SOIL SURVEY OF

Lamar County, Mississippi

This is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and agencies of the States, usually the Agricultural Experiment Stations. In some surveys, other Federal and local agencies also contribute. The Soil Conservation Service has leadership for the Federal part of the National Cooperative Soil Survey.

Major fieldwork for this soil survey was completed in the period 1965–69. Soil names and descriptions were approved in 1969. Unless otherwise indicated, statements in the publication refer to conditions in the county in 1971. This survey was made cooperatively by the Soil Conservation Service and the Mississippi Agricultural and Forestry Experiment Station. It is part of the technical assistance furnished to the Lamar County Soil and Water Conservation District, organized in 1945.

HOW TO USE THIS SOIL SURVEY

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

Locating Soils

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

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

Finding and Using Information

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

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

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

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

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

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

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

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

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

Cover: A stand of longleaf pine on McLaurin fine sandy loam, 2 to 5 percent slopes, woodland group 2o1.

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SOIL SURVEY OF LAMAR COUNTY, MISSISSIPPI

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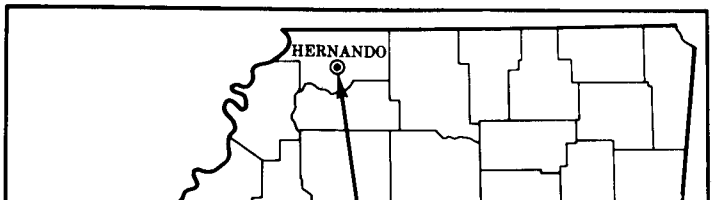
UNITED STATES DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE, IN COOPERATION WITH THE MISSISSIPPI AGRICULTURAL AND FORESTRY EXPERIMENT STATION

LAMAR COUNTY, in the southeastern part of Mississippi (fig. 1), has a land area of 320,000 acres, or 500 square miles. It is bordered by Forrest County on the east, Covington and Jefferson Davis Counties on the north, Marion County on the west, and Pearl River County on the south. Purvis, the county seat, is in the southeastern part of the county.

Forest products, beef cattle, and soybeans are the



How This Survey Was Made

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

native plants or crops; and many facts about the soils. They dug many holes to expose soil profiles. A profile is the sequence of natural layers, or horizons, in a soil; it extends from the surface down into the parent material that has not been changed much by leaching or by the action of plant roots.

The soil scientists made comparisons among the profiles they studied, and they compared these profiles

on such a map all the small, scattered bits of soil of some other kind that have been seen within an area that is dominantly of a recognized soil phase.

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

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

An undifferentiated group is made up of two or more soils that could be delineated individually but are shown as one unit because, for the purpose of the soil survey, separating them is of little value. The pattern and proportion of soils are not uniform. An area shown on the map may be made up of only one of the dominant soils or of two or more. The name of an undifferentiated group consists of the names of the dominant soils, joined by "and." Freestone, Susquehanna, and Prentiss soils, 5 to 12 percent slopes, is an example.

In most areas surveyed there are places where the soil material is so variable that it cannot be classified by soil series. These places are shown on the soil map and are described in the survey, but they are called land types and are given descriptive names. Sandy alluvial land is a land type in Lamar County.

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

Soil scientists observe how soils behave when used as a growing medium for native and cultivated plants and as material for structures, foundations for structures, or covering for structures. They relate this behavior to properties of soils. For example, they observe that filter fields for onsite disposal of sewage fail on a given kind of soil, and they relate this to the slow permeability of the soil or a high water table. They see that streets, road pavements, and foundations for houses are cracked on a named kind of soil, and they relate this failure to the high shrink-swell potential of the soil material. Thus, they use observation and knowledge of soil properties, together with available research data, to predict limitations or suitability of soils for present and potential uses.

After data have been collected and tested for the key, or benchmark, soils in a survey area, the soil scientists set up trial groups of soils. They test these groups by further study and by consultation with farmers, agronomists, engineers, and others. They then adjust the groups according to the results of their studies and consultation. Thus, the groups that are finally evolved reflect up-to-date knowledge of the soils and their behavior under current methods of use and management.

General Soil Map

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

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

The soil associations in Lamar County are discussed in the pages that follow.

