR 5/1), friable silty clay faintly mottled with strong brown (7.5YR 5/6) and yellowish brown (10YR 5/6); plastic when wet and hard when dry; moderate, medium, subangular blocky structure; gradual wavy boundary; strongly acid.
17 to 46 inches, intensely mottled gray (N 5/0) and yellowish-brown (10YR 5/6), firm sandy clay loam; plastic when wet and hard when dry; moderate, medium, subangular blocky structure; gradual wavy boundary; strongly acid.
46 to 52 inches +, highly mottled gray (N 5/0) and yellowish-brown (10YR 5/6), firm sandy clay; plastic when wet and hard when dry; massive (structureless); strongly acid.

The Bibb soils have a wide range in texture; the dominant types are silt loams and fine sandy loams. The 2- to 17-inch layer ranges from gray to dark grayish brown, and the 17- to 46-inch layer ranges from light gray to grayish brown. Mottling, which occurs in the lower layers, differs in intensity from place to place.

These soils are moderately low in fertility and contain a medium to small amount of organic matter. A high water table supplies much moisture during most of the year and excessive amounts during periods of prolonged rainfall.

Use, suitability, and management.—Almost all the acreage of these soils is in water-tolerant trees. Because the soils are wet and poorly drained, they are not suitable for cultivation.

The stream channels need deepening and straightening so that the water table will be lowered and part of the overflow eliminated. Fair to good pasture can be grown where simple drainage measures can remove excess surface water. If these soils are adequately drained and properly fertilized, they produce good pasture of white clover and Kentucky fescue. Capability unit Vw–2.

Bibb soils, local alluvium phases (0 to 2 percent slopes) (Bb).—These soils are on foot slopes and in depressions. They vary widely in texture, color, and consistence. Normally their surface soil is darker gray than that described for the series. Water stands on the lower lying areas for considerable periods, and seepage is common in areas adjacent to higher lying soils. Some of the acreage has an accumulation of material that was recently washed from surrounding higher lying areas. These soils generally have slightly better surface drainage than the Bibb soils on general alluvium. They occur in small patches that are normally 1 to 2 acres in size.

Use, suitability, and management.—About one-half the acreage is in woodland; the rest is about equally divided between cultivated crops and pasture. Because these soils are wet and poorly drained, they are not suitable for cultivation. Areas that are adequately drained and fertilized, can grow good stands of white clover and fescue. Capability unit Vw–2.

Boswell series

The soils in this series are moderately shallow, somewhat poorly drained, and medium acid to strongly acid. They occur over acid, clayey sediments on the uplands of the Coastal Plain, mainly in the northern part of the county. They are gently sloping to sloping, but the hazard of erosion is high. The native vegetation was mixed hardwoods and pines.

These soils occur among the Shubuta and Cuthbert soils. They have a redder, thinner, and more plastic subsoil than have the Shubuta soils, and their internal drainage is slower. Their subsoil is more strongly developed and redder than that of the Cuthbert soils.

More than one-half of the total acreage of these soils is in woodland. Much of the cleared acreage is being seeded to pasture.

Boswell very fine sandy loam, eroded very gently sloping moderately shallow phase (2 to 5 percent slopes) (BdB2).—This is the most extensive soil in the Boswell series. The following describes a profile in a forested area:

A_{00} 1¼ to ¾ inch, pine straw and leaves.
A_0 ¾ to 0 inch, partly decomposed and matted leaves and pine straw.
A_1 0 to ½ inch, very dark grayish-brown (10YR 3/2), friable very fine sandy loam; weak, fine, crumb structure; abrupt boundary; medium acid.
A_2 ½ to 4 inches, grayish-brown (10YR 5/2), friable very fine sandy loam; soft when dry; weak, fine, crumb structure; abrupt boundary; medium acid.
B_{21} 4 to 16 inches, dark-red (10R 3/6), firm clay; hard when dry and plastic when wet; strong, medium and very fine, angular blocky structure; abrupt boundary; strongly acid.

B_{22} 16 to 26 inches, red (2.5YR 4/6), firm clay mottled with light gray (10YR 7/2); hard when dry and slightly plastic when wet; weak, fine, platy structure; abrupt boundary; strongly acid.

B_{23} 26 to 37 inches, strong-brown (7.5YR 5/6), firm clay intensely mottled with light gray; hard when dry and slightly plastic when wet; moderate, fine, platy structure; structural aggregates, or peds, coated with strong-brown clay skins; clear boundary; strongly acid.

C_{11} 37 to 56 inches, light-gray (10YR 7/1), firm silty clay loam shales highly streaked with yellow (10YR 7/6); hard when dry and slightly plastic when wet; moderate, fine, platy structure; peds coated with reddish-brown clay skins; clear boundary; strongly acid.

C_{12} 56 to 60 inches, strong-brown (7.5YR 5/6), firm very fine sandy loam shales highly streaked with light brownish gray (10YR 6/2); hard when dry and slightly plastic when wet; moderate, fine, platy structure; clear boundary; strongly acid.

C_{13} 60 to 72 inches +, light-gray (10YR 7/1), firm sandy clay loam highly streaked with light brownish gray (10YR 6/2) and strong brown (7.5YR 5/6); hard when dry and slightly plastic when wet; moderate, fine, platy structure; strongly acid.

The surface soil varies from gray in undisturbed areas to strong brown or red where it is mixed with the upper subsoil. The thickness of the unmottled upper B layer ranges from a few inches to 18 inches. Also variable are the color, number, and distinctness of the mottles in the parent material. Included with this soil is a small acreage on slopes of 0 to 2 percent.

This soil is slowly permeable and has a low to moderate available water-holding capacity. It is low in organic matter and fertility and has fairly good tilth. The hazard of erosion is moderate.

Use, suitability, and management.—This soil is suited to most crops commonly grown in the county. Because it is thin, moderately likely to erode, and low in fertility, it is probably not very well suited to crops that need frequent cultivation. It is better suited to perennial sod crops grown for pasture and hay or for suitable species of pine.

This soil is moderately exacting in its management requirements but produces fair yields under good management. If the soil is cultivated, the management should provide for grass-based rotations, terraces, water disposal, and cultivation on the contour. Capability unit IIIe–3.

Boswell very fine sandy loam, eroded gently sloping moderately shallow phase (5 to 8 percent slopes) (BdC2).—This soil has more rapid runoff, less capacity for available moisture, and generally a thinner B horizon than has Boswell very fine sandy loam, eroded very gently sloping moderately shallow phase. Included are small scattered areas where accelerated erosion has removed the original sandy surface layer and exposed the red, firm clay subsoil. Because it is sloping and has rapid runoff, this soil is best suited to permanent vegetation, especially suitable species of pine. Capability unit IVe–3.

Boswell very fine sandy loam, eroded sloping moderately shallow phase (8 to 12 percent slopes) (BdD2).—This soil has more rapid runoff, less capacity for available moisture, and generally a thinner B horizon than has Boswell very fine sandy loam, eroded very gently sloping moderately shallow phase. Included are small scattered areas where accelerated erosion has removed the original sandy surface layer and exposed the red, firm clay subsoil. Because it is sloping and has rapid runoff, this soil is best suited to permanent vegetation, especially suitable species of pine. Capability unit VIe–2

Boswell sandy clay, severely eroded very gently sloping moderately shallow phase (2 to 5 percent slopes) (BcB3).—This soil has a reddish-brown or red, firm sandy clay surface layer. Accelerated erosion has removed most, or all, of the original sandy surface layer, and the present plow layer is a mixture of remnants of the original surface soil and the red, firm clay upper subsoil. A few moderately deep gullies occur in some places.

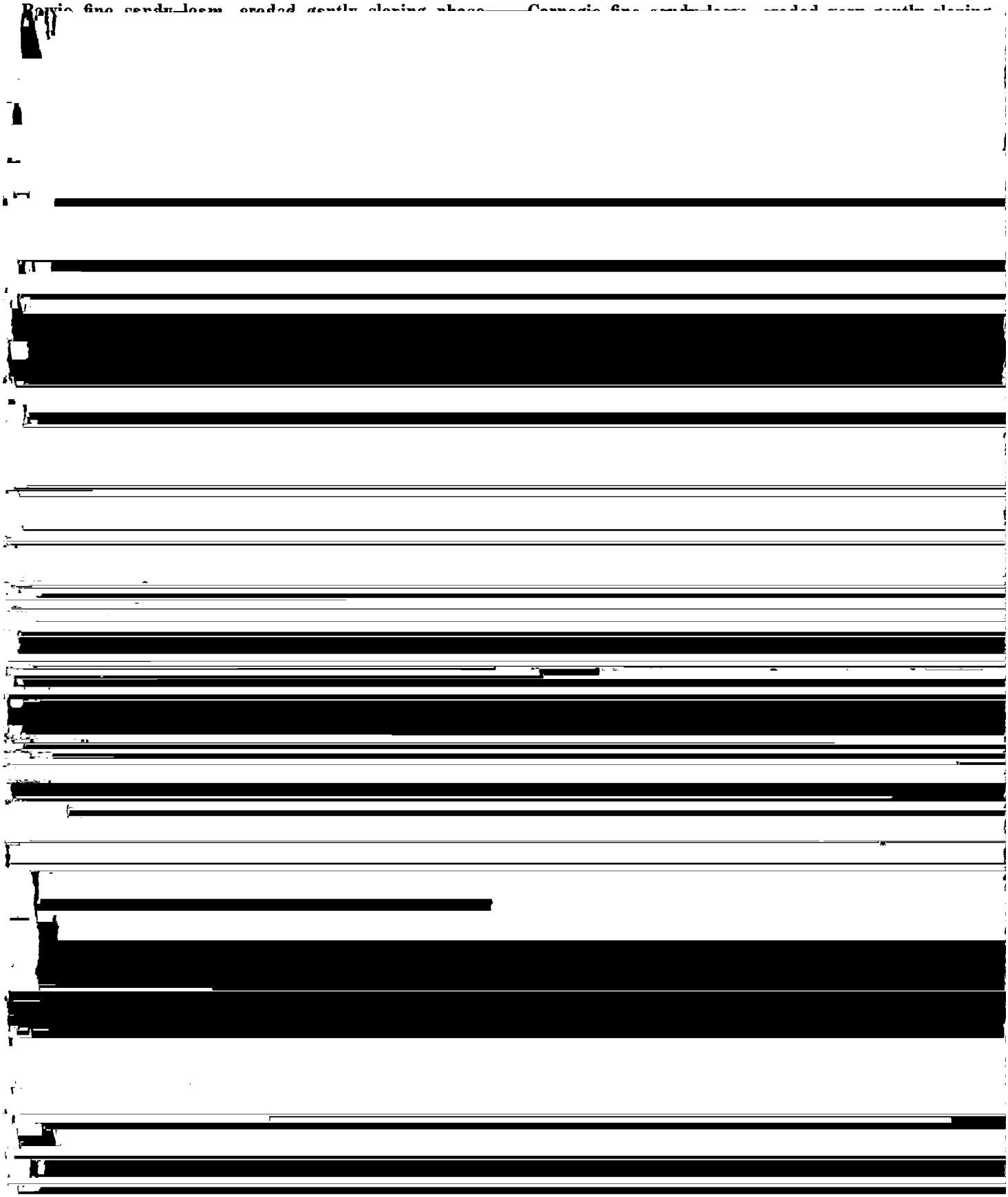
This soil has poor tilth and poor workability. It is low in fertility, organic matter, and capacity for available moisture. The hazard of erosion is high.

Use, suitability, and management.—This soil is poorly suited to cultivated crops. It is probably better suited to pasture and hay or suitable species of pine. If it must be used for crops, it requires intensive management. Crop rotations should be used that keep the soil in deep-rooted perennial sod crops at least 3 out of 4 years. Capability unit IVe–3.

Boswell sandy clay, severely eroded gently sloping moderately shallow phase (5 to 8 percent slopes) (BcC3).— This Soil is on slightly stronger slopes than Boswell sandy clay, severely eroded very gently sloping moderately shallow phase. Its runoff is slightly more rapid, and its capacity for available moisture is slightly less. Shallow and moderately deep gullies are more common. The hazard of erosion is high. Tilth and workability are poor. This soil is probably best suited to permanent vegetation, especially suitable species of pine. Capability unit VIe–2.

Bowie series

The soils in this series are moderately deep, moder-



Cuthbert fine sandy loam, eroded sloping phase (8 to 12 percent slopes) (CcD2).—The following describes a profile in a moist woodland area:

- A_0 ½ to 0 inch, thin layer of partially decomposed and matted leaves and pine straw.
- A_1 0 to 7 inches, light brownish-gray (10YR 6/2), very friable very fine sandy loam; weak, fine, crumb structure; clear boundary; medium acid.
- B 7 to 19 inches, yellowish-red (5YR 4/8), firm, compact clay; strong, medium and coarse, subangular blocky structure; hard when dry and slightly plastic when wet; diffuse boundary; strongly acid.
- C 19 to 37 inches, yellowish-red (7.5YR 5/6), thinly bedded clays and sands intensely mottled and streaked with yellow (2.5Y 8/6), red (2.5YR 5/8), and light gray (5YR 7/1); some brown clay skins.

