Series 1960, No. 3

Issued July 1963

SOIL SURVEY

Claiborne County Mississippi

OUR SOIL ★ OUR STRENGTH

UNITED STATES DEPARTMENT OF AGRICULTURE
Soil Conservation Service
In cooperation with
MISSISSIPPI AGRICULTURAL EXPERIMENT STATION

HOW TO USE THE SOIL SURVEY REPORT

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

Locating Soils

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

Finding Information

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

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

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

Engineers will want to refer to the subsection "Engineering Applications," where tables list characteristics of the soils that affect engineering.

Scientists and others who are interested will find information about how the soils were formed and how they were classified in the section "Formation and Classification of Soils."

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

Newcomers in Claiborne County will be especially interested in the section "General Soil Map," where broad patterns of soils are described. They may also be interested in the section "Additional Facts About the County."

* * * *

Fieldwork for this survey was completed in 1960. Unless otherwise indicated, all statements in the report refer to conditions in the county at that time. The soil survey of Claiborne County was made as part of the technical assistance furnished by the Soil Conservation Service to the Claiborne County Soil Conservation District.

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Contents

Series 1960, No. 3

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SOIL SURVEY OF CLAIBORNE COUNTY, MISSISSIPPI

BY HENRY C. LANE AND WILLIAM A. COLE, UNITED STATES DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE, IN COOPERATION WITH THE MISSISSIPPI AGRICULTURAL EXPERIMENT STATION

CLAIBORNE COUNTY is in southwestern Mississippi (fig. 1). Port Gibson, the county seat, is south of Vicksburg, northeast of Natchez, and southwest of Jackson. The county has a total area of 486 square miles, or 311,040 acres.

About one-tenth of the county lies on the alluvial plain of the Mississippi River. That part of the plain is also called the delta. It is nearly level. The soils are not protected from floods, and only a few fields are cultivated. The vegetation is mostly hardwood trees.

About two-tenths of the county consists of the flood plains and adjoining hills along the Big Black River, Big Bayou Pierre, and Little Bayou Pierre. The soils of these flood plains are nearly level, and most of them are used for crops or for pasture.

Nearly six-tenths of the county is made up of silty soils of the uplands. These soils vary in slope and in natural drainage. More than half of the acreage is in trees. A little more than one-tenth of the county is rough, broken land and is mostly in a forest of pines mixed with hardwoods.

How Soils Are Named, Mapped, and Classified

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

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

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

Soils that have profiles almost alike make up a soil series. Except for different texture in the surface layer, all the soils of one series have major horizons that are similar in thickness, arrangement, and other important characteristics. Each soil series is named for a town or other geographic feature near the place where a soil of that series was first observed and mapped. Grenada and Memphis, for example, are the names of two soil series.

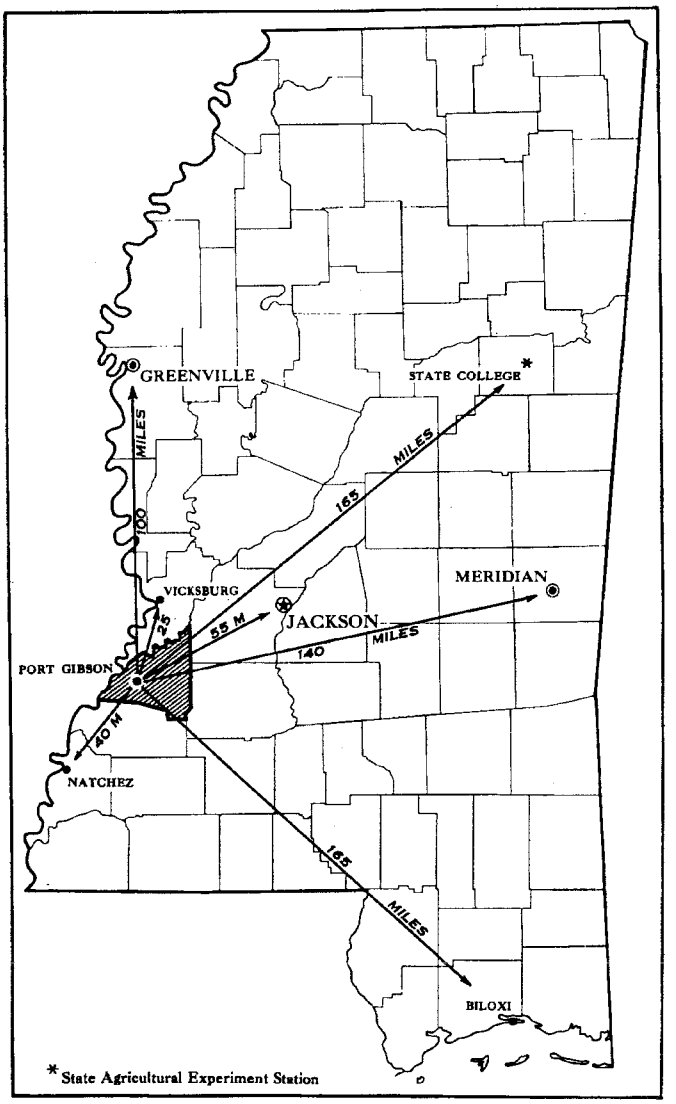

Figure 1.—Location of Claiborne County in Mississippi.

All the soils in the United States having the same series name are essentially alike in natural characteristics.

Many soil series contain soils that are alike except for texture of their surface layer. According to this difference in texture, separations called soil types are made. Within a series, all the soils having a surface layer of the same texture belong to one soil type. All Grenada soils mapped in Claiborne County are silt loams and, therefore, are of the same soil type, Grenada silt loam.

Some soil types vary so much in slope, degree of erosion, number and size of stones, or some other feature affecting their use, that practical suggestions about their management could not be made if they were shown on the soil map as one unit. Such soil types are divided into soil phases. The name of a soil phase indicates a feature that affects management. For example, Grenada silt loam, 0 to 2 percent slopes, is one of several phases of Grenada silt loam, a soil type that ranges from nearly level to steep.

After a fairly detailed guide for classifying and naming the soils had been worked out, the soil scientists drew soil boundaries on aerial photographs. They used these photos for their base map because they show woodlands, buildings, field borders, trees, and other detail that greatly help in drawing boundaries accurately. The soil map in the back of this report was prepared from the aerial photographs.

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

In most mapping, some areas are so severely eroded, so shallow, or so frequently worked by wind and water that they cannot be called soils. These areas are shown on a soil map like other mapping units, but they are given descriptive names, such as Gullied land or Mixed alluvial land, and are called land types rather than soils.

Only part of the soil survey was done when the soil scientist had named and described the soil series and mapping units, and had shown the location of the mapping units on the soil map. The mass of detailed information he had recorded then needed to be presented in different ways for different groups of users, among them farmers, managers of woodlands and rangelands, and engineers.

To do this efficiently, he had to consult with persons in other fields of work and jointly prepare with them groupings that would be of practical value to different users. Such groupings are the capability classes, subclasses, and units, designed primarily for those interested in producing the short-lived crops and tame pasture; woodland suitability groups, for those who need to manage wooded tracts; and the classifications used by engineers who build highways or structures to conserve soil and water.

General Soil Map

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

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

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

The general soil map showing patterns of soils is useful to people who want a general idea of the soils, who want to compare different parts of a county, or who want to know the possible location of good-sized areas suitable for a certain kind of farming or other land use.

Bowdre-Adler-Commerce association: Soils on the alluvial plain of the Mississippi River

This soil association covers about 10 percent of the county and is entirely within the alluvial plain of the Mississippi River. It consists of soils on recently formed natural levees, in slack-water areas adjacent to the levees, and in areas adjacent to the loessal uplands. The natural levees are 15 to 20 feet higher than the normal level of the river.

The Bowdre, Adler, and Commerce soils are dominant in this association. The surface layer of all these soils is very dark grayish-brown and dark grayish-brown silty clay to very fine sandy loam. The subsoil ranges from silty clay to loamy sand in the Bowdre soils and is silt or silt loam in the Adler soils. It is stratified in the Commerce soils. These major soils are medium acid to moderately alkaline.

The Bowdre soils are in slack-water areas, and the Adler soils are between the slack-water areas and the loessal uplands. The Commerce soils are on the recently formed natural levees. Also in this soil association are small areas of Crevasse, Robinsonville, Inglefield, and Tunica soils. Very little of the acreage is cultivated; most of it is in hardwoods.

Collins-Falaya-Calloway association: Soils on the alluvial plains of tributary streams

This soil association is on the flood plains along tributaries of the Mississippi River and on adjacent, nearly level loessal uplands. These tributaries are the Big Black River, Big Bayou Pierre, and Little Bayou Pierre. The association makes up about 22 percent of the county.

The Collins and Falaya soils are dominant in this association, but there are also large areas of Calloway soils. These major soils are acid. They have a brown to dark grayish-brown surface layer of silt loam. Their subsoil is silt loam or heavy silt loam. The Collins and Falaya soils are on flood plains and formed in alluvial material. The Calloway soils are on uplands and have a fragipan at a depth of 16 to 20 inches. Also in this association are Waverly, Memphis, Grenada, and Henry soils and Mixed alluvial land.

About 90 percent of this soil association is in cultivated crops or in pasture. Most of the farms are large, well managed, and productive.

Memphis-Natchez-Adler association: Undulating to steep, well-drained soils on uplands

This soil association occupies about 52 percent of the county. The main soils are the Memphis and Natchez soils, but also extensive are the Adler soils. The Memphis and Natchez soils are on loessal uplands. The Adler soils are in narrow valleys and at the foot of bluffs on alluvium that washed from the loessal uplands.

Silt loam is the dominant texture of these major soils. The Memphis and Natchez soils formed in deep, loessal materials. The Memphis soils are well drained, nearly level to very steep, and acid. Natchez soils are strongly sloping to very steep, somewhat excessively drained, and alkaline. On nearly level slopes are the moderately well drained Adler soils. Also in this soil association are small areas of the Loring, Calloway, Henry, and Collins soils.

The soils in this association are productive, but severe erosion is likely on slopes of more than 5 percent. If soil and water are conserved, the soils on ridgetops and gentle slopes can be cultivated intensively. The moderately sloping soils are suited to pasture and to perennial crops. The steep soils are best for trees. Most of the acreage in this soil association is in hardwoods.

Memphis-Loring-Grenada association: Undulating to hilly, well drained to moderately well drained soils on uplands

This soil association is on the uplands in the southeastern part of the county. It makes up about 5 percent of the total acreage.

The Memphis, Loring, and Grenada soils are dominant in this association. These soils formed in deep, loessal material. They are mostly silt loam and are medium acid to strongly acid. The slope ranges from 2 to 17 percent. A fragipan occurs in the Loring soils at a depth of 36 to 40 inches, and in the Grenada soils at a depth of 17 to 30 inches. The Memphis soils do not have a fragipan. Also in this soil association are small areas of Collins and Falaya soils and of Mixed alluvial land.

The steeper soils in this association are likely to erode severely if they are cultivated. They are best suited to trees. The gently sloping soils are well suited to cultivated crops. About half of this association is in pasture, and half is in mixed pines and hardwoods.

Rough broken land association: Long, narrow ridges and steep, broken side slopes

This soil association is in the eastern part of the county and makes up about 11 percent of the total acreage. It consists of long, narrow finger ridges with steep, broken side slopes. The valleys between the ridges are also long and narrow.

In this association the loessal material is thinner than that elsewhere in the county. At or near the surface is sand, gravel, and other material of the Coastal Plain. This association is in mixed pines and hardwoods.

Descriptions of Soils

In the following pages the soil series of Claiborne County are described in alphabetic order. Following the description of a series, each soil in that series is described. A generalized profile of the first soil in each series is described, for this soil is typical of the series. The reader is to assume that all other mapping units in the series have essentially the same kind of profile. The differences are indicated in the soil name or are stated in the text.

The approximate acreage and proportionate extent of the soils are given in table 1, and their location can be seen on the detailed map at the back of the report. Many soil terms are defined in the Glossary at the back of this report and in the "Soil Survey Manual" (*5*).[1] Some terms are explained here so that the soil descriptions can be understood more readily.

Soil scientists use Munsell notations to indicate the precise color of a soil, and they provide the equivalent in words for readers not familiar with the system. They compare the color of a soil sample with that on a standard color chart. If, for example, the Munsell notation for the color of the soil is 10YR 4/2, the soil is dark grayish brown. In this section only words are used to describe color, but both words and Munsell notations are used in the section "Formation and Classification of Soils."

The textural name of a soil refers to the content of sand, silt, or clay. Texture is determined by the way the soil feels when rubbed between the fingers and is checked further by laboratory analyses.

Structure is indicated by the way the individual soil particles are arranged in larger grains, or aggregates, and the amount of pore space between grains. The structure of a soil is determined by the distinctness, the size, and the shape of the aggregates. For example, a soil may have a weak, fine, granular structure. Generally only shape of the aggregates is given in this section.

Friable, firm, plastic, and other terms are used to describe consistence. Soil scientists estimate consistence by the way a soil feels when it is squeezed or molded with the fingers.

Adler Series

The Adler series consists of deep, nearly level, moderately well drained soils. These friable soils formed in alkaline material that washed from the loessal uplands. Their surface layer is very dark grayish-brown and dark grayish-brown silt loam. It is underlain by mottled, brown silt loam. The mottles are few and faint in the upper part of the subsoil but increase in number and prominence below a depth of 20 inches.

The Adler soils generally adjoin or are near the Inglefield, Collins, and Falaya soils. They are better drained than the somewhat poorly drained Inglefield and Falaya soils. The Adler soils are more alkaline than the acid Collins and Falaya soils.

Only one Adler soil was mapped in Claiborne County. It occurs in narrow strips where the loessal material is thick, mainly in narrow valleys of upland streams and at the foot of loessal bluffs that border the flood plain of the Mississippi River.

The native vegetation is hardwoods, but most of the acreage has been cleared and is cultivated. Adler soils are suited to many kinds of crops.

Adler silt loam (0 to 2 percent slopes) (Ad).—This is a

[1] Italic numbers in parentheses refer to Literature Cited, p. 54.

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

Soil	Area	Extent
	Acres	*Percent*
Adler silt loam	5, 865	1. 9
Bowdre, Tunica, and Crevasse soils	14, 435	4. 6
Calloway silt loam, 0 to 2 percent slopes	3, 805	1. 2
Calloway silt loam, 2 to 5 percent slopes	1, 860	. 6
Collins silt loam	13, 610	4. 4
Commerce silt loam	1, 410	. 5
Crevasse, Commerce, and Robinsonville soils	6, 280	2. 0
Falaya silt loam	24, 690	7. 9
Grenada silt loam, 0 to 2 percent slopes	900	. 3
Grenada silt loam, 2 to 5 percent slopes	460	. 1
Grenada silt loam, 2 to 5 percent slopes, eroded	1, 205	. 4
Grenada silt loam, 2 to 5 percent slopes, severely eroded	1, 720	. 6
Grenada silt loam, 5 to 8 percent slopes, severely eroded	4, 495	1. 4
Grenada silt loam, 8 to 12 percent slopes, severely eroded	3, 515	1. 1
Grenada silt loam, 12 to 17 percent slopes, severely eroded	1, 995	. 6
Gullied land	11, 290	3. 6
Henry silt loam	905	. 3
Inglefield silt loam	1, 285	. 4
Loring and Memphis silt loams, 0 to 2 percent slopes	745	. 2
Loring and Memphis silt loams, 2 to 5 percent slopes, eroded	995	. 3
Loring and Memphis silt loams, 2 to 5 percent slopes, severely eroded	3, 580	1. 2
Loring and Memphis silt loams, 5 to 8 percent slopes, eroded	1, 450	. 5
Loring and Memphis silt loams, 5 to 8 percent slopes, severely eroded	9, 905	3. 2
Loring and Memphis silt loams, 8 to 12 percent slopes, severely eroded	3, 565	1. 1
Memphis silt loam, 0 to 2 percent slopes	6, 045	1. 9
Memphis silt loam, 2 to 5 percent slopes	610	. 2
Memphis silt loam, 2 to 5 percent slopes, eroded	2, 675	. 9
Memphis silt loam, 2 to 5 percent slopes, severely eroded	6, 070	2. 0
Memphis silt loam, 5 to 8 percent slopes, eroded	410	. 1
Memphis silt loam, 5 to 8 percent slopes, severely eroded	11, 280	3. 6
Memphis and Natchez silt loams, 8 to 12 percent slopes, eroded	435	. 1
Memphis and Natchez silt loams, 8 to 12 percent slopes, severely eroded	7, 645	2. 5
Memphis and Natchez silt loams, 12 to 17 percent slopes, eroded	1, 470	. 5
Memphis and Natchez silt loams, 12 to 17 percent slopes, severely eroded	7, 670	2. 5
Memphis and Natchez silt loams, 17 to 40 percent slopes, eroded	38, 910	12. 5
Memphis and Natchez silt loams, 17 to 40 percent slopes, severely eroded	51, 715	16. 6
Mixed alluvial land	12, 420	4. 0
Rough broken land	34, 110	11. 0
Sandy alluvial land	830	. 3
Waverly silt loam	3, 270	1. 1
Miscellaneous land	5, 510	1. 8
Total	311, 040	100. 0

moderately well drained, friable, alkaline soil that is sometimes flooded.

Soil layers in a typical profile:

0 to 4 inches, very dark grayish-brown to dark grayish-brown silt loam.

4 to 20 inches, brown silt loam with few, faint mottles of pale brown and dark brown.

20 to 56 inches, mottled, dark-brown silt loam.

The surface layer of this soil ranges from very dark grayish brown to brown. It is underlain by pale-brown to yellowish-brown silt loam or silt. Included with Adler silt loam are areas that have a silt surface soil.

This soil has a thick root zone and is easy to work, but it tends to crust and pack when bare. Water moves into and through the soil moderately well, and moisture is available to plants in large amounts. The soil is low in organic matter but is moderately high in natural fertility. Its surface layer is slightly acid to mildly alkaline, and its subsoil is strongly alkaline.

Adler silt loam is one of the most productive soils in the county. It is well suited to many kinds of plants. The flooding of streams is the main hazard. In addition, water flows onto this soil from higher areas, and streambanks often cave in. Most of this soil is in cultivated crops or in pasture, but some small areas that are hard to reach are in hardwoods. (Capability unit IIw-1)

Bowdre Series

The Bowdre series consists of moderately well drained, medium acid to moderately alkaline soils that formed in sediments from the Mississippi River. These soils are near the river along low natural levees. The surface layer is very dark grayish-brown silty clay. It is underlain by coarser material at a depth of about 14 inches.

In most places the Bowdre soils are adjacent to the Tunica, Crevasse, Commerce, or Robinsonville soils. The Bowdre soils are better drained than the Tunica soils but are less well drained than the Crevasse and Robinsonville soils. In the surface layer and upper part of the subsoil, the Bowdre soils are finer textured than the Commerce soils.

The native vegetation on Bowdre soils is hardwoods. The soils are suited to many kinds of plants but are hard to cultivate because their surface layer is clayey.

In Claiborne County the Bowdre, Tunica, and Crevasse soils are mapped together in one undifferentiated mapping unit.

Bowdre, Tunica, and Crevasse soils (0 to 2 percent slopes) (Bc).—These soils were mapped together in one unit because it was not practical to map them separately. They are in an intricate pattern, are somewhat similar, and are covered by a dense growth of trees. The Bowdre soils are moderately well drained, the Tunica soils are somewhat poorly drained, and the Crevasse soils are excessively drained.

These soils are in alluvium along the Mississippi River. The Bowdre soils consist of shallow, clayey material that is underlain by deposits of silt and sand. The Tunica soils are also clayey and, at a depth of about 24 to 36 inches, are underlain by silt loam to loamy sand. The Crevasse soils are deep and sandy.

The Bowdre soils make up about 70 percent of this mapping unit; the Tunica soils, about 20 percent; and the Crevasse soils, about 10 percent. In some areas mapped, only Bowdre soils or Tunica soils occur, but most areas contain the soils of all three series. All of these areas are delineated on the map in this one mapping unit, Bowdre, Tunica, and Crevasse soils. A brief description of a representative profile of a soil in each of these series follows:

Bowdre silty clay:

0 to 14 inches, very dark grayish-brown silty clay.
14 to 20 inches, mottled, brown, light brownish-gray, and yellowish-brown silt loam.
20 to 52 inches, pale-brown sandy loam with thin strata of variably colored sandy loam, silt, and clay.

The surface layer of the Bowdre soils ranges from silty clay loam to clay and is underlain by silt loam to loamy sand.

Tunica silty clay loam:

0 to 5 inches, dark-gray silty clay loam.
5 to 24 inches, mottled, dark-gray silty clay or clay.
24 to 42 inches +, dark-gray, brown or dark-brown, and yellowish-brown silt loam.

The surface layer of the Tunica soils ranges from silty clay loam to clay and is underlain by a clayey layer. These two layers combined are 24 to 36 inches thick. The underlying coarser textured layer ranges from silt loam to loamy sand.

Crevasse fine sandy loam:

0 to 23 inches, pale-brown fine sandy loam containing strata of dark grayish-brown silt loam.
23 to 42 inches, grayish-brown loamy sand.

The surface layer of the Crevasse soils ranges from loamy sand to very fine sandy loam and is 6 to 30 inches thick. The underlying layer is sandy loam or loamy sand.

Infiltration, internal drainage, and the available moisture-holding capacity vary in Bowdre, Tunica, and Crevasse soils. The supply of organic matter ranges from moderately high to low, and natural fertility, from high to low. These soils are medium acid to moderately alkaline. Reaction ranges from medium acid in the upper part of some areas of the Bowdre and Tunica soils to moderately alkaline in the Crevasse soils. Because flooding is a severe hazard, all the acreage is in hardwoods. (Capability unit Vw–1)

Calloway Series

The Calloway series consists of acid, somewhat poorly drained soils on uplands. These soils formed in loessal material. They have a grayish-brown to pale-brown silt loam surface layer and a mottled, yellowish-brown silt loam subsoil. A few fine and medium concretions of manganese and iron occur throughout the profile and increase in number with increasing depth. At a depth of 16 to 20 inches, a fragipan has formed.

The Calloway soils occur with the Memphis, Loring, Grenada, and Henry soils. In drainage and in color, Calloway soils are intermediate between the moderately well drained Grenada soils and the poorly drained Henry soils. They are paler in the subsoil than the Grenada soils and are mottled nearer the surface. Their subsoil is not so gray as that of the Henry soils. Calloway soils are more poorly drained than the Memphis soils, which are well drained and do not have a fragipan. They are not so well drained as the Loring soils. The fragipan in the Calloway soils is more strongly developed and closer to the surface than that in the Loring soils.

In Claiborne County the Calloway soils occur throughout the loessal uplands. The native vegetation is mostly hardwoods, but there are some stands of mixed pines and hardwoods.

Calloway silt loam, 0 to 2 percent slopes (CaA).—This is a somewhat poorly drained, friable soil with a fragipan. Soil layers in a typical profile:

0 to 7 inches, grayish-brown to pale-brown silt loam.
7 to 20 inches, mottled, yellowish-brown heavy silt loam; subangular blocky structure.
20 to 45 inches, mottled, yellowish-brown, or dark-brown, and light brownish-gray silt loam; subangular blocky structure, brittle and compact (fragipan).

The surface layer of this soil ranges from grayish brown to pale brown or dark brown. The fragipan begins 16 to 20 inches from the surface.

This soil can be tilled within only a fairly narrow range of moisture content. It often is too wet or too dry for tillage. Water enters the soil at a fairly slow rate. Internally it moves moderately well above the fragipan but moves very slowly within it. The fragipan, which is near the surface, limits the root zone and the capacity of the soil to hold moisture that plants can use. The soil is acid and is low in organic matter and in natural fertility.

Because this soil is nearly level and is very slowly permeable, excess surface water is a problem. Most of the soil is in pasture or in cultivated crops. (Capability unit IIIw–2; woodland suitability group 2)

Calloway silt loam, 2 to 5 percent slopes (CaB).—This soil has more rapid runoff than Calloway silt loam, 0 to 2 percent slopes, and is 2 or 3 inches thinner in the surface layer. In both soils the fragipan in the lower part of the subsoil is waterlogged and poorly aerated during wet periods. This pan restricts the root zone and, consequently, the range of suitable crops. Most of this soil is in pasture. (Capability unit IIIw–3; woodland suitability group 2)

Collins Series

The Collins series consists of friable, moderately well drained, acid soils. These soils formed in silty sediments that washed from the loessal uplands. The surface layer is brown to dark grayish-brown silt loam. At a depth of about 16 inches, this layer is underlain by mottled silt loam.

In most places the Collins soils are adjacent to the Adler, Falaya, or Waverly soils and to Mixed alluvial land. The Collins soils are more acid than the alkaline Adler soils. They are better drained than the somewhat poorly drained Falaya soils and the poorly drained Waverly soils. They are not so varied in drainage and texture as Mixed alluvial land, which ranges from sand to silt.

Only one Collins soil was mapped in Claiborne County. This soil occurs throughout the county except on the alluvial plain of the Mississippi River. Most of the acreage is east of the steep, broken, loessal bluffs. Large areas occur along Big Bayou Pierre and Little Bayou Pierre and their main tributaries.

The native vegetation on Collins soils is hardwoods. These soils are suited to many kinds of crops and pasture plants.

Collins silt loam (0 to 2 percent slopes) (Cn).—This is a moderately well drained, friable, acid soil that is likely to be flooded.

Soil layers in a typical profile:

0 to 18 inches, brown to dark grayish-brown silt loam.

18 to 33 inches, mottled, pale-brown, light-gray, brown, dark-brown, and yellowish-brown silt loam.
33 to 40 inches, mottled, light-gray silt loam.

Mottling begins at a depth of 18 to 30 inches.

This soil has a thick root zone and is easy to work, but it tends to crust and pack if it is bare. Water moves into and through the soil moderately well, and moisture is available to plants in large amounts. This soil contains little organic matter and is strongly acid. It responds well to fertilization, though its natural fertility is moderately high.

This soil is suited to a fairly wide range of crops. But many areas are likely to be flooded, and planting is often delayed in spring. Also, water flows over bluffs onto this soil, and streambanks cave in. Well-arranged crop rows and drainage ditches help to remove excess surface water and thereby to increase yields. About 80 percent of this soil has been cleared and is in cultivated crops or in pasture. Most of the rest is in hardwoods. (Capability unit IIw–1; woodland suitability group 3)

Commerce Series

The Commerce series consists of friable, moderately well drained to somewhat poorly drained soils that are moderately alkaline. These soils are in sediments from the Mississippi River. The surface layer is very dark grayish-brown and dark grayish-brown silt loam. It overlies stratified layers of silt loam, sandy loam, and sandy clay loam. These layers are mottled pale brown, brown, and dark grayish brown.

The Commerce soils are near the Crevasse, Robinsonville, Adler, and Bowdre soils. They are not so well drained as the excessively drained Crevasse soil or as the well-drained Robinsonville soils. They are in sediments deposited by the Mississippi River, whereas the Adler soils formed in loessal material. The Commerce soils have a coarser textured surface layer than have the Bowdre soils and are in higher positions. The Bowdre soils are in slack-water areas.

Only one Commerce soil was mapped in Claiborne County. This soil occurs in narrow belts along the Mississippi River. It is on recent natural levees, along cutoffs, and in old stream channels.

The native vegetation is hardwoods. Commerce soils are well suited to many kinds of crops and pasture plants.

Commerce silt loam (0 to 2 percent slopes) (Co).—This soil is moderately well drained and somewhat poorly drained, alkaline, and friable. It occurs on the alluvial plain of the Mississippi River.

Soil layers in a typical profile:

0 to 5 inches, very dark grayish-brown or dark grayish-brown silt loam.
5 to 45 inches, stratified layers of pale-brown and brown to dark grayish-brown silt loam, sandy loam, and sandy clay loam mottled with brown and gray.
45 to 54 inches, thin, stratified layers of grayish-brown sandy loam and silt loam mottled with pale brown and yellowish red.

This soil has a thick root zone and is easy to work, but it crusts and packs when it is bare. A plowpan forms easily. Water moves into and through this soil moderately well, and a large amount of moisture is available to plants.

Commerce silt loam contains little organic matter, is moderately high in natural fertility, and is moderately alkaline. It is susceptible to floods, but flooding generally is in winter and does not damage most row crops. About 60 percent of this soil has been cleared and is in cultivated crops or in pasture. The rest is in hardwoods. (Capability unit I–2)

Crevasse Series

The Crevasse series consists of excessively drained, moderately alkaline soils that formed in coarse sediments from the Mississippi River. These soils have a brown to pale-brown surface layer of very fine sandy loam or fine sandy loam. This layer is underlain by grayish-brown loamy sand.

In most places the Crevasse soils are adjacent to the Commerce, Robinsonville, Bowdre, or Tunica soils. They are better drained than the moderately well drained to somewhat poorly drained Commerce soils and the well drained Robinsonville soils. Crevasse soils are also better drained than the Bowdre and the Tunica soils and are much finer textured throughout the profile.

In this county Crevasse soils are on the levees that border the Mississippi River and its former channels. The native vegetation is hardwoods. Because these soils are sandy and droughty, their suitability for crops and pasture is limited.

In Claiborne County the Crevasse, Commerce, and Robinsonville soils are mapped together in one undifferentiated mapping unit.

Crevasse, Commerce, and Robinsonville soils (0 to 2 percent slopes) (Cr).—These soils were mapped together in one unit because it was not practical to map them separately. They are in an intricate pattern and are somewhat similar. They are covered by a dense growth of trees. The Crevasse soils are excessively drained, the Commerce soils are moderately well drained and somewhat poorly drained, and the Robinsonville soils are well drained.

These soils are in coarse-textured alluvium from the Mississippi River and are likely to be flooded. Crevasse soils make up about 60 percent of this mapping unit; Commerce soils, 30 percent; and Robinsonville soils, about 10 percent. In some areas mapped, only Crevasse soils occur, but most areas contain Crevasse, Commerce, and Robinsonville soils. A brief description of a representative profile of a soil in each of these series follows:

Crevasse very fine sandy loam:

0 to 10 inches, brown to pale-brown very fine sandy loam.
10 to 45 inches +, grayish-brown loamy sand.

The surface layer of the Crevasse soils ranges from very fine sandy loam to loamy sand. The underlying material is sandy loam or loamy sand.

Commerce silt loam:

0 to 10 inches, dark grayish-brown silt loam; high content of sand.
10 to 36 inches, mottled, pale-brown to dark grayish-brown silt loam to sandy loam.

The surface layer of the Commerce soils ranges from very dark grayish brown to dark grayish brown in color and from silt loam and silty clay loam to fine sandy loam in texture.

Robinsonville very fine sandy loam:

0 to 14 inches, very dark grayish-brown to dark grayish-brown very fine sandy loam.

14 to 40 inches, pale-brown to brown very fine sandy loam.
40 to 50 inches, stratified, brown to yellowish-brown very fine sandy loam.

The surface layer of the Robinsonville soils ranges from very dark grayish brown to yellowish brown in color and from very fine sandy loam to sandy loam in texture.

Crevasse, Commerce, and Robinsonville soils have variable infiltration, internal drainage, and available moisture-holding capacity. They generally contain little organic matter and range from low to high in natural fertility. In most places they are moderately alkaline. Because they are likely to be flooded occasionally by the Mississippi River, these soils have not been cleared and are in hardwoods. (Capability unit Vw–1)

Falaya Series

The Falaya series consists of friable, somewhat poorly drained, acid soils. These soils formed in silty material that washed from the loessal uplands. Their surface layer is brown to dark grayish-brown silt loam and is about 10 inches thick. It is underlain by mottled silt loam.

The Falaya soils occur with the Collins and the Waverly soils and with Mixed alluvial land. They are less well drained than the moderately well drained Collins soils but are better drained than the poorly drained Waverly soils. Unlike Mixed alluvial land, the Falaya soils do not contain stratified layers of silt and sand.

Only one Falaya soil was mapped in Claiborne County. This soil occurs throughout all the county and is the dominant soil on first bottoms.

The native vegetation is hardwoods. If Falaya soils are adequately drained, they are suited to many kinds of crops and pasture plants.

Falaya silt loam (0 to 2 percent slopes) (Fa).—This is a somewhat poorly drained, acid, friable soil. It is on first bottoms and is likely to be flooded.

Soil layers in a typical profile:

0 to 10 inches, brown to dark grayish-brown silt loam.
10 to 29 inches, mottled, light-gray, yellowish-brown, and dark yellowish-brown silt loam.
29 to 40 inches +, gray silt loam to silty clay loam mottled with dark grayish brown.

This soil is easy to work, but it tends to crust and pack when bare. Water moves into and through the soil moderately well, and enough moisture is available to meet the needs of most crops grown locally. This soil is low in organic matter, is moderately high in natural fertility, and is strongly acid.

Flooding and somewhat poor drainage are the main limitations. Streambanks often cave in, and water flows onto this soil from higher areas. Well-arranged crop rows and drainage ditches help remove excess surface water. About 60 percent of this soil has been cleared and is cultivated or is in pasture. The rest is in hardwoods. (Capability unit IIIw–1; woodland suitability group 5)

Grenada Series

The Grenada series consists of moderately well drained, strongly acid, silty soils. These soils are on ridgetops in the loessal uplands. Their surface layer is dark grayish-brown silt loam, and their subsoil is brown and dark-brown silty clay loam. A fragipan has formed at a depth of about 17 to 25 inches.