1. *Freestone-Susquehanna-Prentiss association*

Somewhat poorly drained and moderately well drained, gently sloping to sloping and rolling soils that have a loamy or clayey subsoil; some have a fragipan

This association is mostly in the northeastern and southwestern parts of the county, and a small area is in the central part. It is dissected by numerous short drainageways. Gently sloping soils are on the narrow ridgetops, and gently sloping to sloping soils are on the sides of ridges and on narrow flood plains of the smaller streams in the county.

This association makes up about 10 percent of the county. It is about 23 percent Freestone soils, 22 percent Susquehanna soils, and 18 percent Prentiss soils. The rest is Baxterville, Benndale, and Falkner soils.

Freestone soils are on the middle and upper sides of ridges. They are moderately well drained or somewhat poorly drained. They have a surface layer of grayish-brown sandy loam and a subsurface layer of pale-brown sandy loam. The subsoil is strong-brown sandy clay loam to a depth of 28 inches and clay mottled with shades of gray, red, and brown in the lower part.

Susquehanna soils are generally on the mid and lower slopes. They are poorly drained. They have a surface layer of grayish-brown silt loam. The subsoil is pale-brown silt loam in the upper 7 inches and clay mottled with shades of gray, brown, and red in the lower part.

Prentiss soils are generally on ridgetops and the upper slopes. They are moderately well drained. They have a surface layer of very dark grayish-brown fine sandy loam. The subsoil is yellowish-brown loam that is mottled with strong brown in the lower part. It is underlain at a depth of about 27 inches by a loam fragipan mottled with shades of brown and gray.

Nearly all of this association is wooded (fig. 2), and about 5 percent is used for pasture. The soils of this association have only a limited use for crops, because they are clayey and lack uniformity in soil pattern.

Most of this association is in large wooded tracts

Figure 2.—**A six-year-old plantation of slash pine in the Freestone-Susquehanna-Prentiss association.**

owned by timber companies. A few homesteads and small farms, generally less than 300 acres in size, are scattered throughout the association.

2. *McLaurin-Prentiss association*

Well drained and moderately well drained, nearly level to moderately steep soils that have a loamy subsoil;

About 75 percent of this association is wooded, and 25 percent is used mainly for crops, pasture, and pecan orchards. The nearly level and gently sloping soils on ridgetops are suitable for crops, and the steeper soils are better suited to pasture or woodland. The main crop is soybeans; a smaller acreage is in corn and cotton.

face layer of dark grayish-brown fine sandy loam and a subsurface layer of yellowish-brown fine sandy loam. The subsoil is yellowish-red sandy loam and loam.

Prentiss soils are at lower elevations and have more nearly level topography than McLaurin soils. They are moderately well drained. They have a surface layer of very dark grayish-brown fine sandy loam. The subsoil is yellowish-brown loam that has strong-brown mottles in the lower part. It is underlain at a depth of about 27 inches by a loam fragipan mottled with shades of brown and gray.

Freestone soils are on mid and lower slopes. They are moderately well drained or somewhat poorly drained. They have a surface layer of grayish-brown sandy loam and a subsurface layer of pale-brown sandy loam. The subsoil is strong-brown sandy clay loam in the upper part and clay mottled with shades of

percent Osier soils. The rest is Basin, Dorovan, Mashulaville, and Pamlico soils.

Trebloc soils are generally in slackwater areas. They are poorly drained. They have a surface layer of very dark gray silt loam and a subsurface layer of silt loam mottled with shades of gray and brown. The subsoil is gray and light-gray silt loam, silty clay loam, and silty clay mottled with shades of brown.

Osier soils are generally near channels and areas associated with networks of channels. They are very poorly drained. They have a surface layer of very dark grayish-brown mucky sandy loam. The underlying material is dark grayish-brown mucky loamy sand in the upper part and light-gray loamy sand in the lower part.