The A_1 horizon ranges in thickness from 2 to 18 inches. The A_2 horizon ranges from light brownish gray to pale yellow, and the B horizon, from yellowish red to red. The texture of the B horizon ranges from sandy clay to clay. Iron crusts, ¼ inch to 1 inch thick, occur in places. Included with this soil are some uneroded areas that have a surface soil of sandy loam or loamy sand.

This soil is slowly permeable and has a low capacity for available moisture. Tilth is fairly good, but the hazard of erosion is severe. The uses of this shallow, sloping soil are extremely limited. This soil should be kept in permanent vegetation, especially suitable species of pine. Capability unit VIIe–2.

Cuthbert fine sandy loam, eroded, 12 to 30 percent slopes (CcE2).—Because of its steep slopes and heavy, compact, shallow subsoil, this soil is highly susceptible to erosion. Runoff is rapid, infiltration is slow, and the capacity for available moisture is low. This soil is probably best suited to growing pine trees, but it needs good management to improve the stands. Capability unit VIIe–2.

Cuthbert fine sandy clay, severely eroded, 8 to 30 percent slopes (CbE3).—This soil has lost through erosion

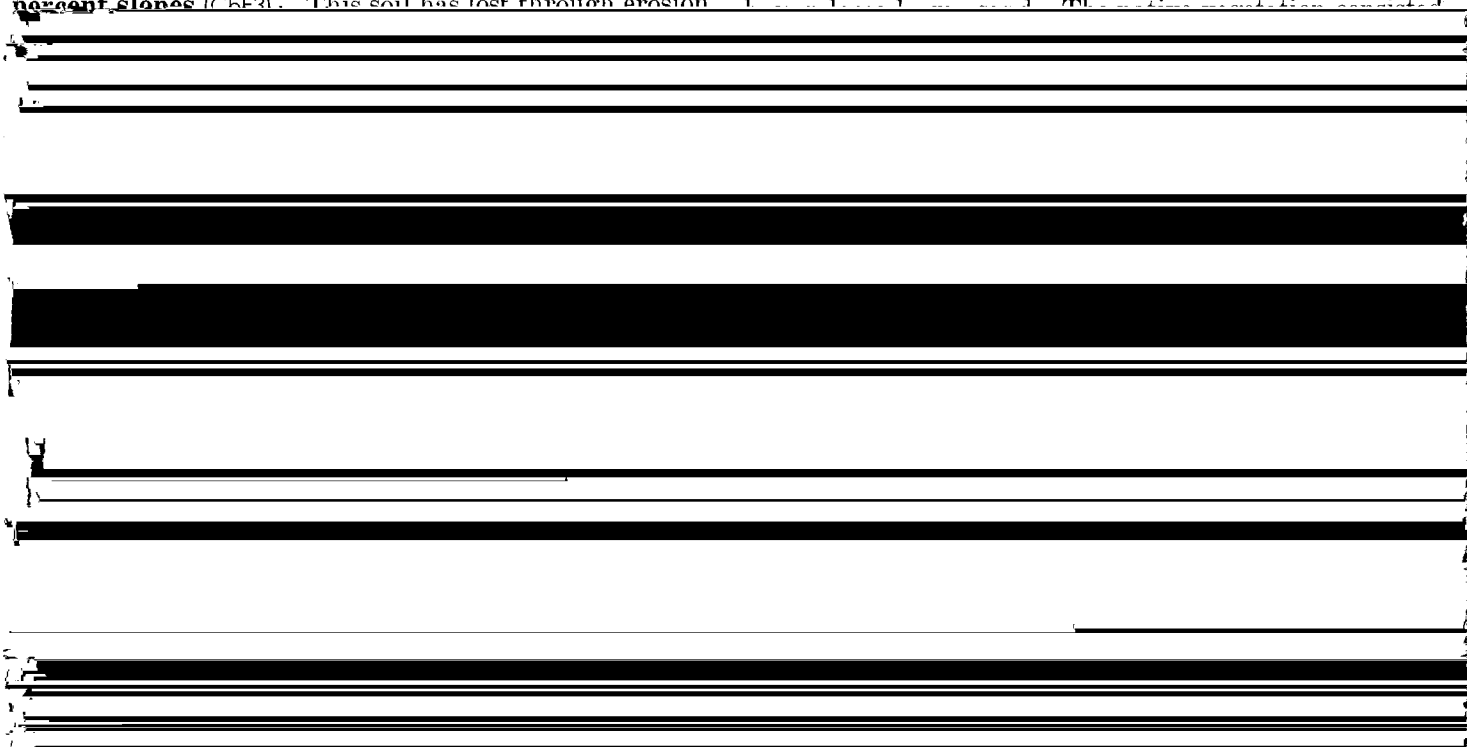
Most of the acreage of these soils has never been cleared. Much that was formerly cleared has returned to woodland, probably its best use.

Cuthbert, Boswell, and Eustis soils, eroded sloping phases (8 to 12 percent slopes) (CdD2).—These soils generally have a loamy sand to fine sandy loam surface soil, 3 to 7 inches thick. The subsoil is predominantly heavy sandy clay loam to clay and includes a small amount of loamy sand. Many shallow gullies occur in places. Runoff is moderately rapid, and the hazard of erosion is severe under clean cultivation. These soils are probably best suited to suitable species of pines. Good management is needed to improve the stands. Capability unit VIIe–2.

Cuthbert, Boswell, and Eustis soils, 12 to 30 percent slopes (CdE).—These soils are generally on steep, broken slopes adjoining streams. Except for small areas of sandy Eustis soils, they are mainly fine textured. Many small and a few moderately deep gullies have formed in places. Runoff is very rapid, and the hazard of erosion is severe. Most of the acreage is in woodland that has had small areas cleared for pasture. These soils probably are best suited to pine trees, but in most places the stands need improved management. Capability unit VIIe–2.

Eustis series

In this series are deep, somewhat excessively drained, medium acid to strongly acid sandy soils that are widely distributed on the Coastal Plain upland. These soils occur on slopes that range from 0 to 25 percent. They make up about 12 percent of the total area of the county. An extensive acreage occurs in the vicinity of Ozark and extends in a belt westward to Coffee County. These soils have developed from thick beds of acid marine sands underlain by finer sediments at depths of more than 30 inches. They have a subsoil of strong-brown to dark-



The surface soil ranges from strong brown to dark brown, and the subsoil, from yellowish brown to reddish yellow. The depth to the finer textured underlying material commonly ranges from about 30 to 120 inches.

This soil has slow runoff and rapid infiltration, and it is very permeable to a considerable depth. Its capacity for available moisture is low to very low. It is very low in fertility and organic matter. The tilth is good, and the soil is easy to work, but it is droughty and susceptible to severe leaching. Sheet erosion presents a slight hazard, and there are a few moderately deep gullies in places.

Use, suitability, and management.—About one-half of this fairly extensive soil is cultivated. It is fairly well suited to most of the cultivated crops grown in the county. It is probably better suited to peanuts than to cotton or corn. Bahiagrass is a suitable pasture plant. The liberal use of green-manure crops and the turning under of crop residues help to increase the content of organic matter and the capacity for available moisture. For highest yields, this soil needs frequent medium-sized applications of commercial fertilizer. Capability unit IIIs–1.

Eustis loamy sand, 5 to 12 percent slopes (EaC).—This is the most extensive soil in the Eustis series. It has slightly more rapid runoff than has Eustis loamy sand, surface soil than the Ruston soils and a finer textured subsoil. They are redder in the subsoil than the Ruston and Marlboro soils and less red in the subsoil than the Magnolia soils. They lack the fairly high content of iron concretions that occurs in the Tifton soils.

Most of the acreage is cultivated; a small area is in permanent pasture. Because these soils have good drainage, high capacity for available moisture, and mild slopes, they are suitable for intensive use.

Faceville fine sandy loam, eroded very gently sloping phase (2 to 5 percent slopes) (FaB2).—The following describes a profile in a cultivated area:

A_p 0 to 6 inches, dark grayish-brown (10YR 4/2), very friable fine sandy loam; weak, fine, crumb structure; abrupt wavy boundary; medium acid.

B_1 6 to 13 inches, strong-brown (7.5YR 5/6), very friable sandy clay loam; weak, fine, subangular blocky structure; gradual wavy boundary; strongly acid.

B_2 13 to 29 inches, strong-brown (7.5YR 5/6), friable sandy clay; moderate, fine, subangular blocky structure; gradual wavy boundary; strongly acid.

B_3 29 to 39 inches, strong-brown (7.5YR 5/8), friable sandy clay faintly mottled with red (2.5YR 4/6); moderate, fine, subangular blocky structure; clear wavy boundary; strongly acid.

D 39 to 47 inches +, red (2.5YR 4/6), firm clay distinctly mottled with yellowish brown (10YR 5/6); hard when dry; moderate, fine to medium, subangular blocky

red, heavy, compact clay that is mottled in the lower part. The Flint soils occur with the more poorly drained Izagora and Leaf soils.

Somewhat less than one-half of the acreage of these soils is cleared and used for row crops and pasture. The higher lying soils. The native vegetation was cypress, tupelo-gum, water oak, and willow.

Areas of these soils generally range in size from less than 1 to 3 or more acres. After periods of prolonged rainfall, water stands in these areas a few [illegible]

Gullied land (2 to 25 percent slopes) (Gb).—This land has a network of deep gullies that generally are well cut into the parent material. In some places the profile has been completely destroyed except in small areas between the gullies. These small areas have profiles similar to those of adjacent severely eroded soils, and in a few places still retain some original surface soil. In some places no islands of soil occur, and the parent material is exposed over large areas. In other places the gullies have undercut very friable material and the surrounding soils have caved in.

In the more clayey areas, runoff is very rapid and internal drainage is slow; consequently, very little water enters the soil. Some areas of this land receive runoff

38 to 50 inches +, light olive-brown (2.5Y 5/6), friable sandy clay slightly mottled with brown; sticky when wet; massive (structureless); strongly acid.

The depth of the alluvial material ranges from 18 to more than 50 inches. Some areas are less intensely mottled in the deeper layers than indicated in the profile description.

This soil is permeable to a considerable depth and has a high capacity for available moisture. It has medium fertility and contains a medium amount of organic matter. It is easily worked and conserved under good management.

Use, suitability, and management.—This soil has a wide range of suitability for use. It is especially well suited

contains a very small amount of organic matter. It is droughty and susceptible to severe leaching, but under good management it is easy to work and to conserve.

Use, suitability, and management.—This soil is fairly well suited to most of the cultivated crops grown in the county. Yields are moderate to low. Peanuts are probably better suited than cotton or corn. The liberal use of green-manure crops and the turning under of crop residues help to improve the content of organic matter and the moisture-holding capacity. Frequent moderate applications of commercial fertilizer are normally needed for best production. Bahiagrass is a well-suited pasture plant for this droughty soil. Capability unit IIs–2.

Iuka series

In this series are deep, moderately well drained, medium acid to strongly acid soils. These soils are on general alluvium on the flood plains along the larger streams, and on local alluvium at the base of upland slopes, in slight depressions, and along narrow upland drainways. The parent materials of these soils were washed from the Norfolk, Ruston, Bowie, Shubuta, and similar soils on the Coastal Plain. The native vegetation was mainly water oak, willow, beech, sweetgum, white oak, and other hardwoods. The local alluvium areas also contained longleaf and loblolly pines.

The soil on the general alluvium is associated with the Bibb soils, which are poorly drained, and with the Hannahatchie soils, which are browner than the Iuka soils.

Iuka soils occur in a small acreage that is widely distributed throughout the county. Slightly more than one-half is used for cultivated crops. Because Iuka soils are medium in fertility, contain a medium amount of organic matter, and have a high capacity for available moisture, they are suited to a wide variety of crops. They are especially well suited to corn, truck crops, and pasture.

Iuka fine sandy loam (0 to 2 percent slopes) (Ia).—This soil occurs on general alluvium along the larger streams and is likely to be flooded at times. It is in small tracts surrounded by poorly drained alluvial soils. The following describes a profile in a moist woodland:

½ to 0 inch, partly decomposed and matted leaves.
0 to 9 inches, dark grayish-brown (10YR 4/2), friable very fine sandy loam; weak, fine, crumb structure; clear wavy boundary; medium to strongly acid.
9 to 26 inches, yellowish-brown (10YR 5/4), friable fine sandy loam faintly mottled with shades of yellow, brown, and gray; moderate, fine, crumb structure; diffuse wavy boundary; strongly acid.
26 to 40 inches +, gray (10YR 6/1), friable fine sandy loam conspicuously mottled with yellow (2.5Y 7/6), dark brown (10YR 4/3), and reddish brown (5YR 5/4); moderate, fine, crumb structure; strongly acid.