The Grenada soils occur with the Memphis, Loring, Calloway, and Henry soils. They are less well drained than the well-drained Memphis soils, which lack a fragipan. The fragipan in the Grenada soils is more strongly developed and closer to the surface than that in the Loring soils. The Grenada soils are better drained than the Calloway and the Henry soils and have a darker colored subsoil.

The Grenada soils in this county are in the eastern part. Here, the layer of loess is thinner than elsewhere in the county, and the underlying material of the Coastal Plain is closer to the surface.

The native vegetation on Grenada soils is mixed pines and hardwoods. These soils are suited to many kinds of crops, but sloping areas are likely to erode if they are cultivated.

Grenada silt loam, 5 to 8 percent slopes, severely eroded (GrC3).—This is a moderately well drained, friable, silty soil with a fragipan.

Soil layers in a typical profile.

0 to 3 inches, dark grayish-brown silt loam.
3 to 22 inches, brown and dark-brown, friable silty clay loam in upper part and dark yellowish-brown heavy silt loam in the lower part; subangular blocky structure.
22 to 40 inches, mottled, yellowish-brown, light brownish-gray, brown and dark-brown, compact silt loam (fragipan).

The depth to the fragipan ranges from 17 to 22 inches. In some small areas sandy material from the Coastal Plain is near the surface.

Most or all of the original surface layer has been removed from this soil. The subsoil is exposed in large areas. Small, shallow gullies are common, and in a few places deep ones have formed. This soil is easy to work but is very erosive and packs and crusts when bare. Infiltration is slow, and the available moisture-holding capacity is low. Internal drainage is moderate above the pan but is slow within it. The content of organic matter is low. This soil is high in natural fertility but responds well to fertilization and other good management.

Nearly all of this soil has been cleared and cultivated, but a sizable acreage has reverted to forest. The hazard of erosion is too great for frequent cultivation, but cultivated crops can be grown occasionally if management to control erosion is intensive. (Capability unit IVe–3; woodland suitability group 4)

Grenada silt loam, 0 to 2 percent slopes (GrA).—The surface layer of this soil is 10 to 12 inches thicker than that of Grenada silt loam, 5 to 8 percent slopes, severely eroded. The depth to the fragipan is about 24 to 26 inches. Thus, the root zone is thicker than that in the severely eroded soil. Tilth is generally good.

Surface water is excessive because this soil is nearly level and infiltration is slow. When rain is heavy, the soil becomes saturated and the preparation of seedbeds may be delayed.

This soil is in cultivated crops or pasture. It is suited to a fairly wide range of cultivated crops and sod crops. (Capability unit IIw–2; woodland suitability group 4)

Grenada silt loam, 2 to 5 percent slopes (GrB).—The surface layer of this soil is 8 to 10 inches thicker than that of Grenada silt loam, 5 to 8 percent slopes, severely eroded, and there is more room for roots. Surface runoff is slower, the hazard of erosion is less, and tilth is generally better.

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Nearly all of this soil is in cultivated crops or in pasture. It is suited to many kinds of cultivated crops and sod crops, but erosion is a slight to moderate hazard in cultivated fields. (Capability unit IIe–3; woodland suitability group 4)

Grenada silt loam, 2 to 5 percent slopes, eroded (GrB2).—The surface layer of this soil is 6 to 8 inches thicker than that of Grenada silt loam, 5 to 8 percent slopes, severely eroded. Because of the mild slopes, generally good tilth, and moderately good drainage, this soil is suited to a fairly wide range of crops. Erosion, however, is a slight to moderate hazard. Nearly all of this soil has been cleared and is in cultivated crops or in pasture. (Capability unit IIe–3; woodland suitability group 4)

Grenada silt loam, 2 to 5 percent slopes, severely eroded (GrB3).—This gently sloping soil is less susceptible to further erosion than Grenada silt loam, 5 to 8 percent slopes, severely eroded. It is suited to a fairly wide range of crops, but erosion is a moderate to severe hazard in cultivated fields. Almost all of this soil is in cultivated crops or in pasture. The rest has reverted to forest. (Capability unit IIIe–3; woodland suitability group 4)

Grenada silt loam, 8 to 12 percent slopes, severely eroded (GrD3).—This strongly sloping soil has more numerous deep gullies than Grenada silt loam, 5 to 8 percent slopes, severely eroded. In some small areas sandy material of the Coastal Plain is near the surface.

About 60 percent of this soil is in pasture, and 40 percent is in forest. Because the soil is strongly sloping and erosive, the hazard of erosion is very severe and cultivation generally is not feasible. If they are carefully managed, some of the less erosive areas can be cultivated occasionally. (Capability unit VIe–3; woodland suitability group 4)

Grenada silt loam, 12 to 17 percent slopes, severely eroded (GrE3).—This steep soil has a larger number of deep gullies than Grenada silt loam, 5 to 8 percent slopes, severely eroded. Sandy material of the Coastal Plain is near the surface in some places.

This soil is mostly in forest. The slopes are too steep and the hazard of erosion too great for cultivation. The soil is fair for pasture. (Capability unit VIe–3; woodland suitability group 4)

Gullied Land

This miscellaneous land type consists of gullied, deep, loessal soils. The land is so gullied that it is not practical to classify it as soil. Where the loess is deep, gullies have cut into the unweathered loessal parent material. In the eastern part of the county the gullies have cut through the loess and into the underlying material of the Coastal Plain. Areas of Gullied land are scattered throughout Claiborne County.

Gullied land (Gu).—This land is intricately dissected by deep and shallow gullies. Cultivation in its present condition is not possible, and reclamation would be very slow and generally expensive. Gullied land is mostly wooded. A small acreage is in pasture, but trees are slowly taking over. (Capability unit VIIe–2)

Henry Series

The Henry series consists of poorly drained, acid soils on uplands. These soils formed in loessal material. Their surface layer is dark yellowish-brown to pale-brown silt loam, and their subsoil is mottled, light brownish-gray silt loam. A fragipan has formed at a depth of about 12 to 16 inches. Many, small, medium, and coarse concretions of manganese are scattered throughout the profile.

The Henry soils occur with the Memphis, Loring, Grenada, and Calloway soils. They are more poorly drained than the well-drained Memphis soils, which do not have a fragipan. They are darker and more poorly drained than the Loring and Grenada soils, and their fragipan is closer to the surface than it is in those soils. The mottled, light brownish-gray subsoil in the Henry soils differs from the yellowish-brown subsoil in the somewhat poorly drained Calloway soils.

Only one Henry soil was mapped in this county. This soil occupies flats or depressions in the loessal uplands. Because of this position and because this soil is shallow to a slowly permeable fragipan, excessive surface water is a problem. The Henry soils, therefore, are best suited to pasture. Their native vegetation is hardwoods.

Henry silt loam (0 to 2 percent slopes) (Hn).—This is a poorly drained soil with a fragipan. It occurs in flats and gentle depressions of the loessal uplands.

Soil layers in a typical profile:

0 to 7 inches, dark yellowish-brown silt loam mottled in the lower half with dark brown, pale brown, and yellowish brown.
7 to 16 inches, light brownish-gray silt loam mottled with dark brown and yellowish brown; subangular blocky structure.
16 to 44 inches, gray to light brownish-gray silt loam mottled with yellowish brown; firm, brittle, and compact (fragipan).

Many concretions of manganese are above the fragipan in this soil. Within the pan are many concretions of iron and of manganese.

This soil crusts and packs when it is bare. It is difficult to work except within a fairly narrow range of moisture content. Generally, it is either too wet or too dry for cultivation. Water enters the soil slowly. It moves slowly in the upper part and very slowly in the fragipan. During dry periods little moisture is available to plants because the pan is fairly close to the surface. This soil is low in organic matter and in natural fertility. It is strongly acid.

Unless this soil is drained, the subsoil is waterlogged and poorly aerated for fairly long periods and the effective root zone is restricted. Consequently, only a few crops can be grown. Nearly all of this soil has been cleared. Some of it is in pasture, and some is in row crops. (Capability unit IVw–2; woodland suitability group 1)

Inglefield Series

The Inglefield series consists of somewhat poorly drained, alkaline soils. These soils formed in loessal material and are silty. Their surface layer is dark grayish-brown to brown silt loam. It is underlain by mottled, light-gray, yellowish-brown, and dark grayish-brown silt loam. Mottled silty clay loam generally begins at a depth of about 30 inches.

The Inglefield soils occur with the Adler soils, which formed in alkaline material that washed from uplands. The loessal parent material of the Inglefield soils differs from the sediments of the Mississippi River from which the Commerce, Bowdre, and Tunica soils formed.

Only one Inglefield soil was mapped in Claiborne County. This soil occurs along the base of the loessal bluffs that border the flood plain of the Mississippi River.

The native vegetation is hardwoods. If the Inglefield soils are adequately drained, they are suited to many kinds of crops and pasture plants.

Inglefield silt loam (0 to 2 percent slopes) (In).—This soil is somewhat poorly drained and alkaline. It is along the base of the loessal bluffs that border the flood plain of the Mississippi River.

Soil layers in a typical profile:

0 to 16 inches, dark grayish-brown to brown silt loam that is mottled in the lower part.
16 to 30 inches, mottled, light-gray, yellowish-brown, and dark grayish-brown silt loam.
30 to 44 inches, mottled, dark-gray, slightly plastic to plastic silty clay loam.
44 to 50 inches, dark-gray silt loam mottled with strong brown.

This soil is easy to work, but it tends to crust and pack when bare. Water enters and moves through the soil moderately well, and moisture is available to plants in moderate amounts. This soil is low in organic matter, moderately high in natural fertility, and moderately alkaline in reaction.

About 90 percent of this soil is in bottom-land hardwoods. Flooding is a problem, but cleared areas are suited to many kinds of crops and pasture plants. To remove the excess surface water, provide adequate diversion ditches and drainage ditches. (Capability unit IIIw-1)

Loring Series

The Loring series consists of moderately well drained to well drained, medium acid to strongly acid soils that developed in thick deposits of loess. These soils are on uplands. They have a dark-brown to yellowish-brown silt loam surface soil and a brown to dark-brown silty clay loam subsoil. A weak fragipan has formed at a depth of 26 to 40 inches.

The Loring soils commonly occur with the Natchez, Grenada, Calloway, and Memphis soils. They have a finer textured subsoil than have the Natchez soils and are acid throughout the profile; Natchez soils are alkaline in the lower part. The Loring soils are better drained than the moderately well drained Grenada soils and the somewhat poorly drained Calloway soils. Their fragipan is weaker and formed at a greater depth. The Memphis soils lack a fragipan.

In this county the Loring soils are mainly in the eastern part. They are mapped only in undifferentiated soil groups with the Memphis soils. They are suited to many kinds of plants, but because of erosion, only the gentle slopes should be cultivated regularly. The native vegetation consists of stands of mixed hardwoods and pines.

Loring and Memphis silt loams, 2 to 5 percent slopes, eroded (LmB2).—These soils were mapped together in one unit because it was not practical to map them separately. They are in an intricate pattern and are somewhat similar. The Loring and Memphis soils developed in deep loess. They have a dark-brown silt loam surface layer and a thick, brown to dark-brown silty clay loam subsoil.

The Loring soil is moderately well drained to well drained and has a weak fragipan at a depth of about 36 to 40 inches. The Memphis soil does not have a fragipan and has good drainage.

The Loring soil makes up about 60 percent of this mapping unit. Some areas contain only the Loring soil, and others contain only the Memphis. Most areas, however, contain both soils.

Profile of Loring silt loam:

0 to 6 inches, dark-brown to yellowish-brown silt loam.
6 to 36 inches, brown to dark-brown silty clay loam to silt loam; subangular blocky structure.
36 to 60 inches, brown to dark-brown, weak fragipan mottled with pale brown.

The plow layer of this soil ranges from dark brown, brown, and pale brown to dark grayish brown. The depth to the fragipan is 30 to 40 inches.

Profile of Memphis silt loam:

0 to 6 inches, brown to dark-brown silt loam.
6 to 40 inches, brown to dark-brown silty clay loam to silt loam; subangular blocky structure.
40 to 68 inches, brown to dark-brown silt loam.

The plow layer of this soil is dark yellowish brown, brown, pale brown, or dark grayish brown.

Loring and Memphis silt loams, 2 to 5 percent slopes, eroded, have lost much of their surface layer through erosion. The plow layer consists of the original surface soil mixed with the upper part of the subsoil. These soils are easy to work and have a thick root zone, but they crust and pack if bare and erode easily if not protected. Water enters these soils slowly but moves through the profile at a medium rate. A moderate to large amount of moisture is available to plants. The soils are low in organic matter but are moderate in natural fertility. They are medium acid to strongly acid in reaction.

The soils in this mapping unit are suited to many kinds of crops, but they erode easily if cultivated. To help control erosion, cultivate on the contour, provide vegetated waterways to lead water away safely, and leave all crop residue on the surface. Nearly all of the small acreage is in cultivated crops or in pasture. (Capability unit IIe-1; woodland suitability group 7)

Loring and Memphis silt loams, 0 to 2 percent slopes (LmA).—The surface layer of these soils is 4 to 6 inches thicker than that in Loring and Memphis silt loams, 2 to 5 percent slopes, eroded. Surface runoff is slow.

These nearly level soils have good internal drainage, slow infiltration, and a large capacity for holding water available to plants. Their root zone is thick. Natural fertility is moderate, but these soils respond well to fertilization and are suited to many kinds of crops. Because surface runoff is slow, good row arrangement and W-type ditches are needed to remove excess water in wet periods. These soils are in cultivated crops or in pasture. (Capability unit I-1; woodland suitability group 7)

Loring and Memphis silt loams, 5 to 8 percent slopes, eroded (LmC2).—These strongly sloping soils have greater runoff than Loring and Memphis silt loams, 2 to 5 percent slopes, eroded, and are more susceptible to further erosion. They are suited to many kinds of crops, but careful management is needed to control erosion. About 60 percent of the acreage is woodland; most of the rest is pasture. (Capability unit IIIe-2; woodland suitability group 7)

Loring and Memphis silt loams, 2 to 5 percent slopes. severely eroded (LmB3).—These severely eroded soils are 3 to 4 inches thinner in the surface layer than Loring

and Memphis silt oams, 2 to 5 percent slopes, eroded. The plow layer extends to the clayey subsoil in most places. Tilth generally is poorer than in the less eroded soils. Also, the severely eroded soils cannot be worked in so wide a range of moisture content. Shallow gullies are common in some areas, and a few deep gullies have formed.

These soils are suited to a fairly wide range of crops, but erosion is a moderate to severe hazard in cultivated fields. Most of the acreage has been cleared and is in cultivated crops and pasture. (Capability unit IIIe-1; woodland suitability group 7)

Loring and Memphis silt loams, 5 to 8 percent slopes, severely eroded (LmC3).—The surface layer is 3 to 5 inches thinner in these moderately sloping soils than in Loring and Memphis silt loams, 2 to 5 percent slopes, eroded. Shallow gullies are common, and in some places a few deep gullies have formed.

These soils are suited to many kinds of crops, but they need very careful management. Further erosion is likely because the soils take in water slowly and have rapid runoff. Most of the acreage is in pasture. (Capability unit IIIe-1; woodland suitability group 7)

Loring and Memphis silt loams, 8 to 12 percent slopes, severely eroded (LmD3).—The surface layer of these soils is 4 to 5 inches thinner than that of Loring and Memphis silt loams, 2 to 5 percent slopes, eroded. Shallow gullies are common, and in some places a few deep gullies have formed.

Because these soils are strongly sloping and highly erosive, they are not suited to frequent cultivation. But if erosion is controlled, row crops can be grown occasionally. About 70 percent of the acreage is in pasture; the rest is wooded. (Capability unit IVe-1; woodland suitability group 7)

Memphis Series

The Memphis series consists of deep, well-drained, acid soils. These soils are silty and formed on uplands in thick deposits of loess. The slope ranges from 0 to 40 percent. In most places these soils have a brown to dark yellowish-brown silt loam surface soil and a brown to dark-brown silty clay loam subsoil. The underlying material is brown to dark yellowish-brown silt loam or silt.

These soils occur with the Natchez, Loring, Grenada, Calloway, and Henry soils. The well-drained Memphis soils are more acid than the somewhat excessively drained Natchez soils, which are alkaline in the lower part. The subsoil in the Memphis soils is silty clay loam, but that in the Natchez soils is silt loam. Memphis soils are deeper and better drained than the Loring, Grenada, Calloway, and Henry soils, all of which have a fragipan.

The Memphis soils occur throughout most of Claiborne County but are missing in small areas in the eastern part and along the Mississippi River. The native vegetation is chiefly hardwoods. These soils are suited to many kinds of crops. Because they erode easily if not protected, only less sloping areas can be cultivated frequently. About 95 percent of the acreage is in pasture or in row crops.

Memphis silt loam, 2 to 5 percent slopes (MeB).—This is a well-drained, friable, silty soil that developed in deep loess.

Soil layers in a typical profile:

0 to 13 inches, dark yellowish-brown to yellowish-brown silt loam.
13 to 29 inches, brown to dark-brown silty clay loam; subangular blocky structure.
29 to 60 inches +, brown to dark-brown silt loam; subangular blocky structure.

The surface layer ranges from dark yellowish brown to pale brown. A few spots are eroded.

This soil has a thick root zone and is easy to work, but if it is bare, it crusts, packs, and erodes. Water enters the soil at a fairly slow rate, and it moves internally at a moderate rate. Enough moisture is available to meet the needs of most plants. This soil is low in organic matter, medium in natural fertility, and medium acid to strongly acid in reaction.

Though erosion is a slight to moderate hazard, this soil is suited to many kinds of crops. All of it has been cleared and is used for cultivated crops and pasture. (Capability unit IIe-1; woodland suitability group 7)

Memphis silt loam, 0 to 2 percent slopes (MeA).—Surface runoff is slower on this nearly level soil than it is on Memphis silt loam, 2 to 5 percent slopes. The surface layer is 4 to 6 inches thicker.

This soil has a thick root zone, good internal drainage, and enough moisture to meet the needs of plants. It is well drained, but a careful arrangement of crop rows and W-type ditches is required to carry excess water to safe outlets.

This soil is suited to many cultivated crops and to hay and pasture. Nearly all of it has been cleared and is used for crops, but in the past few years a small acreage has been planted to pine. (Capability unit I-1; woodland suitability group 7)

Memphis silt loam, 2 to 5 percent slopes, eroded (MeB2).—This soil is 3 to 4 inches thinner in the surface layer than Memphis silt loam, 2 to 5 percent slopes. Though eroded, the soil has a thick root zone and is suited to many kinds of crops. Most of it is in cultivated crops or in pasture. (Capability unit IIe-1; woodland suitability group 7)

Memphis silt loam, 2 to 5 percent slopes, severely eroded (MeB3).—The surface layer of this severely eroded soil is 8 to 10 inches thinner than that of Memphis silt loam, 2 to 5 percent slopes, and contains more clay. In most places the plow layer extends well into the subsoil. The subsoil is exposed in many places, and a few shallow gullies have formed.

This soil readily forms clods and generally is in poor tilth. Most of the acreage is in cultivated crops or in pasture. A fairly wide range of crops is suited, but erosion is a moderate to severe hazard. (Capability IIIe-1; woodland suitability group 7)

Memphis silt loam, 5 to 8 percent slopes, eroded (MeC2).—The surface layer of this strongly sloping soil is 3 to 4 inches thinner than that of Memphis silt loam, 2 to 5 percent slopes, and erosion is a greater hazard. Cultivated crops and sod crops are suitable uses, but most of the acreage is wooded. (Capability unit IIIe-2; woodland suitability group 7)

Memphis silt loam, 5 to 8 percent slopes, severely eroded (MeC3).—The surface layer of this severely eroded soil is 8 to 10 inches thinner and contains more clay than that of Memphis silt loam, 2 to 5 percent slopes. The plow layer extends well into the clayey subsoil

material. Some areas contain a few shallow gullies. This soil forms clods readily and is generally in poor tilth.

About 60 percent of this soil is in cultivated crops and in pasture; the rest was once cleared but has reverted to forest. (Capability unit IIIe-1; woodland suitability group 7)

Memphis and Natchez silt loams, 17 to 40 percent slopes, severely eroded (MnF3).—These soils were mapped together in one unit because it was not practical to map them separately. They are in an intricate pattern, are very steep, and are covered by a dense growth of trees. These soils formed in deep loess on steep, broken terrain and on long narrow, finger ridges.

The Memphis soil is well drained and is strongly acid to medium acid to a depth of several feet. The Natchez soil is somewhat excessively drained and generally is alkaline below 2 or 3 feet. The total acreage is about equally divided between the two soils. Some delineations consist only of the Memphis soil and some only of the Natchez soil, but most delineations consist of both soils.

Severely eroded area of Memphis silt loam:

0 to 4 inches, dark grayish-brown silt loam.
4 to 37 inches, dark yellowish-brown or brown to dark-brown silty clay loam to silt loam; subangular blocky structure.
37 to 62 inches, brown to dark-brown silt loam; subangular blocky structure.

Severely eroded area of Natchez silt loam:

0 to 3 inches, brown silt loam.
3 to 23 inches, strong-brown to yellowish-brown silt loam; subangular blocky structure; medium acid.
23 to 55 inches, light yellowish-brown silt; strongly alkaline.

The surface layer of the Natchez soil ranges from brown to dark grayish brown in color and from acid to alkaline in reaction. The subsoil is acid to alkaline silt to silt loam.

Memphis and Natchez silt loams, 17 to 40 percent slopes, severely eroded, has lost practically all of the original surface soil through erosion. In large areas the subsoil is exposed. Small, shallow gullies and a few deep gullies are common. These soils are deep and friable but are very erosive. Because they are steep and absorb water slowly, runoff is very rapid. But internal drainage is medium, and enough water is generally available to meet the needs of plants. These soils contain little organic matter.

This is the most extensive mapping unit in the county. Nearly all of the acreage is in trees. (Capability unit VIIe-1; woodland suitability group 7)

Memphis and Natchez silt loams, 8 to 12 percent slopes, eroded (MnD2).—These soils are 3 to 5 inches thicker in the surface layer than Memphis and Natchez silt loams, 17 to 40 percent slopes, severely eroded, but their slope is too strong for frequent cultivation. They can be cultivated 1 year in 4 if they are intensively managed to control erosion. Most of the acreage is in trees. (Capability unit IVe-2; woodland suitability group 7)

Memphis and Natchez silt loams, 8 to 12 percent slopes, severely eroded (MnD3).—These soils are too steep for frequent cultivation and are also too susceptible to erosion. Where further erosion can be controlled by intensive management, the soils are suited to row crops grown in a long cropping system with other crops. About 90 percent of the acreage is in pasture, which is probably the best use. (Capability unit IVe-1; woodland suitability group 7)

Memphis and Natchez silt loams, 12 to 17 percent slopes, eroded (MnE2).—The surface layer of these soils is 2 to 4 inches thicker than that of Memphis and Natchez silt loams, 17 to 40 percent slopes, severely eroded, and is generally less gullied.

Because the slopes are moderately steep and water infiltrates slowly, these soils are too erosive for cultivation. Some areas can be kept in pasture, but most of the acreage is wooded. (Capability unit VIe-2; woodland suitability group 7)

Memphis and Natchez silt loams, 12 to 17 percent slopes, severely eroded (MnE3).—These soils are slightly less steep than Memphis and Natchez silt loams, 17 to 40 percent slopes, severely eroded, but they are too steep for cultivation. The soils can be used for pasture, but most of the acreage is wooded. (Capability unit VIe-1; woodland suitability group 7)

Memphis and Natchez silt loams, 17 to 40 percent slopes, eroded (MnF2).—These soils are on steep terrain that is broken by long, narrow finger ridges. The surface layer is 2 to 4 inches thicker than that of Memphis and Natchez silt loams, 17 to 40 percent slopes, severely eroded, and is generally less gullied. This is the second largest mapping unit in the county. It can be used for pasture, but nearly all of it is in forest. (Capability VIe-2; woodland suitability group 7)

Mixed Alluvial Land

Mixed alluvial land consists of nearly level, deep, friable soil materials that have been recently deposited on first bottoms by frequent floods. This alluvium is a mixture of loessal material and of sandy material of the Coastal Plain. The surface layer ranges from silt loam to loamy sand and is 2 to 6 inches thick. Below this are stratified layers of silt loam, fine sandy loam, sandy loam, and loamy sand. These layers range from 2 to 20 inches in thickness and are very thinly stratified with fine sand and silt. Drainage is excessive to somewhat poor.

Mixed alluvial land (Mx).—This land type occurs throughout all the county except the flood plain of the Mississippi River. It is most common along Big Bayou Pierre, Little Bayou Pierre, Big Sand Creek, and their tributaries.

Infiltration ranges from good to rapid, internal drainage varies but is generally medium, and the moisture available to plants is low. Mixed alluvial land is low in organic matter and is moderately high to low in natural fertility. It is strongly acid. The vegetation is hardwoods in most places, but cleared areas are mostly in pasture. Protection from flooding is not feasible, nor is cultivation suitable. (Capability unit Vw-1)

Rough Broken Land

Rough broken land consists of steep areas that are broken by many, intermittent drains. The terrain is deeply dissected by narrow, V-shaped valleys. Divides are sharply winding. Runoff is severe, and geologic erosion is active. In Claiborne County the loessal material is thinner in Rough broken land than it is elsewhere in the county. Sand, gravel, and other material of

the Coastal Plain is at or near the surface. The native vegetation is mixed pines and hardwoods.

Rough broken land (Ro).—This land consists of long, narrow finger ridges and valleys. Steep, broken side slopes extend from the ridges. The surface layer and subsoil vary in texture.

Rough broken land occurs in the eastern part of Claiborne County, mostly between the Big Black River and Big Bayou Pierre. Locally this area is called the Scutchblow Hills. Other areas of this land type are along the county line that separates Claiborne County from Copiah and Jefferson Counties.

Water slowly enters the soil material of Rough broken land, and surface runoff is rapid. Little moisture is available to plants, and organic matter is scarce. This land type erodes readily unless it is protected by vegetation. It makes up about 11 percent of the county and is practically all in trees, which is the best use. (Capability unit VIIe-2)

Sandy Alluvial Land

Sandy alluvial land consists of very friable, excessively drained soil material on bottom lands that are frequently flooded. The material is recent general alluvium that consists of mixed loessal material and sandy Coastal Plain material.

Runoff from high-lying areas has deeply gullied this land and has cut through the loess and into the strata of the Coastal Plain. The debris from this gullying has been deposited on the alluvial plains. Streams and rivers have also added to this debris. The material is strongly acid, generally infertile sand, silt, and gravel.

Sandy alluvial land occurs with Mixed alluvial land and with the Collins, Falaya, and Waverly soils. It is coarser textured and contains more gravel than Mixed alluvial land and is generally better drained. Mixed alluvial land is excessively drained to somewhat poorly drained. Also, horizons have not developed in Sandy alluvial land, but weak ones have developed in Mixed alluvial land.

Sandy alluvial land differs from the Collins, Falaya, and Waverly soils in drainage, profile development, and parent material. The Collins soils are moderately well drained, the Falaya soils are somewhat poorly drained, and the Waverly soils are poorly drained. The Collins, Falaya, and Waverly soils formed in loess instead of alluvium and have a well-developed profile.

In this county Sandy alluvial land occurs mainly along Big Bayou Pierre and Little Bayou Pierre. The dominant vegetation is willows.

Sandy alluvial land (Sa).—This land type is on first bottoms. It is nearly level to gently sloping and is excessively drained. The surface layer and subsoil vary in texture but are generally sand and loamy sand that contain varied amounts of silt and gravel.

This land is exceptionally droughty and is very low in organic matter and in natural fertility. Infiltration and internal drainage are very rapid except in areas that contain layers of silt and sand. (Capability unit VIw-1)

Waverly Series

The Waverly series consists of poorly drained, acid soils on first bottoms that are likely to be flooded. These soils formed in silty, loessal material. To a depth of about 24 inches, they are mottled, gray, yellowish-brown, and brown silt loam. In most places the material below 24 inches is mottled, gray silty clay loam.

These soils occur with the Collins and Falaya soils and with Mixed alluvial land. Waverly soils are more poorly drained than the moderately well drained Collins soils and the somewhat poorly drained Falaya soils. Texture and drainage are uniform in Waverly soils but are variable in Mixed alluvial land.

Only one Waverly soil was mapped in Claiborne County. This soil is in small, depressional or nearly level areas.

Flooding, poor drainage, and a seasonally high water table are hazards on the low-lying Waverly soils. Because of the excess water, these soils are suited to only a few crops. Their native vegetation is hardwoods, but the acreage is mostly in pasture.

Waverly silt loam (0 to 2 percent slopes) (Wa).—This is a poorly drained, acid soil. It is on first bottoms and is frequently flooded.

Soil layers in a typical profile:

0 to 3 inches, mottled, dark yellowish-brown silt loam.
3 to 23 inches, gray to light-gray silt loam mottled with yellowish brown, dark brown, and brown.
23 to 52 inches +, gray silty clay loam with some yellowish-brown, brown, and dark-brown mottles.

The surface layer ranges from dark yellowish brown to brown or dark brown. In some places this soil is mottled throughout; in other places the depth to mottling is as much as 6 inches.

Because of the severe floods, this soil is wet and cold. For long periods it is too wet for cultivation. It tends to clod when plowed, and to crust and pack when bare. A plowpan forms readily. Infiltration and internal drainage are slow, and a moderate amount of moisture is available to plants. This soil is low in organic matter and in natural fertility. It is strongly acid to medium acid.

Waverly silt loam is poorly suited to crops because of the frequent floods, the poor drainage, and the seasonally high water table. It is best suited to pasture plants, especially those that grow in summer. Most of its acreage is pastured. (Capability unit IVw-1; woodland suitability group 6)

Use and Management of Soils

This section discusses the use and management of soils for crops and pasture, as woodland, and in engineering works.

Crops and Pasture [2]

This subsection has three main parts. In the first part, capability grouping is explained. In the second part, the soils of the county are placed in capability units and the use and management of these units are discussed. The third part consists of a table that lists estimated yields and another that gives relative suitability of soils for named crops.

[2] H. S. SAUCIER, conservation agronomist, Soil Conservation Service, assisted in writing this subsection.

Capability groups of soils

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

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

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

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

Within the subclasses are the capability units, groups of soils enough alike to be suited to the same crops and pasture plants, to require similar management, and to have similar productivity and other responses to management. Thus, the capability unit is a convenient grouping for making many statements about management of soils. Capability units are generally identified by numbers assigned locally, for example, IIe-1 or IIIe-2. These numbers are not consecutive in Claiborne County, because not all of the capability units used in Mississippi occur in the county.

Soils are classified in capability classes, subclasses, and units in accordance with the degree and kind of their permanent limitations. Not considered in this classification are major and generally expensive land-forming that would change the slope, depth, or other characteristics of the soil, and not considered are possible but unlikely major projects of reclamation.

The eight classes in the capability system, and the subclasses and capability units in this county are described in the list that follows. Claiborne County has no soils in class VIII.

Class I.—Soils with few limitations that restrict their use.
- Capability unit I-1: Nearly level, deep, well drained and moderately well drained silt loams on uplands.
- Capability unit I-2: Nearly level, moderately well drained and somewhat poorly drained silt loam on the alluvial plain of the Mississippi River.

Class II.—Soils with some limitations that reduce the choice of plants or require moderate conservation practices.
- Subclass IIe: Soils subject to moderate erosion if they are not protected.
  - Capability unit IIe-1: Gently sloping, deep, well drained and moderately well drained silt loams on uplands.
  - Capability unit IIe-3: Gently sloping, moderately deep, moderately well drained silt loams with a fragipan; on uplands.
- Subclass IIw: Soils that have moderate limitations because of excess water.
  - Capability unit IIw-1: Nearly level, moderately well drained silt loams on bottom lands that are likely to be flooded.
  - Capability unit IIw-2: Nearly level, moderately deep, moderately well drained silt loam with a fragipan; on uplands.

Class III.—Soils with severe limitations that reduce the choice of plants, or require special conservation practices, or both.
- Subclass IIIe: Soils subject to severe erosion if they are cultivated and not protected.
  - Capability unit IIIe-1: Gently sloping and moderately sloping, deep, well drained and moderately well drained silt loams on uplands; severely eroded.
  - Capability unit IIIe-2: Moderately sloping, deep, well drained and moderately well drained silt loams on uplands; moderately eroded.
  - Capability unit IIIe-3: Gently sloping, moderately deep, moderately well drained silt loam with a fragipan; on uplands.
- Subclass IIIw: Soils that have severe limitations because of excess water.
  - Capability unit IIIw-1: Nearly level, somewhat poorly drained silt loams on bottom lands that are likely to be flooded.
  - Capability unit IIIw-2: Nearly level, shallow, somewhat poorly drained silt loam with a fragipan; on uplands.
  - Capability unit IIIw-3: Gently sloping, somewhat poorly drained silt loam with a fragipan; on uplands.