Most of this association is wooded, but some areas

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

Soil	Acres	Percent
Basin fine sandy loam	5,900	1.8
Baxterville fine sandy loam, 2 to 5 percent slopes	9,000	2.8
Baxterville fine sandy loam, 5 to 8 percent slopes	1,080	0.3
Benndale fine sandy loam, 2 to 5 percent slopes	1,800	.5
Dorovan and Pamlico mucks	5,900	1.8
Falkner silt loam, 2 to 5 percent slopes	2,750	.9
Freestone–McLaurin–Susquehanna association, rolling	36,970	11.5
Freestone, Susquehanna, and Prentiss soils, 5 to 12 percent slopes	19,950	6.2
Lakeland sand, 2 to 12 percent slopes	1,870	.6
Latonia fine sandy loam	2,970	.9
Mashulaville fine sandy loam	3,950	1.2
McLaurin fine sandy loam, 0 to 2 percent slopes	890	.3
McLaurin fine sandy loam, 2 to 5 percent slopes	65,860	20.7
McLaurin fine sandy loam, 5 to 8 percent slopes	18,100	5.7
McLaurin and Cahaba soils, 8 to 12 percent slopes	7,400	2.3
McLaurin–Lucy association, rolling	61,000	19.0
Prentiss fine sandy loam, 0 to 2 percent slopes	3,760	1.1
Prentiss fine sandy loam, 2 to 5 percent	[illegible]	[illegible]

Ap—0 to 5 inches, very dark gray (10YR 3/1) fine sandy loam; weak, medium, granular structure; very friable; many fine roots; brown (7.5YR 4/4) stains around fine root channels; very strongly acid; abrupt, smooth boundary.

A2—5 to 8 inches, pale-brown (10YR 6/3) fine sandy loam; few, fine, distinct mottles of olive yellow; weak, fine and medium, granular structure; very friable; few fine roots; brown (7.5YR 4/4) root stains around fine roots and in root channels; very strongly acid; clear, wavy boundary.

B21t—8 to 16 inches, light yellowish-brown (2.5YR 6/4) fine sandy loam; common, medium, distinct mottles of yellowish brown (10YR 5/8) and strong brown (7.5YR 5/8), common, coarse, distinct mottles of light gray (2.5Y 7/2), and few, medium, prominent mottles of red (2.5YR 5/8); weak, medium, subangular blocky structure; friable; some sand grains coated and bridged with clay in yellowish-brown and strong-brown areas; few fine roots; strongly acid; gradual, wavy boundary.

B22t&A'2—16 to 20 inches, mottled light brownish-gray (2.5Y 6/2) and yellowish-brown (10YR 5/6) fine sandy loam; weak, medium, subangular blocky structure; light brownish-gray part is friable, yellowish-brown part is brittle and compact; few, medium, dark-brown and black concretions; strongly acid; clear, irregular boundary.

B23t—20 to 39 inches, mottled light yellowish-brown (2.5Y 6/4), strong-brown (7.5YR 5/8), gray (10YR 6/1), and red (2.5YR 5/8) fine sandy loam; weak, fine and medium, subangular blocky structure; yellowish-brown, red, and strong-brown part is firm, compact and brittle, gray part is friable; few voids; patchy clay films; 10 to 15 percent plinthite; few fine red concretions; very strongly

Permeability and runoff are slow. The available water capacity is medium.

About 70 percent of the acreage is wooded. Small areas are used for row crops or pasture. This soil is suited to cotton, corn, soybeans, oats, and pasture plants. It is well suited to pine and adapted hardwood

lowish-brown coatings on prism faces; very strongly acid.

The A1 horizon is very dark grayish brown, dark grayish brown, or brown. The A2 horizon, where present, is dark grayish brown, yellowish brown, brownish yellow, or light olive brown. The upper part of the Bt horizon is yellowish-

In a representative profile the surface layer is dark grayish-brown fine sandy loam about 4 inches thick, and the subsurface layer is pale-brown fine sandy loam about 8 inches thick. The subsoil extends to a depth of 61 inches or more. The upper 28 inches is strong-brown and yellowish-brown sandy loam. The next 7 inches is brownish-yellow loam mottled with yellowish

Cahaba Series

The Cahaba series consists of well-drained soils that formed in loamy material. Slopes are 8 to 12 percent.

In a representative profile the surface layer is dark grayish-brown fine sandy loam about 2 inches thick,

of U.S. Highway 11 and 100 feet north of the Purvis-Greenville road, on a tributary of Boggy Hollow Creek; SE¼NW¼ sec. 7, T. 2 N., R. 14 W.

Oe1—0 to 26 inches, very dark grayish-brown (10YR 3/2) muck; partly decomposed leaves, twigs, and roots; many tree roots; very strongly acid; diffuse, wavy boundary.

Oa1—26 to 65 inches, black (10YR 2/1) muck; common undecomposed bits of woody material; very strongly acid.