The surface soil varies from dark gray to dark grayish brown. The mottles differ in their intensity and in the depth at which they occur. In some places thin layers of silt or silty clay occur below a depth of 9 inches. Included with this soil are areas of very fine sandy loam, loam, and silt loam.

This soil is permeable to a considerable depth and has a high capacity for available moisture. It contains a medium amount of organic matter and is medium in fertility. The tilth is good.

Use, suitability, and management.—This soil has a small total acreage; it has never been cleared. If it were cleared, it could be used for truck crops, corn, pasture grasses, and clovers. Capability unit IIw–1.

Iuka soils, local alluvium phases (0 to 5 percent slopes) (Ib).—This soil normally occurs in 1- to 3-acre patches. It is not likely to be flooded, but water stands in places for short periods after long rains. The following describes a profile in a moist cultivated area:

0 to 12 inches, very dark grayish-brown (2.5Y 3/2), very friable fine sandy loam; weak, fine, crumb structure; clear wavy boundary; medium acid.
12 to 27 inches, light olive-brown (2.5Y 5/6), very friable sandy loam with splotches of very dark gray; faintly mottled with brown at 12 inches; weak, fine, crumb structure; gradual wavy boundary; strongly acid.
27 to 35 inches, yellowish-brown (10YR 5/8), friable sandy clay loam; weak, fine, subangular blocky structure; gradual wavy boundary; strongly acid.
35 to 50 inches +, yellowish-brown (10YR 5/6), friable sandy clay loam; weak, fine, subangular blocky structure; strongly acid.

The surface soil ranges in texture from loamy sand to a fine sandy loam and in color from gray to very dark grayish brown. The depth of the recently deposited alluvial material ranges from 18 to more than 50 inches.

This soil is permeable to a considerable depth and has a high capacity for available moisture. It is medium in fertility and contains a medium amount of organic matter. It is easily worked and conserved under good management.

Use, suitability, and management.—This soil is well suited to a wide variety of crops. It is especially well suited to sugarcane and corn. If adequately fertilized, it will normally produce high yields. Capability unit IIw–1.

Izagora series

In this series are moderately deep, moderately well drained to somewhat poorly drained, medium acid soils. They have a gray to grayish-brown loamy fine sand to very fine sandy loam surface soil. The upper subsoil is fine sandy loam, and the lower subsoil is sandy clay loam. These soils lie on level to very gently sloping stream terraces. They developed from sandy alluvium that overlies clayey alluvium. The total area of about 8,000 acres is widely distributed throughout the county. The native vegetation was chiefly mixed stands of longleaf and loblolly pines.

Izagora soils occur among the Kalmia, Myatt, and Flint soils. They are less well drained than the Kalmia soils and have a finer textured lower subsoil. They are better drained and finer textured than the Myatt soils. They are more friable than the Flint soils and much yellower in the subsoil.

About two-thirds of the acreage remains in woodland. The cleared acreage is used for pasture and cultivated crops, mostly corn and truck crops. Because these soils have a high water table and are somewhat poorly drained, they are better suited to pasture grasses, clover, and pine trees than to row crops.

Izagora very fine sandy loam, level phase (0 to 2 percent slopes) (IcA).—This soil has a high water table that supplies plenty of moisture most of the time and excessive

moisture during periods of prolonged rainfall. The following describes a profile in a moist cultivated area:

A_p 0 to 7 inches, dark-gray (10YR 4/1), very friable very fine sandy loam; weak, fine, crumb structure; clear wavy boundary; medium acid.
A_2 7 to 10 inches, light olive-brown (2.5Y 5/4), very friable fine sandy loam; weak, fine, subangular blocky and crumb structure; clear wavy boundary; strongly acid.
B_2 10 to 18 inches, yellowish-brown (10YR 5/8), friable sandy clay loam; weak, medium, subangular blocky structure; clear wavy boundary; strongly acid.
B_g 18 to 28 inches, yellowish-brown (10YR 5/8), firm fine sandy clay conspicuously mottled with light red (2.5YR 6/8); moderate, fine, subangular blocky structure; hard when dry and plastic when wet; strongly acid.
C_g 28 to 40 inches +, yellowish-brown (10YR 5/8), friable sandy clay loam distinctly mottled with gray (10YR 6/1); weak, fine, subangular blocky structure; hard when dry and plastic when wet; strongly acid.

The texture of the A_2 horizon ranges from sandy loam to sandy clay loam. The depth to the firm sandy clay layer and the extent of mottlings vary from place to place. Included with this soil are areas of loamy sand, sandy loam, fine sandy loam, loam, and silt loam.

This soil is permeable in the upper subsoil and slowly permeable in the lower subsoil. It has low fertility and contains a low amount of organic matter. It is easily worked and conserved under good management.

Use, suitability, and management.—In places where the excess surface water can be removed by simple measures of artificial drainage, this soil can grow fair to good pasture. Capability unit IIIw–5.

Izagora very fine sandy loam, very gently sloping phase (2 to 5 percent slopes) (IcB).—This soil is moderately well drained. It is better suited to cultivated crops than the somewhat poorly drained Izagora very fine sandy loam, level phase. It is, however, probably better suited to permanent vegetation than to cultivated crops. Capability unit IIIw–5.

Kalmia series

In the Kalmia series are deep, well-drained, medium acid to strongly acid soils. These soils are on nearly level to very gently sloping stream terraces along the larger streams of the Coastal Plain. They have developed from sediments that were washed mainly from the Norfolk, Ruston, and other sandy soils of the Coastal Plain. The native vegetation was chiefly longleaf, shortleaf, and loblolly pines and included a few oaks, sweetgum, and blackgum.

Kalmia soils occur among the Izagora, Huckabee, Myatt, and Leaf soils. They are lighter colored than the Izagora soils and have a more friable and coarser textured lower B horizon. They differ from the Huckabee in having a subsoil of sandy clay loam rather than loamy sand. Kalmia soils are lighter colored and much better drained than the Myatt soils. They are much more friable throughout the profile than are the Leaf soils.

Two-thirds of the total area of about 3,600 acres is used for pasture and cultivated crops. These soils can be used moderately intensively because they have good drainage, moderately high water-holding capacity, and mild slopes.

Kalmia fine sandy loam, very gently sloping phase (2 to 5 percent slopes (KaB).—The following describes a profile in a moist cultivated area:

A_p 0 to 9 inches, grayish-brown (2.5Y 5/2), very friable fine sandy loam; weak, fine, crumb structure; gradual wavy boundary; medium acid.
B_1 9 to 14 inches, light olive-brown (2.5Y 5/4), very friable fine sandy loam; weak, fine, subangular blocky structure; clear wavy boundary; medium acid.
B_2 14 to 32 inches, yellowish-brown (10YR 5/8), friable sandy clay loam; weak, fine, subangular blocky structure; gradual wavy bounday; strongly acid.
D_1 32 to 43 inches, strong-brown (7.5YR 5/8), friable sandy clay; weak, fine, subangular blocky structure; gradual wavy boundary; strongly acid.
D_2 43 to 51 inches +, strong-brown (7.5YR 5/8), firm sandy clay with a few faint mottles of red (2.5YR 4/8); moderate, fine to medium, subangular blocky structure; strongly acid.

This soil is permeable and has a moderate capacity for available moisture. It is low in fertility and contains a small amount of organic matter. It has good tilth and is moderately easy to conserve. The hazard of erosion is moderate.

Use, suitability, and management.—Slightly more than one-half of this soil is used for cultivation. The soil is well suited to cotton, corn, peanuts, truck crops, hay, and pasture. Because it responds well to fertilizer, good to high yields can be obtained under good management. Capability unit IIe–1.

Kalmia fine sandy loam, level phase (0 to 2 percent slopes) (KaA).—This soil normally is 1 to 3 inches thicker in the surface soil than Kalmia fine sandy loam, very gently sloping phase, and it is higher in available capacity for moisture. In places the surface soil contains more organic matter and is darker colored than that of the more sloping soil. This soil has few limitations to use, and it does not need exacting management. It responds well to good management, especially fertilization. Capability unit I–1.

Kalmia loamy fine sand, thick surface phase (0 to 2 percent slopes) (Kb).—This soil differs from Kalmia fine sandy loam, very gently sloping phase, in that it has a gray to dark grayish-brown loamy sand surface soil that ranges from 18 to 30 inches in thickness. In characteristics it is intermediate between the very gently sloping phase and Huckabee loamy fine sand, 0 to 5 percent slopes. It is low in fertility and in content of organic matter.

Use, suitability, and management.—This soil is fairly well suited to most crops grown in the county. It is probably better suited to peanuts than it is to cotton or corn. Under good management, yields are low to moderate. Large additions of organic matter are needed to improve the water-holding capacity and to reduce leaching. Capability unit IIs–2.

Lakeland series

This series consists of deep, somewhat excessively drained, medium acid to strongly acid, sandy soils. These soils occur on the upland of the Coastal Plain on 0 to 25 percent slopes. They have developed from thick beds of acid marine sands that extend to depths of more than 30 inches, where finer sediments occur. They have a grayish-brown to pale-brown loose loamy sand surface soil and a pale-yellow to light yellowish-brown loamy sand subsoil. The native vegetation was predominantly longleaf pine with an undergrowth of scrub oak.

Lakeland soils occur mainly among the Norfolk, Bowie, Shubuta, and Eustis soils. They differ from the Nor-

folk, Bowie, and Shubuta soils in having loose sandy material to depths of more than 30 inches. They are yellower than the Eustis soils, which are strong brown.

The Lakeland soils are the most widely distributed and most extensive soils in the county. They make up 20 percent of the total area. About one-half the acreage is woodland, and one-half is cleared. About two-thirds of the cleared acreage is cultivated, and the rest is about equally divided between idle land and pasture.

Lakeland loamy fine sand, 0 to 5 percent slopes (LaB).—The following describes a profile in a cultivated area:

0 to 6 inches, grayish-brown (2.5Y 5/2), loose loamy fine sand; essentially structureless; clear wavy boundary; medium acid.
6 to 18 inches, light yellowish-brown (2.5Y 6/4), loose loamy fine sand; weak, fine, crumb structure; diffuse smooth boundary; strongly acid.
18 to 42 inches, light yellowish-brown (2.5Y 6/4), very friable loamy fine sand; weak, fine, crumb structure; diffuse smooth boundary; strongly acid.
42 to 54 inches +, yellow (10YR 7/8), firm fine sandy clay loam intensely mottled with yellowish red (5YR 5/8); moderate, medium, subangular blocky structure; strongly acid.

The surface soil ranges from grayish brown to pale brown. The next two layers below the surface soil are pale yellow to light yellowish brown. The fine sandy clay loam occurs at depths of 30 inches to several feet. The layer that in the foregoing profile extends from depths of 42 to 54 or more inches has a wide range in color, texture, and consistence.

This soil is highly permeable to a considerable depth. It has slow runoff and rapid infiltration. It is low to very low in fertility, in capacity for available moisture, and in content of organic matter. The tilth and workability are very good. This somewhat excessively drained soil is susceptible to severe leaching, but sheet erosion is only a slight hazard.

Use, suitability, and management.—About one-half of the total area of 26,632 acres is cultivated. This soil cleared now has fair to good stands of longleaf and loblolly pines. Capability unit IVs–1.

Lakeland loamy fine sand, 12 to 25 percent slopes (LaE).—Formerly cultivated areas of this soil have many shallow gullies and a few deep ones. Most of the acreage is in woodland. This soil is best suited to trees because it is strongly sloping and moderately steep, excessively drained, susceptible to erosion, and very low in fertility. The pine stands could be improved by good management. Capability unit VIIs–1.