Class IV.—Soils with very severe limitations that restrict the choice of plants, require very careful management, or both.
- Subclass IVe: Soils subject to very severe erosion if they are cultivated and not protected.
  - Capability unit IVe-1: Strongly sloping, moderately well drained to somewhat excessively drained, severely eroded silt loams on uplands.
  - Capability unit IVe-2: Strongly sloping, well-drained and somewhat excessively drained, somewhat eroded silt loams on uplands.
  - Capability unit IVe-3: Moderately sloping, moderately deep, moderately well drained silt loam with a fragipan.

Subclass IVw: Soils that have very severe limitations for cultivation because of excess water.
Capability unit IVw-1: Nearly level, poorly drained silt loam on bottom lands that are likely to be flooded.
Capability unit IVw-2: Nearly level, shallow, poorly drained silt loam with a fragipan; on uplands.

Class V.—Soils not likely to erode that have other limitations, impractical to remove without major reclamation, that limit their use largely to pasture or range, woodland, or wildlife food and cover.
Subclass Vw: Soils too wet for cultivation; drainage or protection not feasible.
Capability unit Vw-1: Excessively drained to somewhat poorly drained soils on bottom lands that are frequently flooded.

Class VI.—Soils with severe limitations that make them generally unsuitable for cultivation and that limit their use largely to pasture or range, woodland, or wildlife food and cover.
Subclass VIe: Soils severely limited, chiefly by risk of erosion if protective cover is not maintained.
Capability unit VIe-1: Steep, deep, excessively drained to well-drained silt loams on uplands; severely eroded.
Capability unit VIe-2: Steep and very steep, deep, excessively drained to well-drained silt loams on uplands; moderately eroded.
Capability unit VIe-3: Strongly sloping and steep, moderately deep, moderately well drained silt loams on uplands; severely eroded; fragipan.
Subclass VIw: Soils severely limited by excess water and generally unsuitable for cultivation.
Capability unit VIw-1: Nearly level, excessively drained soil on bottom lands that are likely to be flooded.

Class VII.—Soils with very severe limitations that make them unsuitable for cultivation without major reclamation, and that restrict their use largely to grazing, woodland, or wildlife.
Subclass VIIe: Soils very severely limited, chiefly by risk of erosion if protective cover is not maintained.
Capability unit VIIe-1: Very steep, deep, well-drained or somewhat excessively drained silt loams; severely eroded.
Capability unit VIIe-2: Gullied, steep, and broken land.

Class VIII.—Soils and landforms with limitations that preclude their use, without major reclamation, for commercial production of plants, and that restrict their use to recreation, wildlife, water supply, or esthetic purpose.

Capability units in Claiborne County

In this subsection, the soils of the county are placed in capability units and are described generally. Suggested for each unit are suitable uses and management practices.

CAPABILITY UNIT I-1

This capability unit consists of nearly level, deep, well drained and moderately well drained soils on the loessal uplands. They are—

Loring and Memphis silt loams, 0 to 2 percent slopes.
Memphis silt loam, 0 to 2 percent slopes.

The surface layer of these soils is silt loam, and the subsoil is silty clay loam or heavy silt loam. In the Loring soil a weak fragipan has formed at a depth of 30 inches.

The infiltration of water is fairly slow, and internal drainage is medium. The available moisture-holding capacity is moderate. These soils have a low content of organic matter but moderately high natural fertility. They are medium acid.

The soils in this group have few limitations to use. If well managed, they can be kept in clean-tilled crops. For part of the management needed, leave crop residue on the soils, and apply fertilizer in adequate amounts. These soils are well suited to row crops, small grains, most grasses and legumes, and pecans. Well-suited grasses and legumes are Coastal and common bermudagrasses, dallisgrass, bahiagrass, crimson, white, and red clovers, wild winter peas, vetch, and annual lespedeza. Pine and hardwood trees grow well.

CAPABILITY UNIT I-2

The only soil in this capability unit—Commerce silt loam—is moderately well drained and somewhat poorly drained. This nearly level soil is in alluvium along the Mississippi River. The surface soil and upper part of the substratum are silt loam. The lower part of the substratum varies in texture.

Water infiltrates into this soil and drains internally at a moderate rate. A large amount of moisture is available to plants. The content of organic matter is low, but natural fertility is moderately high. The reaction is moderately alkaline.

This soil has few limitations to use. It is susceptible to flooding only in winter. If it is adequately fertilized and is protected by crop residue, this soil can be planted continuously to clean-tilled crops. It is well suited to row crops, many grasses and legumes, pecans, and hardwood trees. Small grains grow moderately well. Suitable grasses and legumes are Coastal and common bermudagrasses, dallisgrass, bahiagrass, white and red clovers, wild winter peas, vetch, and annual lespedeza.

CAPABILITY UNIT IIe-1

This capability unit consists of deep, gently sloping, well drained and moderately well drained soils on the loessal uplands. These soils are slightly or moderately eroded. They are—

Loring and Memphis silt loams, 2 to 5 percent slopes, eroded.
Memphis silt loam, 2 to 5 percent slopes.
Memphis silt loam, 2 to 5 percent slopes, eroded.

The surface layer of these soils is silt loam, and the subsoil is silty clay loam or heavy silt loam. In the Loring soil a weak fragipan has formed at a depth of 30 inches.

Infiltration is fairly slow in these soils, internal drainage is medium, and the available moisture-holding capacity is moderate. The soils contain little organic matter but are moderately high in natural fertility. They are medium acid.

Because erosion and flooding are slight hazards, these soils are somewhat restricted in use. But they can be cropped continuously to clean-tilled crops if excess water is removed by vegetated waterways and they are managed

well. As part of the good management, leave crop residue on the surface, and add fertilizer in adequate amounts. On fields not protected by vegetated waterways, alternate clean-tilled crops with close-growing crops that improve the soil.

These soils are well suited to row crops, small grains, grasses and some legumes, and pecans. Well-suited grasses and legumes are Coastal and common bermudagrasses, dallisgrass, bahiagrass, crimson, white, and red clovers, wild winter peas, vetch, and annual lespedeza. Pine and hardwood trees grow well.

CAPABILITY UNIT IIe-3

This capability unit consists of moderately deep, moderately well drained, loessal soils on gently sloping uplands. These soils are slightly eroded and moderately eroded. They are—

Grenada silt loam, 2 to 5 percent slopes.
Grenada silt loam, 2 to 5 percent slopes, eroded.

The surface layer of these soils is silt loam, and the subsoil is heavy silt loam. A fragipan has formed at a depth of about 20 to 25 inches.

These soils are easy to work, but they tend to crust and pack if left bare. They are likely to erode if not protected. Water infiltrates at a fairly slow rate. Internal drainage is medium above the fragipan and is slow within it. Enough moisture generally is available to meet the needs of plants. These soils are medium acid, low in content of organic matter, and moderately high in natural fertility.

The soils in this group are slightly limited in use because of erosion and excess water. But they can be used continuously for clean-tilled crops if excess water is removed in vegetated waterways and they are managed well. Add fertilizer in adequate amounts and leave crop residue on the surface. To improve the soils in undrained areas, alternate clean-tilled crops with close-growing crops.

These soils are suited to row crops, small grains, grasses, many legumes, and pecans. They are not suited to alfalfa and are poorly suited to fescue, ladino and sweet clovers, and apples. Well-suited grasses and legumes are Coastal and common bermudagrasses, dallisgrass, bahiagrass, crimson, white, and red clovers, wild winter peas, vetch, and annual lespedeza. Pine and hardwood trees grow well.

CAPABILITY UNIT IIw-1

This capability unit consists of moderately well drained, silty soils. These soils are on bottom lands that are likely to be flooded. They are—

Adler silt loam.
Collins silt loam.

These soils have a silt loam surface layer and subsoil. They are easy to work but tend to crust and pack if left bare.

Water infiltrates moderately well. Internal drainage is medium, and the available moisture-holding capacity is high. The soils contain little organic matter and are medium acid to moderately alkaline.

Flooding is the main hazard. The soils, however, can be used for row crops continuously if flood damage is controlled, crop residue is left on the surface, and fertilizer is added in adequate amounts. Install a drainage system where needed, and build structures to hold back floodwaters and to prevent sedimentation. In areas without drainage or flood-control systems, alternate clean-tilled crops with close-growing crops and leave crop residue on the soil. Row crops need a complete fertilizer.

These soils are suited to row crops, most small grains, grasses and legumes, and pecans. They are poorly suited to barley. Well-suited grasses and legumes are Coastal and common bermudagrasses, dallisgrass, bahiagrass, white and red clovers, wild winter peas, vetch, and annual lespedeza. The Collins soils are poorly suited to sweet clover. Hardwood trees grow well.

CAPABILITY UNIT IIw-2

The only soil in this capability unit—Grenada silt loam, 0 to 2 percent slopes—is moderately deep and moderately well drained. This nearly level soil is on the loessal uplands and is not likely to erode. It has a silt loam surface layer and a heavy silt loam subsoil. A fragipan has formed at a depth of 24 to 26 inches.

This soil is easy to work, but it tends to crust and pack if it is bare. The infiltration of water is fairly slow. Internal drainage is medium above the fragipan and is slow within it. Enough moisture generally is available to meet the needs of plants. This soil is low in organic-matter content and is moderately high in natural fertility. It is medium acid.

Plowing and planting may be delayed in spring when the soil is saturated. Management should provide adequate fertilization, the use of crop residue, and a complete system to dispose of excess water. Clean-tilled crops can be grown continuously in drained fields. In undrained fields, alternate close-growing crops with clean-tilled crops.

Suited to Grenada silt loam, 0 to 2 percent slopes, are row crops, most small grains, and grasses and most legumes. Alfalfa is not suited. Fescue, ladino clover, sweet clover, and apples are poorly suited. Well-suited grasses and legumes are Coastal and common bermudagrasses, dallisgrass, bahiagrass, crimson, white, and red clovers, wild winter peas, vetch, and annual lespedeza. Pine and hardwood trees grow well.

CAPABILITY UNIT IIIe-1

In this capability unit are deep, severely eroded, well drained and moderately well drained soils on the loessal uplands. These soils are gently sloping and moderately sloping. They are—

Loring and Memphis silt loams, 2 to 5 percent slopes, severely eroded.
Loring and Memphis silt loams, 5 to 8 percent slopes, severely eroded.
Memphis silt loam, 2 to 5 percent slopes, severely eroded.
Memphis silt loam, 5 to 8 percent slopes, severely eroded.

The surface layer of these soils is silt loam, and the subsoil is heavy silt loam to silty clay loam. In Loring silt loam, a weak fragipan has formed below a depth of about 30 inches.

These soils are fairly easy to work, but they tend to crust and pack if they are not protected by vegetation. The infiltration of water is slow, internal drainage is medium, and the available moisture-holding capacity is moderate. The soils contain little organic matter but are moderately high in natural fertility. They are medium acid.

The soils in this group are restricted in use mainly by the severe hazard of erosion. They are best used for close-growing sod crops because these crops conserve the

soils and help to control further erosion. Legumes, grasses, and other sod crops add a large amount of organic matter to the soils and improve their structure. Under good management clean-tilled crops can be grown in a cropping system with the sod crops. Good management provides the use of crop residue, adequate fertilization, and vegetated waterways.

If they are well managed, the gently sloping soils in this group are suited to row crops, small grains, grasses and legumes, and pecans. The moderately sloping soils should be kept in perennial vegetation. Coastal bermudagrass, common bermudagrass, and bahiagrass are suitable grasses. Suitable legumes are crimson clover, wild winter peas, vetch, and annual and sericea lespedezas. Pine and hardwood trees grow well.

CAPABILITY UNIT IIIe-2

In this capability unit are deep, well drained and moderately well drained, loessal soils on uplands. These soils are moderately sloping and are moderately eroded. They are—

Loring and Memphis silt loams, 5 to 8 percent slopes, eroded.
Memphis silt loam, 5 to 8 percent slopes, eroded.

These soils have a surface layer of silt loam and a subsoil of heavy silt loam to silty clay loam. At a depth of 30 inches, a weak fragipan has formed in Loring silt loam.

These soils are easy to work, but unless they are protected by vegetation, they tend to crust and pack and to erode. They have a fairly slow infiltration rate, medium internal drainage, and a moderate available moisture-holding capacity. The content of organic matter is low, but natural fertility is moderately high. These soils are medium acid.

The use of these soils is somewhat restricted by slope and the hazard of erosion. If management is good, however, clean-tilled crops can be safely alternated with sod or other close-growing crops. Make intensive use of crop residue, add fertilizer, and dispose of excess water by vegetated waterways. These soils should be kept in sod crops unless water can be disposed of by vegetated waterways or by the arrangement of crop rows.

Some of the less sloping areas of the soils in this group are suited to row crops and small grains. Most areas, however, are too steep and erosive for these crops and are best suited to legumes and pasture grasses. Among the best suited grasses are Coastal and common bermudagrasses, dallisgrass, and bahiagrass. Suitable legumes are crimson, white, and red clovers, wild winter peas, vetch, and annual lespedeza. Pines and hardwoods are well suited forest trees.

CAPABILITY UNIT IIIe-3

Grenada silt loam, 2 to 5 percent slopes, severely eroded, is the only soil in this capability unit. This gently sloping soil is moderately deep and moderately well drained. It occurs on the loessal uplands. The surface soil is silt loam, and the subsoil is heavy silt loam. A fragipan has formed at a depth of about 20 inches.

This soil is fairly easy to work, but it tends to crust and pack if it is bare. A plowpan forms readily. Infiltration of water is slow, and runoff is rapid. Soil material may be washed away unless the soil is protected by vegetation. Internal drainage is medium in the upper part of the subsoil but is slow in the fragipan. The available moisture-holding capacity is fairly low. The content of organic matter is low and difficult to keep at a high level, but natural fertility is moderately high. This soil is medium acid.

Grenada silt loam, 2 to 5 percent slopes, severely eroded, is restricted in use mainly by erosion caused by the rapid runoff. If this soil is well managed, clean-tilled crops can be alternated with close-growing sod crops that add humus and improve the soil. Keep crop residue on the soil, fertilize adequately, and provide vegetated waterways to dispose of runoff. If water cannot be disposed of safely, this soil should be kept in close-growing crops.

This soil is suited to row crops, small grains, many kinds of pasture grasses and legumes, and pecans. The best suited pasture plants are Coastal and common bermudagrasses, dallisgrass, tall fescue, and bahiagrass. Suitable legumes are crimson, white, and red clovers, wild winter peas, vetch, and annual lespedeza. Alfalfa is not suited, and ladino and sweet clovers are poorly suited. Pine and hardwood trees grow well.

CAPABILITY UNIT IIIw-1

This capability unit consists of somewhat poorly drained, nearly level soils on bottom lands that are likely to be flooded. They are—

Falaya silt loam.
Inglefield silt loam.

These soils have a silt loam surface layer and subsoil. They are easy to work but tend to crust and pack if they are bare. Infiltration, internal drainage, and the available moisture-holding capacity are moderate. These soils contain little organic matter but are moderately high in natural fertility. They are medium alkaline to strongly acid.

Excess water is the main limitation to soils in this group. If good management is practiced, however, clean-tilled crops can be grown year after year. Where it is practical, provide drainage and build structures to help control flooding and sedimentation. Keep other areas in perennial vegetation.

Fairly well suited to the soils in this group are row crops, a few small grains, grasses, and some legumes. Well-suited grasses and legumes are Coastal and common bermudagrasses, dallisgrass, bahiagrass, tall fescue, white and red clovers, wild winter peas, vetch, and annual lespedeza. Alfalfa is not suited. Hardwood trees grow well.

CAPABILITY UNIT IIIw-2

The only soil in this capability unit—Calloway silt loam, 0 to 2 percent slopes—is shallow and somewhat poorly drained. This soil occurs on the loessal uplands and is not likely to erode. The surface soil is silt loam, and the subsoil is heavy silt loam. A fragipan has formed at a depth of about 20 inches.

This soil is easy to work, but it crusts and packs if it is bare. Infiltration is fairly slow; internal drainage is medium in the subsoil but is slow in the fragipan. Because the fragipan is near the surface, the available moisture-holding capacity is low. This soil is generally too wet or too dry for cultivation, and the preparation of seedbeds is fairly difficult. Organic matter and natural fertility are low. The reaction is strongly acid to slightly acid.

Excess water is the main problem of management. If this soil is adequately drained, fertilized, and otherwise well managed, clean-tilled crops can be grown contin-

uously. Where drainage is not feasible, keep the soil in perennial vegetation.

Fairly well suited to this soil are small grains and some grasses and legumes. Well-suited sod crops are Coastal and common bermudagrasses, dallisgrass, bahiagrass, whiteclover, wild winter peas, vetch, and annual and sericea lespedezas. Alfalfa and sweetclover are not suited. Pine and hardwood trees are well suited.

CAPABILITY UNIT IIIw-3

Calloway silt loam, 2 to 5 percent slopes, is the only soil in this capability unit. It is a somewhat poorly drained, loessal soil on uplands. Erosion is a slight hazard. The surface soil is silt loam, and the subsoil is heavy silt loam. A fragipan has formed at a depth of about 20 inches, and the root zone is thin.

This soil is easy to work, but it crusts and packs if it is bare. Infiltration is fairly slow; internal drainage is medium in the subsoil but is slow in the fragipan. Because of the thin root zone, this soil generally is too wet or too dry for cultivation. Seedbeds are fairly difficult to prepare. The content of organic matter and natural fertility are low. The reaction is strongly acid to slightly acid.

This soil is moderately limited in use because it is somewhat poorly drained and is slightly susceptible to erosion. Management should include protection with crop residue, adequate fertilization, and drainage through vegetated waterways. If this management is provided, clean-tilled crops can be alternated with close-growing or sod crops. Undrained areas should be kept mainly in close-growing crops or in sod crops that add humus and improve the soil.

Drained areas of this soil are suited to small grain. Undrained areas are well suited to Coastal and common bermudagrasses, dallisgrass, bahiagrass, whiteclover, wild winter peas, vetch, and annual and sericea lespedezas. Alfalfa and sweetclover are not suited. Pine and hardwood trees grow well.

CAPABILITY UNIT IVe-1

In this capability unit are moderately well drained to somewhat excessively drained loessal soils on uplands. These soils are—

Loring and Memphis silt loams, 8 to 12 percent slopes, severely eroded.
Memphis and Natchez silt loams, 8 to 12 percent slopes, severely eroded.

These soils are likely to erode. They are fairly easy to work but tend to crust and pack if they are bare. Surface runoff is rapid, infiltration is slow, and internal drainage is medium. A moderate amount of moisture is available to supply the needs of plants. These soils are low in organic-matter content, moderately high in natural fertility, and medium acid to strongly alkaline in reaction.

The soils in this group are limited in use mainly by strong slopes and a severe hazard of erosion. Their best use is for perennial vegetation because cultivated areas are difficult to maintain. But if runoff is safely diverted by vegetated waterways, clean-tilled crops can be grown infrequently on some of the mild slopes. Suitable grasses and legumes are Coastal and common bermudagrasses, bahiagrass, crimson clover, wild winter peas, vetch, and annual and sericea lespedezas. Pine and hardwood trees grow well.

CAPABILITY UNIT IVe-2

Memphis and Natchez silt loams, 8 to 12 percent slopes, eroded, are the only soils in this capability unit. These strongly sloping soils are well drained and somewhat excessively drained. They occur on the loessal uplands. Their surface soil is silt loam, and their subsoil is silt loam to silty clay loam.

These soils erode easily unless they are protected. They are easy to work but crust and pack if they are bare. Infiltration is slow, and internal drainage is moderate. A moderate amount of moisture is available for the use of plants. These soils contain little organic matter but are moderately high in natural fertility.

Erosion and strong slopes are the main limitations to the use of these soils. Perennial vegetation is the best use because cultivation permits further erosion. If vegetated waterways can be provided, some of the less strongly sloping areas can be planted occasionally to clean-tilled crops or to small grains. Well-suited to these soils are Coastal and common bermudagrasses, dallisgrass, bahiagrass, tall fescue, crimson, white, and red clovers, wild winter peas, vetch, and annual lespedeza. Pine and hardwood trees are well suited.

CAPABILITY UNIT IVe-3

The only soil in this capability unit—Grenada silt loam, 5 to 8 percent slopes, severely eroded—is moderately deep and moderately well drained. This moderately sloping soil is on the loessal uplands. It has a silt loam surface soil and subsoil. A fragipan has formed at a depth of about 20 inches.

This soil is fairly easy to work, though it crusts and packs if it is bare. Infiltration is slow, and the available moisture-holding capacity is low. Internal drainage is medium above the fragipan but is slow within it. The soil is low in content of organic matter but is moderately high in natural fertility.

If this soil is cultivated, control further erosion by good management. Provide vegetated waterways to control excess water, apply enough fertilizer, and leave all crop residue on the surface to protect the soil. Close-growing or sod crops are generally best. If vegetated waterways with graded rows are used, clean-tilled crops can be alternated infrequently with sod crops on some of the gentle slopes.

Fairly well suited to this soil are row crops, small grains, grasses and legumes, and pecans. Well-suited grasses and legumes are Coastal and common bermudagrasses, bahiagrass, crimson clover, wild winter peas, vetch, and annual and sericea lespedezas. Alfalfa is not suited. Pine and hardwood trees grow well.

CAPABILITY UNIT IVw-1

Waverly silt loam is the only soil in this capability unit. This nearly level, poorly drained soil is on bottom lands that are likely to be flooded. The surface layer and subsoil are silt loam. Because it is poorly drained, this soil generally is hard to work. It tends to clod if it is plowed and to crust and pack if it is left bare. Infiltration and internal drainage are slow, and only a moderate amount of moisture is available to plants. The organic-matter content and natural fertility are low.

This soil is severely limited in use and requires good management if it is cultivated. It should be artificially drained, adequately fertilized, and protected by crop

residue. Then clean-tilled crops can be grown infrequently in a cropping system with close-growing crops. Keep undrained areas in perennial vegetation. Well-suited grasses and legumes are dallisgrass, common bermudagrass, tall fescue, whiteclover, annual lespedeza, and wild winter peas. Hardwood trees are well suited.

CAPABILITY UNIT IVw-2

Henry silt loam is the only soil in this capability unit. This soil is nearly level, shallow, and poorly drained. It occurs on the loessal uplands and is uneroded or only slightly eroded. The surface soil and subsoil are silt loam. A fragipan has formed at a depth of about 16 inches.

The soil is fairly easy to work, but it crusts and packs if it is bare. Infiltration is slow. Internal drainage is medium in the subsoil but is slow in the fragipan. Because it is shallow and poorly drained, Henry silt loam is generally too wet or too dry for cultivation. It contains little organic matter and is low in natural fertility.

This soil is severely limited in use. Drained areas, however, are suited to close-growing crops and to crops that improve the soil. If crop residue is left on the surface and enough fertilizer is added, clean-tilled crops can be alternated occasionally with the close-growing crops. Perennial vegetation is well suited to areas that cannot be drained.

Suited to Henry silt loam are Coastal and common bermudagrasses, bahiagrass, tall fescue, and white clover. Pine and hardwood trees grow well.

CAPABILITY UNIT Vw-1

Capability unit Vw–1 consists of excessivley drained to somewhat poorly drained soils on bottom lands. These soils are frequently flooded and generally cannot be protected from overflow. They are—

Bowdre, Tunica, and Crevasse soils.
Crevasse, Commerce, and Robinsonville soils.
Mixed alluvial land.

The surface layer of these soils is clay, silt, or sand. It is underlain by stratified layers of silty and sandy material. These soils have varied infiltration, internal drainage, and available moisture-holding capacity. They contain little organic matter but are moderately high to low in natural fertility.

Flooding is the main hazard on these soils. Since flood control is not practical in most places, perennial vegetation is the best use. Drained areas can be planted to close-growing crops or crops that improve the soil. Clean-tilled crops can be grown in a long cropping system with close-growing crops if the soils are drained, are adequately fertilized, and are protected by crop residue.

The Mixed alluvial land is suited to corn, oats, wheat, rye, and practically all the legumes and grasses grown in the county. Suited to the Commerce soils are Coastal and common bermudagrasses, dallisgrass, bahiagrass, tall fescue, white and red clovers, wild winter peas, vetch, and annual lespedeza. The Bowdre, Tunica, Crevasse, and Robinsonville soils vary widely in suitability for crops, grasses, and legumes (see table 3, p. 21).

CAPABILITY UNIT VIe-1

Memphis and Natchez silt loams, 12 to 17 percent slopes, severely eroded, are the only soils in this capability unit. These soils occur on uplands and are deep, loessal, and excessively drained to well drained. They have a silt loam surface soil and subsoil.

Because runoff is rapid, these soils erode readily. Infiltration is slow, internal drainage is medium, and enough moisture is available to meet the needs of plants. These soils contain little organic matter but are moderately high in natural fertility.

The use of the soils in this group is severely restricted by erosion. Permanent vegetation is the best use. Well-suited plants are Coastal and common bermudagrasses, bahiagrass, crimson clover, wild winter peas, annual and sericea lespedezas, and vetch. Pine and hardwood trees grow well.

CAPABILITY UNIT VIe-2

In this capability unit are deep, excessively drained to well drained soils on the loessal uplands. These soils are moderately eroded. They are—

Memphis and Natchez silt loams, 12 to 17 percent slopes, eroded.
Memphis and Natchez silt loams, 17 to 40 percent slopes, eroded.

These steep and very steep soils have a silt loam surface layer and subsoil. They are susceptible to further erosion because runoff is rapid. Infiltration is slow, and internal drainage is medium. Enough moisture is available, however, to meet the needs of plants. These soils contain little organic matter but are moderately high in natural fertility.

Because they are likely to erode, the soils in this group should be kept in permanent vegetation. Suitable grasses and legumes for pasture are Coastal and common bermudagrasses, bahiagrass, crimson, white, and red clovers, wild winter peas, vetch, and annual lespedeza. Pine and hardwood trees grow well.

CAPABILITY UNIT VIe-3

In this capability unit are moderately deep, moderately well drained, loessal soils on uplands. These strongly sloping and steep soils are—

Grenada silt loam, 8 to 12 percent slopes, severely eroded.
Grenada silt loam, 12 to 17 percent slopes, severely eroded.

These soils have a silt loam surface layer and subsoil. A fragipan has formed at a depth of about 20 inches and has limited the root zone. Runoff is rapid. Because of slow infiltration and the thin root zone, only a small amount of moisture is available to plants. Internal drainage is medium above the fragipan but slow within it. Organic matter is scarce and difficult to increase.

Because of the severe erosion hazard, permanent vegetation is the best use for these soils. Well-suited pasture plants are Coastal and common bermudagrasses, bahiagrass, crimson clover, wild winter peas, annual and sericea lespedezas, and vetch. Pine and hardwood trees grow well.

CAPABILITY UNIT VIw-1

Sandy alluvial land is in this capability unit. It is excessively drained but is nearly level and likely to be flooded at times. In most places its surface soil and subsoil are sand and loamy sand, but in some areas these layers contain a large amount of silt or of gravel.

This land is exceptionally droughty and very low in natural fertility. It is also very low in organic matter,

which is difficult to increase. Infiltration and internal drainage are very rapid.

Because it is frequently flooded, this land is best used as woodland. Suitable trees are green ash, black willow, cottonwood, hackberry, sweetgum, and sycamore.

CAPABILITY UNIT VIIe-1

Memphis and Natchez silt loams, 17 to 40 percent slopes, severely eroded, are the only soils in this capability unit. These soils are deep and well drained or somewhat excessively drained. They occur on loessal uplands and have a silt loam surface soil and subsoil.

Water infiltrates slowly but moves internally moderately well. Enough moisture is available to meet the needs of plants. The organic-matter content is low, but natural fertility is moderately high.

Because these steep soils are severely eroded, they are best suited to trees. Pine and hardwood trees grow well.

CAPABILITY UNIT VIIe-2

This capability unit consists of two land types that have a surface soil and subsoil of varied texture. The underlying material is mostly sand and gravel but is sandy clay in a few places. These land types are—

Gullied land.
Rough broken land.

Runoff is rapid on these land types, and further erosion is likely. Partly because water infiltrates at a varied rate, the amount of moisture available to plants varies. Organic matter commonly is scarce and is difficult to maintain or increase.

These land types are severely limited in use because they are gullied and steep. They are best suited as woodland. Suitable trees are pine, black cherry, blackgum, sweetgum, cedar, cherrybark oak, southern red oak, white oak, willow oak, hickory, honeylocust, magnolia, persimmon, and sassafras.

Estimated yields and relative suitability of soils for crops

This subsection consists mainly of tables 2 and 3. In table 2 are estimated yields of the principal crops grown in Claiborne County. Gullied land, Mixed alluvial land, Rough broken land, and Sandy alluvial land are not listed in table 2, because they generally are not suited to crops.

Table 3 shows the relative suitability of named crops on the soils of the county.

TABLE 2.—*Estimated average acre yields of principal crops under defined management*

[Dashed lines indicate crop is not suited to soil or is not commonly grown on it]

Soil	Corn	Cotton (lint)	Soybeans	Oats		Winter pasture			Summer pasture		Hay crops	
				Improved management	Ordinary management	Oats	Ryegrass	Tall fescue	Common bermudagrass and white-clover	Dallisgrass and white-clover	Common bermudagrass	Dallisgrass
	Bu.	*Lb.*	*Bu.*	*Bu.*	*Bu.*	*Cow-acre-months* [1]	*Cow-acre-months* [1]	*Cow-acre-months* [1]	*Cow-acre-months* [1]	*Cow-acre-months* [1]	*Tons*	*Tons*
Adler silt loam	95	650	30	70	65	7.0	7.5	7.2	10.5	10.9	3.5	3.6
Bowdre, Tunica, and Crevasse soils	------	------	------	------	------	------	------	------	------	------	------	------
Calloway silt loam, 0 to 2 percent slopes	70	350	30	65	60	6.0	6.2	5.9	8.7	9.0	2.5	3.0
Calloway silt loam, 2 to 5 percent slopes	60	375	30	60	55	6.0	6.2	6.0	8.2	8.5	2.3	2.7
Collins silt loam	95	650	30	70	65	7.0	7.5	7.2	10.5	10.9	3.5	3.6
Commerce silt loam	80	750	30	70	65	8.0	9.5	10.6	10.3	8.8	6.0	------
Crevasse, Commerce, and Robinsonville soils	------	------	------	------	------	------	------	------	------	------	------	------
Falaya silt loam	95	575	30	68	60	7.0	7.5	7.2	10.5	10.9	3.2	3.3
Grenada silt loam, 0 to 2 percent slopes	85	600	30	70	58	6.0	6.2	5.8	9.5	10.0	3.0	3.5
Grenada silt loam, 2 to 5 percent slopes	75	550	25	68	56	6.0	6.2	6.0	9.3	9.8	2.8	3.4
Grenada silt loam, 2 to 5 percent slopes, eroded	60	500	25	60	52	5.5	6.0	5.7	9.1	9.5	2.6	2.8
Grenada silt loam, 2 to 5 percent slopes, severely eroded	40	450	20	56	48	5.0	5.5	5.2	8.7	9.2	2.5	------
Grenada silt loam, 5 to 8 percent slopes, severely eroded	------	------	------	------	------	------	------	------	------	------	------	------
Grenada silt loam, 8 to 12 percent slopes, severely eroded	------	------	------	------	------	------	------	------	------	------	------	------
Grenada silt loam, 12 to 17 percent slopes, severely eroded	------	------	------	------	------	------	------	------	------	------	------	------
Henry silt loam	------	------	------	------	------	6.0	6.3	6.0	7.5	9.0	2.5	3.0
Inglefield silt loam	95	575	30	65	58	7.0	7.5	7.2	10.0	11.0	3.2	3.3
Loring and Memphis silt loams, 0 to 2 percent slopes	95	650	40	75	65	5.1	5.1	5.1	9.9	10.0	3.0	3.5
Loring and Memphis silt loams, 2 to 5 percent slopes, eroded	90	600	38	68	56	5.1	5.1	5.1	9.5	9.8	2.6	3.0

See footnote at end of table.