The Oe1 horizon is very dark gray or very dark grayish brown and is 40 to 60 percent unrubbed fiber. Live tree roots are common to many. The Oa1 horizon is black or very dark brown muck that contains few to common bits of undecomposed woody material. Sunken logs and large woody fragments are many to common in the lower part of the Oa1 horizon. A IICg horizon, where present, is at a depth of more than 60 inches. It is sand or loamy sand. Reaction is strongly acid or very strongly acid throughout the profile.

Dorovan soils are associated with Pamlico soils. They have a thicker layer of organic material than Pamlico soils and extend to a depth of more than 60 inches.

Dorovan and Pamlico mucks (Dp).—This mapping unit consists of very poorly drained Dorovan and Pamlico mucks on densely vegetated flood plains where organic matter has accumulated under wet conditions over a long period of time. These soils are associated on the landscape, but not in a regular pattern. Some areas are made up entirely of one of these soils, but most places consist of both soils. Areas generally are larger and the composition more variable for this mapping unit than for most others in the county.

Dorovan soils make up about 65 percent of the unit, Pamlico soils about 30 percent, and poorly drained mineral soils 5 percent.

The Dorovan soils have the profile described as representative of the Dorovan series. They are strongly acid or very strongly acid. The available water capacity is very high. Permeability and runoff are very slow.

The Pamlico soils have a surface layer of very dark grayish-brown muck about 8 inches thick. Below this is very dark gray muck that extends to a depth of

cies along these edges are titi, black alder, waxmyrtle, and greenbrier. Capability unit VIIw–1; woodland group 4w9.

Falkner Series

The Falkner series consists of somewhat poorly drained soils that formed partly in loamy material high in content of silt and partly in the underlying clayey material.

In a representative profile the surface layer is dark grayish-brown silt loam about 3 inches thick. The subsoil extends to a depth of about 60 inches. The upper 14 inches is light yellowish-brown to yellowish-brown silt loam mottled with dark grayish brown and strong brown. The middle 10 inches is pale-yellow silt loam mottled with shades of red, yellow, and gray. The lower part is clay mottled with shades of gray, brown, yellow, and red.

Representative profile of Falkner silt loam, 2 to 5 percent slopes, in a wooded area 3½ miles north of Lumberton and 3 miles northwest of the Seneca community; SW¼NW¼ sec. 12, T. 1 N., R. 15 W.

A1—0 to 3 inches, dark grayish-brown (10YR 4/2) silt loam; weak, medium, granular structure; friable; very strongly acid; clear, smooth boundary.

B1—3 to 8 inches, light yellowish-brown (10YR 6/4) silt loam; many, fine, distinct, dark grayish-brown (10YR 4/2) mottles; weak, medium, granular structure; friable; very strongly acid; clear, smooth boundary.

B21t—8 to 17 inches, yellowish-brown (10YR 5/6) silt loam; common, medium, distinct, strong-brown (7.5YR 5/6) mottles; weak, medium, subangular blocky structure; friable; sand grains coated and bridged with clay; few patchy clay films on ped faces; very strongly acid; gradual, wavy boundary.

B22t—17 to 27 inches, pale-yellow (2.5Y 7/4) silt loam; common, medium, distinct mottles of brownish yellow (10YR 6/6), common, medium, prominent mottles of red (2.5YR 4/8), and many, fine, distinct mottles of light gray (10YR 7/1); weak, medium, angular blocky structure; friable; patchy clay films on ped faces and in root channels; coat

Falkner silt loam, 2 to 5 percent slopes (FaB).—This is a somewhat poorly drained soil on uplands. Small areas of Baxterville and Susquehanna soils are included in mapping.

This soil is strongly acid or very strongly acid. Permeability is moderately slow above the clay and slow in the clay. Runoff is slow or medium. The available water capacity is high. The hazard of erosion is slight. The soil crusts and packs if left bare.

Most of the acreage is wooded. A small acreage is used for crops or pasture. This soil is suited to cotton, corn, soybeans, oats, and pasture plants and well suited to pine trees and adapted hardwoods.

Contour farming, grassed waterways, the return of crop residue, and adequate fertilization are needed if this soil is used for row crops. Capability unit IIIe–2; woodland group 2w8.

Freestone Series

are not so clayey in the upper part of the Bt horizon as Susquehanna soils.