Lakeland and Cuthbert soils

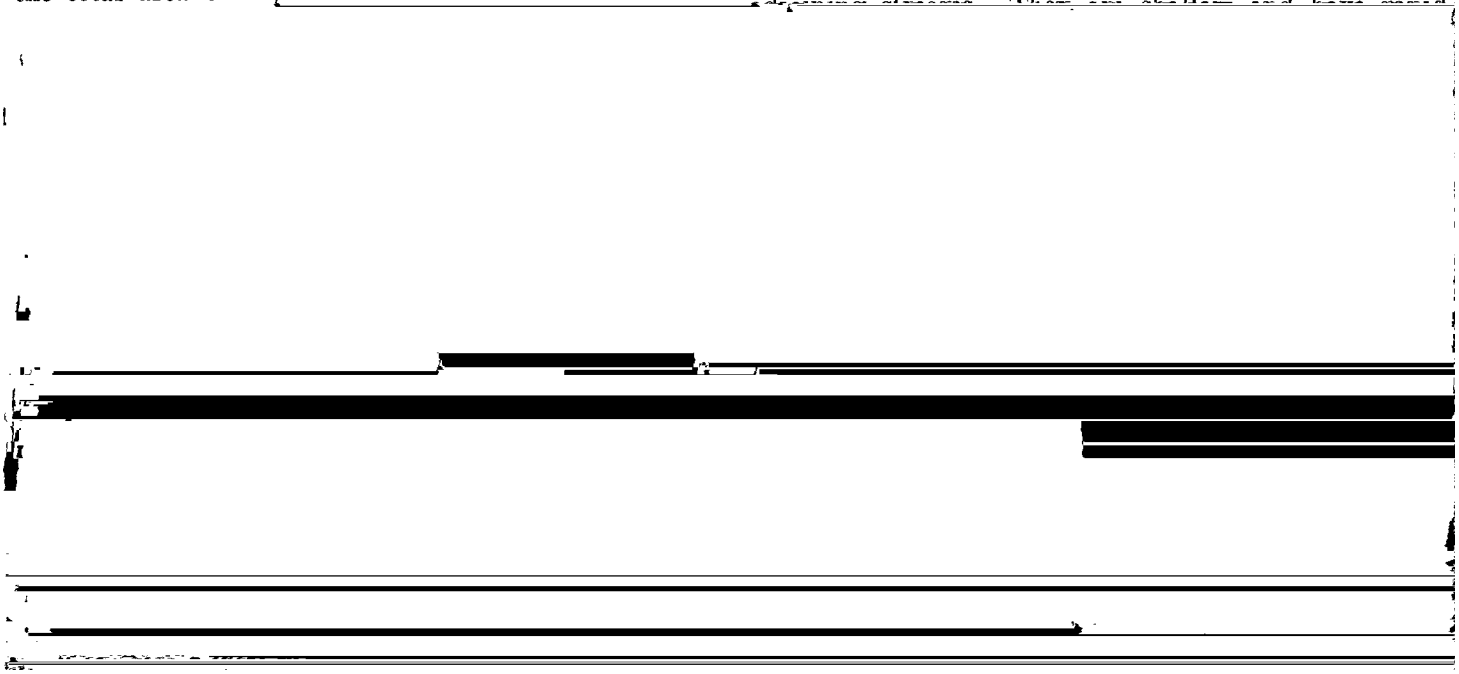
These somewhat excessively drained to moderately well drained soils have developed from thick beds of sands and clays. They are on sloping to steep uplands on the Coastal Plain, mostly in the northern part of the county. Their texture varies from loamy sand to sandy clay and is coarser than that of the Cuthbert, Boswell, and Eustis soils. Profiles of Lakeland loamy fine sand, 0 to 5 percent slopes, and Cuthbert fine sandy loam, eroded sloping phase, are described under their respective series.

These soils are deep to shallow. Where they have been cultivated, erosion is severe. They are medium acid to strongly acid and have a moderately low to low capacity for available moisture.

Most of the acreage is used for woodland. The greater part of the formerly cleared areas has reverted to woods.

Lakeland and Cuthbert soils, eroded gently sloping phases (5 to 8 percent slopes) (LbC2).—These soils generally have a loamy sand or fine sandy loam surface soil, 3 to 7 inches thick. The texture of the subsoil ranges from loamy sand in the Lakeland soils to clay in the Cuthbert soils. Many shallow gullies occur. Runoff is moderate to moderately rapid; the hazard of erosion is moderately severe. These soils are best suited to permanent vegetation, especially suitable species of pine. Capability unit VIe–2.

Lakeland and Cuthbert soils, 12 to 30 percent slopes (LbE).—These soils generally occur on steep, broken slopes



soils in being poorly drained and in having a much finer textured, mottled subsoil.

One soil of the Leaf series is mapped in this county. Most of its small acreage is in forest, but some is used for corn, hay crops, and pasture. Because of the high water table and poor drainage, the soil is better suited to pasture grasses and clovers than to cultivated crops.

Leaf very fine sandy loam (0 to 2 percent slopes) (Lc).—The following describes a profile in a moist woodland:

A_1 0 to 2 inches, dark grayish-brown (10YR 4/2), very friable very fine sandy loam.

idle land. Partly because of the good drainage and moderately high capacity for available moisture, these soils are suited to most crops and pasture plants grown in the area.

Magnolia fine sandy loam, eroded very gently sloping phase (2 to 5 percent slopes) (MaB2).—The following describes a profile in a moist cultivated area:

A_p 0 to 4 inches, dark-brown (10YR 4/3), very friable fine sandy loam; weak, fine, crumb structure; abrupt wavy boundary; medium acid.

B_1 4 to 8 inches, yellowish-red (5YR 4/6), very friable sandy clay loam; weak, fine, subangular blocky structure;

has been seriously damaged by erosion, which has removed

The color of the A horizon ranges from gray to dark

to 24 inches. Included with this soil are areas of fine

management should provide for terraces, sod waterways,

The following describes a profile in a moist cultivated

Most of the acreage is wooded, but some areas have

subsoil. The native vegetation was predominantly stands of mixed hardwoods and pines.

Red Bay soils occur among the Ruston, Magnolia, and Americus soils. They have a darker brown surface soil than that of the Magnolia and Ruston soils. Their subsoil is much finer textured than that of the Americus soils.

These soils cover an area of about 6,500 acres. More than two-thirds of the acreage is cropped, and the rest is in permanent pasture, idle land, woodland, and miscellaneous land. Partly because drainage is good and the water-holding capacity moderate, these soils give high yields under moderately intensive use.

Red Bay fine sandy loam, very gently sloping phase (2 to 5 percent slopes) (RbB).—The following describes a profile in a moist cultivated area:

- A_p 0 to 9 inches, dark reddish-brown (5YR 3/2), very friable fine sandy loam; weak, fine, crumb structure; clear to abrupt boundary; medium acid.
- B_1 9 to 14 inches, reddish-brown (5YR 4/4), very friable fine sandy loam; weak, fine and coarse, subangular blocky structure; diffuse boundary; strongly acid.
- B_2 14 to 84 inches, red (2.5YR 4/6), very friable fine sandy clay loam; weak, coarse and medium, subangular blocky structure; gradual boundary; strongly acid.
- D 84 to 120 inches +, yellowish-red (5YR 5/8), interstratified fine sand and slightly compact sandy clay; easily crushed; granular and weak, fine, subangular blocky structure; strongly acid.

The color of the A horizon ranges from dark reddish brown to brown; the B horizon is dark reddish brown to red. Included in this mapping unit are areas of loamy sand and sandy loam.

This soil is permeable and has a moderate capacity for available moisture. It is low in fertility and in content of organic matter. It is easy to work and moderately easy to conserve. Response to management is good.

Use, suitability, and management.—This very gently sloping soil has a wide range in use. It is well suited to many crops, especially cotton and peanuts. If enough fertilizer and organic matter are added and this soil is otherwise well managed, yields are normally high. Capability unit IIe–1.

Red Bay fine sandy loam, level phase (0 to 2 percent slopes) (RbA).—This soil is permeable and has a moderate capacity for available moisture. It covers nearly 1,000 acres, mostly in the southern part of the county. Nearly all of this acreage is in cultivated crops. The soil has very few limitations to its use and is highly productive. It responds well to good management, particularly additions of fertilizer and organic matter. Capability unit I–1.

Red Bay fine sandy loam, eroded very gently sloping phase (2 to 5 percent slopes) (RbB2).—This soil differs from Red Bay fine sandy loam, very gently sloping phase, primarily in having a thinner surface soil, which is 3 to 7 inches thick. Included in this mapping unit are small, severely eroded areas that have lost all, or almost all, of the original surface soil through erosion.

This soil has slightly lower water-holding capacity than the very gently sloping phase and contains slightly less organic matter. Its greater runoff is likely to cause further erosion. This soil, however, is suited to the same kinds of crops as the very gently sloping phase. Capability unit IIe–1.

Red Bay fine sandy loam, eroded gently sloping phase (5 to 8 percent slopes) (RbC2).—This soil has a 3- to 7-inch surface layer that is thinner and contains less organic matter than that of Red Bay fine sandy loam, eroded very gently sloping phase. Runoff is greater on this soil and causes a hazard of further erosion. Included in the mapping unit is a small acreage of severely eroded soil from which all, or almost all, of the original surface soil has been removed by erosion.

This soil is suited to about the same crops as the very gently sloping phase, but more intensive management is required to keep it productive. Capability unit IIIe–1.

Red Bay and Magnolia soils

In some very gently sloping to sloping areas throughout the county, these soils are mapped together because they occur in a pattern that makes it impractical to map them separately. They are deep, well drained, and friable. In their respective series descriptions they are described in detail. Some areas of these soils near Rocky Head have thin layers of rock rich in iron on the surface and in the profile. The soils in these areas have a finer textured and more compact subsoil than that described for the profiles of Red Bay soils and Magnolia soils.

Most of the acreage of these groups of soils is cultivated. If these soils are adequately fertilized and otherwise well managed, their yields are moderate to high.

Red Bay and Magnolia fine sandy loams, eroded very gently sloping phases (2 to 5 percent slopes) (RcB2).—These soils are permeable and have a moderately high capacity for available moisture. Fertility is medium to low, and organic matter is low. Tilth is good, and the soils are moderately easy to work and to conserve.

Use, suitability, and management.—These soils are well suited to cotton, corn, peanuts, and most other crops grown in the area. Yields are moderate to high if enough fertilizer is applied. The management should include use of a complete system of water disposal and of rotations in which sod crops are grown at least 2 years out of every 4. Capability unit IIe–2.

Red Bay and Magnolia fine sandy loams, eroded gently sloping phases (5 to 8 percent slopes) (RcC2).—The depth of these soils to the parent material is normally less than that of the Red Bay and Magnolia fine sandy loams, eroded very gently sloping phases; consequently, the capacity for available moisture is less. Runoff creates a moderately severe hazard of further erosion. These soils are suited to the same kinds of crop as the eroded very gently sloping phases but require more intensive management to keep them highly productive. Capability unit IIIe–2.

Red Bay and Magnolia fine sandy loams, eroded sloping phases (8 to 12 percent slopes) (RcD2).—These soils have moderately rapid runoff and moderately low capacity for available moisture. Many shallow gullies occur, and the soils are very likely to be further eroded and to have more and deeper gullies cut. Small areas that are eroded and strongly sloping or severely eroded and sloping are included with these soils. These soils are probably best suited to permanent vegetation. If used for cultivated crops, they should be kept in sod crops 3 years out of every 4. Capability unit IVe–2.

Red Bay and Magnolia sandy clay loams, severely eroded gently sloping phases (5 to 8 percent slopes) (RdC3).—Areas of these soils were once areas of fine sandy

loam, but accelerated erosion has removed all, or almost all, of the surface soil and has exposed the sandy clay loam subsoil. Many shallow gullies occur, and the soils have a high hazard of further erosion. Runoff is rapid, and the capacity for available moisture is moderately low. These soils have only fair tilth and fair workability. They are probably better suited to permanent vegetation than to cultivated crops. If these soils are cultivated, they need intensive management. Capability unit IVe–2.

Ruston series

In this series are deep, well-drained, medium acid soils. These soils have a large total acreage that is widely distributed throughout the county on the Coastal Plain upland. The largest acreage is in the southern part of the county. Ruston soils are level to strongly sloping and occur on thick beds of acid sandy clay loams. They have a grayish-brown loamy sand to fine sandy loam surface soil and a strong-brown to yellowish-red sandy clay loam subsoil. The native vegetation was predominantly longleaf and loblolly pines but included mixed stands of hardwoods.

Ruston soils are associated with the Norfolk, Red Bay, Magnolia, Eustis, Cuthbert, and Faceville soils. They are similar to the Norfolk soils in texture but are redder in the subsoil. They are grayer in the surface soil than the Red Bay soils but less red in the subsoil. Their subsoil is more friable, less red, and sandier than that of the Magnolia soils. The Ruston soils do not have a loamy sand subsoil like that of the Eustis soils. They are thicker and more friable in the subsoil than the Cuthbert soils. They differ from the Faceville soils in having a thicker and sandier subsoil.

More than three-fourths of the acreage is cropped, and the rest is in woodland or pasture or is idle land. These soils can be used moderately intensively because they have good drainage, moderate water-holding capacity, and generally mild slopes.

Ruston fine sandy loam, eroded very gently sloping phase (2 to 5 percent slopes) (ReB2).—The following describes a profile in a moist cultivated area:

- A_p 0 to 6 inches, dark grayish-brown (10YR 4/2), very friable fine sandy loam; weak, fine, crumb structure; clear wavy boundary; medium acid.
- B_1 6 to 16 inches, strong-brown (7.5YR 5/6), very friable sandy loam; weak, fine, crumb structure; gradual wavy boundary; medium acid.
- B_2 16 to 35 inches, yellowish-red (5YR 5/6), friable sandy clay loam; weak, fine, subangular blocky structure; gradual wavy boundary; strongly acid.
- B_3 35 to 45 inches +, yellowish-red (5YR 5/8), friable light sandy clay loam; moderate, fine, subangular blocky structure; strongly acid.