TABLE 2.—*Estimated average acre yields of principal crops under defined management*—Continued

[Dashed lines indicate crop is not suited to soil or is not commonly grown on it]

Soil	Corn	Cotton (lint)	Soybeans	Oats		Winter pasture			Summer pasture		Hay crops	
				Improved management	Ordinary management	Oats	Ryegrass	Tall fescue	Common bermudagrass and white-clover	Dallisgrass and white-clover	Common bermudagrass	Dallisgrass
	Bu.	*Lb.*	*Bu.*	*Bu.*	*Bu.*	*Cow-acre-months* [1]	*Cow-acre-months* [1]	*Cow-acre-months* [1]	*Cow-acre-months* [1]	*Cow-acre-months* [1]	*Tons*	*Tons*
Loring and Memphis silt loams, 2 to 5 percent slopes, severely eroded	75	500	35	60	50	4.9	5.0	4.9	8.7	9.2	2.5	------
Loring and Memphis silt loams, 5 to 8 percent slopes, eroded	------	450	30	55	47	4.9	5.0	4.9	7.2	7.9	2.5	------
Loring and Memphis silt loams, 5 to 8 percent slopes, severely eroded	------	------	20	50	42	4.5	4.8	4.5	5.7	5.9	2.2	------
Loring and Memphis silt loams, 8 to 12 percent slopes, severely eroded	------	------	------	------	------	------	------	------	------	------	------	------
Memphis silt loam, 0 to 2 percent slopes	95	650	40	75	65	5.1	5.1	5.1	10.0	10.2	3.0	3.5
Memphis silt loam, 2 to 5 percent slopes	90	625	40	72	60	5.1	5.1	5.1	9.9	10.0	2.8	3.3
Memphis silt loam, 2 to 5 percent slopes, eroded	75	600	35	68	56	5.0	5.0	5.0	9.5	9.8	2.6	3.0
Memphis silt loam, 2 to 5 percent slopes, severely eroded	65	500	30	62	53	4.9	5.0	4.9	8.7	9.2	2.5	------
Memphis silt loam, 5 to 8 percent slopes, eroded	------	450	30	57	49	4.9	5.0	4.9	7.2	7.9	2.5	------
Memphis silt loam, 5 to 8 percent slopes, severely eroded	------	------	20	50	42	4.5	4.8	4.5	5.7	5.9	2.2	------
Memphis and Natchez silt loams, 8 to 12 percent slopes, eroded	------	------	------	------	------	------	------	------	------	------	------	------
Memphis and Natchez silt loams, 8 to 12 percent slopes, severely eroded	------	------	------	------	------	------	------	------	------	------	------	------
Memphis and Natchez silt loams, 12 to 17 percent slopes, eroded	------	------	------	------	------	------	------	------	------	------	------	------
Memphis and Natchez silt loams, 12 to 17 percent slopes, severely eroded	------	------	------	------	------	------	------	------	------	------	------	------
Memphis and Natchez silt loams, 17 to 40 percent slopes, eroded	------	------	------	------	------	------	------	------	------	------	------	------
Memphis and Natchez silt loams, 17 to 40 percent slopes, severely eroded	------	------	------	------	------	------	------	------	------	------	------	------
Waverly silt loam	------	------	30	65	60	6.5	7.0	6.8	9.7	10.2	3.0	3.0

[1] Cow-acre-months means the number of months in a year that an animal unit can graze 1 acre without damage to the pasture. An animal unit is one cow or steer, five hogs, or seven sheep.

ESTIMATED YIELDS

The estimated yields in table 2 are based on long-term experiments, on cooperative studies of productivity as related to management, and on estimates by agronomists who have had much experience with the crops and soils in the county. The estimated yields are 20 to 35 percent higher than the yields obtained under ordinary management.

The combined effects of slope, weather, and levels of management were considered in estimating the yields. If data on a soil were not available, the estimates were made from data on similar soils. All the estimates are for nonirrigated soils. Flooding is not considered, because the past and present effect of floods on yields must be considered locally. An estimate is not given for a crop not commonly grown or not suited to a specified soil.

To manage your soils under the defined management and thus obtain the yields in table 2—

1. Fertilize at planting according to the needs indicated by soil tests and by past practices in cropping and fertilizing.
2. Use crop varieties that are suited to the soil and produce high yields.
3. Prepare adequate seedbeds.
4. Plant or seed by suitable methods, at suitable rates, and at the right time.
5. Inoculate legumes.
6. Use shallow cultivation of row crops.
7. Control weeds, insects, and diseases.
8. Provide cropping systems that conserve soil.
9. Manage water, where needed, by using sod waterways, contour cultivation, terraces, or contour stripcropping.
10. Protect the soil from overgrazing.
11. Manage crop residue well.

TABLE 3.—*Suitability rating of soils for specified crops*

[Number 1 means soil is well suited; number 2 means soil is suited; number 3 means soil is poorly suited; number 4 means soil is not suited. These ratings are for soils not steeper than 8 percent or not severely eroded]

Crop	Adler	Bowdre	Calloway	Collins	Commerce	Crevasse	Falaya	Grenada	Henry	Inglefield	Loring	Memphis	Natchez	Robinsonville	Tunica	Waverly
Row crops:																
Cotton	1	2	3	1	1	4	2	2	4	2	1	1	1	1	2	4
Corn	1	3	3	1	1	4	1	2	4	2	1	1	1	1	2	3
Soybeans	1	2	3	1	1	4	2	2	3	2	1	1	1	1	1	3
Grain sorghum	1	2	3	1	1	4	2	2	3	2	1	1	1	1	2	3
Small grains:																
Oats	2	2	2	2	2	3	2	2	3	2	1	1	1	1	1	4
Wheat	2	2	2	2	2	3	2	2	3	2	1	1	1	1	1	4
Barley	3	2	2	3	2	3	3	2	4	3	1	1	1	1	2	4
Rye	2	2	2	2	2	3	2	2	3	3	1	1	1	1	1	4
Rice	4	3	3	4	3	4	3	4	2	4	4	4	4	4	3	2
Grasses:																
Coastal bermudagrass	1	2	2	1	1	3	2	1	2	2	1	1	1	1	1	2
Common bermudagrass	1	2	2	1	1	3	2	1	2	2	1	1	1	1	1	2
Fescue, tall	2	2	3	1	2	4	2	3	2	2	2	2	2	2	1	2
Dallisgrass	2	2	3	1	1	4	2	2	3	2	1	1	1	1	1	2
Johnsongrass	1	2	3	1	1	3	2	2	4	2	1	1	1	1	2	4
Bahiagrass	1	-----	2	1	1	-----	2	1	2	2	1	1	1	-----	-----	2
Sudangrass	1	2	2	1	1	4	2	2	3	2	1	1	1	1	2	3
Ryegrass	1	2	2	1	2	3	2	2	3	2	1	1	1	1	2	4
Millet	1	2	2	1	1	4	2	2	3	2	1	1	1	1	2	3
Rescuegrass	1	2	3	1	2	4	2	2	3	2	1	1	1	1	2	4
Legumes:																
Wild winter peas	1	2	2	1	1	4	2	2	3	2	1	1	1	1	1	3
Vetch	1	2	3	1	1	4	2	2	3	2	1	1	1	1	2	3
Alfalfa	2	3	4	2	2	4	3	4	4	3	2	2	2	2	1	4
Field peas	1	3	2	1	2	4	2	1	3	3	1	1	1	1	2	3
Sericea lespedeza	1	2	3	1	2	4	3	2	3	3	2	2	2	1	1	4
Annual lespedeza	1	2	2	1	1	4	2	2	3	2	1	1	1	1	1	3
Red clover	1	2	3	2	1	4	2	2	3	2	2	2	2	1	1	4
White clover	2	2	2	1	1	4	2	2	2	2	2	2	2	1	1	2
Crimson clover	1	3	3	2	2	3	3	1	3	3	1	1	1	1	3	4
Ladino clover	1	2	2	1	1	4	2	3	2	2	2	2	2	1	1	2
Sweet clover	2	3	4	3	2	4	4	3	4	4	2	2	1	1	2	4
Orchards:																
Pecans	2	1	3	2	1	3	4	2	4	4	1	1	1	1	1	4

Although soil tests should determine the rates of fertilization, specified rates of fertilization and of planting were assumed in estimating the yields in table 2. By good management that includes fertilizing and planting at about the rates assumed, which are those suggested in the following paragraphs, you can expect to obtain the yields in table 2.

Corn: Soils that produce 90 bushels of corn or more require per acre at planting time 40 pounds of nitrogen, 40 pounds of phosphoric acid, and 40 pounds of potash. Sidedress with 100 pounds of nitrogen. Plant any hybrid suited to the soil at a rate of 10,000 to 12,000 plants per acre. The corn should be planted at the correct time on soil free of weeds. Use shallow cultivation until the corn is knee high.

Soils that yield 65 to 90 bushels of corn require per acre 24 pounds of nitrogen, 24 to 32 pounds of phosphoric acid, and 24 to 32 pounds of potash. Sidedress with 66 pounds of nitrogen. Plant 8,000 to 10,000 plants per acre at the right time and on soil free of weeds. Practice shallow cultivation until the corn is knee high.

Soils that yield 40 to 65 bushels of corn per acre ordinarily require at planting time 16 to 24 pounds each of nitrogen, of phosphoric acid, and of potash. Sidedress crop with 33 pounds of nitrogen. Plant any suitable hybrid or a good, open-pollinated variety at a rate of 6,000 to 8,000 plants per acre.

Soils that have an estimated yield of less than 40 bushels per acre are poorly suited to corn and should be used for some other crop.

Cotton: Cotton is generally grown on only good soils, which for highest yields should be managed in about the same way. On these soils add 75 to 100 pounds each of nitrogen, of phosphoric acid, and of potash. Prepare the soil properly, and plant suitable kinds of cotton. Control weeds, insects, and diseases.

Soybeans: In this county soybeans do not produce consistent yields, and they grow equally well on soils

ranging from somewhat poorly drained to well drained.

To obtain the yields listed in table 2, apply 60 pounds of phosphoric acid and 30 pounds of potash at planting time. Inoculate the seed, and practice shallow cultivation to control weeds.

Oats: Yields of oats at two levels of management are given in table 2. The amount of nitrogen applied determines the level of management. To obtain yields of oats in column A, apply 20 pounds of nitrogen, 40 pounds of phosphoric acid, and 30 pounds of potash. Between March 1 and March 15, topdress with 65 additional pounds of nitrogen. To obtain yields in column B, make a single application of 40 pounds of nitrogen, 40 pounds of phosphoric acid, and 30 pounds of potash.

Winter pasture: All the soils of this county in winter pasture respond well to good management. To obtain the yields listed in table 2, apply at planting time 60 pounds of phosphoric acid and 60 pounds of potash. In split applications apply 120 pounds of nitrogen. The soils should have a pH rating of 6.5 and may need additions of lime to bring the pH up to that rating.

Summer pasture: To obtain the yields of grasses listed in table 2, apply 60 to 90 pounds of nitrogen, and apply lime, phosphate, and potash as indicated by soil tests. For legumes bring the pH to 6.5 by liming, and apply phosphate and potash annually. Spray to control weeds. Fence the pasture so that grazing can be regulated. Renovate and reseed the pasture annually.

Hay crops: To obtain the yields of common bermudagrass and dallisgrass listed in table 2, apply 60 pounds of phosphoric acid and of potash at planting time and 90 pounds of nitrogen in split application. Lime the soil to bring the pH to 6.5.

RELATIVE SUITABILITY OF SOILS FOR CROPS

The relative suitability of soil series for specified crops are listed according to the following key (table 3)—

1	Well suited.
2	Fairly well suited.
3	Poorly suited.
4	Not suited.

The ratings listed for the series apply only to soils that have not been materially affected by erosion and are not more than moderately sloping. Soils well suited to a named crop have the most dependable yields and need the least management. Soils fairly well suited are moderately limited by excess moisture, lack of moisture, shallow root zone, low fertility, or some other factor. Poorly suited soils do not produce good yields unless management is intensive. Soils not suited to a listed crop should be used for something else.

Woodland[3]

Woodland in Claiborne County occupies about the same total acreage that it occupied when the county was first settled, but the species of trees and their distribution have changed to some extent. Most of the virgin timber has been cut, and some woodland areas have been cleared for crops and pasture. The best grade of hardwoods and the largest trees have been cut. The woodland is now largely in second-growth trees of medium to poor quality and small to medium size.

The early settlers found most of the area covered by a forest of loblolly pine and many species of hardwoods. The pine was more common in the eastern part of the county, except on poorly drained soils; but it was also plentiful on the uncultivated uplands. Though loblolly pine was mixed with hardwoods in most places, in some places the hardwoods were missing. The bottom lands along the Mississippi River were heavily forested with willow, cottonwood, overcup oak, water oak, gum, sycamore, elm, and some cypress.

In the 1920's most farms in the county contained woodlots. Many fields that had been cultivated reverted to brush, weeds, and shrubs, and to forest trees. Hardwoods generally were more plentiful than pines in areas that reforested naturally.

Lumbering was important in the county by 1900 and increased during World War I. Hardwoods of good quality were harvested, particularly ash, oak, magnolia, poplar, and gum.

Lumbering increased again during and after World War II. From 1942 through 1952, portable sawmills were moved from place to place. Loggers cut almost all of the remaining virgin timber and much of the second-growth timber that had grown to merchantable size since early in the 1920's. Large volumes of pine and hardwood timber were harvested in these operations.

Timber is processed in several towns in the county. A plant at Port Gibson that makes veneer and boxes each year processes about 10 million board feet of hardwoods. It employs about 350 people and has an annual payroll of more than $500,000. At Hermanville a modern sawmill processes about 10 million board feet of high-quality southern pine. Its annual payroll is about $375,000. The mill at Hermanville uses a debarker and a chipper that makes it possible to recover and use chips from slabs that formerly were burned as waste. A small sawmill at Russum has a daily capacity of 10,000 to 12,000 board feet.

FOREST TYPES

Stands of trees that cover a considerable part of the county may be classed as forest types according to the species and proportions of trees in the stands. A forest type generally is given the name of the tree or trees that are dominant in the stands.

According to the U.S. Forest Service, in 1957 commercial forest land covered 223,500 acres, or 71.9 percent of the county (*6*). The following lists the forest types on this woodland and the number of acres occupied by each type.

Forest type	*Acres*
Loblolly-shortleaf pine	24, 800
Oak-pine	31, 000
Oak-hickory	80, 700
Oak-gum-cypress and elm-ash-cottonwood	87, 000
Total	223, 500

The loblolly-shortleaf pine and the oak-pine forest types consist mostly of softwoods. Hardwoods make up the oak-hickory, oak-gum-cypress, and elm-ash-cottonwood forest types.

The loblolly-shortleaf pine type consists of forests in which 50 percent or more of the stand is loblolly pine, shortleaf pine, or some other southern yellow pine except longleaf or slash pine. The stand may be pure or mixed

[3] JOSEPH V. ZARY, Soil Conservation Service, assisted in writing this subsection.

and may include oak, hickory, and gum. This forest type occurs mainly on the shallow, loessal soils in the southeastern part of the county.

In the oak-pine forest type, 50 percent or more of the forest is hardwoods, usually upland oaks, and 25 to 49 percent is southern pine. The stand may be pure or mixed and may include yellow-poplar, elm, maple, and black walnut. This forest type predominates on uplands and on dry sites of the deep, loessal soils. It extends from the south-central to the east-central part of the county.

The oak-hickory forest type has 50 percent or more of its stand in oak or hickory, alone or mixed. Other trees commonly present are yellow-poplar, elm, maple, and black walnut. The trees in this forest type grow on moist, deep, loessal soils and extend from the south-central to the east-central part of the county.

The oak-gum-cypress forest type is on bottom lands. At least 50 percent of the stand is tupelo, blackgum, sweetgum, oak, or southern cypress, alone or mixed. Trees commonly in this type are cottonwood, willow, ash, elm, hackberry, and maple. The oak-gum-cypress type occurs on the Delta of the Mississippi River and along the alluvial plains of the Big Black River, Big Bayou Pierre, and Little Bayou Pierre. It is also in narrow bands along small streams.

The elm-ash-cottonwood forest type has 50 percent or more of its stand in elm, ash, or cottonwood, alone or mixed. Also common in the stand are willow, sycamore, beech, and maple. Like the oak-gum-cypress type, this forest type occurs along streams.

In this county the forest types occur in belts that vary from about 2 to 20 miles in width. These belts parallel the Mississippi River, generally in a southwest-northeast direction.

PRODUCTION OF WOOD PRODUCTS AND DATA ON STANDS

Since 1946, the amount of pulpwood processed by mills in the county has steadily increased. Table 4 lists the amount of pulpwood produced from pines and hardwoods from 1946 through 1958.

Table 5 lists the amounts of growing stock and sawtimber in the county in 1957. *Sawtimber* consists of live commercial softwoods or hardwoods of a minimum size and culls in which at least 50 percent of the gross sawlog volume is in merchantable logs. The commercial softwoods must be at least 9 inches in diameter at breast height (d.b.h.), and the hardwoods must be at least 11 inches. Each must contain a merchantable butt log 12 feet long. *Growing stock* is the net volume of live sawtimber and live poletimber in cubic feet. This volume is measured from the stump to a point where the diameter inside the bark is at least 4 inches. *Poletimber* consists of trees smaller than sawtimber that are at least 5 inches in diameter at breast height.

In 1956, the softwoods cut in the county amounted to 1,600,000 cubic feet of growing stock and 6,100,000 board feet of sawtimber. The hardwoods cut in 1956 amounted to 4,800,000 cubic feet of growing stock and 17,700,000 board feet of sawtimber.

Table 6 shows the growth of and yields from loblolly pine and shortleaf pine in unmanaged stands.

TABLE 4.—*Pulpwood production in standard cords, 1946–59* [1]

Year [2]	Pine	Hardwood	Total
1946	7,371	1,913	9,284
1947	4,281	2,625	6,906
1948	5,131	2,360	7,491
1950	9,669	2,602	12,271
1951	10,411	3,617	14,028
1952	11,743	10,296	22,039
1953	8,542	12,007	20,549
1955	7,715	19,570	27,285
1956	8,775	22,261	31,036
1957	6,240	24,702	30,942
1958	5,584	32,162	37,746
1959	7,630	33,671	41,301

[1] Data from U.S. Forest Service Forest Survey Releases 38, 43, 47, 53, 56, 58, 61, 69, 72, 80 and 82 (*4*).
[2] Data not available for 1949 and 1954.

TABLE 5.—*Volume of growing stock and of sawtimber in 1957*

Trees	Growing stock	Sawtimber
	Million cu. ft.	*Million bd. ft.*
Pines	12.2	53.8
Cypress, cedar, and other softwoods	.6	2.8
Total softwoods	12.8	56.6
Cottonwood, sweetgum, yellow-poplar, and other soft hardwoods	49.8	220.3
Oaks	28.7	111.6
Ash, hickory, sycamore, and other hardwoods	38.1	113.3
Total hardwoods	116.6	445.2
Total, all species	129.4	501.8

TABLE 6.—*Stand and yield information for fully-stocked, unmanaged, second-growth stands of loblolly pine and shortleaf pine*

[Yield figures are cumulative. They include all volumes harvested in prior thinnings. Absence of figure indicates that trees of the specified size are not generally processed for lumber. Statistics are compiled from United States Department of Agriculture Miscellaneous Publication No. 50 (*2*)]

LOBLOLLY PINE

Site index	Age	Total merchantable volume per acre		
	Years	*Cords*	*Bd. ft. (Doyle)*	*Average d.b.h. Inches*
70	20	17		5.4
	30	31	1,000	7.8
	40	42	3,500	9.6
	50	50	6,500	10.9
	60	55	10,000	12.1
	70	59	12,500	13.0
	80	62	15,000	13.8
80	20	22		6.2
	30	38	2,000	8.7
	40	51	6,000	10.7
	50	60	11,500	12.2
	60	66	16,000	13.6
	70	70	19,500	14.6
	80	73	22,000	15.5

See footnote at end of table.

TABLE 6.—*Stand and yield information for fully-stocked, unmanaged, second-growth stands of loblolly pine and shortleaf pine*—Continued

Site index	Age	Total merchantable volume per acre		
	Years	*Cords*	*Bd. ft. (Doyle)*	*Average d.b.h.* [1] *Inches*
LOBLOLLY PINE—Continued				
90	20	27	----------	6. 9
	30	46	4, 000	9. 6
	40	61	10, 000	11. 7
	50	71	16, 500	13. 6
	60	78	22, 000	15. 0
	70	82	26, 000	16. 2
	80	85	29, 000	17. 2
100	20	32	500	7. 4
	30	53	6, 000	10. 4
	40	71	14, 500	12. 8
	50	84	23, 000	14. 7
	60	92	29, 500	16. 2
	70	96	33, 000	17. 6
	80	100	35, 500	18. 6
SHORTLEAF PINE				
60	20	12	----------	3. 8
	30	32	----------	5. 7
	40	46	1, 550	7. 3
	50	54	4, 350	8. 4
	60	60	7, 600	9. 7
	70	65	10, 250	10. 6
	80	68	12, 700	11. 4
70	20	18	----------	4. 5
	30	41	750	6. 6
	40	56	4, 000	8. 4
	50	66	8, 650	9. 8
	60	73	12, 600	11. 0
	70	79	16, 250	12. 0
	80	83	19, 400	12. 8
80	20	25	----------	5. 2
	30	48	1, 950	7. 5
	40	65	7, 650	9. 5
	50	77	13, 550	11. 1
	60	85	18, 850	12. 3
	70	92	23, 450	13. 3
	80	97	27, 550	14. 2
90	20	30	----------	6. 1
	30	54	4, 550	8. 8
	40	73	12, 600	10. 9
	50	87	20, 450	12. 6
	60	98	27, 400	14. 0
	70	105	32, 850	15. 2
	80	112	37, 400	16. 2

[1] Diameter at breast height.

Woodland suitability groups of soils

Management of woodland can be planned more effectively if soils are grouped according to those characteristics that affect the growth of trees and management of the stands. For this reason, the deep, loessal soils of Claiborne County have been placed in seven woodland suitability groups. Each group consists of soils that have about the same suitability for wood crops, require about the same management, and have about the same potential productivity. Because enough data are not available, some soils and land types in the county have not been assigned to woodland suitability groups.

Listed in table 7, and later described in the text, are the seven woodland suitability groups in this county. In table 7 the average site index is given for loblolly pine and shortleaf pine in each suitability group, and also the hazards and limitations that affect the management of each group. The terms used in this table require explanation.

The potential productivity of a soil for a specified kind of tree is expressed as a *site index*. A site index is the average height of the dominant and codominant trees 50 years of age. For each soil the site index is determined mainly by the capacity of that soil to provide moisture and growing space for tree roots. The site index in table 7 is an average for all the soils in the suitability group.

As shown in table 7, each woodland suitability group has, in varying degree, limitations that affect its management. Some of these limitations are expressed in the relative terms, slight, moderate, or severe. The relative term expresses the degree of limitation, as explained in the following:

PLANT COMPETITION: When a woodland is disturbed by fire, cutting, grazing, or some other means, undesirable brush, trees, and plants may invade. The invading growth competes with the desirable trees and hinders their establishment and growth.

Competition is *slight* if unwanted plants are no special problem. It is *moderate* if the invaders delay but do not prevent the establishment of a normal, fully stocked stand. Where plant competition is moderate, seedbed preparation is generally not needed and simple methods can be used to prevent undesirable plants from invading. Competition is *severe* if trees cannot regenerate naturally. Where competition is severe, carefully prepare the site and use management that includes controlled burning, spraying with chemicals, and girdling.

EQUIPMENT LIMITATION: Drainage, slope, stoniness, soil texture, or other soil characteristics may restrict or prohibit the use of ordinary equipment in pruning, thinning, harvesting, or other woodland management. Different soils may require different kinds of equipment, methods of operation, or seasons when equipment may be used.

Limitation is *slight* if there are no restrictions on the type of equipment or on the time of year that the equipment can be used. It is *moderate* if slopes are moderately steep, if heavy equipment is restricted by wetness in winter and early in spring, or if the use of equipment damages the tree roots to some extent. Equipment limitation is *severe* if many types of equipment cannot be used, if the time equipment cannot be used is more than 3 months a year, and if the use of equipment severely damages the roots of trees and the structure and stability of the soil. Limitation is severe on moderately steep and steep soils that are stony and have rock outcrops. It is also severe on wet bottom lands and low terraces in winter or early in spring.

SEEDLING MORTALITY: Even when healthy seedlings of a suitable tree are correctly planted or occur naturally in adequate numbers, some of them will not survive if characteristics of the soil are unfavorable.

Mortality is *slight* if not more than 25 percent of the planted seedlings die, or if trees ordinarily

TABLE 7.—*Woodland suitability groupings of some deep, loessal soils*

Woodland suitability groups and soils	Site index [1]		Plant competition	Seedling mortality	Equipment limitation	Windthrow hazard	Erosion hazard
	Loblolly pine	Shortleaf pine					
Group 1:							
Henry silt loam (Hn)	[2] 91±5	(3)	Severe	Moderate	Severe	Severe	Slight.
Group 2:							
Calloway silt loam (CaA, CaB)	87±8	72±3	Moderate	Moderate	Moderate	Slight to moderate.	Slight.
Group 3:							
Collins silt loam (Cn)	104±3	[2] 88	Severe	Moderate	Moderate to severe.	Slight to moderate.	Slight.
Group 4:							
Grenada silt loam (GrA, GrB, GrB2, GrB3, GrC3, GrD3, GrE3).	88±2	76±2	Slight to moderate.	Slight to moderate.	Slight to moderate.	Slight to moderate.	Slight to severe.
Group 5:							
Falaya silt loam (Fa)	105±1	(3)	Severe	Moderate	Moderate to severe.	Slight	Slight.
Group 6:							
Waverly silt loam (Wa)	[3] 80	(3)	Severe	Moderate to severe.	Moderate to severe.	Slight	Slight.
Group 7:							
Loring and Memphis silt loams (LmA, LmB2, LmB3, LmC2, LmC3, LmD3).	(4)	(4)	Moderate	Slight to moderate.	Slight to moderate.	Slight	Moderate to severe.
Memphis silt loams (MeA, MeB, MeB2, MeB3, MeC2, MeC3).	(4)	(4)	Moderate to severe.	Slight to moderate.	Slight to moderate.	Slight	Moderate to severe.
Memphis and Natchez silt loams (MnD2, MnD3, MnE2, MnE3, MnF2, MnF3).	(5)	(5)	Moderate to severe.	Slight to moderate.	Slight to moderate.	Slight	Moderate to severe.

[1] Based on information obtained on soils in Amite, Franklin, Pike, and Lincoln Counties.
[2] Less than five sites examined.
[3] Stands not adequate for measurement.
[4] Not rated, because only a few sites were available. Much of the canopy was broken during a severe ice storm in February 1951.
[5] Not rated; predominantly hardwoods.

regenerate naturally in places where there are enough seeds. It is *moderate* if 25 to 50 percent of the seedlings die, or if trees do not regenerate naturally in numbers needed for adequate restocking. In some places, replanting to fill open spaces will be necessary. Mortality is *severe* if not more than 50 percent of the planted seedlings die, or if trees do not ordinarily reseed naturally in places where there are enough seeds. If mortality is severe, plant seedlings where the seeds do not grow, prepare special seedbeds, and use good methods of planting to insure a full stand of trees.

WINDTHROW HAZARD: Soil characteristics affect the development of tree roots and the firmness with which the roots anchor the tree in the soil so that it resists the force of the wind. Root development may be prevented by a high water table or by an impermeable layer. The protection of surrounding trees also affects windthrow hazard. Knowing the degree of this hazard is important when choosing trees for planting and when planning release cuttings or harvest cuttings.

The windthrow hazard is *slight* if roots hold the tree firmly against a normal wind. Individual trees are likely to remain standing if protective trees on all sides are removed. The hazard is *moderate* if the roots develop enough to hold the tree firmly except when the soil is excessively wet and the wind velocity is very high. It is *severe* if rooting is not deep enough to give adequate stability. On soils with a rating of severe, individual trees are likely to be blown over if they are released on all sides.

EROSION HAZARD: Woodland can be protected from erosion by choosing the kinds of trees, by adjusting the rotation age and cutting cycles, by using special techniques in management, and by carefully constructing and maintaining roads, trails, and landings.

Erosion hazard is rated according to the risk of erosion on well-managed woodland that is not protected by special practices. It is *slight* where a small loss of soil is expected. Generally, erosion is slight if slopes range from 0 to 2 percent and runoff is slow or very slow. The erosion hazard is *moderate* where there will be a moderate loss of soil if runoff is not controlled and the vegetative cover is not adequate for protection. It is *severe* where steep slopes, rapid runoff, slow infiltration, slow permeability, and past erosion make the soil susceptible to severe erosion.

For the land types in the county and for some soils, the site index for trees has not been computed and the hazards to management have not been estimated. Consequently, those land types and soils have not been assigned woodland suitability groups. They are—

Adler silt loam.
Bowdre, Tunica, and Crevasse soils.
Commerce silt loam.
Crevasse, Commerce, and Robinsonville soils.
Gullied land.
Inglefield silt loam.
Mixed alluvial land.
Rough broken land.
Sandy alluvial land.

The deep, loessal soils in Claiborne County have been placed in seven woodland suitability groups. The soils in each group have about the same moisture-supplying capacity and, therefore, about the same potential productivity. They are subject to similar hazards and limitations and require similar management.

WOODLAND SUITABILITY GROUP 1

Henry silt loam is the only soil in this group. On this soil the average site index for loblolly pine is about 91. Shortleaf pine generally is not suited. A fully stocked, unmanaged stand of second-growth loblolly pine that is 50 years old normally produces an annual yield of about 345 board feet of lumber (Doyle Rule) per acre.

Competition from unwanted plants, particularly hardwoods, is severe on Henry silt loam. Loblolly pine will not regenerate naturally in sufficient numbers and needs special seedbed preparation and management. Seedling mortality is moderate.

Wetness causes serious hazards on this soil. Equipment limitation is severe. Excessive moisture prohibits the use of heavy logging equipment for a period of 3 to 6 months, generally in winter and early in spring. The windthrow hazard is severe in periods of excessive wetness and high winds because of the shallow root zone. Erosion is only a slight hazard on this nearly level soil.

WOODLAND SUITABILITY GROUP 2

This woodland suitability group consists of the following soils—

Calloway silt loam, 0 to 2 percent slopes.
Calloway silt loam, 2 to 5 percent slopes.

On these soils the average site index is about 87 for loblolly pine and about 72 for shortleaf pine. Fully stocked, unmanaged stands of second-growth loblolly pine 50 years old normally produce annual yields of about 300 board feet (Doyle Rule) per acre. In the same period shortleaf pine yields about 193 board feet per acre.

On these soils competition from undesirable trees is moderate. Competing plants slow the initial growth of desired trees but do not prevent adequate stands from establishing. Sites do not require special preparation, for the competing plants can be suppressed by simple management. Seedling mortality is moderate.

The equipment limitation is moderate. Equipment can be used about 9 months of the year. The hazard from windthrow is slight to moderate, and the erosion hazard is slight.

WOODLAND SUITABILITY GROUP 3

Collins silt loam is the only soil in this group. This soil has an average site index of about 104 for loblolly pine and about 88 for shortleaf pine. Normally, loblolly pine, 50 years old, yields annually about 480 board feet (Doyle Rule) per acre. Shortleaf pine yields about 380 feet per acre.

Competition from unwanted plants is so severe on Collins silt loam that pines do not regenerate naturally in sufficient numbers and require special management to establish fully stocked stands. Planting sites should be selected carefully. Seedling mortality is moderate.

The equipment limitation is moderate to severe. Because of excessive wetness, heavy logging equipment cannot be used for a period of 3 to 6 months, normally late in winter and early in spring. The windthrow hazard is slight to moderate when the soil is excessively wet and winds are high. Because Collins silt loam is nearly level, erosion is only a slight hazard.

WOODLAND SUITABILITY GROUP 4

This woodland group consists of the following soils—

Grenada silt loam, 0 to 2 percent slopes.
Grenada silt loam, 2 to 5 percent slopes.
Grenada silt loam, 2 to 5 percent slopes, eroded.
Grenada silt loam, 2 to 5 percent slopes, severely eroded.
Grenada silt loam, 5 to 8 percent slopes, severely eroded.
Grenada silt loam, 8 to 12 percent slopes, severely eroded.
Grenada silt loam, 12 to 17 percent slopes, severely eroded.

On these soils the average site index is about 88 for loblolly pine and about 76 for shortleaf pine. A fully stocked, unmanaged stand of loblolly pine 50 years old normally produces an annual yield of about 310 board feet (Doyle Rule) per acre. At the same age, shortleaf pine yields about 232 board feet per acre.

Competition from unwanted plants is slight to moderate on the soils of this group. When moderate, competing plants slow the initial growth of desired seedlings, but they do not prevent trees from forming an adequate stand. Planting sites do not require special preparation, for simple management eliminates competing plants. Seedling mortality is slight to moderate.

The equipment limitation is also slight to moderate. Heavy equipment can be used about 9 months of the year. Because the hazard of erosion is slight to severe, locate roads, landings, and skid trails so that further erosion is avoided. Manage the strongly sloping soils in this group with special care. The windthrow hazard is slight to moderate on soils of this group.

WOODLAND SUITABILITY GROUP 5

Falaya silt loam is the only soil in this group. This soil has an average site index of 50 for loblolly pine and generally is not suited to shortleaf pine. A fully stocked stand of loblolly pine 50 years old normally produces an annual yield of about 485 board feet (Doyle Rule) per acre.

Competition from undesirable plants is severe, and desired trees do not regenerate naturally in sufficient numbers. Adequate stands require that sites be specially prepared and well managed. Seedling mortality is moderate.

Falaya silt loam is wet and has moderate to severe equipment limitation. Heavy logging equipment cannot be used for 3 to 6 months in winter and early in spring. The windthrow hazard and the erosion hazard are slight.

WOODLAND SUITABILITY GROUP 6

Waverly silt loam is the only soil in this group. This soil has an average site index of 80 for loblolly pine and generally is not suited to shortleaf pine. A fully stocked, unmanaged stand of loblolly pine 50 years old annually yields about 233 board feet (Doyle Rule) per acre.