In some areas in the southern part of the county, red sandy clay occurs at depths of 24 to 36 inches. Included [illegible] well suited to peanuts. If enough fertilizer and organic matter are added, yields are normally good to high. Capability unit IIe–1.

Ruston fine sandy loam, level phase (0 to 2 percent slopes) (ReA).—Nearly all of this soil occurs in the southeastern part of the county in a belt that extends from the vicinity of Newton south to Houston County. Much of this soil has a red, firm sandy clay layer at depths of 24 to 36 inches.

This soil is permeable and has a moderately high capacity for available moisture. It is low in fertility and in organic matter and is medium acid. Tilth is good, and the soil is easy to conserve.

Use, suitability, and management.—This level soil has few limitations to use. It is well suited to cotton, corn, peanuts, hay, pasture, and truck crops. Because it is very responsive, moderate to high yields can be obtained under good management. Capability unit I–1.

Ruston fine sandy loam, very gently sloping phase (2 to 5 percent slopes) (ReB).—This soil has a thicker surface soil than Ruston fine sandy loam, eroded very gently sloping phase, and a slightly higher capacity for available moisture. Included are some areas of loamy sand that normally have a thicker surface soil than the rest of the mapping unit. This soil has about the same uses and management needs as those of the very gently sloping phase. Capability unit IIe–1.

Ruston fine sandy loam, eroded gently sloping phase (5 to 8 percent slopes) (ReC2).—This soil has more rapid runoff than Ruston fine sandy loam, eroded very gently sloping phase, and generally a thinner solum. Included are small areas that are severely eroded. These inclusions have an exposed subsoil, especially in the more sloping parts. In some places there are a few shallow gullies.

Use, suitability, and management.—This soil can be used for peanuts, cotton, corn, oats, pasture, and pine trees. It has moderately severe limitations, however, and needs exacting management. If cultivated crops are grown, the soil should have a complete system of water disposal, with terraces, vegetated waterways, and cultivation on the contour. Row crops should be grown in rotations that keep close-growing crops on the soil at least 2 years out of every 3. Capability unit IIIe–1.

Ruston fine sandy loam, eroded sloping phase (8 to 12 percent slopes) (ReD2).—This soil has a plow layer of yellowish-brown fine sandy loam that is generally 6 to 8 inches thick. It has more rapid runoff than Ruston fine sandy loam, eroded very gently sloping phase, and a lower capacity for available moisture.

Included are severely eroded areas where all, or nearly all, of the surface layer has been removed by accelerated erosion. In some places 3 or 4 inches of the subsoil also has been removed. Shallow gullies are common. In these [illegible]

Ruston fine sandy loam, strongly sloping phase (over 12 percent slopes) (ReE).—The profile of this soil varies more from place to place than does that of Ruston fine sandy loam, eroded very gently sloping phase. Generally, the depth to the parent material is shallower. Many shallow gullies and a few moderately deep ones occur. Partly because of the rapid runoff, this soil is susceptible

drained and lies along streams on narrow to moderately wide, nearly level flood plains. It occurs with the Bibb soils. Although predominantly sandy, this land has extremely wide variations in texture that depend on the source of the materials and on the condition of the stream when the material is deposited.

Sandy alluvial land, poorly drained (Sa).—This land

B_1 6 to 11 inches, yellowish-red (5YR 4/8), friable fine sandy clay loam; moderate, medium, subangular blocky structure; few brown clay skins on ped faces; clear wavy boundary; strongly acid.

B_2 11 to 24 inches, yellowish-red (5YR 4/6), firm fine sandy clay conspicuously mottled with light gray (10YR 7/2), and red (10R 4/8); strong, medium and fine, subangular blocky structure; few thin clay skins on ped faces; diffuse boundary; strongly acid.

B_3 24 to 50 inches, yellowish-red (5YR 4/6), firm sandy clay [illegible]

soil create an erosion hazard. Most of the acreage is in woodland and is uneroded. These soils are fairly well suited to most cultivated crops, but their best use is probably for permanent vegetation, particularly pine trees. Capability unit IIIe–3.

Shubuta and Angie very fine sandy loams, eroded gently sloping phases (5 to 8 percent slopes) (ScC2).—These soils have more rapid runoff, slightly less capacity [illegible]

grayish-brown fine sandy loam and loamy sand surface soil and a brownish-yellow to yellowish-brown fine sandy clay loam subsoil. Many small concretions of iron are on the surface and throughout the profile. These inextensive soils have developed from marine deposits of sandy clay on the level to gently sloping upland of the Coastal Plain, mainly in the southern part of the county. Longleaf pine was the predominant native vegetation, and

sloping phase. The soil is highly productive and has a high capacity for available moisture. Tilth is good, and there are few limitations to use. This soil has a total area of 477 acres, nearly all of which is cultivated. It responds very well to good management, especially fertilization. Capability unit I–2.

Tifton fine sandy loam, eroded gently sloping phase (5 to 8 percent slopes) (TgC2).—This soil is generally

hills had mixed stands of longleaf, shortleaf, and loblolly pines, as well as some dogwood and water and blackjack oaks, some of which were scrubby trees. The finer textured soils of the upland were covered with mixed stands of hardwoods and slash, loblolly, and shortleaf pines.

Only small amounts of vegetable matter have accumulated in Dale County because the climate has not favored its accumulation. This scarcity of vegetable matter is reflected in the light color of the soils. A layer of vegetable mold does occur in the areas that still support a forest growth, but this layer is very thin, and little organic matter has been mixed with the soil.

As agriculture has advanced in Dale County, man has become important in the development of soils. His work of clearing the forest, cultivating the soil, introducing new species of plants, and improving drainage will be reflected in the future formation of soils.

PARENT MATERIALS: The parent materials of the soils in Dale County are mainly unconsolidated beds of sands, sandy clays, and clays. These materials were deposited on the bottom of an ancient sea or along its edges. Later the bed formed by these deposits was elevated, and it became the present Coastal Plain. Then much of the area was overspread by a sandy formation, which has yielded many of the sands and sandy loams in the county.

The soils of the county are generally sandy, but, mainly because of the differences in drainage, they vary considerably from place to place. In the hilly northern section of the county, the dominant underlying formations are strata of stiff, compact, plastic clays that have alternate layers of sandy materials. In places erosion has exposed these stratified clays and sands. The Cuthbert, Shubuta, Boswell, and similar soils have formed from the stratified sands and clays.

The alluvial sediments of sands, silts, and clays that were washed from the surrounding upland are the parent materials of the soils of the flood plains and terraces. Along the smaller streams, the material was predominantly sandy alluvium. Along the larger streams and terraces, Bibb, Leaf, Flint, and similar soils have formed from the finer textured silts and clays.

RELIEF: The general direction of drainage in Dale County is toward the southwest. The relief ranges from highly dissected ridgetops and steep side slopes in the northern part of the county to broad, smooth flats in the southern part. The northern part of the county is very gently sloping to moderately steep; the southern part is

well-developed profiles with clearly defined horizons, or layers. Except those in the Regosol great soil group, most soils of the upland are mature and well defined. These mature soils of the upland show the effects of all five factors of soil formation, or genesis. They have a leached surface layer underlain by a finer textured subsoil, which within each series is uniform in color and well oxidized.

The somewhat younger soils are intermediate in development. The horizons are discernible but are not very clearly defined. In many places they have fewer horizons than the mature soils. Soils in the Low-Humic Gley and Planosol great soil groups have intermediate development.

The young soils are weakly developed. They are Alluvial soils, and the sandy soils of the Regosol great soil group.

Classification of Soils

Soils are classified at several levels. The lowest three—phase, type, and series—are discussed in the section, Soil Survey Methods and Definitions. Soil series may be grouped into higher categories. The highest category, called the soil order, has three divisions—zonal soils, intrazonal soils, and azonal soils. Subdivisions within each soil order are called great soil groups, which are broad groups of soils that have fundamental characteristics in common. The classification of soils into higher categories is based on an article by Thorp and Smith in Soil Science, February 1949 [4] and the 1938 Yearbook of Agriculture, Soils and Men.[5]

The zonal soil order consists of those great soil groups that have soils with well-developed characteristics that reflect the influence of the active factors of soil genesis—climate and living organisms, chiefly vegetation. The outstanding characteristic of the zonal soils in Dale County is their leached A horizon that is underlain by a finer textured, more uniformly colored, well-oxidized B horizon. The C horizon varies considerably from place to place, but in most places it is coarser than the B horizon and finer than the A horizon. On some soils that had a relatively thick A horizon before they were disturbed, erosion has removed part or all of the original sandy layer and has exposed the yellow or red sandy clay subsoil.

The intrazonal order consists of those great soil groups having soils with moderately well developed profiles that

sols are also azonal soils. They consist of deep, unconsolidated sand deposits in which there are few or no clearly expressed soil characteristics.

The classification of the soil series in Dale County, according to orders and great soil groups, is shown in the following list:

Zonal soils—
- Red-Yellow Podzolic soils:
  - (Red members):
    - Boswell
    - Carnegie
    - Cuthbert (intergrading to Regosols)
    - Faceville
    - Flint
    - Magnolia
    - Ruston
    - Shubuta
  - Red-Yellow Podzolic soils:
  - (Yellow members):
    - Angie
    - Bowie
    - Izagora
    - Kalmia
    - Marlboro
    - Norfolk
    - Tifton
  - Reddish-Brown Lateritic soils:
    - Red Bay

Intrazonal soils—
- Low-Humic Gley soils:
  - Bibb (intergrading to Alluvial soils)
  - Grady (intergrading to Humic Gley soils)
  - Myatt
  - Plummer
  - Rains
- Planosols:
  - Leaf

Azonal soils—
- Alluvial soils:
  - Hannahatchee
  - Iuka
- Regosols:
  - Americus (intergrading to Reddish-Brown Lateritic soils)
  - Eustis
  - Huckabee
  - Lakeland

Morphology of Soils by Great Soil Groups

In this subsection the morphology of the soils of all the series in Dale County is discussed by respective great soil groups. Soil profiles that represent each series are described in the subsection, Soil Series, Types, and Phases.

Red-Yellow Podzolic soils

This great soil group is divided into red members and yellow members. The cause of the difference in color is not known. Apparently the red members were derived from materials higher in bases than the materials of the yellow members.

RED MEMBERS

The red members of the Red-Yellow Podzolic great soil group are zonal soils that have organic or organic-mineral layers over a yellowish-brown leached layer, which in turn overlies an illuviated red horizon. These soils developed under a deciduous or mixed forest in a warm-temperate, moist climate.

Boswell series.—The soils in this series have developed from acid clayey materials. These soils are very gently sloping to sloping and moderately shallow over highly mottled and streaked clay. They are somewhat poorly drained; internal drainage is very slow. They have a gray to brown surface soil and a subsoil of firm clay that is red in the upper few inches and prominently mottled in the lower part.

Carnegie series.—The only soil in this series in Dale County is Carnegie fine sandy loam, eroded very gently sloping phase. This soil has developed from deposits of unconsolidated sandy clays and clays. As in the Magnolia soils, the solum is thick and drainage is good. The Carnegie soil has a dark-gray or brown surface soil that overlies yellowish-red to red firm sandy clay. Many hard concretions of iron are distributed through the profile. Partly weathered, mottled clay occurs at depths below 40 inches.

Cuthbert series.—The soils in this series do not have strongly developed profiles like those of the Magnolia and other Red-Yellow Podzolic soils. They are actually intergrades toward the Regosol great soil group. They have developed from beds of clay that contain lenses of sand. They are moderately well drained to somewhat poorly drained. Cuthbert soils are sloping to moderately steep. They have a brownish-gray to pale yellow surface soil that is underlain by compact yellowish-red clay. The clay is highly mottled below depths of 6 to 20 inches.

Faceville series.—The soils in this series have developed from unconsolidated marine sediments, such as sandy clays and clays, on flats and very gentle slopes. They are generally slightly more friable than the Carnegie soils but do not contain iron concretions. They are less red than the Magnolia soils. Faceville soils are deep and well drained and have well-developed profiles. They have a dark-gray or grayish-brown surface soil that is underlain by a strong-brown or yellowish-red sandy clay subsoil, which, in turn, is underlain by mottled clay at depths below 36 inches.

Flint series.—The soils in this series have developed on level to very gently sloping terraces. Their parent material is alluvium that was washed from clays and sandy clays. These soils are moderately well drained to somewhat poorly drained and are moderately deep over intensely mottled clay. They have a gray surface soil that is underlain by a pale-brown to yellowish-red very firm clay subsoil. The subsoil is mottled in the lower part.

Magnolia series.—The soils in this series have developed from thick beds of acid sandy clays and clays. These soils are level to sloping and well drained. They are deep over unconsolidated sandy clay or clay material that is mottled and streaked. They have a brown surface soil and a reddish-brown or red sandy clay subsoil. In cultivated fields the surface layer has been mixed. An undisturbed profile would have a dark grayish-brown or brown A_1 layer high in organic matter and an eluviated, lighter colored A_2 horizon.

Ruston series.—The soils in this series have developed from thick beds of acid sandy clay loams that contain, in places, layers of sand, loamy sand, or sandy clay. These soils are level to strongly sloping and are well drained. They have a thick solum over reticulated sandy clay. Their grayish-brown surface soil is underlain by a subsoil of strong-brown to yellowish-red sandy clay loam. The subsoil overlies various kinds of partly weathered stratified sands to sandy clays. The Ruston soils have a thicker A horizon than that of the Magnolia, Faceville, and Carnegie soils.

Shubuta series.—The soils in this series have developed from thinly bedded clays, sandy clays, and clay shales. These soils are gently sloping to sloping and moderately well drained. Their solum is moderately thick. They have a gray to grayish-brown surface soil and a thin yellowish-red to red sandy clay loam subsoil that grades to clay at a depth of about 11 inches. The lower subsoil is highly mottled and streaked with shades of gray, red, and yellow clay. Some clay skins are on the faces of the peds. The Shubuta soils generally have less uniform characteristics than the Magnolia, Carnegie, Faceville, and Ruston soils.

YELLOW MEMBERS

The yellow members of the Red-Yellow Podzolic great soil group are moderately well developed to well developed zonal soils. They have thin organic and organic-mineral layers that are underlain by a grayish-yellow horizon.[6] These soils are nearly level to sloping. Except for the Izagora and Kalmia soils, the parent material of the yellow members consists of beds of sands, sandy clay, and clays. The parent material of the Izagora and Kalmia soils is alluvium that was washed from sands, loamy sands, sandy loams, and sandy clay loams. The yellow members developed under a forest vegetation of mixed hardwoods and pines. The climate was similar to that in which the red members developed.

Angie series.—The soils in this series occur with the Shubuta soils and are similar to them in most characteristics except color. These soils have developed from thinly bedded clays and sandy clays on very gently sloping to sloping relief. They are moderately well drained to somewhat poorly drained and are moderately deep over mottled clay. They have a gray to grayish-brown surface soil and a yellow to brownish-yellow subsoil. The subsoil is mottled in the lower part.

Bowie series.—The soils in this series have developed from beds of unconsolidated acid sandy clays. These soils are moderately well drained to well drained and have very gently sloping to sloping relief. They have a grayish-brown to yellowish-brown surface soil that is underlain by a light yellowish-brown to reddish-yellow sandy clay loam upper subsoil. Bowie soils are slightly heavier in the lower subsoil than are the Norfolk soils.

Izagora series.—The soils in this series are classed as Red-Yellow Podzolic soils, but they have some characteristics of Low-Humic Gley soils in their lower horizons. Izagora soils have developed along most streams in the county on old alluvium that was washed chiefly from the coarser textured soils. They are moderately well drained to somewhat poorly drained and are moderately deep over a parent matrial of mottled sandy clay. They have a gray to grayish-brown surface soil and a subsoil of yellowish-brown sandy loam to sandy clay loam that grades with increasing depth to mottled, yellowish-brown sandy clay.

Kalmia series.—The soils in this series occur on bench-like areas along rivers and somewhat smaller streams. These soils have developed from old alluvium that was washed from sandy soils of the Coastal Plain upland. They have a grayish-brown surface soil and a yellowish-brown sandy clay loam subsoil. In color, texture, structure, and consistence, Kalmia soils are similar to the Norfolk soils, which are on uplands.

Marlboro series.—The soils in this series have developed from thick beds of sandy loams and sandy clays. These soils are level to gently sloping and well drained. They are deep over mottled sandy clay. They have a gray to grayish-brown, thin surface soil and a yellow to yellowish-brown sandy clay subsoil. In cultivated fields the plow layer is a mixture of the subsoil and the original surface soil. An undisturbed profile would have a dark-gray organic-mineral A_1 horizon and a light-colored A_2 horizon.

Norfolk series.—The soils in this series have developed on beds of unconsolidated sands and clays. They are level to sloping and well drained. These soils are deep over various kinds of mottled, stratified sands and sandy clays. The solum of the Norfolk soils generally resembles that of the Marlboro soils in color, but Norfolk soils have a thicker A horizon, a more friable B horizon, and a sandier solum. They closely resemble the Ruston soils in texture, structure, and consistence but are less red.

Tifton series.—The soils in this series have developed from marine deposits of sandy clay on flats and gentle slopes. These soils occur with the Carnegie soils, which are redder but are similar in structure and consistence. Tifton soils are well drained and deep to deposits of reticulated sandy clay. The surface soil is a grayish-brown loamy sand, and the subsoil is yellow to yellowish-brown sandy clay loam to sandy clay.

Reddish-Brown Lateritic soils

These zonal soils have a reddish-brown surface soil and a red, very friable sandy clay or very fine sandy loam B horizon. In a few places the B horizon is underlain by beds of loamy sand, but in most places it is directly underlain by a deep substratum of compact sandy clay that has a network of mottles.

Red Bay series.—The soils in this series have developed from unconsolidated sands and sandy clays. These soils are well drained and deep over interstratified sands and clays. The horizons differ from one another very little in color. The surface soil is brown to dark reddish brown, and the subsoil is dark reddish brown to red. Red Bay soils are the only Reddish-Brown Lateritic soils mapped in Dale County.

Low-Humic Gley soils

Low-Humic Gley soils are in the intrazonal order. They are poorly drained and have a thin A_1 horizon, which is moderately high in organic matter. The surface soil overlies mottled gray and brown gleylike mineral horizons that differ little in texture.[7] The A_1 horizon is not prominent, but the B and C horizons are strongly gleyed. These soils range in texture from sand to clay. They are strongly acid. Their parent materials vary widely in physical and chemical properties. The native cover is mainly swamp forest.

Bibb series.—This series consists of soils that have developed from alluvium that was washed from sandy loams and sandy clay loams. These soils occur on flood plains along the larger streams of the county and are poorly drained. The water table is high most of the time. Because fresh alluvium is occasionally deposited on the surface, these soils are classified as intergrades toward the Alluvial great soil group. Bibb soils have a gray to grayish-brown surface soil that overlies a mottled, gray or grayish-brown silt loam to sandy clay loam subsoil. They contain little organic matter.

Grady series.—These soils have developed in poorly drained depressions on beds of deep acid, sandy loam and clay. Grady soils differ from the other Low-Humic Gley soils of Dale County in having a thicker and darker colored A_1 horizon. Because of these features of the surface soil, Grady soils are classified as intergrades toward the Humic Gley soil group.

[6] See footnote 5, p. 46.

[7] See nootnote 5.

Myatt series.—Myatt very fine sandy loam is the only Myatt soil mapped in Dale County. This soil occurs on low terraces bordering streams and is poorly drained. It has developed on old alluvium that was washed from Norfolk, Ruston, and other sandy soils. The water table is high during periods of high rainfall and low during dry periods. Because of this fluctuating water table and the consequent alternating oxidization and reduction, yellow and brown mottles have formed. The formation of this soil has been affected mainly by topography and vegetation. It has a light-gray to grayish-brown surface soil that overlies a gray sandy clay loam to silty clay subsoil. The subsoil is mottled below depths of about 10 inches. The A horizon contains a medium to low amount of organic matter.

Plummer series.—The soils in this series are mapped with those of the Rains series. Plummer soils are poorly drained. They occur mainly in the upland on flats and in depressions, but they are also in a few seepy areas on slopes as steep as 20 percent. The surface soil generally contains a medium amount of organic matter, but in some sanded areas it contains a large amount. The Plummer soils are generally much sandier throughout the profile than the Rains soils. The water table is normally high, but it fluctuates with the amount of rainfall.

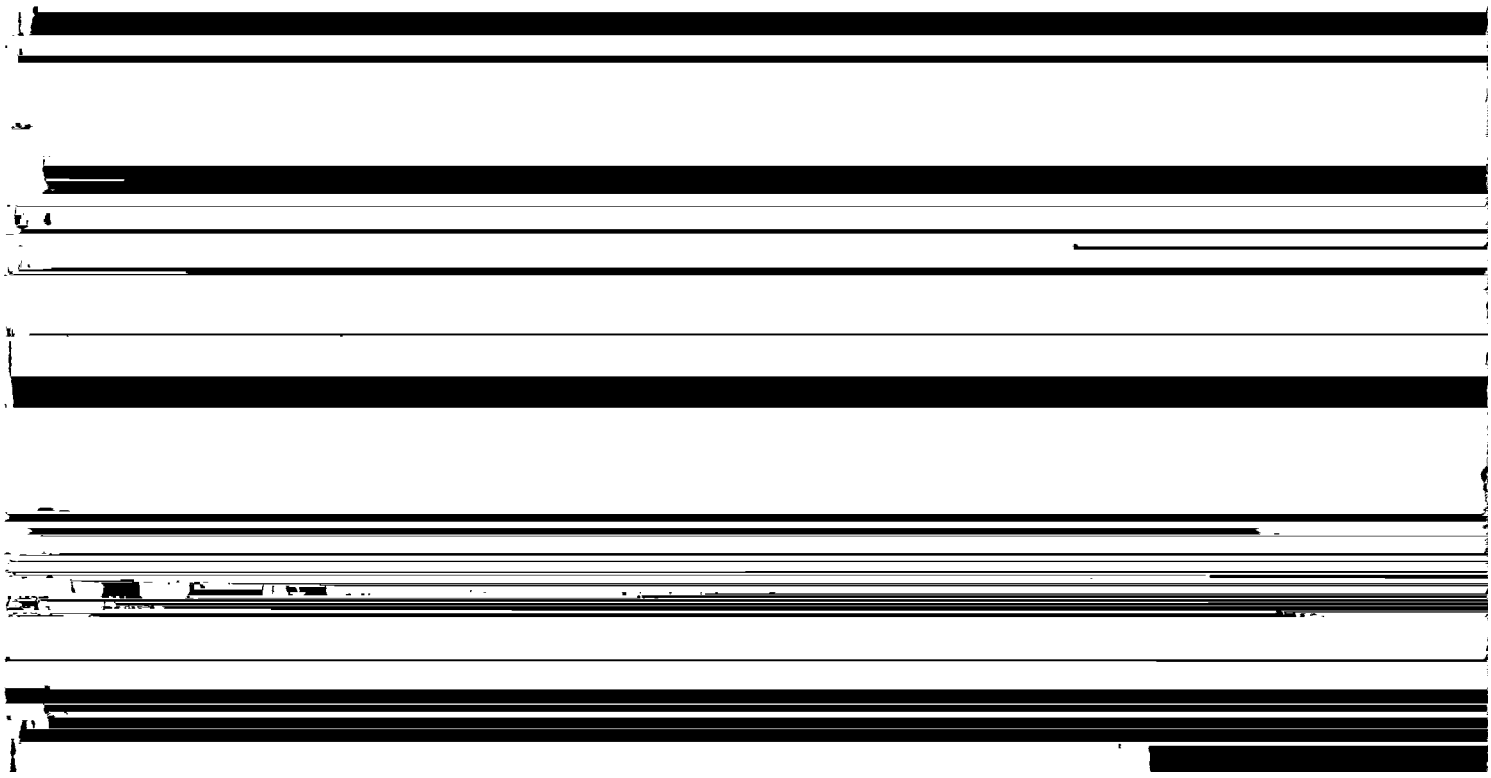
Rains series.—The soils in this series have developed on thick beds of poorly drained acid sandy loams and sandy clay loams. These soils occur on broad flats and in a few seepy areas that have slopes of less than 20 percent. They have a gray or dark-gray surface soil that is poorly drained. Their subsoil is gray, mottled with yellow and brown. The surface soil contains a medium to small

vium phase. This is a moderately well drained soil developing from local alluvium that was washed mainly from reddish-brown or brown sandy loams, sandy clay loams, sandy clay, and clays. It occurs at the base of upland slopes, in slight depressions, and along narrow upland drainways. This soil shows some profile development but lacks the well-developed profiles of the surrounding Reddish-Brown Lateritic soils and Red-Yellow Podzolic soils. It has a dark grayish-brown to reddish-brown surface soil and a very dark grayish-brown to reddish-brown silty clay loam subsoil. The surface soil contains a medium amount of organic matter.

Iuka series.—The soils of this series are in positions similar to those of the Hannahatchee soils and along the larger streams. The Iuka soils, which are moderately well drained, are also similar to the Hannahatchee soils in drainage. They have had some profile development; a B horizon with slight differentiation in texture or color can be discerned.

Regosols

This is an azonal group of soils that consists of deep, unconsolidated materials in which few or no distinct soil characteristics have developed. In Dale County the Regosols formed from thick beds of acid sands or loamy sands. They have some characteristics of the associated zonal soils. For example, the Lakeland soils, which are Regosols, have about the same color profile as the Norfolk soils, which are Red-Yellow Podzolic soils. The Lakeland soils, however, are much sandier throughout the profile than are the Norfolk soils, and they lack the distinct textural development and horizon differentiation



sloping terraces along streams. In color they are similar to the Kalmia soils, which are yellow members of the Red-Yellow Podzolic great soil group. They have a gray to yellowish-brown loamy fine sand surface soil that is underlain by a subsoil of yellow to light-brown loamy sand. Sediments that are finer textured than the material above occur at depths below 30 inches.