Competition from undesirable plants is severe, and natural regeneration does not always provide restocking of desired trees. Thus, it is necessary to suppress competing plants by special management and site preparation. Seedling mortality is moderate to severe.

Equipment limitation is moderate to severe. Logging equipment cannot be used on this wet, cold soil for 3 to

6 months in winter and early in spring. The windthrow hazard and the erosion hazard are slight.

WOODLAND SUITABILITY GROUP 7

This woodland suitability group consists of the following soils—

Loring and Memphis silt loams, 0 to 2 percent slopes.
Loring and Memphis silt loams, 2 to 5 percent slopes, eroded.
Loring and Memphis silt loams, 2 to 5 percent slopes, severely eroded.
Loring and Memphis silt loams, 5 to 8 percent slopes, eroded.
Loring and Memphis silt loams, 5 to 8 percent slopes, severely eroded.
Loring and Memphis silt loams, 8 to 12 percent slopes, severely eroded.
Memphis silt loam, 0 to 2 percent slopes.
Memphis silt loam, 2 to 5 percent slopes.
Memphis silt loam, 2 to 5 percent slopes, eroded.
Memphis silt loam, 2 to 5 percent slopes, severely eroded.
Memphis silt loam, 5 to 8 percent slopes, eroded.
Memphis silt loam, 5 to 8 percent slopes, severely eroded.
Memphis and Natchez silt loams, 8 to 12 percent slopes, eroded.
Memphis and Natchez silt loams, 8 to 12 percent slopes, severely eroded.
Memphis and Natchez silt loams, 12 to 17 percent slopes, eroded.
Memphis and Natchez silt loams, 12 to 17 percent slopes, severely eroded.
Memphis and Natchez silt loams, 17 to 40 percent slopes, eroded.
Memphis and Natchez silt loams, 17 to 40 percent slopes, severely eroded.

On these soils the average site index has not been computed, because only a few sites were available. Practically all the canopy was broken during a severe ice storm in February 1961. Loblolly pine and shortleaf pine are suited to the soils.

Competition from unwanted plants is moderate to severe. Competing plants slow the initial growth of desired seedlings, but they usually do not prevent trees from forming an adequate stand. Seedling mortality is slight to moderate.

The equipment limitation is also slight to moderate. Heavy equipment can be used about 9 months of the year. Because the hazard of erosion is moderate to severe, locate roads, landings, and skid trails so that further erosion is avoided. Manage the steep slopes with care. The hazard of windthrow is slight on soils of this group.

Trees to favor in management

The trees to be favored in this county are those that are expected to increase in value at a satisfactory rate. They have a high priority in improving the stand. A favored species must be suited to the site and be commercially valuable. This relationship between species and site must be recognized if management of timber is to be successful. Trees that are valuable commercially are often poorly formed and infested with insects and diseases if they do not grow on favorable sites.

Table 8 lists the trees that grow on the delta in Claiborne County and tells which of these trees to favor in management on different kinds of soils, and which not to favor. In table 8 "Favor" means to manage the stand so that

TABLE 8.—*Important commercial trees suggested for management on soils of the delta* [1]

[Absence of entry in a column indicates that tree ordinarily does not grow on soils of series named]

Tree	Soils on recent natural levees		Soils in slack-water areas	Soils on loessal bottom lands		
	Crevasse soils	Robinsonville and Commerce soils	Bowdre and Tunica soils	Collins soils	Falaya soils	Waverly soils
Ash, green [2]	Favor; occurs occasionally.	Favor; occurs occasionally.	Do not favor; occurs occasionally.		Favor; occurs occasionally.	Favor; occurs commonly.
Blackgum			Do not favor; occurs occasionally.	Favor; occurs occasionally.	Do not favor; occurs commonly.	
Black walnut				Favor; occurs occasionally.	Do not favor; occurs occasionally.	
Black willow [2]	Favor; occurs occasionally.	Favor; occurs occasionally.	Do not favor; occurs occasionally.		Do not favor; occurs occasionally.	Favor; occurs commonly.
Cherrybark oak [2]	Favor; occurs occasionally.	Favor; occurs occasionally.	Favor; occurs commonly.	Favor; occurs commonly.	Favor; occurs commonly.	Do not favor; occurs occasionally.
Cottonwood [2]	Favor; occurs commonly.	Favor; occurs commonly.	Favor; occurs commonly.	Favor; occurs commonly.	Favor; occurs commonly.	Do not favor; occurs occasionally.
Cow oak [2]			Do not favor; occurs occasionally.	Do not favor; occurs commonly.	Favor; occurs commonly.	Do not favor; occurs commonly.
Cypress [2]					Do not favor; occurs occasionally.	Favor; occurs commonly.
Elms, soft	Do not favor; occurs commonly.	Do not favor; occurs commonly.	Do not favor; occurs commonly.	Do not favor; occurs commonly.	Do not favor; occurs commonly.	Do not favor; occurs commonly.

See footnotes at end of table.

TABLE 8.—*Important commercial trees suggested for management on soils of the delta*—Continued

Tree	Soils on recent natural levees		Soils in slack-water areas	Soils on loessal bottom lands		
	Crevasse soils	Robinsonville and Commerce soils	Bowdre and Tunica soils	Collins soils	Falaya soils	Waverly soils
Hackberry	Favor; occurs occasionally.	Favor; occurs commonly.	Favor; occurs commonly.	Favor; occurs occasionally.	Favor; occurs occasionally.	Do not favor; occurs occasionally.
Hickory				Do not favor; occurs commonly.	Do not favor; occurs commonly.	Do not favor; occurs occasionally.
Honeylocust	Do not favor; occurs occasionally.	Do not favor; occurs occasionally.	Do not favor; occurs occasionally.	Do not favor; occurs occasionally.	Do not favor; occurs commonly.	Do not favor; occurs commonly.
Laurel oak				Do not favor; occurs occasionally.	Favor; occurs occasionally.	Do not favor; occurs occasionally.
Nuttall oak [2]			Favor; occurs commonly.	Favor; occurs occasionally.	Favor; occurs commonly.	Favor; occurs commonly.
Overcup oak			Do not favor; occurs occasionally.		Favor; occurs commonly.	Favor; occurs commonly.
Pecan, bitter			Do not favor; occurs occasionally.			Do not favor; occurs occasionally.
Pecan	Favor; occurs commonly.	Favor; occurs commonly.	Favor; occurs occasionally.	Favor; occurs occasionally.	Do not favor; occurs occasionally.	Do not favor; occurs occasionally.
Persimmon		Do not favor; occurs occasionally.	Favor; occurs occasionally.	Do not favor; occurs occasionally.	Favor; occurs commonly.	Favor; occurs occasionally.
Red maple			Favor; occurs commonly.	Do not favor; occurs occasionally.	Favor; occurs commonly.	Do not favor; occurs commonly.
Sassafras			Do not favor; occurs commonly.	Favor; occurs occasionally.	Do not favor; occurs occasionally.	
Shumard oak [2]			Favor; occurs occasionally.	Favor; occurs commonly.	Favor; occurs occasionally.	Do not favor; occurs occasionally.
Silver maple		Favor; occurs occasionally.				
Sweetgum [2]	Favor; occurs occasionally.	Favor; occurs commonly.	Favor; occurs commonly.	Favor; occurs commonly.	Favor; occurs commonly.	Do not favor; occurs commonly.
Sycamore [2]	Favor; occurs commonly.	Favor; occurs commonly.	Favor; occurs occasionally.	Favor; occurs commonly.	Favor; occurs commonly.	Do not favor; occurs occasionally.
Tupelo [2]					Do not favor; occurs occasionally.	Favor; occurs commonly.
Water oak [2]	Do not favor; occurs occasionally.	Favor; occurs occasionally.	Favor; occurs commonly.	Favor; occurs commonly.	Favor; occurs commonly.	Do not favor; occurs occasionally.
White oak				Favor; occurs commonly.	Favor; occurs commonly.	Do not favor; occurs occasionally.
Willow oak [2]			Favor; occurs commonly.	Favor; occurs commonly.	Favor; occurs commonly.	Do not favor; occurs occasionally.
Yellow-poplar				Favor; occurs commonly.	Favor; occurs commonly.	Do not favor; occurs commonly.

[1] Information provided by U.S. Forest Service, Southern Forest Experiment Station, and is based on observation, experience, and limited research.

[2] Information for planting and care of tree can be obtained from the U.S. Forest Service, Southern Forest Experiment Station, Stoneville Research Center, Stoneville, Miss.

the growth of the tree specified is aided; or to plant the tree in woodlots where it does not occur, if practical techniques of management can be developed. "Do not favor" means to manage the stand by ordinary practices of woodland management.

Trees other than those listed in table 8 also grow on the delta. Black locust, dogwood, and bois-d'arc, which are used for posts and specialties, grow on well-drained soils; mulberry grows on all soils. Not plentiful on the delta and of little commercial value are boxelder, hard elms, river birch, holly, post oak, swamp cottonwood. buckeye, Kentucky coffeetree, bur oak, catalpa, and chinaberry. Weed trees are ironwood, blue beech, privet, water elm, red haw, and roughleaf dogwood.

Table 9 is similar to table 8 but tells which trees on deep, loessal soils to favor or not to favor in management. Black locust and dogwood grow on the well-drained soils and are used for posts and specialties. Mulberry grows abundantly on all the soils. Of little commercial value and few in number are boxelder, hard elms, river birch, holly, black cottonwood, red cedar, chestnut oak, post oak, black oak, buckeye, sumac, and chinaberry. Weed trees are ironwood, blue beech, blackjack oak, water elm, red haw, privet, and buttonbush.

Of all pines loblolly is preferred, even in the stands containing shortleaf pine and loblolly pine.

Engineering Applications [4]

Soil engineering is well established in engineering practice today. In a broad sense it is a subdivision of structural engineering, for it deals with soils as the foundation material on which structures rest and with soils used as a structural material. Soils to the engineer are natural materials that occur in great variety on the earth's surface. Their properties that affect engineering may vary widely from place to place and within the relatively small area of a single project. Generally, soils are used in the locality and in the condition they are found. A large part of soil engineering consists of locating the various soils, of determining their engineering properties, of correlating those properties with the requirements of the job, and of selecting the best material for each job.

[4] JOEL G. PAYNE, agricultural engineer, Soil Conservation Service, assisted in writing this subsection.

This soil survey report contains information about the soils of Claiborne County that will help engineers. This subsection emphasizes properties of soils related to agricultural engineering, especially properties affecting irrigation, farm ponds, and structures that control and conserve soil and water. The information in this report will assist the engineer (1) to select and develop industrial, business, residential, and recreational sites, (2) to select locations for highways, pipelines and airports, (3) to locate sand and gravel for use in construction, (4) to correlate pavement performance with kinds of soil and thus develop information that will be useful in designing and maintaining the pavements, (5) to determine the suitability of soils for the cross-country movement of vehicles and construction equipment, and (6) to supplement information obtained from other published maps and reports and from aerial photographs for the purpose of making soil maps and reports that can be used readily by engineers.

Engineers of the Mississippi State Highway Department, the United States Bureau of Public Roads, and the Soil Conservation Service collaborated with soil scientists of the Soil Conservation Service in preparing this report. These specialists combined their knowledge and interpreted the soils on the basis of the information obtained from laboratory tests and field experiences.

The soil maps included in this report and the corresponding interpretations are necessarily generalized and, without further tests and samplings, are not sufficient to be used in locating, designing, and constructing specific engineering works.

At many construction sites, the soil material varies greatly within the depth of proposed excavations, and several different soils occur within short distances. The maps, soil descriptions, and other data in this report can be used to plan detailed soil investigations at the construction site. Then the number of soil samples needed for laboratory testing should be a minimum. After testing the soil materials and observing their behavior in place under varying conditions, the engineer should be able to anticipate, to some extent, the properties of the individual soils wherever they are mapped.

Most of the information in this section is in tables 10, 11, and 12, but information useful to engineers also can be found in other sections of this report, particularly "Descriptions of Soils" and "Formation and Classification of Soils."

TABLE 9.—*Important commercial trees suggested*

[Absence of an entry in a column indicates that tree

Trees	Soils on uplands			
	Memphis, Loring, and Natchez soils			Grenada soils
	On ridges and upper slopes		On middle and lower slopes	Noneroded
	Noneroded	Eroded		
Ash, white or green [2]	Do not favor; occurs occasionally.		Favor; occurs commonly	Do not favor; occurs occasionally.
Basswood	Do not favor; occurs commonly.		Favor; occurs commonly	Do not favor; occurs commonly.
Beech	Do not favor; occurs occasionally.		Do not favor; occurs commonly.	Do not favor; occurs occasionally.
Black cherry	Do not favor; occurs commonly.	Do not favor; occurs occasionally.	Favor; occurs commonly	Do not favor; occurs commonly.
Blackgum	Do not favor; occurs commonly.	Do not favor; occurs commonly.	Favor; occurs commonly	Do not favor; occurs commonly.
Black walnut	Do not favor; occurs occasionally.		Favor; occurs occasionally.	Do not favor; occurs occasionally.
Cedar	Do not favor; occurs commonly.	Do not favor; occurs commonly.	Favor; occurs commonly	Do not favor; occurs commonly.
Cherrybark oak [2]	Favor; occurs commonly	Do not favor; occurs commonly.	Favor; occurs commonly	Favor; occurs commonly.
Chinquapin oak	Favor; occurs occasionally.	Do not favor; occurs occasionally.	Favor; occurs commonly	Favor; occurs occasionally.
Cottonwood [2]			Favor; occurs occasionally.	
Cow oak [2]				
Cucumbertree			Favor; occurs occasionally.	Do not favor; occurs occasionally.
Cypress [2]				
Elms, soft	Do not favor; occurs occasionally.	Do not favor; occurs occasionally.	Do not favor; occurs commonly.	Do not favor; occurs commonly.
Hackberry			Do not favor; occurs occasionally.	
Hickory	Do not favor; occurs commonly.	Do not favor; occurs commonly.	Do not favor; occurs commonly.	Do not favor; occurs commonly.
Honeylocust			Do not favor; occurs occasionally.	
Laurel oak				
Magnolia	Do not favor; occurs occasionally.		Favor; occurs commonly	Do not favor; occurs occasionally.
Maple	Do not favor; occurs commonly.	Do not favor; occurs occasionally.	Do not favor; occurs commonly.	Do not favor; occurs commonly.

See footnotes at end of table.

for management on deep, loessal soils [1]

ordinarily does not grow on soils of series named]

Soils on uplands—Continued			Soils on bottom lands		
Grenada soils—Con.					
Eroded	Calloway soils	Henry soils	Collins soils	Falaya soils	Waverly soils
----------	Do not favor; occurs commonly.	Do not favor; occurs commonly.	Do not favor; occurs commonly.	Favor; occurs commonly.	Favor; occurs commonly.
----------	Do not favor; occurs commonly.	Do not favor; occurs commonly.	Favor; occurs occasionally.	----------	
----------	Do not favor; occurs occasionally.	Do not favor; occurs occasionally.	Do not favor; occurs commonly.	Do not favor; occurs commonly.	Do not favor; occurs commonly.
Do not favor; occurs occasionally.	Do not favor; occurs occasionally.	----------	Favor; occurs occasionally.	Do not favor; occurs occasionally.	
Do not favor; occurs commonly.	Do not favor; occurs commonly.	Do not favor; occurs commonly.	Favor; occurs commonly.	Do not favor; occurs commonly.	
----------	Do not favor; occurs occasionally.	----------	Favor; occurs occasionally.	Do not favor; occurs occasionally.	
Do not favor; occurs commonly.	Do not favor; occurs commonly.	Do not favor; occurs commonly.	Favor; occurs commonly.	Favor; occurs commonly.	Do not favor; occurs commonly.
Do not favor; occurs commonly.	Favor; occurs commonly.	Do not favor; occurs occasionally.	Favor; occurs commonly.	Favor; occurs commonly.	Do not favor; occurs occasionally.
Do not favor; occurs occasionally.	----------	----------	----------	----------	
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Do not favor; occurs occasionally.	Do not favor; occurs commonly.	Do not favor; occurs occasionally.	Do not favor; occurs commonly.	Do not favor; occurs commonly.	Do not favor; occurs commonly.
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Do not favor; occurs commonly.	Do not favor; occurs commonly.	Do not favor; occurs occasionally.	Do not favor; occurs commonly.	Do not favor; occurs commonly.	Do not favor; occurs occasionally.
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----------	Do not favor; occurs occasionally.	----------	Favor; occurs commonly.	Favor; occurs occasionally.	
Do not favor; occurs occasionally.	Do not favor; occurs commonly.	Do not favor; occurs occasionally.	Do not favor; occurs commonly.	Do not favor; occurs commonly.	Do not favor; occurs occasionally.

TABLE 9.—*Important commercial trees suggested*

Trees	Soils on uplands			
	Memphis, Loring, and Natchez soils			Grenada soils
	On ridges and upper slopes		On middle and lower slopes	Noneroded
	Noneroded	Eroded		
Nuttall oak [2]	----------	----------	----------	----------
Overcup oak	----------	----------	----------	----------
Pecan	----------	----------	----------	----------
Persimmon	Do not favor; occurs commonly.	Do not favor; occurs commonly.	Favor; occurs commonly	Do not favor; occurs commonly.
Pine [2]	Do not favor; occurs commonly.	Favor; occurs commonly	Do not favor; occurs commonly.	Do not favor; occurs commonly.
Sassafras	Do not favor; occurs commonly.	Do not favor; occurs commonly.	Favor; occurs commonly	Do not favor; occurs commonly.
Shumard oak [2]	Favor; occurs commonly	Do not favor; occurs commonly.	Favor; occurs commonly	Favor; occurs commonly
Southern red oak	Do not favor; occurs commonly.	Do not favor; occurs commonly.	Favor; occurs commonly	Do not favor; occurs commonly.
Sweetgum [2]	Do not favor; occurs commonly.	Do not favor; occurs commonly.	Favor; occurs commonly	Favor; occurs commonly
Sycamore [2]	Do not favor; occurs occasionally.	----------	Favor; occurs occasionally	Do not favor; occurs occasionally.
Tupelo [2]	----------	----------	----------	----------
Water oak [2]	Do not favor; occurs commonly.	Do not favor; occurs occasionally.	Favor; occurs commonly	Do not favor; occurs commonly.
White oak	Favor; occurs commonly	Do not favor; occurs commonly.	Favor; occurs commonly	Favor; occurs commonly
Willow oak [2]	Do not favor; occurs occasionally.	----------	Favor; occurs occasionally	Do not favor; occurs occasionally.
Yellow-poplar [2]	Do not favor; occurs commonly.	----------	Favor; occurs commonly	Do not favor; occurs commonly.

[1] Information provided by U.S. Forest Service, Southern Forest Experiment Station, and is based on observation, experience, and limited research.

for management on deep, loessal soils [1]—Continued

Soils on uplands—Continued			Soils on bottom lands		
Grenada soils—Con.					
Eroded	Calloway soils	Henry soils	Collins soils	Falaya soils	Waverly soils
----------	----------	----------	Favor; occurs occasionally.	Favor; occurs commonly.	Favor; occurs commonly.
----------	----------	----------	----------	Favor; occurs commonly.	Favor; occurs commonly.
----------	----------	----------	Favor; occurs occasionally.	Do not favor; occurs commonly.	Do not favor; occurs occasionally.
Do not favor; occurs commonly.	Do not favor; occurs commonly.	Do not favor; occurs commonly.	Do not favor; occurs occasionally.	Favor; occurs commonly.	Favor; occurs occasionally.
Favor; occurs commonly.	Do not favor; occurs commonly.	Favor; occurs occasionally.	Do not favor; occurs commonly.	Do not favor; occurs commonly.	Do not favor; occurs occasionally.
Do not favor; occurs commonly.	Do not favor; occurs occasionally.	----------	Favor; occurs occasionally.	Do not favor; occurs occasionally.	
Do not favor; occurs commonly.	Favor; occurs commonly.	Do not favor; occurs occasionally.	Favor; occurs commonly.	Favor; occurs occasionally.	Do not favor; occurs occasionally.
Do not favor; occurs commonly.	Do not favor; occurs commonly.	Do not favor; occurs occasionally.	Favor; occurs occasionally.	Do not favor; occurs occasionally.	
Do not favor; occurs commonly.	Favor; occurs commonly.	Favor; occurs commonly.	Favor; occurs commonly.	Favor; occurs commonly.	Do not favor; occurs commonly.
----------	Do not favor; occurs occasionally.	----------	Favor; occurs commonly.	Favor; occurs commonly.	Do not favor; occurs occasionally.
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Do not favor; occurs occasionally.	Favor; occurs commonly.	Do not favor; occurs occasionally.	Favor; occurs commonly.	Favor; occurs commonly.	Do not favor; occurs occasionally.
Do not favor; occurs commonly.	Favor; occurs commonly.	Do not favor; occurs occasionally.	Favor; occurs commonly.	Favor; occurs commonly.	Do not favor; occurs occasionally.
----------	Do not favor; occurs commonly.	Do not favor; occurs occasionally.	Favor; occurs commonly.	Favor; occurs commonly.	Do not favor; occurs occasionally.
----------	Do not favor; occurs commonly.	----------	Favor; occurs commonly.	Favor; occurs commonly.	Do not favor; occurs commonly.

[2] Information for planting or care of tree can be obtained from the U.S. Forest Service, Southern Forest Experiment Station, Stoneville Research Center, Stoneville, Miss.

TABLE 10.—*Brief description and*

[Dashed lines indicate that properties

Map symbol	Soil name	Depth to seasonally high water table	Description of soil and site	Depth from surface
		Feet		*Inches*
Ad	Adler silt loam (0 to 2 percent slopes).	2–4	2 to 4 feet of moderately well drained silt loam on bottom lands in loessal material.	0–4 4–20 20–42 42–56
Bc	Bowdre, Tunica, and Crevasse soils (0 to 2 percent slopes).	0	Mostly undifferentiated, stratified silty clay loam in slack-water and depressional areas on the alluvial plain of the Mississippi River; small areas of loamy sand on old natural levees. Flooding is the main problem.	0–6 6–14 14–20 20–52 52+
CaA CaB	Calloway silt loam, 0 to 2 percent slopes. Calloway silt loam, 2 to 5 percent slopes.	0–1	1 to 2 feet of silt loam or heavy silt loam underlain by 2 or 3 feet of compact silt loam on uplands in deep loessal material; somewhat poorly drained; fragipan at about 1½ feet.	0–7 7–20 20–45
Cn	Collins silt loam (0 to 2 percent slopes)	2–4	2 to 4 feet of moderately well drained silt loam over deep, somewhat poorly drained silt loam; on bottom lands in loessal material.	0–40
Co	Commerce silt loam (0 to 2 percent slopes)	0	Stratified silt loam and sandy loam on natural levees of the Mississippi River.	0–9 9–15 15–21 21–45 45–54+
Cr	Crevasse, Commerce, and Robinsonville soils (0 to 2 percent slopes).	0–5	Mainly undifferentiated, stratified silt loam and sandy loam on natural levees of the Mississippi River.	0–8 8–14 14–50
Fa	Falaya silt loam (0 to 2 percent slopes)	2–4	2 to 4 feet of somewhat poorly drained silt loam on bottom lands in loessal material.	0–5 5–10 10–40
GrA GrB GrB2 GrB3 GrC3 GrD3 GrE3	Grenada silt loam, 0 to 2 percent slopes Grenada silt loam, 2 to 5 percent slopes Grenada silt loam, 2 to 5 percent slopes, eroded Grenada silt loam, 2 to 5 percent slopes, severely eroded. Grenada silt loam, 5 to 8 percent slopes, severely eroded. Grenada silt loam, 8 to 12 percent slopes, severely eroded. Grenada silt loam, 12 to 17 percent slopes, severely eroded.	10+	1½ to 2½ feet of moderately well drained silt loam and silty clay loam underlain by compact silt loam, 2 to 3 feet thick; in deep loessal material; fragipan at about 1½ to 2 feet.	0–3 3–17 17–22 22–40
Gu	Gullied land			
Hn	Henry silt loam (0 to 2 percent slopes)	0–1	1 to 1½ feet of poorly drained silt loam on compact layer of silt loam, 2 to 3 feet thick; in deep, loessal material; fragipan at about 1 to 1½ feet.	0–7 7–16 16–26 26–44

estimated physical properties of soils

are variable and were not estimated]

Classification			Permeability	Available water capacity	Reaction	Dispersion	Shrink-swell potential	Percentage passing sieve—	
USDA texture	Unified	AASHO						No. 10	No. 200
			Inches per hour	*Inches per inch of soil*	*pH value*				
Silt loam	ML or CL	A-4	0. 8-2. 5	0. 13	6. 5-7. 0	High	Low	100	100
Silt loam	ML or CL	A-4	0. 8-2. 5	. 13	6. 5-7. 5	High	Low	100	100
Silt loam	ML or CL	A-4	0. 8-2. 5	. 13	7. 0-7. 5	High	Low	100	100
Silt loam	ML	A-4	0. 8-2. 5	. 13	7. 0-8. 0	High	Low	100	100
Silty clay	CH	A-7	0. 05-0. 2	. 18	6. 0-7. 5	Low	High	100	100
Silty clay	CH	A-7	0. 05-0. 2	. 18	6. 0-7. 5	Low	High	100	100
Silt loam	ML	A-4	0. 8-2. 5	. 17	6. 0-7. 5	Moderate	Low	100	98
Sandy loam	SM or SC	A-4	5. 0-10+	. 13	6. 0-8. 0	High	Low	100	35-50
Loamy sand	SM	A-2	5. 0-10+	. 02	6. 0-8. 0	High	Low	100	35
Silt loam	ML or CL	A-4	0. 8-2. 5	. 12	5. 0-5. 5	High	Low	100	100
Heavy silt loam	CL	A-6	0. 5-2. 0	. 10	5. 0-5. 5	Moderate	Moderate	100	100
Silt loam	ML	A-4	0-. 02	. 06	5. 0-5. 5	Moderate	Moderate	100	100
Silt loam	ML or CL	A-4	0. 8-2. 5	. 13	5. 0-6. 0	High	Low	100	100
Silt loam	ML or CL	A-4	0. 8-2. 5	. 13	6. 5-7. 5	High	Low	100	70-100
Sandy loam	SM	A-4	2. 5-5. 0	. 042	6. 5-8. 0	Low	Low	100	50-70
Sandy clay loam	SC or CL	A-6	0. 5-2. 0	. 086	6. 5-8. 0	Moderate	Low to moderate.	100	50-70
Sandy loam	SM	A-4	2. 5-5. 0	. 042	6. 5-8. 0	Low	Low	100	50-70
Sandy loam and silt loam.	ML	A-4	0. 8-2. 5	. 086	6. 5-8. 0	Moderate	Low	100	60-80
Very fine sandy loam.	SM or ML	A-4	0. 8-2. 5	. 13	6. 5-8. 0	High	Low	100	40-60
Silt loam	ML or CL	A-4	0. 8-2. 5	. 13	6. 5-8. 0	High	Low	100	100
Very fine sandy loam.	SM or ML	A-4	0. 8-2. 5	. 13	6. 5-8. 0	High	Low	100	40-60
Silt loam	ML or ML-CL	A-4	0. 8-2. 5	. 13	5. 0-6. 0	High	Low to moderate.	100	98
Silt loam	ML-CL	A-4 or A-7.	0. 8-2. 5	. 13	5. 0-6. 0	High	Low to moderate.	100	100
Silt loam	ML-CL	A-4, A-6	0. 8-2. 5	. 13	5. 0-6. 0	High	Low to moderate.	100	100
Silt loam	ML or CL	A-4	0. 8-2. 5	. 13	5. 0-5. 5	High	Low	100	97
Silty clay loam	CL	A-6	0. 8-1. 5	. 13	4. 5-5. 5	Moderate	Moderate	100	100
Heavy silt loam	CL	A-6	0. 8-1. 5	. 13	4. 5-5. 5	Moderate	Moderate	100	100
Silt loam	ML or CL	A-4	0. 5-0. 8	. 06	4. 5-5. 5	Moderate	Moderate	100	100
Silt loam	ML or CL	A-4	0. 8-2. 5	. 12	4. 5-5. 5	High	Low	100	97
Silt loam	ML or CL	A-4	0. 2-0. 8	. 086	4. 5-5. 5	High	Moderate	100	96
Heavy silt loam	CL	A-4 or A-6.	0-. 02	. 05	4. 5-5. 5	Moderate	Moderate	100	100
Silty clay loam	CL	A-6	0-. 02	. 05	4. 5-5. 5	Moderate	Moderate	100	100

TABLE 10.—*Brief description and estimated*

Map symbol	Soil name	Depth to seasonally high water table	Description of soil and site	Depth from surface
		Feet		*Inches*
In	Inglefield silt loam (0 to 2 percent slopes)	2–4	2 to 4 feet of somewhat poorly drained silt loam on bottom lands in loessal material.	0–16 16–30 30–38 38–44 44–50+
LmA	Loring and Memphis silt loams, 0 to 2 percent slopes.	5–20+	Undifferentiated, deep, well drained and moderately well drained silt loams with a silty clay loam layer on uplands in deep, loessal material; weak fragipan in Loring soils, at a depth of 2½ to 3 feet.	0–9
LmB2	Loring and Memphis silt loams, 2 to 5 percent slopes, eroded.			9–23
LmB3	Loring and Memphis silt loams, 2 to 5 percent slopes, severely eroded.			23–36
LmC2	Loring and Memphis silt loams, 5 to 8 percent slopes, eroded.			36–60
LmC3	Loring and Memphis silt loams, 5 to 8 percent slopes, severely eroded.			
LmD3	Loring and Memphis silt loams, 8 to 12 percent slopes, severely eroded.			
MeA	Memphis silt loam, 0 to 2 percent slopes.	5–20+	Deep, well-drained silt loam with a silty clay loam layer; in deep, loessal material.	0–10
MeB	Memphis silt loam, 2 to 5 percent slopes.			
MeB2	Memphis silt loam, 2 to 5 percent slopes, eroded.			10–13
MeB3	Memphis silt loam, 2 to 5 percent slopes, severely eroded.			13–29
MeC2	Memphis silt loam, 5 to 8 percent slopes, eroded.			29–40
MeC3	Memphis silt loam, 5 to 8 percent slopes, severely eroded.			40–60+
MnD2	Memphis and Natchez silt loams, 8 to 12 percent slopes, eroded.	5–20+	Undifferentiated, deep, somewhat excessively drained and well drained silt loams in loessal material; alkaline below 2 feet in some places.	0–3
MnD3	Memphis and Natchez silt loams, 8 to 12 percent slopes, severely eroded.			3–23
MnE2	Memphis and Natchez silt loams, 12 to 17 percent slopes, eroded.			23–55
MnE3	Memphis and Natchez silt loams, 12 to 17 percent slopes, severely eroded.			
MnF2	Memphis and Natchez silt loams, 17 to 40 percent slopes, eroded.			
MnF3	Memphis and Natchez silt loams, 17 to 40 percent slopes, severely eroded.			
Mx	Mixed alluvial land.			
Ro	Rough broken land.			
Sa	Sandy alluvial land.			
Wa	Waverly silt loam (0 to 2 percent slopes).	0–1	1 to 2 feet of poorly drained silt loam on bottom lands in loessal material.	0–9 9–23 23–40

physical properties of soils—Continued

Classification			Permeability	Available water capacity	Reaction	Dispersion	Shrink-swell potential	Percentage passing sieve—	
USDA texture	Unified	AASHO						No. 10	No. 200
			Inches per hour	*Inches per inch of soil*	*pH value*				
Silt loam	ML or CL	A-4	0. 8-2. 5	. 13	6. 5-7. 5	High	Low	100	100
Silt loam	ML	A-4	0-8-2. 5	. 13	7. 0-8. 0	High	Low	100	100
Silty clay loam	CL	A-6	0. 5-2. 0	. 17	7. 5-8. 0	Moderate	Moderate	100	100
Silty clay	CH	A-7	0. 2-1. 0	. 17	7. 5-8. 0	Moderate	High	100	100
Silt loam	ML or CL	A-4	0. 8-2. 5	. 13	7. 5-8. 0	High	Low	100	100
Silt loam	ML or ML-CL	A-4	0. 8-2. 5	. 12	5. 0-5. 5	High	Low	100	100
Silty clay loam	ML-CL, CL	A-7	0. 8-2. 5	. 14	4. 5-5. 5	Moderate	Moderate to high.	100	100
Heavy silt loam	ML-CL	A-4 or A-6.	0. 8-2. 5	. 14	4. 5-5. 5	Moderate	Moderate	100	100
Silt loam	ML-CL	A-4	0. 8-2. 5	. 14	4. 5-5. 5	Moderate	Low	100	100
Silt loam	ML-CL	A-4	0. 8-2. 5	. 12	5. 0-5. 5	High	Low	100	100
Silt loam	ML-CL	A-4	0. 8-2. 5	. 14	4. 5-5. 5	Moderate	Low	100	100
Silty clay loam	ML-CL, CL	A-7	0. 8-2. 5	. 14	4. 5-5. 5	Moderate	Moderate to high.	100	100
Heavy silt loam	CL	A-4 or A-6.	0. 8-2. 5	. 14	4. 5-5. 5	Moderate	Moderate	100	100
Silt loam	ML, ML-CL	A-4 or A-6.	0. 8-2. 5	. 14	5. 5-7. 5	Moderate	Low to moderate.	100	100
Silt loam	ML, ML-CL	A-4	0. 8-2. 5	. 12	5. 0-6. 0	High	Low	100	100
Silt loam	ML-CL	A-4 or A-6.	0. 8-2. 5	. 12	6. 0-6. 5	High	Low to moderate.	100	100
Silt	ML, ML-CL	A-4	0. 8-2. 5	. 12	7. 5-8. 0	High	Low	100	95-100
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Silt loam	ML or CL	A-4	0. 05-0. 2	. 13	5. 0-6. 0	High	Low	100	100
Silt loam	ML or CL	A-4	0. 2-0. 8	. 11	5. 0-6. 0	High	Low	100	100
Silty clay loam	CL	A-6	0. 2-0. 8	. 11	5. 0-6. 0	High	Moderate	100	100