Lakeland series.—Lakeland soils have some characteristics of Red-Yellow Podzolic soils but lack the well-defined profile development. They are level to steep, somewhat excessively drained, deep, and sandy. They have developed on thick beds of sands. Their surface soil is grayish-brown to pale-brown loamy fine sand, which is underlain by pale-yellow to light yellowish-brown loamy fine sand. Finer textured sediments occur at depths below 30 inches.

General Nature of the Area

Dale County, in southeastern Alabama, is on the

TABLE 5.—*Temperature and precipitation at Ozark, Dale County, Ala.*

[Elevation, 380 feet]

Month	Temperature [1]			Precipitation [2]			
	Average	Absolute maximum	Absolute minimum	Average	Driest year (1954)	Wettest year (1929)	Average snowfall
	°F.	°F.	°F.	Inches	Inches	Inches	Inches
December	51.8	85	13	4.85	2.71	3.23	(3)
January	50.8	84	8	4.45	.84	6.71	0.1
February	53.0	85	10	5.68	2.64	15.21	.1
Winter	52.0	85	8	14.98	6.19	25.15	.2
March	60.0	89	17	5.34	3.83	21.71	0
April	66.2	94	28	4.21	2.47	2.18	0
May	73.5	101	40	3.43	1.51	2.83	0
Spring	66.6	101	17	12.98	7.81	26.72	0

Tuscahoma sand, which is also called the Bells Landing series, borders the Nanafalia formation and extends across the county in the same general direction as the Nanafalia. It consists of beds of clayey sands, sandy clays, and marls. The Ruston, Cuthbert, Boswell, and Shubuta soils occur on Tuscahoma sand.

The Hatchetigbee and Bashi formations appear at the surface in only a few places in the county. The Hatchetigbee formation consists mainly of deep beds of sandy clays or clayey sands, and the Bashi formation is marl over sandy clays that contain seams of lignite.

The Tallahatta formation, which is also called Buhrstone, extends under a larger acreage than any other geologic formation in the county. It extends in an irregular line from Daleville, through Ozark, Echo, and Clopton and covers much of the southern and eastern parts of the county. It consists of claystone, sandstone, and red and yellow sand.

The formations in Dale County come to the surface in roughly parallel belts, but the soils that developed on them have little belted arrangement. In many places these soils are entirely unrelated to the underlying formations. For example, sandy soils are found over clays in many places. These clays normally would give rise to clay loams and other heavy soils, but sandy soils develop because a thin mantle of sandy material overlies the formation in much of the county.

Water Supply

Drinkable water is found in all parts of Dale County. Some of the natural springs that were used by the first settlers are still in use. The county also has flowing wells, most of them near the larger streams. The Choctawhatchee wells and those at Munns Bridge furnish water for swimming pools and other recreational uses. Many tourists visit the Clayhatchee wells each year.

Although the first wells dug were shallow, much deeper wells are now used. The shallow wells are about 30 feet, but, because these do not supply the water that is needed for livestock and home use, many deeper wells have been drilled. Some of these wells are 200 feet deep and supply water for irrigation as well as other uses. Many artificial stock ponds and fish ponds have been constructed. In many places, seepy areas at the base of slopes could be made into watering places for livestock.

Vegetation

The early settlers found the area to be heavily forested with pure stands of longleaf, loblolly, and shortleaf pines or mixed stands of pines and hardwoods. Magnolia, cypress, ash, bamboo, and an undergrowth of gallberries and briers grew where there was abundant moisture.

Virgin timber was used for building houses and barns and for fuel. Much of the timber was burned when the land was cleared for planting crops. Because markets were distant, choice logs and other forest products were not commercially important during the early years of settlement.

All the original stands were cut, and stands of young pines, many of them inferior, were left. In many places, especially on the deep sandy soils, the pines have been followed by thick stands of scrubby oak and blackjack oak that are almost worthless. In recent years, the growth of pines has been helped by good forest management.

Settlement and Population

Dale County was created from parts of Barbour, Covington, Henry, and Pike Counties in 1824. It was named in honor of Gen. Samuel Dale, who had won distinction during the Indian War. The county seat was Daleville until 1841, when it was moved to Newton. In 1864, it was moved to Ozark, the present county seat.

The population of Dale County is gradually declining. This decline is caused mainly by the introduction of improved farm machinery and the restrictive farm program. The improved machinery reduces the number of farm laborers needed. The farm program reduces the acreage in peanuts and cotton. The population of Ozark, however, grew from 3,500 in 1945 to 7,500 in 1956. Ozark is the largest incorporated town. Other incorporated towns, all having populations less than 500, are Ariton, Newton, Pinckard, Midland City, and Daleville.

Schools

High schools are at Ozark, Ariton, Newton, and Midland City; junior high schools are at Daleville, Pinckard, Echo, and Skipperville. There are four elementary schools in Dale County, all of which are served by buslines. The George C. Wallace Vocational Trade School is at Napier Field.

Railroads and Roads

The main line of the Atlantic Coast Line Railroad runs the entire length of the county. It enters the county from the northwestern corner and leaves the county near Grimes in the southeastern corner. This line has stations and sidings at Ariton, Ozark, Ewell, Newton, Pinckard, Midland City, and Napier Field. From Waterford a branch line passes through Fort Rucker and Daleville and extends to Elba in adjoining Coffee County. Another branch runs from the main line at Grimes to Abbeville in Barbour County. A branch of the Central of Georgia Railway extends from its terminus at Ozark to Clayton and Eufaula in adjoining Barbour County.

United States Highway 231 runs diagonally across the county, generally from northwest to southeast. United States Highway 84 runs through Clayhatchee and crosses the southwestern corner of the county. State Highways 27 and 85 are lateral roads that connect with the main highways. Hard-surfaced roads are accessible to all parts of the county, and a number of farm-to-market roads run into them. Buses run to points outside the county, and freight is carried over the main highways.

Farm, Home, and Community Facilities

Dwellings in rural areas, especially in the southern part of the county, range from large, well-built houses on the more prosperous farms to very poor houses on some of the tenant farms. The southern part of the county

has, in general, the best dwellings and farm buildings. Electricity is available in nearly all sections of the county, and most farm homes are fairly well equipped with modern conveniences. Telephone service is available in practically all small towns and local centers, and a few telephone lines extend to rural sections. Mail service is countywide. Nearly all of the most frequently traveled roads are hard surfaced, and other roads are scheduled to be paved in the near future. Ozark has a weekly newspaper, a radio station, a modern hospital, and a health unit. The health unit consists of the county health officer, a nurse, and a sanitary engineer.

Recreation Facilities

The nearby Gulf of Mexico and the good fishing waters in Florida are fairly accessible to residents of Dale County. The largest recreation facility in the county is Lake Tholocco on the Fort Rucker Military Reservation where there is a beach, picnic grounds, and good fishing. Another lake for fishing is now being built in the county.

Industries

Many people in Dale County are employed in construction and in industries that produce lumber, other building materials, and pulpwood. Several mills manufacture textile products, and a factory at Napier Field makes furniture. At the beginning of World War II, the construction of Napier Field and Camp Rucker increased the development and growth of the county. Napier Field has been closed, but the Fort Rucker Army Aviation School, which has been converted from Camp Rucker, employs many people and uses many local products.

Agriculture

The agriculture of Dale County was founded on the staples, cotton and corn, which were sold. Only enough livestock and vegetables were produced to supply home needs. The first farming was in the northern, or hilly, section of the county where the earliest settlements were made. Not until the latter part of the 19th century and the early part of this century did the southern part of the county become one of the most productive and intensively cultivated sections. Table 6 gives the acreage of principal crops and number of bearing nut trees in the county for stated years.

Because the boll weevil damaged the cotton, peanuts became a cash crop in the county about 40 years ago. Peanuts are now one of the main sources of farm income. Before the early 1930's, when the Agricultural Adjustment Administration was created, 40,000 acres were planted to cotton and 35,000 acres to peanuts. The rest of the open land was planted to corn and other field crops that were used to feed livestock, mainly hogs.

In 1954, only about 9,500 acres were in cotton and 21,000 acres were in peanuts. This decrease in the acreage of cotton and peanuts was the result of the acreage restrictions of the farm program. The rest of the available soil was planted to corn, peanuts for hogs, soybeans, and grain sorghum. In recent years several thousand acres of cropland has been seeded to permanent pasture that is used to graze cattle.

TABLE 6.—*Acreage of principal crops and number of bearing nut trees in Dale County, Ala., in stated years*

Crop	1929	1939	1949	1954
	Acres	*Acres*	*Acres*	*Acres*
Corn for all purposes	40, 975	43, 268	34, 671	36, 208
Cotton harvested	41, 029	19, 878	7, 226	9, 518
Peanuts grown alone	31, 083	46, 320	33, 736	21, 721
Sorghums for all purposes except sirup	28	36	450	482
Small grains threshed or combined	1, 593	298	303	1, 398
Vegetables harvested for sale	332	[1] 887	1, 327	825
Watermelons	142	115	331	348
Sweetpotatoes	771	1, 016	238	98
	Number [2]	*Number* [2]	*Number* [2]	*Number*
Pecan trees	6, 406	12, 737	11, 532	6, 548

[1] Includes 115 acres of watermelons.
[2] Number in census year, which is 1 year later than the crop year given at the head of the column.

Before 1939 much of the acreage in peanuts was hogged off in Dale County, which had long been a leading hog-producing county in Alabama. During World War II, however, the increased demand for peanuts caused a much larger acreage to be planted, and peanuts became the leading cash crop. Although crop allotments have reduced the acreage planted in recent years, peanuts remain the leading cash crop in the county.

The number of livestock in the county generally has increased since 1940 (table 7). Peanut hay is the main source of roughage for the livestock. Before 1940, much of the hay was sold to cattle raisers in Florida and in the Black Belt section of Alabama. Because of the increased number of livestock in the county, the local demand for peanut hay has increased. In 1954, 7,847 tons of peanut hay was baled. The large cattle producers are now supplementing the peanut hay with grass hay, mostly coastal bermudagrass and bahiagrass.

About 25,000 acres of cropland, some the best in the county, has been taken for activities of national defense. About 200 farm families gave up farming in the county when their land was acquired by the Government, and about 200 other farm families started farming in other sections of the county.

TABLE 7.—*Number of livestock on farms in Dale County, Ala., in stated years*

Livestock	1930	1940	1950	1954
	Number	*Number*	*Number*	*Number*
Horses and mules	4, 297	[1] 3, 914	2, 695	1, 360
Cattle and calves	6, 160	[1] 6, 926	7, 737	14, 487
Swine	29, 515	[2] 18, 438	30, 196	29, 249
Sheep and lambs	51	([3])	9	11
Chickens	[1] 55, 296	[2] 50, 607	[2] 40, 970	[2] 47, 505

[1] Over 3 months old.
[2] Over 4 months old.
[3] Not reported.

According to the United States Census, there were 1,611 farms in the county in 1954. The average-sized farm was 158 acres. These farms had a total of about 72,000 acres in cultivation and 6,904 acres in permanent pasture. The 1,611 farms were made up of 541 field-crop farms other than vegetable, fruit, or nut, 16 dairy farms, 15 poultry farms, 228 livestock farms other than dairy or poultry, 310 general farms, and 501 miscellaneous and unclassified farms.

In 1954, owners operated 65.9 percent of the farms in Dale County and tenants operated 34.1 percent. The total number of tenants was 550, of which 344 were share tenants and croppers, 128 were cash tenants, 28 were share-cash tenants, and 50 were miscellaneous tenants. There were 760 full owners, 298 part owners, and 3 managers. The proportion of farms operated by owners to those operated by tenants varies in different parts of the county.

In 1954, there were 224 farms less than 30 acres in size, 184 ranging from 30 to 49 acres, 379 ranging from

Erosion, soil. The wearing away or removal of soil material by water or wind.

Fertility, soil. The capacity of a soil to supply the amounts, kinds, and proportions of nutrients needed for growth of specified plants when other conditions such as water, light, and heat are favorable.

First bottom. The normal flood plain of a stream; land along the stream subject to overflow.