TABLE 11.—*Engineering*

Soil and map symbol	Suitability for winter grading	Suitability as a source of—			Features affecting
		Road subgrade	Road fill	Topsoil	Vertical alinement of highways
Adler silt loam (Ad)	Fair to poor because of high water table.	Fair to poor	Poor; unstable but can be used if properly controlled.	Fair to good	High water table
Bowdre, Tunica, and Crevasse soils (Bc).	Poor because of high water table and plastic clay in surface layer.	Fair to poor	Poor to good; variable soil material.	Unsuitable	Plastic clay and variable soil material; high water table.
Calloway silt loam (CaA, CaB).	Poor; high water table caused by fragipan.	Fair to poor	Poor; unstable	Unsuitable	Material fair if adequate subdrainage is provided; somewhat poor drainage.
Collins silt loam (Cn)	Fair to poor because of high water table.	Fair to poor	Poor; unstable and close control of moisture needed.	Fair to good	High water table
Commerce silt loam (Co).	Fair to poor because of high water table and flooding.	Good to fair	Fair to good; stratified material.	Fair to good	Erodible in cut slopes; subject to flooding.
Crevasse, Commerce, and Robinsonville soils (Cr).	Fair to poor because of high water table and flooding.	Good to poor	Good to poor; stratified material unsuitable.	Fair to good	High parts erodible in cuts; low parts subject to flooding.
Falaya silt loam (Fa)	Poor because of high water table.	Fair to poor	Poor; unstable but can be used if properly controlled.	Poor	High water table
Grenada silt loam (GrA, GrB, GrB2, GrB3, GrC3, GrD3, GrE3).	Poor; high water table caused by fragipan.	Fair to poor	Poor; unstable	Poor	Material fair if adequate subdrainage is provided; moderately good drainage.
Henry silt loam (Hn)	Poor; high water table caused by fragipan.	Fair to poor	Poor; unstable	Poor	Material poor for cuts but can be used if adequate subdrainage is provided; poor drainage.
Inglefield silt loam (In)	Poor because of high water table.	Fair to poor	Poor; unstable, but can be used if properly controlled.	Poor	High water table
Loring and Memphis silt loams (LmA, LmB2, LmB3, LmC2, LmC3, LmD3).	Fair; highly erodible	Fair	Fair to poor; unstable and easily eroded.	Poor	Material suitable for deep cuts; roadbanks erode easily; moderately good and good drainage.

interpretation of soils

Features affecting—continued						Suitability for irrigation
Dikes or levees	Farm ponds		Agricultural drainage	Terraces and diversions	Waterways	
	Reservoir areas	Embankment				
Poor stability	Little seepage	Poor stability	High water table; needs surface drainage; will slough.	High erodibility.	High erodibility	Good; will crust and pack.
Fair stability	Some seepage	Good to fair stability; use for impervious cores.	High water table; needs surface drainage.	Terraces not needed.	High to low erodibility; variable fertility and water-holding capacity.	Variable; water-holding capacity and infiltration rate vary.
Poor stability; can be used but needs close control of moisture.	No seepage	Poor stability; needs close control of moisture.	High water table; needs drainage.	High erodibility.	High erodibility	Poor; thin subsoil above fragipan.
Poor stability; can be used with proper control.	Little seepage	Poor stability; may be used with proper control.	High water table; needs surface drainage; will slough and cave in.	High erodibility.	High erodibility	Good; will crust and pack.
Layers of fair and poor stability.	Little seepage	Fair to poor stability; may be used with proper control.	High water table; needs surface drainage.	Terraces not needed.	Moderate to low erodibility.	Good; will crust and pack.
Fair stability	Excessive to little seepage.	Fair stability	High water table; needs surface drainage; internal drainage variable.	Terraces not needed.	High to low erodibility; variable fertility and water-holding capacity.	Variable; water-holding capacity varies.
Poor stability; can be used with proper control.	Little seepage	Poor stability; may be used with proper control.	High water table; needs surface drainage; will slough and cave in.	High erodibility.	High erodibility	Fair; will crust and pack.
Poor stability; can be used with proper control.	No seepage	Mixed and poor stability; can be used with proper control.	High water table; needs surface drainage in less sloping areas.	High erodibility.	High erodibility	Good; will crust and pack.
Poor stability; can be used with proper control.	No seepage	Poor stability; can be used with proper control.	High water table; poorly drained; needs surface drainage.	Terraces not needed.	High erodibility	Poor; fragipan near the surface.
Poor stability; can be used with proper control.	Little seepage	Poor stability	High water table; needs surface drainage.	Terraces not needed.	High erodibility	Good; will crust and pack.
Poor stability; can be used with proper control.	Some water loss through absorption.	Poor stability; can be used with proper control.	Moderately good and good drainage, but soil needs surface drainage on nearly level slopes.	High erodibility.	High erodibility	Good; will crust and pack.

TABLE 11.—*Engineering*

Soil and map symbol	Suitability for winter grading	Suitability as a source of—			Features affecting
		Road subgrade	Road fill	Topsoil	Vertical alinement of highways
Memphis silt loam (MeA, MeB, MeB2, MeB3, MeC2, MeC3).	Fair; highly erodible	Fair	Fair to poor; unstable and easily eroded.	Poor	Material suitable for deep cuts; roadbanks erode easily; good drainage.
Memphis and Natchez silt loams (MnD2, MnD3, MnE2, MnE3, MnF2, MnF3).	Fair; highly erodible	Fair	Fair to poor; unstable and easily eroded.	Poor	Material suitable for deep cuts; roadbanks erode easily; good to excessive drainage.
Waverly silt loam (Wa)	Poor because of high water table.	Fair to poor	Poor; unstable	Poor	High water table

TABLE 12.—*Engineering test data for*

Soil name and location [2]	Parent material	Bureau of Public Roads report number	Depth	Horizon
			Inches	
Falaya silt loam:				
NE¼NW¼ sec. 23, T. 14 N., R. 4 E. (modal)	Loess	S 34032	0–6	A_1
		S 34033	6–18	A_2
		S 34034	18–48+	A_3
SE¼NE¼ sec. 29, T. 14 N., R. 4 E. (more poorly drained)	Loess	S 34035	0–3	A_1
		S 34036	3–14	A_2
		S 34037	14–48	A_3
SE¼NW¼ sec. 17, T. 15 N., R. 5 E. (black silty clay loam)	Loess	S 34038	5–12	A_2
		S 34039	15–29	A_4
		S 34040	44–54	A_6
Loring silt loam:				
NW¼SE¼ sec. 21, T. 17 N., R. 5 E. (modal)	Loess	S 34041	0–4	A_p
		S 34042	11–24	B_{22}
		S 34043	49–76+	B_{3m2}
SW¼SE¼ sec. 21, T. 17 N., R. 5 E., (modal)	Loess	S 34044	4–17	B_{22}
		S 34045	33–55	B_{3m2}
		S 34046	55–75+	C
SE¼NE¼ sec. 29, T. 16 N., R. 5 E., (shallower)	Loess	S 34047	1–4	A_2
		S 34048	8–13	B_{22}
		S 34049	23–46	B_{3m}
Memphis silt loam:				
NW¼SW¼ sec. 17, T. 17 N., R. 5 E., (modal, moderately eroded)	Loess	S 34050	3–9	A_2
		S 34051	13–23	B_{21}
		S 34052	51–67	C_1
NW¼SW¼ sec. 17, T. 17 N., R. 5 E., (modal, severely eroded)	Loess	S 34053	5–14	B_{22}
		S 34054	28–39	B_{31}
		S 34055	53–65	C_1

See footnotes at end of table.

interpretation of soils—Continued

Features affecting—continued						Suitability for irrigation
Dikes or levees	Farm ponds: Reservoir areas	Farm ponds: Embankment	Agricultural drainage	Terraces and diversions	Waterways	
Poor stability; can be used with proper control.	Some water loss through absorption.	Poor stability; can be used with proper control.	Moderately good and good drainage, but soil needs surface drainage on nearly level slopes.	High erodibility.	High erodibility	Good; will crust and pack.
Poor stability; can be used with proper control.	Some water loss through absorption.	Poor stability; can be used with proper control.	Needs no drainage.	High erodibility.	High erodibility	Good; will crust and pack.
Poor stability; can be used with proper control.	Little seepage.	Poor stability	High water table; needs surface drainage and internal drainage.	Terraces not needed.	Waterways are no problem.	Poor; low infiltration and permeability.

soil samples taken from 11 soil profiles [1]

Moisture density [3]		Mechanical analyses [4]						Liquid limit	Plasticity index	Classification	
Maximum dry density	Optimum moisture content	Percentage passing sieve— No. 40 (0.42 mm.)	Percentage passing sieve— No. 200 (0.074 mm.)	Percentage smaller than— 0.05 mm.	0.02 mm.	0.005 mm.	0.002 mm.			AASHO [5]	Unified [6]
Lb. per cu. ft.	*Percent*										
100	20	100	99	97	67	21	15	35	8	A-4(8)	ML.
107	17		100	97	64	18	13	30	7	A-4(8)	ML-CL.
107	17		100	98	61	16	12	30	6	A-4(8)	ML-CL.
100	18	99	98	95	57	17	13	30	5	A-4(8)	ML.
98	22	100	97	96	80	44	33	45	18	A-7-6(12)	ML-CL.
105	19	100	99	97	66	28	21	36	12	A-6(9)	ML-CL.
106	17		100	98	69	21	15	32	8	A-4(8)	ML-CL.
108	16	100	99	98	74	28	19	32	8	A-4(8)	ML-CL.
101	22	100	99	98	81	52	43	64	36	A-7-6(20)	CH.
105	17		100	97	58	16	14	29	4	A-4(8)	ML.
106	20		100	98	68	33	28	43	18	A-7-6(12)	ML-CL.
109	17		100	98	64	25	19	37	14	A-6(10)	ML-CL.
104	20		100	98	70	35	31	43	18	A-7-6(12)	ML-CL.
109	17		100	97	64	25	19	35	12	A-6(9)	ML-CL.
110	16		100	98	61	19	14	31	7	A-4(8)	ML-CL.
108	16		100	97	62	22	19	30	7	A-4(8)	ML-CL.
106	19		100	98	70	33	29	46	20	A-7-6(13)	ML-CL.
110	16		100	98	66	24	20	34	10	A-4(8)	ML-CL.
107	15		100	97	62	21	16	26	7	A-4(8)	ML-CL.
108	18		100	98	69	33	28	47	23	A-7-6(15)	CL.
109	17		100	97	61	20	14	34	8	A-4(8)	ML.
104	19		100	98	72	36	30	48	22	A-7-6(14)	ML-CL.
109	17		100	97	66	28	22	38	15	A-6(10)	ML-CL.
110	15		100	98	62	22	18	36	12	A-6(9)	ML-CL.

TABLE 12.—*Engineering test data for soil*

Soil name and location [2]	Parent material	Bureau of Public Roads report number	Depth	Horizon
Natchez silt loam:			*Inches*	
SW¼NE¼ sec. 26, T. 15 N., R. 3 E., (modal, moderately eroded)	Loess	S 34056	4–12	B_{21}
		S 34057	28–88+	C
NW¼NE¼ sec. 2, T. 14 N., R. 3 E., (modal, severely eroded)	Loess	S 34058	1–7	B_{21}
		S 34059	7–26	B_{22}
		S 34060	26–84+	C
SW¼NE¼ sec. 3, T. 15 N., R. 3 E., (AC profile)	Loess	S 34061	3–18	A_2
		S 34062	36–72+	C_2

[1] Tests performed by the Bureau of Public Roads according to standard procedures of the American Association of State Highway Officials (AASHO) (*1*).
[2] Samples tested are from soils in Warren County, Miss.
[3] Based on the Moisture-Density Relations of Soils, Using 5.5-lb. Rammer and 12-inch Drop. AASOH Designation T 99–57, Method A.
[4] Mechanical analyses according to AASHO Designation T 88. Results by this procedure frequently differ somewhat from results that would have been obtained by the soil survey procedure of the Soil Conservation Service (SCS). In the AASHO procedure, the fine material is analyzed by the hydrometer method and the various grain-size fractions are calculated on the basis of all the material, including

This report uses agricultural terms to describe soils and their uses in farming and related fields. Many of these terms have a meaning to agricultural workers that differs from the meaning understood by engineers. These terms are defined in the Glossary in their agricultural sense.

Engineering classification of soils

AASHO CLASSIFICATION SYSTEM.—Most highway engineers classify soil materials according to the system approved by the American Association of State Highway Officials (*1, 7*). In this system soil materials are classified in seven principal groups. The groups range from A–1, consisting of gravelly soils of high bearing capacity, to A–7, consisting of clayey soils having low strength when wet. Within each group the relative engineering value of the soil material is indicated by a group index number. These numbers range from 0 for the best materials to 20 for the poorest. The group index number is shown in parentheses following the soil group symbol in table 12.

UNIFIED CLASSIFICATION SYSTEM.—Some engineers prefer to use the Unified soil classification system (*7, 8*). In this system soil material is indentified as coarse grained (eight classes), fine grained (six classes), or highly organic. The classification of the soils tested in the laboratory according to the Unified system is given in table 12.

Soil engineering problems in physiographic areas

The soils in Claiborne County have developed in loessal material on uplands and bottom lands and in sediments from the Mississippi River. So that soil engineering can be discussed more readily, the county may be divided into three physiographic parts. These parts are (1) the alluvial plain of the Mississippi River, (2) the deep, loessal uplands and bottom lands, and (3) steep, broken land.

On the alluvial plain of the Mississippi River are the Bowdre, Crevasse, Commerce, Robinsonville, Tunica, Adler, and Inglefield soils. These soils have slopes of 0 to 2 percent. They have a sandy loam to silty clay surface layer and a stratified soil profile. Drainage ranges from excessive in the Crevasse soils to poor in the Tunica soil.

The earthwork of highway construction is restricted on the alluvial plain by the high rainfall in winter and early in spring. From December to April, rain falls at a rate of 5 to 6 inches per month and raises the water table to its highest level for the year.

The alluvial plain is mostly in trees and is not protected by man-made levees. Natural levees of coarse-textured material occur next to the streams or old streambeds, and fine-textured material is in slack-water areas.

On the uplands of deep loess are the Natchez, Memphis, Loring, Grenada, Calloway, and Henry soils. On the loessal bottom lands are the Adler, Collins, Falaya, and Waverly soils, Mixed alluvial land, and Sandy alluvial land. The soils in these uplands and bottom lands are silt loam or silty clay loam in texture. They are nearly level to very steep; slopes range from 0 to 40 percent. Water erosion is very likely.

Drainage in the deep, loessal soils ranges from excessive in the Natchez soils to poor in the Henry soils. It is good in the Memphis and Collins soils. In the Loring, Grenada, Calloway, and Henry soils, a compact fragipan is at a varying depth. It impedes vertical drainage and causes a perched water table.

As on the alluvial plain, the earthwork of highway construction is restricted in the loessal part of the county from December to April because of rain and the high water table. Erosion is likely. The loessal soils on bottom lands and those containing a fragipan need special preparation for roadbeds. If the fragipan is close to the surface, it should be excavated and replaced with more permeable material. But if the pan is below the roadbed, underdrains between the pan and the roadbed may be adequate.

The back slopes of road cuts in undisturbed loessal

samples taken from 11 soil profiles—Continued

Moisture density [3]		Mechanical analyses [4]						Liquid limit	Plasticity index	Classification	
Maximum dry density	Optimum moisture content	Percentage passing sieve—		Percentage smaller than—						AASHO [5]	Unified [6]
		No. 40 (0.42 mm.)	No. 200 (00.74mm.)	0.05 mm.	0.02 mm.	0.005 mm.	0.002 mm.				
Lb. per cu. ft.	*Percent*										
110	16	----------	100	97	62	21	15	33	7	A-4(8)	ML.
106	16	98	95	92	59	10	7	29	5	A-4(8)	ML-CL.
106	18	----------	100	98	70	29	25	40	15	A-6(10)	ML-CL.
110	16	----------	100	97	65	23	18	36	12	A-6(9)	ML-CL.
108	16	97	94	91	58	13	9	28	4	A-4(8)	ML-CL.
105	17	----------	100	97	64	21	17	35	9	A-4(8)	ML-CL.
108	16	99	98	96	58	11	9	27	4	A-4(8)	ML-CL.

that coarser than 2 millimeters in diameter. In the SCS soil survey procedure, the fine material is analyzed by the pipette method and the material coarser than 2 millimeters in diameter is excluded from calculations of grain-size fractions. The mechanical analyses used in this table are not suitable for use in naming textural classes for soils.

[5] Based on Standard Specifications for Highway Materials and Methods of Sampling and Testing (Pt. 1, Ed. 7): The Classification of Soils and Soil-Aggregate Mixtures for Highway Construction Purposes, AASHO Designation M 145-49.

[6] Based on the Unified soil classification system, Tech. Memo. No. 3-357, v. 1, Waterways Experiment Station, Corps of Engineers, March 1953 (*8*).

soils are less likely to slump and slide if they are almost vertical than if they are less steep. The slopes of loessal fills should be less steep than the back slope of cuts made in undisturbed loess. High fills should be benched to protect them from erosion. All ditches and gutters require protection by sod, pavement, or check dams.

Many kinds of soil are in the steep, broken land, which is mostly in trees. Generally, this land has long, narrow ridges and steep side slopes. The ridges consist of deep, loessal soils, and the side slopes of a thin layer of loess over coastal plain material. The coastal plain material ranges from sandy loam to sandy gravel. Because the terrain is broken and contains many soil types, the problems of engineering vary from place to place.

Properties and engineering behavior of soils

Table 10, page 34, gives brief descriptions of the soils in the county and estimates of the physical properties that apply to engineering. The soils are described to a depth of not more than 6 feet. Estimates are based on field observations and on laboratory tests and apply only to soils in Claiborne County.

The water table normally is near the surface in winter. The depth from the surface is that of the typical profile, which is described in the section "Formation and Classification of Soils." The soil material in the main horizons is classified according to textural terms used by the United States Department of Agriculture, and according to the AASHO and Unified systems. Also listed for the horizons, in the last two columns of table 10, are the estimated percentages of material that will pass a No. 10 and a No. 200 sieve.

Permeability is estimated for the soil in place, without compaction. Estimates for available water are approximations of the amount of capillary water in the soil when the flow downward by gravity has practically stopped.

Reaction is listed in pH values, which indicate the degree of acidity or alkalinity. A pH value of less than 7.0 indicates acidity, and one of more than 7.0 indicates alkalinity. A soil with a very low or very high pH requires treatment to obtain stability if the soil is used in structures. An alkaline soil or one high in silt is generally unstable in structures.

Dispersion is an estimate of the degree and rapidity that a soil crumbles into individual particles and thereby loses stability.

The shrink-swell potential indicates how much a soil changes in volume when its moisture content changes. In general, soils classified as CH and A-7 have a high shrink-swell potential. Soils that have a low shrink-swell potential are clean sands and gravels (single-grain structure), those having small amounts of nonplastic to slightly plastic fines, and most other nonplastic to slightly plastic soils.

Table 11, page 38, gives estimates of the suitability of the soils for winter grading, for highway construction, and for conservation engineering. These estimates are based on the description of the soils and their properties given in table 10, on the test data in table 12, and on field experience. Because they are variable, the land types in the county are not listed in table 11.

The Crevasse soils in the county are suitable as sources of sand and gravel. On any of the soils, ponds or reservoirs for storing water are fairly easy to construct because seepage is not a problem.

The ratings for suitability of the soils for winter grading also apply to grading in wet weather. Most of the soils are rated poor or fair to poor for winter grading because, for prolonged periods, they are too wet for heavy equipment.

The soils rated fair to poor, or worse, as a source of material for road subgrade are fairly uniform silty soils (loess) that have a high water table or perched water table. These properties give them a low bearing capacity. Road fill from all of the silty soils erodes easily, is difficult to compact, and therefore requires flat slopes and a

vegetative cover that grows fast. The silty soils that do not have a high or perched water table are rated fair for road subgrade and fair to poor for road fill.

In evaluating the features that affect the vertical alinement of highways, the following were considered: (a) highly plastic clay layers, (b) erodibility or sliding of cut slopes, (c) a fragipan or another impermeable layer that causes a perched water table, (d) a high water table, (e) flooding, and (f) seepage. Because of these features, road cuts are difficult to make. Some soils with unsuitable drainage have to be removed or specially treated before a stable base for fills can be provided.

The construction or maintenance of irrigation structures may be impaired (1) by obstacles to excavating or to the use of canals, (2) by the water-holding capacity, (3) by the capacity of the surface layer to take in water, (4) by difficulty in leveling shallow soils, or (5) by other hazards.

Soil test data

To help evaluate the soils for engineering purposes, soil samples of the principal soil types of four soil series were tested according to standard procedures (*1*, *8*). These samples were taken in Warren County from soils similar to those in Claiborne County. The test data are listed in table 12. Each series was sampled in more than one place, and the test data of the soils in the different locations vary. In some places where samples were not tested, variations in the B and C horizons may be greater than those shown in table 12. All samples were obtained at a depth of less than 5 feet. The test data, therefore, may not be adequate for estimating the characteristics of soil materials in rolling or hilly areas where deep cuts are needed.

The engineering soil classifications in table 12 are based on data obtained by mechanical analyses and by tests to determine liquid limits and plastic limits. Mechanical analyses were made by combined sieve and hydrometer methods. The fine material is analyzed by the hydrometer method, and the various grain-size fractions are calculated on the basis of all the material in the soil sample, including that coarser than 2 millimeters in diameter. The Soil Conservation Service uses the pipette method and excludes from the calculations material coarser than 2 millimeters in diameter. The percentage of clay obtained by the hydrometer method should not be used in naming soil textural classes.

The relationship between moisture and density is important in earthwork. If a constant effort is used to compact soil material at successively higher contents of moisture, the density of the compacted material will increase until the optimum moisture content is reached. After that, the density decreases with increase in moisture content. The highest dry density obtained in the compaction test is called maximum dry density. Generally, a soil is most stable when compacted to about its maximum dry density at approximately the optimum moisture content.

The test to determine liquid limit and plastic limit measures the effect of water on the consistence of soil material. As the moisture content of a clayey soil increases from a very dry state, the material changes from a solid to a semisolid or plastic state. As the moisture content is further increased, the material changes from the plastic to a liquid state. The plastic limit is the moisture content at which the soil material passes from a solid to a plastic state. The liquid limit is the moisture content at which the material changes from a plastic to a liquid state. The plasticity index is the numerical difference between the liquid limit and the plastic limit. It indicates the range of moisture content within which a soil material is in a plastic condition.

Formation and Classification of Soils

This section is in two main parts. The first part lists the factors of soil formation and discusses the effect these factors have had on soils in Claiborne County. In the second part, the soil series are placed in their soil orders and great soil groups and the morphology of the soils of each series in the county is described.

Formation of Soils in Claiborne County

Soils are a function of parent material, climate, plant and animal life, topography, and time (*3*). The nature of the soil at any point on the earth depends upon the combination of the five major factors at that point. All five of these factors come into play in the genesis of every soil. The relative importance of each differs from place to place; sometimes one is more important and sometimes another. In extreme cases, one factor may dominate the formation of the soil and fix most of its properties, as is common when the parent material consists of pure quartz sand. Little can happen to quartz sand, and the soils derived from it usually have faint horizons. Even in quartz sand, however, distinct profiles can be formed under certain types of vegetation when the topography is low and flat and a high water table is present. Thus, for every soil the past combination of the major factors is of first importance to its present character.

Parent material.—Parent material is the unconsolidated mass from which a soil develops. It is largely responsible for the chemical and mineralogical composition of soils. In this county the parent materials are unconsolidated beds of fine to coarse particles that were deposited by wind or water. They can be classified as loess or as alluvium.

The soils of the loessal hills cover about 73 percent of the county and have developed wholly from weathered loess. The loess is thickest in the rugged, western part of the county, in an area that parallels the alluvial plains of the Mississippi River and the Big Black River. In that part of the county the loess near the surface is calcareous. The loess is thinnest in the eastern part of the county. Unweathered loess is uniform in physical and chemical composition. It is fine textured and has particles of irregular shape. This unweathered loess is noncoherent, absorbs water well, stands in vertical walls, and resists weathering.

Most soil scientists believe that the loess was first deposited on the flood plains and later redeposited by wind on the older Coastal Plain formation. The depth of these deposits varied. Though the deposits originally formed a comparatively level plain, weathering and erosion have changed this plain into a highly dissected area that consists of dominantly acid soils. Relief ranges from nearly level to steep.

Soils formed in alluvium occupy about 27 percent of the county. They differ widely on the alluvial plain of the Mississippi River because the river transports sediments containing a variety of minerals from many areas north of Claiborne County. These sediments range in texture from fine gravel to clay and are deposited in stratified layers of different kinds. The relief ranges from depressional to gently sloping. The soils that develop in alluvium are young, but they vary considerably in development of their profile.

Along the Big Black River, Big Bayou Pierre, and their tributaries, the alluvial soils are mostly uniform because those streams bring loessal sediments from the nearby uplands and sandy material from the uplands of the Coastal Plain farther to the east. The sediments are mostly silt loam, but they range in texture from sandy loam to silt loam. The soils in this alluvium are young and do not vary greatly in profile development. They range from depressional to gently sloping.

Climate.—Climate as a genetic factor affects the physical, chemical, and biological relationships in the soil primarily through the influences of precipitation and temperature. Water dissolves minerals, supports biological activity, and transports minerals and organic residue through the soil profile. In a broad area the amount of water that percolates through the soil depends mainly on rainfall, relative humidity, and the length of the frost-free period. At a given point the amount of downward percolation is also affected by physiographic position and by soil permeability.

Claiborne County has a humid, warm climate with rather warm summers and mild winters. Data showing the temperature and the distribution of rainfall are given in table 14, page 51.

Temperature influences the kinds and growth of organisms in the soil and the speed of the physical and chemical reactions. These reactions are also influenced by the warm, moist weather that prevails most of the year. Water from the relatively high precipitation leaches bases and other soluble material and carries colloidal matter and other less soluble material downward. The mature soils in this county have been highly leached, and leaching is progressing in the young soils.

Plant and animal life.—Micro-organisms, plants, earthworms, and all other organisms that live on and in the soil have an important effect on its formation. Bacteria, fungi, and other micro-organisms aid in weathering rock and in decomposing organic matter. Large plants alter the soil climate in small areas (soil microclimate). They also supply organic matter to the soil and transfer elements from the subsoil to the surface soil.

The kinds and numbers of plants and animals that live in the soil are determined mainly by the climate but partly by parent material.

Not much is known of the fungi and micro-organisms in the soils of this county, but they are mostly in the top few inches. The activity of earthworms and other small invertebrates is greatest in the surface soil where they continually mix the soil. Mixing of soil materials by rodents does not appear to have been of much consequence in Claiborne County.

The native vegetation on the loessal uplands was hardwoods, mostly oak and hickory with an undergrowth of canes. Dominant on the alluvial plains were oak, gum, and beech, and there was a heavy undergrowth of vines and canes.

Mainly because of the forest cover and the warm, humid climate, many soils in Claiborne County are brownish and have a low content of organic matter. Virgin areas of mature soils have a surface layer, ½ to 1 inch thick, that is generally dark colored and contains a considerable amount of partly decayed leaves, twigs, and bark. Elsewhere in the county not much organic matter has accumulated.

Topography.—Topography is largely determined by the formations underlying the Coastal Plain, the geologic history of the region, and the effects of dissection by streams. It influences soil formation through its effect on moisture, erosion, temperature, and vegetation, but the influence is modified by the other four factors of soil formation.

The slopes in Claiborne County range from 0 to 40 percent. In upland areas the Memphis, Loring, Grenada, and other soils have a thick, well-developed profile if slopes are less than about 17 percent. On slopes of 17 percent or more, geologic erosion removes the soil material almost as quickly as it forms. As a result, the Natchez and many other soils on the steeper slopes have a thin, weakly developed profile. Though they are level or nearly level, soils formed in recent alluvium also have a weakly developed profile.

Time.—The time required for the formation of a soil depends largely on the other four factors of soil formation. Less time generally is required for a soil to develop in humid, warm regions with luxuriant vegetation than is required in dry or cold regions with scanty vegetation. Also, other things being equal, less time is required if the parent material is coarse textured than if it is fine textured.

The age of a soil varies considerably. Generally, old soils have more horizon differentiation than young soils. For example, on the smooth parts of the uplands, distinct horizons have developed, but on strong slopes geologic erosion has removed so much of the soil material that the horizons are less distinct. Also, the soil materials on bottom lands have not been in place long enough for mature development.

Classification of Soils by Higher Categories

In the comprehensive system of soil classification followed in the United States, the soils are placed in six categories, one above the other. Beginning at the top, these categories are the order, suborder, great soil group, family, series, and type.

In the highest category the soils of the whole country are grouped into three orders; in the lowest category thousands of soil types are recognized. The suborder and family categories have never been fully developed and thus have been little used. Attention has largely been given to the classification of soils into soil types and series within counties or comparable areas and to the subsequent grouping of series into great soil groups and soil orders.

The classes in the highest category of classification are the zonal, intrazonal, and azonal orders. The zonal order consists of soils having well-developed characteristics that reflect in their formation the active forces of soil genesis. These active forces are climate and living organisms, chiefly vegetation. In Claiborne County the

soils of the zonal order are in the Gray-Brown Podzolic great soil group.

The intrazonal order is made up of soils having more or less well-developed characteristics that reflect the dominating influence of some local factor of relief or parent material over the effects of climate and vegetation. The soils in the intrazonal order in Claiborne County are in the Planosol and Low-Humic Gley great soil groups.

The azonal order consists of soils that are poorly developed because of their youth, resistant parent material, or steep topography. In this county the soils of the azonal order are members of the Alluvial and Regosol great soil groups.

Soils of five great soil groups occur in Claiborne County. About 30 percent of the county is occupied by Gray-Brown Podzolic soils, 2 percent by Planosols, 2 percent by Low-Humic Gley soils, 40 percent by Regosols, and 26 percent by Alluvial soils.

Table 13 classifies the soil series in the county by order and great soil group and gives some factors that have contributed to soil morphology.

Gray-Brown Podzolic soils

This great soil group consists of well-developed, well drained and moderately well drained, acid soils that formed under deciduous forest in a temperate, moist climate. These soils have fairly thin organic and organic-mineral layers on top of a grayish-brown, leached A horizon. Beneath the A horizon is an illuvial B horizon. The upper part of the A horizon is grayish-brown silt loam of granular or crumb structure. The B horizon is brown or dark brown in the upper part but is generally lighter colored in the lower part. It has a blocky structure.

The soils of this group normally have a moderately high cation exchange capacity. Base saturation is high and increases as the depth increases. The Gray-Brown Podzolic soils in this county are of the Grenada, Loring, Memphis, and Natchez series.

Grenada series.—The soils of this series occupy slopes of 0 to 17 percent. At a depth of 20 to 30 inches, a fragipan retards water moving downward. These soils are moderately acid to strongly acid throughout. Their A and B horizons are similar to those of the Memphis and Loring soils. The fragipan in the profile indicates that Grenada soils intergrade toward the Planosol great soil group.

Typical profile of Grenada silt loam, 5 to 8 percent slopes, severely eroded (sec. 32, T. 11 N., R. 5 E., on the Tigner ranch 1½ miles south of road between Hermanville in Claiborne County and Hazlehurst in Copiah County):

A_p 0 to 3 inches, dark grayish-brown (10YR 4/2) silt loam; weak, fine, granular structure; friable; many fine roots; strongly acid; clear, smooth boundary.

B_{21} 3 to 17 inches, brown or dark-brown (7.5YR 4/4) silty clay loam; weak to moderate, fine and medium, subangular blocky structure; friable; many fine roots; strongly acid; gradual, wavy boundary.

B_{22} 17 to 22 inches, dark yellowish-brown (10YR 4/4) heavy silt loam; weak to moderate, fine and medium, subangular blocky structure; friable; peds have light brownish-gray (10YR 6/2) coatings of silt; few black (10YR 2/1) coatings and fine concretions of manganese; few small pores; few fine roots; strongly acid; gradual, wavy boundary.

B_{3m} 22 to 40 inches, mottled, yellowish-brown (10YR 5/8), light brownish-gray (10YR 6/2), brown or dark-brown (7.5YR 4/4) silt loam; mottles are many, fine and medium, and distinct; ped faces coated with gray (10YR 6/1) silt; moderate, medium and coarse, subangular blocky structure; friable; firm in place; compact; many black (10YR 2/1) coatings of manganese; few, fine, soft concretions of iron and manganese; many fine voids; few fine roots; strongly acid.

TABLE 13.—*Soil series classified by higher categories, and the major factors that have contributed to differences in soil morphology*

Great soil group and series	Parent material	Relief	Profile development
ZONAL			
Gray-Brown Podzolic soils:			
Grenada [1]	Deep loess	Nearly level to steep.	Strong.
Loring [1]	Deep loess	Nearly level to strongly sloping.	Strong.
Memphis	Deep loess	Nearly level to very steep.	Strong.
Natchez	Deep loess	Steep to very steep.	Weak.
INTRAZONAL			
Planosols:			
Calloway	Deep loess	Nearly level to gently sloping.	Strong.
Henry	Deep loess	Nearly level	Strong.
Low-Humic Gley soils:			
Waverly	Recent silty alluvium.	Nearly level	Weak.
AZONAL			
Alluvial soils:			
Adler	Recent silty alluvium.	Nearly level	Weak.
Bowdre	Recent alluvium from the Mississippi River.	Nearly level	Weak.
Collins	Recent silty alluvium.	Nearly level	Weak.
Commerce	Recent alluvium from the Mississippi River.	Nearly level	Weak.
Falaya [2]	Recent silty alluvium.	Nearly level	Weak.
Inglefield [2]	Recent silty alluvium.	Nearly level	Weak.
Robinsonville.	Recent alluvium from the Mississippi River.	Nearly level	Weak.
Tunica	Recent alluvium from the Mississippi River.	Nearly level	Weak.
Regosols:			
Crevasse	Recent alluvium from the Mississippi River.	Nearly level	Weak.

[1] Intergrades toward Planosols.
[2] Intergrades toward Low-Humic Gley soils.

Loring series.—This series consists of nearly level to strongly sloping, medium acid soils on ridges and side slopes. Though these soils are similar to the Memphis soils in the A and B horizons, a weak fragipan occurs at a depth of 30 to 36 inches and affects water moving downward. The weak fragipan indicates that the soils intergrade toward the Planosol great soil group.

Representative profile of Loring silt loam (sec. 4, T. 11 N., R. 4 E., on driveway to Rial farm):

A_{p1} 0 to 2 inches, dark-brown (10YR 3/3) silt loam; weak, fine, granular structure; friable; many fine roots; strongly acid; clear, smooth boundary.

A_{p2} 2 to 6 inches, yellowish-brown (10YR 5/4) silt loam; weak, medium, subangular blocky and weak, fine, granular structure; friable; many fine roots; strongly acid; clear, smooth boundary.

B_1 6 to 9 inches, brown or dark-brown (7.5YR 4/4) silt loam; weak to moderate, fine, subangular blocky structure; friable; few ped faces with coatings of very pale brown (10YR 6/3) silt; few fine roots; strongly acid; clear, wavy boundary.

B_{21} 9 to 23 inches, brown or dark-brown (7.5YR 4/4) silty clay loam; moderate, fine and medium, subangular blocky structure; many clay skins; friable; few ped faces covered with pale-brown (10YR 6/3) silt; many medium-sized roots and worm channels filled with material from the A_p horizons; medium acid; gradual, wavy boundary.

B_{22} 23 to 36 inches, brown or dark-brown (7.5YR 4/4) heavy silt loam; moderate, fine and medium, subangular blocky structure: clay skins on peds; friable; many ped faces covered with pale-brown (10YR 6/3) coatings of silt; few fine splotches of manganese; medium acid; gradual, wavy boundary.

B_{3m1} 36 to 48 inches, brown or dark-brown (7.5YR 4/4) silt loam; weak to moderate, fine and medium, subangular blocky structure; clay skins on peds; friable; peds coated with light-gray (10YR 7/2) silt; common fine coatings of manganese; few medium roots; few voids; medium acid; clear, smooth boundary.

B_{3m2} 48 to 60 inches, brown or dark-brown (7.5YR 4/4) silt loam; common, fine, distinct mottles of pale brown (10YR 6/3); pale-brown (10YR 6/3) coatings on peds; weak to moderate, fine and medium, subangular blocky structure; few clay skins; friable; few medium roots in cracks; vesicular; common medium coatings of manganese; medium acid.

Memphis series.—This series consists of nearly level to very steep soils on uplands. These soils are well drained. In most places gray, silty material coats the surface of the peds and the sides of root channels and cracks.

Representative profile of Memphis silt loam, 2 to 5 percent slopes (sec. 42, T. 11 N., R. 2 E., ½ mile west of Pattison across road from a cattle pen):

A_{p1} 0 to 5 inches, dark yellowish-brown (10YR 4/4) silt loam; weak, thick, platy structure that breaks into weak, fine, granular structure; friable; many fine roots and wormholes; strongly acid; clear, smooth boundary.

A_{p2} 5 to 10 inches, yellowish-brown (10YR 5/4) silt loam; weak, fine, granular structure; friable; many fine roots and wormholes; strongly acid; clear, smooth boundary.

B_1 10 to 13 inches, yellowish-brown (10YR 5/4) silt loam; weak, medium, subangular blocky structure; some mixing of materials from above; friable; few fine roots; medium acid; clear, smooth boundary.

B_{21} 13 to 29 inches, brown or dark-brown (7.5YR 4/4) silty clay loam; moderate, medium and coarse, subangular blocky structure; clay skins on ped faces; firm; ped faces coated with pale-brown (10YR 6/3) silt; medium acid; gradual, smooth boundary.

B_{22} 29 to 40 inches, brown or dark-brown (7.5YR 4/4) heavy silt loam; moderate, medium and coarse, subangular blocky structure; clay skins on ped faces; friable; common coatings of manganese; medium acid; gradual, smooth boundary.

B_3 40 to 60 inches +, brown or dark-brown (7.5YR 4/4) silt loam; weak, medium, subangular blocky structure; clay skins on ped faces; friable; few splotches of manganese; medium acid.

Natchez series.—Soils of the Natchez series occur on upland slopes that range from 12 to 40 percent. These soils are somewhat excessively drained. The A and B horizons are slightly acid to neutral and are underlain by moderately alkaline material that ranges to strongly alkaline with increasing depth. The structure is weak, granular or crumb in the A horizon and weak, blocky in the B horizon. The profile of the Natchez soils is more weakly developed than that of the other Gray-Brown Podzolic soils in the county.

Representative profile of Natchez silt loam, 17 to 40 percent slopes, severely eroded (sec. 47, T. 13 N., R. 3 E., on Hankinson Road 10 miles north of Port Gibson and 1 mile east of U.S. Highway No. 61):

A_o 0 to 1 inch, shallow covering of leaf mold and hardwood litter.

A_p 1 to 3 inches, brown (10YR 5/3) silt loam; weak, very fine, crumb structure; friable; many fine roots; strongly acid; abrupt, smooth boundary.

B 3 to 23 inches, strong-brown (7.5YR 5/6) to yellowish-brown (10YR 5/6) silt loam or silt; weak, medium, subangular blocky structure; friable; many medium roots; few ped faces coated with light brownish-gray (10YR 6/2) silt; much mixing of soil by worms; some movement of soil material along root channels; medium acid; gradual, smooth boundary.

C 23 to 55 inches, light yellowish-brown (10YR 6/4) silt; structureless; very friable; many, fine, soft flakes of lime from snail shells; many snail shells; few lime nodules; strongly alkaline.

Planosols

Planosols are in the intrazonal order. They have one or more horizons that contrast sharply with an adjacent, underlying horizon in cementation, compaction, or content of clay. These soils developed under forest or grass in a humid, subhumid, or semiarid climate. Generally the water table fluctuates. In many places a cemented or compacted horizon underlies a moderately well developed or well developed B horizon. The percentage of clay is higher in the B horizon than in the A horizon. In this county a fragipan is at varied depths. It is very compact and contains much silt but little clay. The Planosols in this county are in the Calloway and Henry series.

Calloway series.—The soils of the Calloway series are on slopes of 0 to 5 percent. Their A horizon is weak and granular or crumb in structure, and their B horizon is weak and blocky. At a depth of 12 to 20 inches, a compact fragipan begins and restricts the downward movement of water. The fragipan is mottled with shades of gray, yellow, and brown. Many dark-brown concretions of iron are on the surface and throughout the profile. Reaction is strongly acid.

Representative profile of Calloway silt loam, 0 to 2 percent slopes (sec. 20, T. 11 N., R. 4 E., on the Tigner ranch 100 yards south of a cattle pen):

A_p 0 to 7 inches, grayish-brown (10YR 5/2) to pale-brown (10YR 6/3) silt loam; weak, fine and medium, granular structure; friable; many fine, soft concretions of manganese; slightly acid; clear, wavy boundary.

B_{21} 7 to 10 inches, yellowish-brown (10YR 5/6) heavy silt loam; moderate, medium, subangular blocky structure; friable; light-gray (10YR 7/1) coatings of silt

on ped faces and in cracks; many fine roots; slightly acid; clear, wavy boundary.

B_{22} 10 to 20 inches, yellowish-brown (10YR 5/6) heavy silt loam; many, fine, distinct, light-gray (10YR 7/1) mottles; moderate, fine and medium, subangular blocky structure; friable; light-gray (10YR 7/1) coatings of silt on ped faces and in cracks; many fine concretions of manganese; few fine roots; slightly acid; clear, smooth boundary.

B_{3m} 20 to 45 inches +, mottled yellowish-brown (10YR 5/6) brown or dark-brown (7.5YR 4/4), and light brownish gray (10YR 6/2) silt loam; mottles are many, fine, and distinct; weak to moderate, medium, subangular blocky structure; friable, many thick coatings and fine concretions of manganese; slightly acid.

Henry series.—Only one soil in this series is mapped in Claiborne County. This soil occurs in nearly level areas on the loessal uplands. The A horizon has weak, granular or crumb structure, and the B horizon has weak, blocky structure. A compact fragipan begins at a depth of 8 to 16 inches and restricts the movement of water. Many dark-brown concretions of manganese and iron are on the surface and throughout the profile. The reaction is strongly acid.

Profile of Henry silt loam (sec. 8, T. 10 N., R. 4 E., ¼ mile southeast of Clarks Creek Bridge, in a pasture near State Route 547):

A_{p1} 0 to 3 inches, dark yellowish-brown (10YR 4/4) silt loam; weak, fine and medium, granular structure; friable; many fine roots; many fine concretions of manganese; medium acid; abrupt, smooth boundary.

A_{p2} 3 to 7 inches, mottled, dark-brown or brown (10YR 4/3), pale-brown (10YR 6/3), and yellowish-brown (10YR 5/6) silt loam; mottles are many, fine and medium, and distinct; weak, thin, platy structure that breaks to weak, fine, subangular blocky structure; friable; many fine roots; many fine and medium concretions of manganese; strongly acid; clear, smooth boundary.

B_{1g} 7 to 12 inches, light brownish-gray (10YR 6/2) silt loam; many, fine, distinct mottles of dark brown or brown (10YR 4/3) and yellowish brown (10YR 5/8); weak, fine, subangular blocky structure; friable; many fine roots; many medium and coarse concretions of manganese and a few medium concretions of iron; strongly acid; clear, smooth boundary.

B_{2g} 12 to 16 inches, light brownish-gray (10YR 6/2) silt loam; many, fine and medium, distinct mottles of dark brown or brown (10YR 4/3) and yellowish brown (10YR 5/8); weak, fine, subangular blocky structure; friable; many fine roots; many medium and coarse concretions of manganese and a few medium concretions of iron; strongly acid; clear, smooth boundary.

B_{3m1g} 16 to 26 inches, light-gray or gray (10YR 6/1) heavy silt loam; many, fine and medium, prominent mottles of yellowish brown (10YR 5/8); clay skins on peds; weak, coarse, platy structure; firm; few fine roots in cracks; many voids; many coarse concretions of manganese and iron; strongly acid; clear, smooth boundary.

B_{3m2g} 26 to 44 inches, light-gray or gray (10YR 6/1) to light brownish-gray (10YR 6/2) silt loam; many, fine, distinct mottles of yellowish brown (10YR 5/8); massive; friable to firm; pockets of silt and clay; many voids; many coarse concretions of manganese and iron; strongly acid.

Low-Humic Gley soils

This great soil group consists of soils that are imperfectly drained to poorly drained. These soils have a very thin surface layer that contains a moderate amount of organic matter and is underlain by mottled, gray and brown, gleylike, mineral horizons. These horizons vary little in texture. Low-Humic Gley soils range in texture from sand to clay. Their parent materials vary widely in physical and chemical properties. These soils developed in most places under natural swamp forest and in some places under marsh plants. Most of them are medium acid to very strongly acid, but a few are neutral to alkaline. The Waverly series is the only member of the Low-Humic Gley great soil group in Claiborne County.

Waverly series.—This series consists of nearly level soils in slack-water areas on flood plains. These soils are in recent alluvium of loess. Their surface layer is thin. It is silt loam in texture and weak and granular or crumb in structure. The underlying material is structureless silt loam. The reaction is strongly acid.

Typical profile of Waverly silt loam (sec. 12, T. 12 N., R. 2 E., in a ditch along the west boundary of the Island place):

A 0 to 3 inches, dark yellowish-brown (10YR 4/4) silt loam; common, fine, faint mottles of gray or light gray (10YR 6/1) and pale brown (10YR 6/3); weak, fine, granular structure; friable; many fine roots; strongly acid; clear, smooth boundary.

C_1 3 to 9 inches, mottled, gray or light-gray (10YR 6/1), dark-brown or brown (10YR 4/3), and yellowish-brown (10YR 5/8) silt loam; mottles are many, medium, and distinct; weak, fine, granular structure; friable; many fine roots; much worm action; strongly acid; gradual, wavy boundary.

C_{2g} 9 to 17 inches, gray or light-gray (10YR 6/1) silt loam mottled with dark-brown or brown (10YR 4/3) and yellowish-brown (10YR 5/8); mottles are many, fine and medium, and distinct; structureless; friable; few medium roots; many worm casts; strongly acid; clear, smooth boundary.

C_{3g} 17 to 23 inches, gray or light-gray (10YR 6/1) silt loam; many, medium and coarse, distinct mottles of dark brown or brown (10YR 4/3) and yellowish brown (10YR 5/4) and many, fine, prominent mottles of dark red (2.5YR 3/6); structureless; friable; few medium roots; few worm casts; strongly acid; clear, smooth boundary.

C_{4g} 23 to 40 inches, gray (10YR 5/1) silty clay loam; many, medium and coarse, distinct mottles of brown or dark brown (10YR 4/3) and yellowish brown (10YR 5/4) and many, fine, prominent mottles of dark red (2.5YR 3/6); structureless; friable; few medium roots; few worm casts; strongly acid; clear, smooth boundary.

C_{5g} 40 to 52 inches +, gray (10YR 5/1) silty clay loam; many, medium and coarse, distinct mottles of brown or dark brown (10YR 4/3) and yellowish brown (10YR 5/4); structureless; friable; few medium roots; strongly acid.

Alluvial soils

This great soil group consists of soils that are in alluvium that was transported and deposited recently and that has been modified little by the soil-forming processes. The soil series in the Alluvial great soil group in Claiborne County are the Adler, Bowdre, Collins, Commerce, Falaya, Inglefield, Robinsonville, and Tunica.

Adler series.—The soils of the Adler series are on flood plains in local alluvium that washed from loess. These soils are nearly level and moderately well drained. Their surface soil is weak and granular or crumb in structure and ranges from slightly acid to moderately alkaline. The subsoil is structureless and alkaline. Adler soils are in recently deposited materials that overlie older sediments showing the effects of gleization.

Representative profile of Adler silt loam (sec. 28, T. 11 N., R. 1 E., ¼ mile west of bluffs on Mount Gomer plantation):

A_p 0 to 4 inches, very dark grayish-brown (10YR 3/2) and dark grayish-brown (10YR 4/2) silt loam; weak, fine, crumb structure; friable; many fine roots; slightly alkaline; clear, wavy boundary.

C_1 4 to 20 inches, brown (10YR 5/3) silt loam; few, fine, faint mottles of pale brown (10YR 6/3) and brown or dark brown (10YR 4/3); structureless; friable to very friable; many fine and medium roots in upper part of horizon, decreasing in number in lower part; many pores; moderately alkaline; clear, smooth boundary.

C_2 20 to 42 inches, brown or dark-brown (10YR 4/3) silt loam; common, fine, faint mottles of brown (10YR 5/3) and dark grayish brown (10YR 4/2); structureless; very friable; few medium roots; strongly alkaline; clear, smooth boundary.

C_3 42 to 56 inches, dark-brown (10YR 3/3) silt loam; many, fine, faint mottles of brown or dark brown (7.5YR 4/4) and grayish brown (10YR 5/2); structureless; friable; few medium roots; few soft concretions of manganese; horizon appears stratified; strongly alkaline.

Bowdre series.—The Bowdre series consists of nearly level, moderately well drained soils. These soils occur along the Mississippi River in slack-water areas that are adjacent to recent natural levees. The alluvial parent materials of Bowdre soils were recently deposited. Thin beds of fine-textured material are underlain by thick beds of coarser textured material. The surface soil is granular in structure, and the subsoil is structureless. The reaction is slightly acid to slightly alkaline.

Representative profile of a Bowdre soil with a silty clay surface soil (sec. 4, T. 12 N., R. 1 E., beside a county road ¼ mile north of Bucksnort Camp):

A_{p1} 0 to 6 inches, very dark grayish-brown (10YR 3/2) silty clay; few, fine, distinct mottles of yellowish brown (10YR 5/6); moderate, fine and medium, subangular blocky and granular structure; slightly hard; many fine roots; medium acid; clear, smooth boundary.

A_{p2} 6 to 14 inches, very dark grayish-brown (10YR 3/2) silty clay; many, fine, faint mottles of dark gray (10YR 4/1) and dark yellowish brown (10YR 4/4); moderate, fine and medium, subangular blocky and granular structure; friable; many fine roots; moderately alkaline; clear, smooth boundary.

D_1 14 to 20 inches, mottled, brown or dark-brown (10YR 4/3), light brownish-gray (10YR 6/2), and yellowish-brown (10YR 5/6) silt loam; many fine roots; moderately alkaline; clear, smooth boundary.

D_2 20 to 52 inches, pale-brown (10YR 6/3) sandy loam with thin strata of dark grayish-brown (10YR 4/2) sandy loam; many, fine, distinct mottles of yellowish brown (10YR 5/6); structureless; friable; few medium roots; thin strata of silt and clay; moderately alkaline; clear, smooth boundary.

D_{3g} 52 inches +, pale-brown (10YR 6/3) loamy sand; many, medium, distinct mottles of light gray (10YR 7/1) and yellowish brown (10YR 5/6); structureless; moderately alkaline.

Collins series.—Soils of the Collins series are on flood plains in alluvium that has washed from loess. These soils are nearly level and moderately well drained. Their surface soil is weak and granular or crumb in structure, and their subsoil is structureless. Below a depth of about 18 inches, some effects of gleization can be seen. The reaction is acid.

Representative profile of Collins silt loam (sec. 10, T. 10 N., R. 4 E., ¼ mile north of Newman house on State Route 547):

A_p 0 to 5 inches, brown (10YR 5/3) silt loam; weak, fine, granular structure; friable; many fine roots; strongly acid; clear, smooth boundary.

C_1 5 to 18 inches, brown or dark-brown (10YR 4/3) silt loam; weak, fine, subangular blocky and granular structure; friable; many fine roots; many wormholes; many pores; strongly acid; clear, smooth boundary.

C_2 18 to 23 inches, mottled, pale-brown (10YR 6/3), brown (10YR 5/3), and brown or dark-brown (10YR 4/3) silt loam; mottles are many, fine, and faint; structureless; friable; many fine and medium roots; many wormholes; many pores; strongly acid; clear, smooth boundary.

C_3 23 to 33 inches, mottled, light-gray (10YR 7/2), yellowish-brown (10YR 5/6), and brown or dark-brown (10YR 4/3) silt loam; mottles are many, medium and coarse, and distinct; structureless; friable; many splotches of manganese; few medium roots; few wormholes; few pores; strongly acid; clear, smooth boundary.

C_{4g} 33 to 40 inches, light-gray (10YR 7/1) silt or silt loam; common, medium and coarse, prominent mottles of brownish yellow (10YR 6/6), yellowish brown (10YR 5/6), and dark yellowish brown (10YR 4/4); structureless; friable; few wormholes; few pores; strongly acid.

Commerce series.—The Commerce series consists of nearly level, moderately well drained or somewhat poorly drained soils on recent natural levees. These soils are in coarse-textured and medium-textured alluvium that was recently deposited by the Mississippi River. The surface soil is granular in structure and ranges from slightly acid to moderately alkaline. The subsoil is structureless and neutral to moderately alkaline. These soils are somewhat gleyed.

Typical profile of Commerce silt loam (sec. 3, T. 12 N., R. 1 E., in a field at Bucksnort Camp):

A_p 0 to 5 inches, very dark grayish-brown (10YR 3/2) to dark grayish-brown (10YR 4/2) silt loam; weak, fine, granular structure; friable; many fine roots; moderately alkaline; clear, smooth boundary.

C_1 5 to 9 inches, mottled, brown (10YR 5/3), dark grayish-brown (10YR 4/2), yellowish-brown (10YR 5/8), and pale-brown (10YR 6/3) silt loam; mottles are many, fine and medium, and distinct; weak, fine, granular structure; friable; many fine roots; moderately alkaline; clear, smooth boundary.

C_2 9 to 15 inches, pale-brown (10YR 6/3) sandy loam; many, fine, faint and distinct mottles of light brownish gray (10YR 6/2) and strong brown (7.5YR 5/8); structureless; friable; moderately alkaline; abrupt, smooth boundary.

C_3 15 to 21 inches, mottled, very dark grayish-brown (10YR 3/2), dark-gray (10YR 4/1), and dark yellowish-brown (10YR 3/4) heavy sandy clay loam; mottles are many, fine, and faint; structureless; friable; many medium roots; some worm casts; moderately alkaline; clear, smooth boundary.

C_4 21 to 45 inches, pale-brown (10YR 6/3) sandy loam; few, fine and medium, distinct mottles of light gray (10YR 7/2), dark grayish brown (10YR 4/2), and yellowish brown (10YR 5/8); structureless; friable; horizon contains thin, stratified layers of sand and silt; many medium roots; moderately alkaline; gradual, smooth boundary.

C_5 45 to 54 inches, grayish-brown (10YR 5/2), thin, stratified layers of sandy loam and silt loam; many, fine and medium, distinct and prominent mottles of pale brown (10YR 6/3) and yellowish red (5YR 4/6); structureless; friable; moderately alkaline.

Falaya series.—This series consists of somewhat poorly drained, nearly level soils on flood plains. These soils are in alluvium that washed from loess. They have a weak, granular or crumb structure in the surface soil and a structureless subsoil. Falaya soils show some effects of

gleization below a depth of 12 inches and are, therefore, intergrades to the Low-Humic Gley group. The reaction is acid.

Typical profile of Falaya silt loam (sec. 44, T. 12 N., R. 4 E., in a creek bottom 2 miles east of Hermanville along U.S. Highway No. 18):

A_p 0 to 6 inches, brown or dark-brown (10YR 4/3) to dark yellowish-brown (10YR 4/4) silt loam; few, fine, faint mottles of pale brown (10YR 6/3); weak, fine, subangular blocky and granular structure; friable; many fine roots; strongly acid; clear, smooth boundary.

C_1 6 to 10 inches, brown (10YR 5/3) silt loam; common, medium, faint mottles of light gray (10YR 7/2) and yellowish brown (10YR 5/8), mottles increase with depth; weak, fine, granular structure; friable; many fine roots; strongly acid; clear, smooth boundary.

C_2 10 to 29 inches, mottled, light-gray (10YR 7/2), yellowish-brown (10YR 5/8), and dark yellowish-brown (10YR 4/4) silt loam; mottles are many, fine and medium, and distinct; structureless; friable; many fine roots; strongly acid; abrupt, smooth boundary.

C_{3g} 29 to 40 inches +, gray (10YR 5/1) silt loam; many, fine, faint mottles of dark grayish brown (10YR 4/2); structureless; friable; many pores; strongly acid.

Inglefield series.—This series consists of nearly level, somewhat poorly drained soils that are on flood plains at the base of the loessal bluffs. The surface layer of these soils has a granular or crumb structure and ranges from slightly acid to moderately alkaline. Below a depth of 12 inches, Inglefield soils show effects of gleization and, therefore, intergrade toward the Low-Humic Gley group.

Typical profile of Inglefield silt loam (sec. 12, T. 12 N., R. 2 E., in a pasture 1 mile south of Grand Gulf and 50 yards south of White residence):

A_p 0 to 6 inches, dark grayish-brown (10YR 4/2) silt loam; few, fine, faint mottles of pale brown (10YR 6/3); weak, fine, crumb structure; friable; many fine roots; moderately alkaline; gradual, wavy boundary.

C_1 6 to 16 inches, dark-brown (10YR 4/3) to brown (10YR 5/3) silt loam; many, fine, faint mottles of pale brown (10YR 6/3) and yellowish brown (10YR 5/6); weak, fine, granular structure; friable; many earthworm channels; moderately alkaline; clear, smooth boundary.

C_2 16 to 30 inches, mottled, light-gray (10YR 7/2), yellowish-brown (10YR 5/8), and dark grayish-brown (10YR 4/2) silt loam; mottles are many, fine, and distinct; structureless; friable; few fine and medium roots; some charcoal present; moderately alkaline; clear, smooth boundary.

C_{3g} 30 to 38 inches, dark-gray (10YR 4/1) silty clay loam; many, fine, faint mottles of very dark gray (10YR 3/1) and dark brown (10YR 3/3); structureless; slightly plastic; moderately alkaline; clear, smooth boundary.

C_{4g} 38 to 44 inches, dark-gray (7.5YR 4/0) heavy silty clay loam to silty clay; many, fine, distinct mottles of strong brown (7.5YR 5/6) and yellowish red (5YR 4/8); structureless; plastic; moderately alkaline; gradual, smooth boundary.

C_{5g} 44 to 50 inches, dark-gray (10YR 4/1) silt loam; many, medium, distinct mottles of strong brown (7.5YR 5/6); structureless; few, fine, soft concretions of manganese; moderately alkaline.

Robinsonville series.—The Robinsonville series consists of nearly level, moderately well drained soils on recent natural levees near the present channel of the Mississippi River. These soils are in coarse-textured and medium-textured alluvium that was recently deposited by the river. They have a granular surface layer and a structureless subsoil. The reaction is neutral to moderately alkaline.

Representative profile of a Robinsonville soil with a very fine sandy loam surface layer (sec. 7, T. 12 N., R. 1 E., ¼ mile south of Bucksnort Camp):

A_{p1} 0 to 2 inches, very dark grayish-brown (10YR 3/2) very fine sandy loam; weak, fine, granular structure; friable; many fine roots; moderately alkaline; clear, smooth boundary.

A_{p2} 2 to 8 inches, dark grayish-brown (10YR 4/2) to brown (10YR 5/3) very fine sandy loam; structureless; friable; many fine roots; many worm casts; stratified; moderately alkaline; abrupt, smooth boundary.

A_{1b} 8 to 14 inches, very dark grayish-brown (10YR 3/2) to dark grayish-brown (10YR 4/2) silt loam; weak, fine, crumb structure; friable; high content of organic matter; many fine roots; many worm casts; moderately alkaline; abrupt, smooth boundary.

C_1 14 to 40 inches, pale-brown (10YR 6/3) to brown (10YR 5/3) very fine sandy loam; thin strata of brown or dark-brown (10YR 4/3) very fine sandy loam; structureless; very friable; many medium roots; moderately alkaline; gradual, wavy boundary.

C_2 40 to 50 inches +, stratified, brown (10YR 5/3) to yellowish-brown (10YR 5/4) very fine sandy loam; structureless; common, fine, distinct mottles of very dark gray (10YR 3/1); few medium roots; some charcoal; moderately alkaline.

Tunica series.—In this series are nearly level, somewhat poorly drained soils. These soils are in slack-water areas where coarse-textured alluvium was deposited by the Mississippi River. The underlying material is coarser than that of the surface layer. Though in somewhat thicker layers, the parent material of the Tunica soils is similar to that of the Bowdre soils. Tunica soils are farther than the Bowdre soils from the natural levees. They have blocky structure in the surface layer instead of granular; their subsoil is blocky instead of structureless. Tunica soils are slightly acid to slightly alkaline.

Representative profile of a Tunica soil with a silty clay loam surface soil (sec. 12, T. 13 N., R. 3 E., on a logging road ½ mile south of Little Bogue Desha):

A_{p1} 0 to 5 inches, dark-gray (10YR 4/1) heavy silty clay loam; many, fine, distinct mottles of brown (10YR 5/3) and yellowish brown (10YR 5/6); structureless; friable; many fine roots; many worm casts; slightly acid; clear, smooth boundary.

A_{p2} 5 to 9 inches, dark-gray (10YR 4/1) silty clay; common, fine, distinct mottles of brown (10YR 5/3) and yellowish brown (10YR 5/6); structureless; firm; many fine roots; few worm casts; slightly acid to neutral; abrupt, smooth boundary.

D_1 9 to 13 inches, mottled brown or dark-brown (10YR 4/3) and gray (10YR 5/1) silty clay; mottles are many, fine and medium, and distinct; structureless; friable; few fine roots; few worm casts; slightly acid to neutral; abrupt, smooth boundary.

D_2 13 to 24 inches, dark-gray (10YR 4/1) clay; many, fine and medium, faint mottles of brown or dark brown (10YR 4/3) and few, fine, faint mottles of grayish brown (10YR 5/2); structureless; firm; few medium roots; vesicular; slightly acid; abrupt, smooth boundary.

D_3 24 to 42 inches +, mottled, dark-gray (10YR 4/1), brown or dark-brown (10YR 4/3), and yellowish-brown (10YR 5/6) silt loam; mottles are fine, medium, and distinct; structureless; friable; few medium roots; slightly acid.

Regosols

This great soil group consists of soils in which few or no clearly expressed soil characteristics have developed. These soils are mostly in recent deposits of sand and in loess and glacial drift from steeply sloping land. The

Crevasse series is the only member of the Regosol great soil group in Claiborne County.

Crevasse series.—The Crevasse series consists of excessively drained soils that are in recent, coarse-textured alluvium that was deposited by the Mississippi River. These soils occupy nearly level, natural levees that were laid down along the present and former channels of the Mississippi River. The surface layer is weak, fine, and granular in structure, and the subsoil is structureless. These soils are neutral to moderately acid.

Representative profile of a Crevasse soil with a very fine sandy loam surface soil (sec. 7, T. 12 N., R. 1 E., on a bank of the Mississippi River ¼ mile south of Bucksnort Camp):

A 0 to 10 inches, brown (10YR 5/3) to pale-brown (10YR 6/3) very fine sandy loam; weak, fine, granular structure; friable; few thin strata of silt loam; moderately alkaline; gradual, wavy boundary.

C 10 to 45 inches +, grayish-brown (10YR 5/2) loamy sand; structureless; very friable; moderately alkaline.

Additional Facts About the County

This section was written mainly for those not familiar with the county. It discusses early settlement, climate, physiography, agriculture, and other subjects of general interest.

Settlement and Population

Claiborne County was established in 1802 after the land was acquired from the Choctaw Indian Nation by treaty. The county was named for W. C. C. Claiborne, who once was Governor of the Mississippi Territory.

The early settlers of Claiborne County came from nearly every State of the young nation. They found access to the area fairly easy by way of the Mississippi River and the old Natchez Trace. The first white settlers came in 1729 and settled temporarily near the present town of Rodney. Grand Gulf on the Mississippi River was settled in 1775 and was the first permanent town in the county.

By 1788 settlers began to increase on the south fork of Little Bayou Pierre around a boat landing called Gibson's Port or Gibson's Landing. This settlement was incorporated in 1811 and named Port Gibson. It is now the county seat. Port Gibson had a population of 2,861 in 1960; it is the largest town in the county. Other towns and small trading centers are Hermanville and Pattison.

Early in the 1830's a railroad was built connecting Port Gibson and Grand Gulf. This railroad was profitable in its early years but was sold and abandoned in the 1880's. The plantation system was established early, and the county prospered during the cotton boom before the Civil War.

Climate

The climate of Claiborne County is mainly influenced by the warm waters of the Gulf of Mexico, the subtropical location, and the huge land mass to the north. In summer southern winds prevail and usually bring pleasant weather. But some days in summer are hot and dry when the wind is from the north and west. In winter moist, tropical air alternates with dry, cold air and greatly changes the temperature for variable lengths of time. Table 14 lists climatic data at Port Gibson that were compiled at the United States Weather Bureau Station.