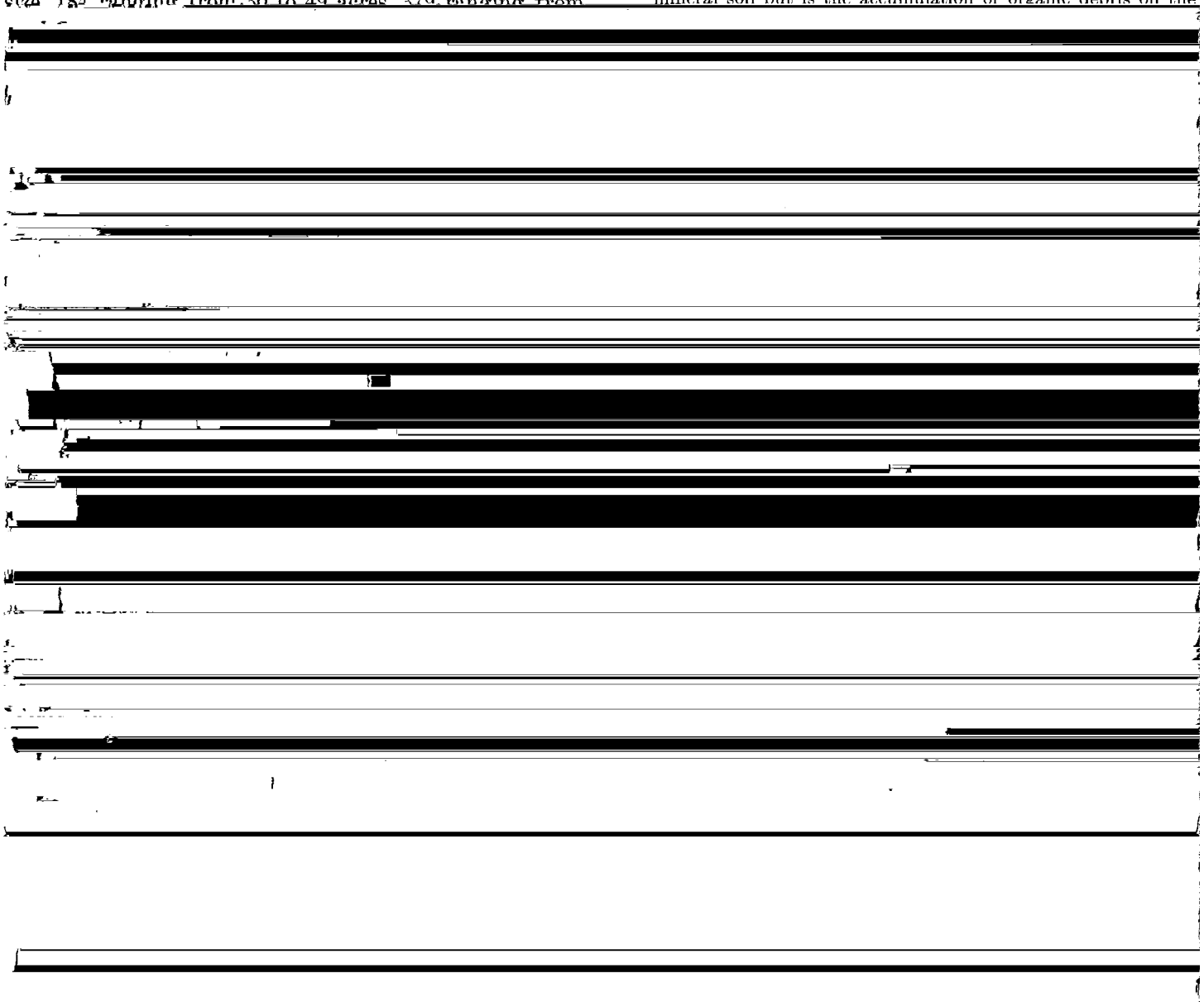
Genesis (see also Horizon). Mode of origin of the soil, referring particularly to the processes responsible for the development of the solum (horizons A and B) from the unconsolidated parent material.

Granular (see also Structure, type). Roughly spherical aggregates that may be either hard or soft, usually more firm than in crumb structure and without the distinct faces of blocky structure.

Great soil group (soil classification). A broad group of soils having certain internal soil characteristics in common.

Horizon, soil. A layer of soil, approximately parallel to the soil surface, with distinct characteristics produced by soil-forming processes.

Horizon A. The upper horizon of the soil mass from which material has been removed by percolating water; the eluviated part of the solum; the surface soil. It is generally subdivided into two or more subhorizons, of which A_0 is not a part of the mineral soil but is the accumulation of organic debris on the

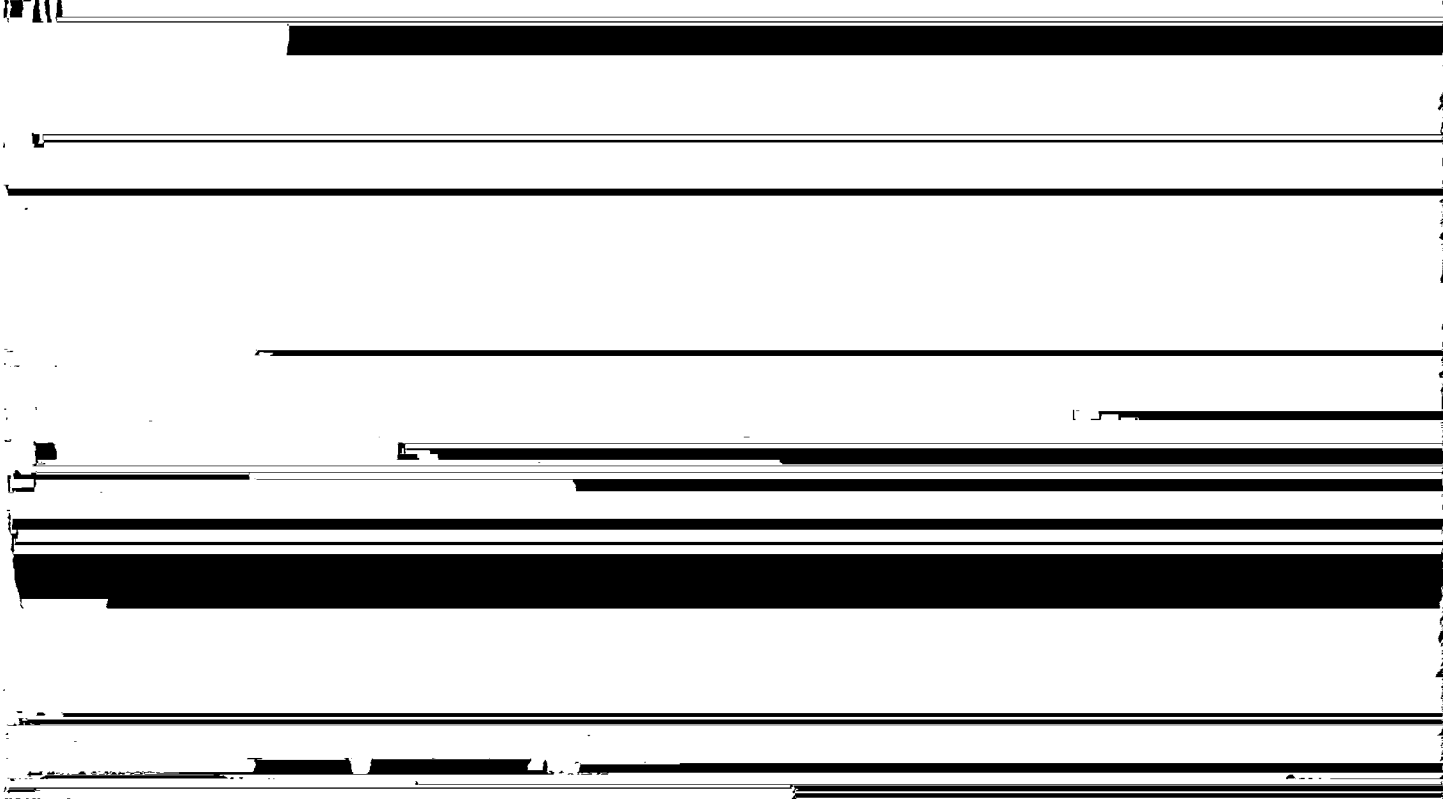


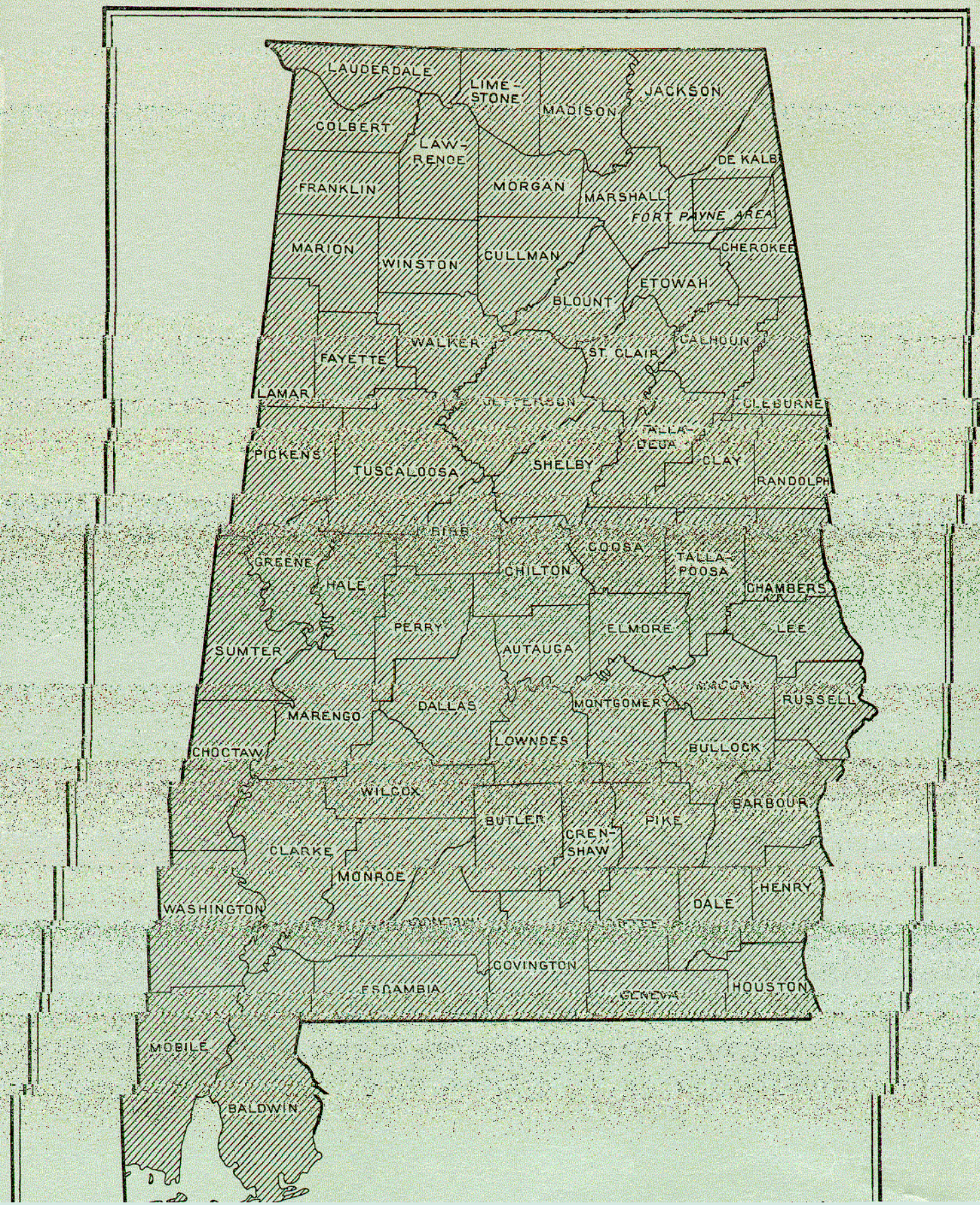
Productivity, soil. The capacity of a soil to produce a specified plant (or plants) under a given system of management.

Profile, soil. A vertical section of the soil from the surface in to the

Structure, soil—Continued

Grade. Degree of distinctness of aggregation; expresses the differential between cohesion within aggregates and adhesion




LAUDERDALE
LIME-STONE
MADISON
JACKSON
COLBERT
LAW-RENCE
DE KALB
FRANKLIN
MORGAN
MARSHALL
FORT PAYNE AREA
MARION
WINSTON
CULLMAN
CHEROKEE
ETOWAH
BLOUNT
WALKER
CALHOUN
FAYETTE
ST. CLAIR
LAMAR
JEFFERSON
CLEBURNE
TALLA-DEGA
PICKENS
TUSCALOOSA
SHELBY
CLAY
RANDOLPH
BIBB
COOSA
GREENE
CHILTON
TALLA-POOSA
HALE
CHAMBERS
PERRY
ELMORE
LEE
SUMTER
AUTAUGA
MACON
MONTGOMERY
RUSSELL
MARENGO
DALLAS
LOWNDES
BULLOCK
CHOCTAW
WILCOX
BARBOUR
BUTLER
PIKE
CREN-SHAW
CLARKE
MONROE
HENRY
DALE
WASHINGTON
COVINGTON
ESCAMBIA
GENEVA
HOUSTON
MOBILE
BALDWIN