TABLE 14.—*Temperature and precipitation at Port Gibson, Claiborne County, Mississippi*

[Elevation, 160 feet]

Month	Temperature [1]			Precipitation [2]			
	Average	Absolute maximum	Absolute minimum	Average	Driest year (1924)	Wettest year (1923)	Average snowfall
	°F.	°F.	°F.	Inches	Inches	Inches	Inches
December	49.0	83	4	6.28	5.50	11.70	0.2
January	48.5	85	−5	5.07	6.32	5.45	.9
February	50.6	85	−3	4.90	3.00	8.28	.2
March	58.2	94	16	5.67	4.39	11.76	(3)
April	64.8	92	28	5.24	4.83	8.75	0
May	71.6	99	34	4.63	5.56	7.63	0
June	78.6	104	47	4.67	2.29	5.48	0
July	80.9	104	51	4.74	.75	8.23	0
August	80.5	107	51	3.72	1.63	3.21	0
September	76.0	103	37	2.88	.51	1.80	0
October	65.0	96	23	2.78	.17	1.36	0
November	55.4	89	16	3.80	.14	4.50	(3)
Year	64.9	107	−5	54.38	35.09	78.15	1.3

[1] Average temperature based on a 67-year record, through 1953; highest temperature based on a 61-year record, and lowest temperature on a 60-year record, through 1952.

[2] Average precipitation based on a 70-year record, through 1955; wettest and driest years based on a 61-year record, in the period 1894-1955; snowfall based on a 61-year record, through 1952.

[3] Trace.

The relative humidity is 60 percent or higher about two-thirds of the time and is below 40 percent only one-tenth of the time. When the temperature is 90° F. or higher, the relative humidity never exceeds 79 percent. A drop in temperature to 20° or lower generally occurs during 1 or more days in 9 out of 10 years. On the average, 48 days a year have a freezing temperature of 32° or lower, and 95 days a year, a temperature of 90° or higher. The highest temperature ever recorded at Port Gibson was 107°, and the lowest was 5° below zero. There is a 50 percent chance of freezing temperature after March 26 in spring and before November 3 in fall. After April 6 and before October 22, the chance of freezing temperature is 20 percent. The average frost-free period is 235 days per year. Tornadoes strike about once in 4 years, and damaging windstorms and hailstorms each occur on an average of once in 10 years. Measurable snow occurs about one winter in three.

Physiography and Geology

About nine-tenths of Claiborne County is an area of loessal uplands that includes alluvial areas along large tributary streams; the rest is on the alluvial plain of the Mississippi River.

The alluvial plain of the Mississippi River extends eastward from the river to the loessal uplands and varies between 1 and 5 miles in width. This plain consists of recent natural levees, slack-water areas, and areas

adjacent to the loessal uplands. The natural levees are 15 to 20 feet higher than the normal level of the river. Man-made levees have not been built to protect against floods. Hardwoods are the dominant vegetation on the alluvial plain.

The loessal uplands are, in most places, covered by deep soils in loess that ranges from 4 to 60 feet in thickness. This loess probably was deposited during the Ice Age after melting glaciers created a river much larger than the present Mississippi River. In ancient times, that river deposited rock flour and other finely ground rock along its sides as it flowed toward the Gulf of Mexico. After the flow of water lessened and the river receded, the sediments dried and were exposed to winds in winter. The prevailing southwesterly winds blew the fine material to the hills and valleys along the eastern rim of the river valley, where it was deposited. The layer of loess is thickest near the alluvial plain of the Mississippi River and is thinnest toward the east.

The loessal uplands in Claiborne County have been severely eroded by water, which has caused sheet and gully erosion. The northwestern half is steep. Hardwoods are the dominant vegetation, but mixed stands of pines and hardwoods are common. The southeastern half of the uplands is smooth, rolling, and only slightly dissected by streams. Mixed stands of pines and hardwoods make up the vegetation.

Industries and Transportation

Although it is basically agricultural, Claiborne County has a few industrial plants. A plant that crushes cotton and soybean seeds was established in 1880 and now has a total annual income of 1 to 2 million dollars. Another plant manufactures wire-bound boxes for packaging produce and poultry. It processes more than 10 million board feet of lumber each year. At Hermanville a lumber mill annually processes about 10 million board feet of high-quality southern pine. Under a plan to balance agriculture with industry, a paper-tube company and a plastics company have established plants at Port Gibson.

The Illinois Central Railroad serves Claiborne County. One branch of this railroad, the Yazoo, passes through Port Gibson on the way south from Vicksburg to New Orleans. Another branch, locally called the Little J railroad, runs southwest from Jackson, in Hinds County, to Hermanville, and on to Natchez in Adams County.

U.S. Highway No. 61 passes through Port Gibson as it crosses the county from north to south. State Route 18 connects Port Gibson with Jackson, Miss., and State Route 547 connects Port Gibson with State Route 20 at Allen in Copiah County. All parts of Claiborne County are accessible by secondary roads that can be used all year. Most of these roads are paved; the rest are graveled.

Wildlife

Claiborne County is the home of many kinds of wildlife, including beaver, bobcat, deer, fox, mink, oppossum, rabbit, raccoon, skunk, squirrel, armadillo, and birds. Important game birds in the county are bobwhite and wild turkey. Duck, geese, and dove are migratory. Many fish abound in the warm, fresh waters.

Most landowners in the county practice wildlife management. They plan and establish habitats so that the number of animals and birds will increase. Because the number of sportsmen is increasing, most of the land in the county is posted. Private hunting clubs have leased parts of the county, especially on the alluvial plain of the Mississippi River. On the alluvial plain, deer, squirrel, and migratory waterfowl are the main quarry.

Most of the loessal uplands is also posted to protect wildlife and farm animals. The landowners, however, often allow prudent sportsmen to hunt on posted land. Bobwhite, dove, and squirrel are mostly hunted on the loessal uplands, but recently deer has been hunted along upper reaches of the large streams.

In 1959, a duck pond was built in a small, leased area along Little Bayou Pierre. A small levee was erected around the area, and browntopmillet was seeded. After the millet matured, the area was flooded by pumping water from the bayou. Because this project was successful and attracted many game birds, several more ponds were established in the county in 1960.

Claiborne County has more than 800 farm ponds, most of them stocked with bream and bass. These ponds yield good catches of fish, but only a few are managed well enough for maximum production. Lake Claiborne, an artificial lake covering 110 acres, is a favorite place for local fishermen. Large catches of bass, crappie, and bluegill sunfish are made in Yucatan Lake on the Mississippi River. A few commercial fishermen fish in the Mississippi River, the Big Black River, Yucatan Lake, Hamilton Lake, and Lake Karnac. The Mississippi State Game and Fish Commission enforces laws that protect game and fish. Because these laws are rigidly enforced, all game, especially deer, have increased in number.

Agriculture

Until about 20 years ago the agriculture of Claiborne County was based mostly on field crops. The early settlers cultivated tobacco, indigo, corn, rice, wheat, and cotton. The tobacco and indigo were exported. The cotton was grown mainly on large plantations and provided most of the cash income until late in the 1930's. Beginning in 1934 the government restricted the acreage that could be planted to cotton. As a result, the main cash income slowly shifted from cotton to forest products and livestock.

A large acreage on farms is now in timber, pasture, and feed crops. But not enough feed is grown in the county to supply the livestock, and some must be purchased elsewhere. The cash income from livestock and from forest products is about equal.

According to the 1959 Census of Agriculture, 188,196 acres of the 311,040 acres in the county was in farms. Table 15 gives a breakdown of land use in 1939, 1949, 1954, and 1959. Between 1954 and 1959 the number of farms in the county and the acreage in farms decreased greatly. The number of farms decreased from 1,204 to 680, and the acreage in farms decreased from 245,934 to 188,196. Part of the reduction in number of farms and acreage in farms resulted from a change in the system of reporting farms. The smaller number of farms also reflects the trend of farms increasing in size. For example, the average-sized farm in the county increased from 204.3 acres in 1954 to 276.8 acres in 1959.

TABLE 15.—*Distribution of land according to use*

Use	1939	1949	1954	1959
	Acres	*Acres*	*Acres*	*Acres*
Cropland, total	94, 195	79, 507	71, 488	41, 616
Cropland harvested	42, 337	30, 944	25, 860	18, 337
Cropland used only for pasture	[1] 45, 780	43, 909	41, 343	20, 010
Cropland not harvested and not pastured	[2] 6, 078	4, 654	4, 285	3, 269
Woodland, total	63, 180	125, 512	144, 593	99, 228
Woodland pastured	([3])	91, 371	109, 787	68, 829
Woodland not pastured	([3])	34, 141	34, 806	30, 399
Other pasture (not cropland or woodland)	([3])	33, 723	24, 383	42, 663
Improved pasture	([3])	([3])	9, 616	12, 100
Other land (house lots, roads, wasteland, etc.)	49, 454	5, 719	5, 470	4, 689

[1] Plowable pasture.
[2] Figure represents crop failure and cropland idle or fallow.
[3] Not reported.

According to the 1959 census, about 14,800 acres was used for hay, silage, and grain; more than 131,502 acres was used for pasture. The saw logs and veneer logs cut amounted to about 1,088,000 board feet, and the pulpwood sold was 5,324 cords.

Crops

Table 16 lists the acreages in the county that were planted to important crops in stated years. Corn is the chief grain crop and is grown extensively throughout the county. Corn and pasture are grown in the open areas along the Mississippi River. In the loessal uplands, corn is grown continuously on the stream bottoms and in a cropping system with grass on the hills. Although the average yield per acre in the county is small, many farmers recently have produced more than the average by improving management.

Cotton ranks second to corn in total acreage. Most of this crop is on the loessal uplands, but a small acreage is on the stream bottoms.

Yields of cotton per acre have increased because farmers have improved management since the acreage planted to cotton has been decreased by allotment. The farmers apply more fertilizer, control insects, and plant improved varieties of seed.

Oats are grown for pasture and grain. Recently they have been seeded with ryegrass for winter pasture. The principal hay crops are lespedeza, bermudagrass, dallisgrass, or johnsongrass combined with white and crimson clovers.

Livestock

Table 17 lists the number of livestock in the county in 1940, 1950, 1954, and 1959. Claiborne County is one of the leading areas in the State for raising beef cattle. Farmers own a number of registered purebred herds, and most other herds are of good stock. During the past few years, steers have been fed and grazed on consignment profitably. In 1957, livestock was sold at Port Gibson for a total of about $1,800,000.

Most hogs and pigs raised in this county are marketed commercially, but some are raised for home use. The use of hog parlors for raising hogs commercially is increasing in the county. Breeds are mixed, and the animals are of poor to good quality. Horses and mules have gradually decreased in number because of the increasing use of tractors. The horses are fair to good in quality and are kept mostly as saddle stock. Most work animals are mules.

TABLE 16.—*Acreage of the principal crops and number of fruit and nut trees of bearing age*

Crop	1939	1949	1954	1959
	Acres	*Acres*	*Acres*	*Acres*
Corn for all purposes	21, 481	13, 618	9, 650	7, 618
Sorghum for all purposes except sirup	324	274	768	1, 110
Oats, threshed or combined	520	574	1, 539	727
Hay crops:				
Alfalfa and alfalfa mixtures	([1])	10	10	58
Lespedeza	1, 920	1, 831	1, 054	324
Small grains cut for hay	([1])	129	383	1, 006
Clover, timothy, and mixtures of clover and grasses cut for hay	1, 686	1, 245	1, 007	702
Other hay cut	756	2, 172	2, 296	2, 524
Cowpeas for all purposes	10, 628	1, 590	1, 066	440
Soybeans for all purposes	3, 719	2, 445	944	586
Soybeans cut for hay	[2] 1, 686	278	12	48
Soybeans for beans	129	380	370	224
Cotton harvested	12, 853	8, 199	6, 609	3, 502
Vegetables for sale	107	43	32	28
	Number [3]	*Number* [3]	*Number*	*Number*
Peach trees	4, 085	1, 295	542	343
Pecan trees	2, 329	1, 695	2, 287	3, 362

[1] Not reported.
[2] All annual legumes saved for hay.
[3] One year later than crop year given at head of column.

TABLE 17.—*Livestock on farms in stated years*

Livestock	1940	1950	1954	1959
	Number	*Number*	*Number*	*Number*
Cattle and calves	[1] 17, 497	25, 427	33, 235	29, 477
Hogs and pigs	[2] 9, 111	9, 955	7, 863	9, 109
Sheep and lambs	[3] 382	1, 440	807	2, 295
Chickens	[2] 36, 466	[2] 31, 915	[2] 26, 782	[2] 26, 513
Turkeys raised	108	311	677	360
Horses and mules	[1] 3, 441	3, 318	2, 243	1, 111

[1] Over 3 months old.
[2] Over 4 months old.
[3] Over 6 months old.

Tenure and size of farms

In 1959, about 66 percent of the farms were operated by owners or part owners, 33 percent by tenants, and less than 1 percent by managers. Some tenants rent for cash, but most of them share the crops with the owners. Tenancy in this county is of two kinds. Most tenants furnish seed, fertilizer, machinery, and farm animals and, in return, generally keep two-thirds of the cotton crop and three-fourths of the corn. To other tenants the farm-owner supplies all equipment, seed, fertilizer, and animals and advances credit for food and personal expenses. The owner then receives interest on the money loaned and half of the crop.

Since 1940 the number of tenants has declined sharply. The following lists the number of farms operated by tenants between 1920 and 1959.

Year	*Number of tenants*
1920	1,589
1930	1,577
1940	1,338
1950	704
1954	568
1959	223

In 1959 there were 680 farms in the county. Of these farms 267 were 0 to 49 acres, 110 were 50 to 99 acres, 215 were 100 to 499 acres, and 88 were more than 500 acres. The average-sized farm was 276.8 acres.

Farm equipment and facilities

Tractors have been replacing mules on many farms for many years and are used exclusively on most of the large farms. In 1959 farm operators owned 487 tractors, 41 grain combines, 32 cornpickers, 38 pick-up hay balers, and 22 field forage harvesters. In 1954 about 59 percent of the farms had electricity; the percentage was about the same in 1959.

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(2) United States Department of Agriculture.
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Glossary

Acidity. The degree of acidity or alkalinity of a soil mass expressed in pH values, or in words, as follows:

	pH		*pH*
Extremely acid	Below 4.5	Neutral	6.6–7.3
Very strongly acid	4.5–5.0	Mildly alkaline	7.4–7.8
Strongly acid	5.1–5.5	Moderately alkaline	7.9–8.4
Medium acid	5.6–6.0	Strongly alkaline	8.5–9.0
Slightly acid	6.1–6.5	Very strongly alkaline	9.1 and higher.

Aggregate, soil. A mass or cluster of many soil particles, such as a granule, clod, block, or prism.

Alluvium. Fine material, such as sand, silt, or clay, deposited on land by streams.

Clay. The mineral particles of soil that are less than 0.002 millimeter in diameter. As a textural class, soil that contains 40 percent of more of clay, less than 45 percent of sand, and less than 40 percent of silt.

Colluvium. Mixed deposits of rock fragments and soil material near the base of slopes. The deposits have accumulated through soil creep, slides, or local wash.

Concretions. Local concentrations of chemical compounds formed into hard grains or nodules of mixed composition and of various size, shape, and color. Calcium carbonate or compounds of magnesium or iron commonly form concretions.

Consistence. The combination of properties of soil material that determine its resistance to crushing and its ability to be molded or changed in shape. Consistence depends mainly on the forces of attraction between soil particles. The terms used to describe consistence in this report are—

Firm. When moist, the soil crushes under moderate pressure but noticeably resists the pressure.

Friable. When moist, the soil can be crumbled by hand and coheres when it is pressed together.

Plastic. When wet, the soil is easy to mold.

Slightly hard. When dry, the soil weakly resists pressure but breaks easily between the thumb and forefinger.

First bottom. The normal flood plain of a stream; land along a stream that is likely to overflow.

Fragipan. Dense and brittle pan or layer in soils. The pan owes its hardness to extreme density or compactness rather than to the content of clay or to cementation.

Great soil group. A broad group of soils that have fundamental characteristics in common. The great soil groups in this county are Gray-Brown Podzolic soils, Planosols, Low-Humic Gley soils, Alluvial soils, and Regosols.

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

Horizon A. The master horizon consisting of (1) one or more mineral horizons that contain a larger accumulation of organic matter than the other horizons in the profile; or (2) surface or subsurface horizons that have lost clay minerals, iron, and aluminum and are lighter in color than the underlying horizon; or (3) horizons in both of these categories.

Horizon B. The master horizon of altered material that has (1) an accumulation of clay, iron, or aluminum, and of organic material; or (2) a blocky or prismatic structure and other characteristics, such as a stronger color, that are unlike those of the A horizon or of the underlying horizons that consist of nearly unchanged material; or (3) characteristics of both these categories. Commonly, the lower limit of the B horizon corresponds to the lower limit of the solum.

Horizon C. A layer of unconsolidated material that has been only slightly affected by organisms. In its chemical, physical, and mineral composition, the C horizon is presumed to be similar to the material from which at least a part of the overlying solum has developed.

Horizon D. Any stratum that underlies the C horizon and is unlike the C horizon or is unlike the material from which the solum has formed. If no C horizon is present, the D horizon directly underlies the B.

Internal drainage. The downward flow of water through the soil. The rate of flow is affected by the texture and structure of the surface soil and subsoil and by the height of the permanent or perched water table. Terms for expressing internal drainage are: *very rapid, rapid, medium, slow, very slow,* and *none.*

Loam. Soil that has approximately equal amounts of sand, silt, and clay.

Loess. Geologic deposits that have been transported by wind and consist of fairly uniform, fine material that is mostly silt.

Morphology. The physical constitution of the soil, including the thickness of the horizons and their arrangement in the profile. Texture, structure, consistence, and color are important morphological characteristics.

Mottling. Irregular spots of different color that are commonly caused by poor drainage.

Natural drainage. Drainage that exists during the development of the soil, but not altered drainage, which is generally the result of artificial drainage or irrigation. Terms used to express natural drainage are: *excessively drained, somewhat excessively drained, well drained, moderately well drained, imperfectly* or *somewhat poorly drained, poorly drained,* and *very poorly drained.*

Parent material. The unconsolidated mass from which the soil profile develops.

Permeability. The quality of a soil that enables water or air to penetrate easily.

Profile, soil. A vertical section of soil through all its horizons and extending into the parent material.

Reaction. (See Acidity.)

Relief. The elevations or inequalities of a land surface, considered collectively.

Runoff. Water that does not enter a soil but flows over its surface. The amount and rapidity of runoff are affected by texture, structure, porosity, climate, vegetation, and relief. Terms used to express runoff are *very rapid, rapid, medium, slow, very slow,* and *ponded.*

Sand. Small fragments of rock or minerals that range in diameter from 0.05 millimeter to 2.0 millimeters. As a textural class, soils that contain 85 percent or more of sand and not more than 10 percent of clay.

Silt. Individual mineral particles of soil that range in diameter from 0.002 millimeter to 0.05 millimeter. As a textural class, soil material that contains 80 percent or more of silt and less than 12 percent of clay.

Single grain. (See Structureless.)

Soil. The natural medium for the growth of land plants on the surface of the earth. A soil is composed of organic and mineral materials.

Solum. The genetic soil developed by the forces of soil formation. In well-developed soils, the A and B horizons, or the upper part of the profile above the parent material.

Structure, soil. The aggregation of primary soil particles into compound particles, or clusters of primary particles, that are separated from adjoining aggregates by surfaces of weakness. The terms of soil structure describe distinctness (grade), size (class), and shape and arrangement (type) of the visible aggregates or peds.

Distinctness. Structureless, weak, moderate, and strong.

Size. Very fine or very thin, fine or thin, medium, coarse or thick, and very coarse or very thick.

Shape and arrangement. Platy, prismatic, columnar, blocky, subangular blocky, granular, and crumb.

Structureless. Aggregation not observable or lines of weakness not in a definite orderly arrangement. Massive if coherent; single grain if noncoherent.

Subsoil. The part of the profile below plow depth. Generally the B horizon if one exists.

Substratum. Material underlying the subsoil.

Surface soil. The soil normally moved in tillage or its equivalent in uncultivated soil.

Texture. The relative proportions of the various size groups of individual soil grains in a mass of soil; specifically, the proportions of sand, silt, and clay. A coarse-textured soil is one high in content of sand; a fine-textured soil has a large proportion of clay.

Upland (geologic). Land consisting of material unworked by water in recent geologic time and generally lying at a higher elevation than the alluvial plain or stream terraces.

GUIDE TO MAPPING UNITS

Map symbol	Mapping unit	Page	Capability unit		Woodland suitability group	
			Symbol	Page	Number	Page
Ad	Adler silt loam	3	IIw-1	15	None	-----
Bc	Bowdre, Tunica, and Crevasse soils	4	Vw-1	18	None	-----
CaA	Calloway silt loam, 0 to 2 percent slopes	5	IIIw-2	16	2	26
CaB	Calloway silt loam, 2 to 5 percent slopes	5	IIIw-3	17	2	26
Cn	Collins silt loam	5	IIw-1	15	3	26
Co	Commerce silt loam	6	I-2	14	None	-----
Cr	Crevasse, Commerce, and Robinsonville soils	6	Vw-1	18	None	-----
Fa	Falaya silt loam	7	IIIw-1	16	5	26
GrA	Grenada silt loam, 0 to 2 percent slopes	7	IIw-2	15	4	26
GrB	Grenada silt loam, 2 to 5 percent slopes	7	IIe-3	15	4	26
GrB2	Grenada silt loam, 2 to 5 percent slopes, eroded	8	IIe-3	15	4	26
GrB3	Grenada silt loam, 2 to 5 percent slopes, severely eroded	8	IIIe-3	16	4	26
GrC3	Grenada silt loam, 5 to 8 percent slopes, severely eroded	7	IVe-3	17	4	26
GrD3	Grenada silt loam, 8 to 12 percent slopes, severely eroded	8	VIe-3	18	4	26
GrE3	Grenada silt loam, 12 to 17 percent slopes, severely eroded	8	VIe-3	18	4	26
Gu	Gullied land	8	VIIe-2	19	None	-----
Hn	Henry silt loam	8	IVw-2	18	1	26
In	Inglefield silt loam	9	IIIw-1	16	None	-----
LmA	Loring and Memphis silt loams, 0 to 2 percent slopes	9	I-1	14	7	27
LmB2	Loring and Memphis silt loams, 2 to 5 percent slopes, eroded	9	IIe-1	14	7	27
LmB3	Loring and Memphis silt loams, 2 to 5 percent slopes, severely eroded	9	IIIe-1	15	7	27
LmC2	Loring and Memphis silt loams, 5 to 8 percent slopes, eroded	9	IIIe-2	16	7	27
LmC3	Loring and Memphis silt loams, 5 to 8 percent slopes, severely eroded	10	IIIe-1	15	7	27
LmD3	Loring and Memphis silt loams, 8 to 12 percent slopes, severely eroded	10	IVe-1	17	7	27
MeA	Memphis silt loam, 0 to 2 percent slopes	10	I-1	14	7	27
MeB	Memphis silt loam, 2 to 5 percent slopes	10	IIe-1	14	7	27
MeB2	Memphis silt loam, 2 to 5 percent slopes, eroded	10	IIe-1	14	7	27
MeB3	Memphis silt loam, 2 to 5 percent slopes, severely eroded	10	IIIe-1	15	7	27
MeC2	Memphis silt loam, 5 to 8 percent slopes, eroded	10	IIIe-2	16	7	27
MeC3	Memphis silt loam, 5 to 8 percent slopes, severely eroded	10	IIIe-1	15	7	27
MnD2	Memphis and Natchez silt loams, 8 to 12 percent slopes, eroded	11	IVe-2	17	7	27
MnD3	Memphis and Natchez silt loams, 8 to 12 percent slopes, severely eroded	11	IVe-1	17	7	27
MnE2	Memphis and Natchez silt loams, 12 to 17 percent slopes, eroded	11	VIe-2	18	7	27
MnE3	Memphis and Natchez silt loams, 12 to 17 percent slopes, severely eroded	11	VIe-1	18	7	27
MnF2	Memphis and Natchez silt loams, 17 to 40 percent slopes, eroded	11	VIe-2	18	7	27
MnF3	Memphis and Natchez silt loams, 17 to 40 percent slopes, severely eroded	11	VIIe-1	19	7	27
Mx	Mixed alluvial land	11	Vw-1	18	None	-----
Ro	Rough broken land	12	VIIe-2	19	None	-----
Sa	Sandy alluvial land	12	VIw-1	18	None	-----
Wa	Waverly silt loam	12	IVw-1	17	6	26

U. S. DEPARTMENT OF AGRICULTURE
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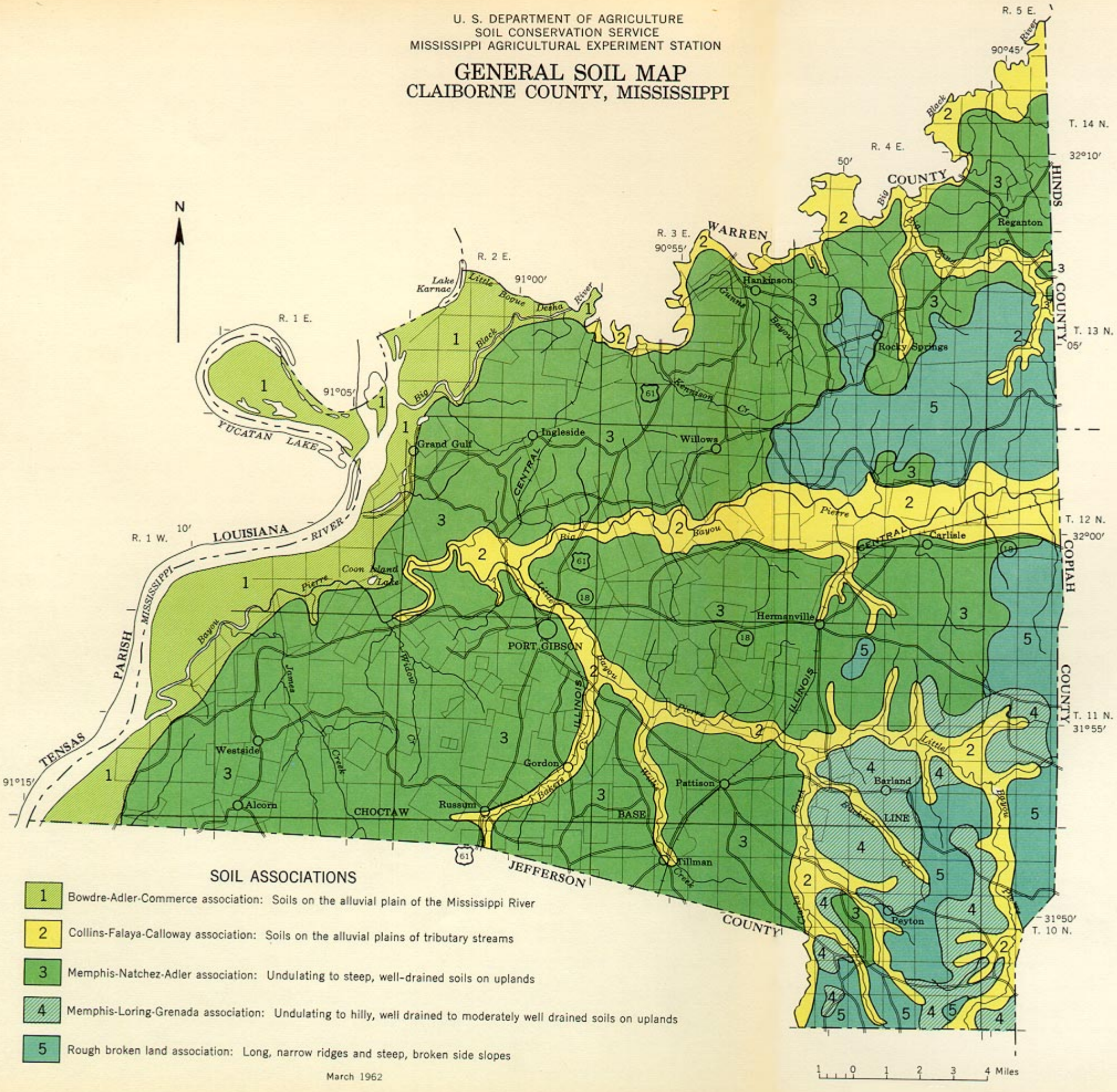
MISSISSIPPI AGRICULTURAL EXPERIMENT STATION

GENERAL SOIL MAP
CLAIBORNE COUNTY, MISSISSIPPI



SOIL ASSOCIATIONS

1 Bowdre-Adler-Commerce association: Soils on the alluvial plain of the Mississippi River

2 Collins-Falaya-Calloway association: Soils on the alluvial plains of tributary streams

3 Memphis-Natchez-Adler association: Undulating to steep, well-drained soils on uplands

4 Memphis-Loring-Grenada association: Undulating to hilly, well drained to moderately well drained soils on uplands

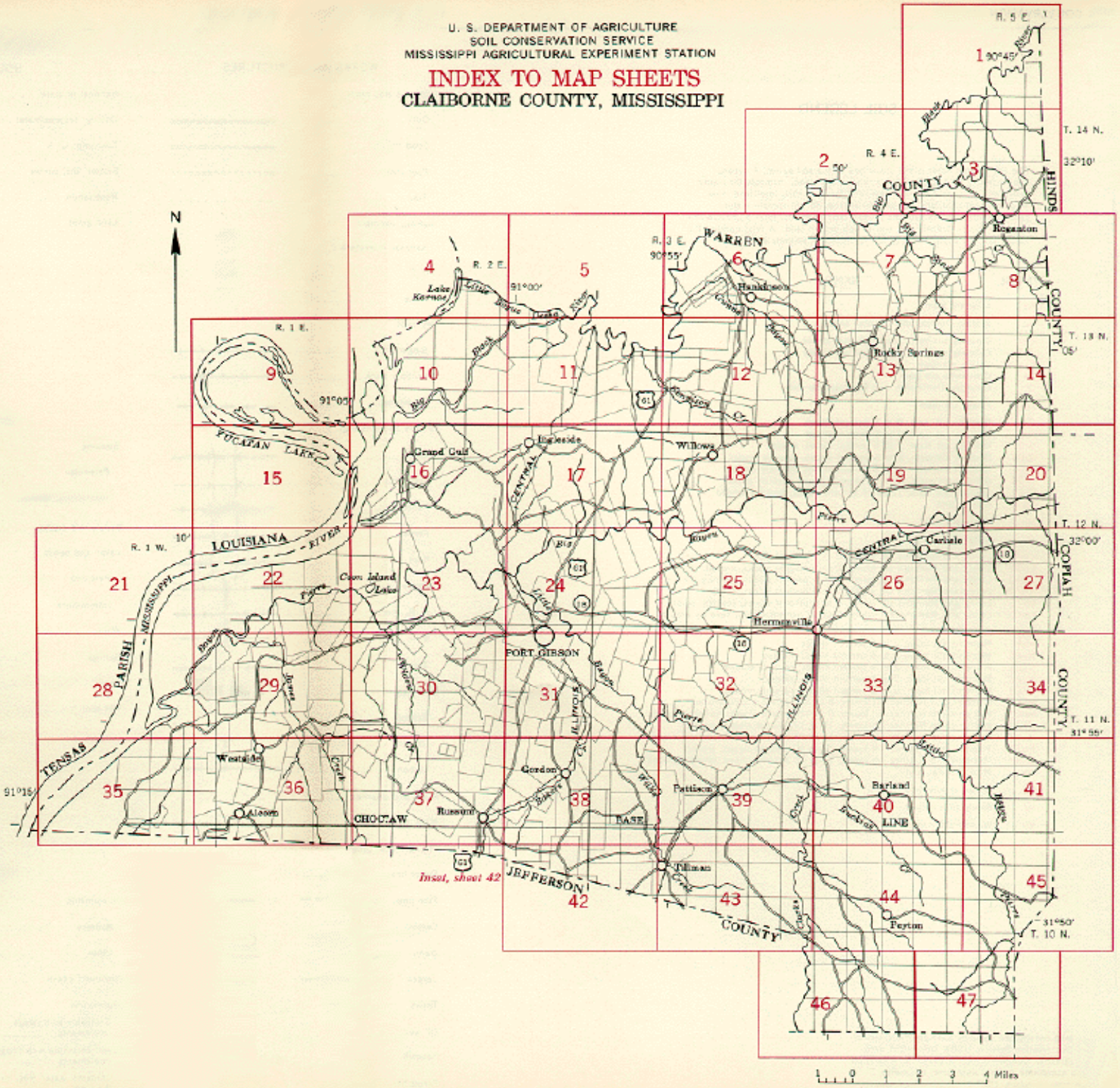
5 Rough broken land association: Long, narrow ridges and steep, broken side slopes

March 1962

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
MISSISSIPPI AGRICULTURAL EXPERIMENT STATION

INDEX TO MAP SHEETS

CLAIBORNE COUNTY, MISSISSIPPI




(Joins sheet 10)
N
Middle Bar
Rock Lake
Grand Gulf
Grand Lake
Hamilton Lake
MISSISSIPPI RIVER
TENSAS PARISH
LOUISIANA
(Joins sheet 15)
(Joins sheet 23)
Cr
Bc
Co
Ad
In
MeA
MeB2
MeC3
MnF2
MnF3
MnD3
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1 Mile


Spring Hill Church
(Joins sheet 17)
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