Freestone-McLaurin-Susquehanna association, rolling (FmC).—This association consists of somewhat poorly drained, moderately well drained, and well drained, rolling soils on rough, wooded uplands. Areas of this unit generally are larger and the composition is more variable than for most others in the county. Mapping has been controlled well enough, however, for the anticipated use of the soils. Slopes are 2 to 15 percent.

The dominant soils make up about 62 percent of the association. Freestone soils make up about 27 percent, McLaurin soils about 19 percent, and Susquehanna soils about 16 percent. The rest consists of small areas of Prentiss soils and of poorly drained soils on the narrow flood plain.

The moderately well drained or somewhat poorly drained Freestone soils are mostly on the tops and upper sides of ridges. They have the profile described

Figure 3.—Bahiagrass pasture on Freestone-McLaurin-Susquehanna association, rolling.

quehanna soil in capability unit VIIe–1 and woodland group 3c2.

Freestone, Susquehanna, and Prentiss soils, 5 to 12 percent slopes (FsD).—This mapping unit consists of somewhat poorly drained and moderately well drained soils that formed in loamy and clayey material on uplands. These soils are associated on the landscape, but in no regular pattern. Some areas are made up of only one or two of these soils, but most areas consist of all three soils.

Freestone soils make up about 24 percent of the unit, Susquehanna soils about 20 percent, Prentiss soils about 17 percent, and Benndale, Cahaba, and somewhat poorly drained and moderately well drained unclassified soils about 39 percent.

The moderately well drained or somewhat poorly drained Freestone soils are on mid and lower slopes. They have a surface layer of dark-gray loam about 3 inches thick and a subsurface layer of pale-brown loam about 8 inches thick. The subsoil extends to a depth of about 61 inches. The upper 16 inches is mottled yellowish-brown and brownish-yellow clay loam. The next 13 inches is light-clay loam mottled with dark red. The lower part is light-gray clay mottled with shades of red and brown. These soils are medium acid to very strongly acid. The available water capacity is medium. Permeability is moderately slow in the upper part of the subsoil and slow in the lower part. Runoff is medium.

The somewhat poorly drained Susquehanna soils also are on mid and lower slopes. They have a surface layer of grayish-brown silt loam about 2 inches thick and a subsurface layer of pale-yellow silt loam about 10 inches thick. Their subsoil extends to a depth of about 68 inches. The upper 10 inches is yellowish-red clay mottled with yellowish brown and white. The rest is light-gray clay mottled with red and reddish yellow. These soils are strongly acid or very strongly acid. The available water capacity is high. Permeability is very slow, and runoff is rapid.

The moderately well drained Prentiss soils are on the tops and upper sides of ridges. They have a surface layer of very dark gray fine sandy loam about 8 inches thick and a subsurface layer of light yellowish-brown fine sandy loam about 7 inches thick. Their subsoil extends to a depth of about 60 inches. The upper 17 inches is strong-brown loam that has yellowish-red mottles in the lower part. Below this is a sandy loam fragipan mottled with shades of brown, gray, and red. These soils are strongly acid or very strongly acid. The available water capacity is medium. Permeability is moderate above the fragipan and moderately slow in the fragipan. Runoff is medium.

Most areas of this mapping unit are wooded. A small acreage is used for pasture. Because slopes are strong and the erosion hazard is moderate, good ground cover is needed. The soils are suited to pasture plants, pines, and adapted hardwood trees. Most of the soils are well suited to loblolly and slash pines. All species of pine occur naturally throughout. The growth rate varies according to the topography, the soil, and the species. The rate of brush invasion is high. Site

preparation for natural seeding does not last more than 1 year. Principal invaders are waxmyrtle, gallberry, and hardwood brush.

Soils at heads of drainageways and along the drainageways grow excellent yellow-poplar. Small drainageways and lower toe slopes produce fair quality white oak, water oak, red oak, blackgum, sweetgum, and hickory. Logging should be avoided in winter and early in spring because most of these soils are wet. Freestone soil in capability unit VIe–2 and woodland group 2w8; Susquehanna soil in capability unit VIe–2 and woodland group 3c2; Prentiss soil in capability unit IVe–1 and woodland group 2o7.

Lakeland Series

The Lakeland series consists of excessively drained soils that formed in sandy material.

In a representative profile the surface layer is grayish-brown sand about 7 inches thick. The underlying material extends to a depth of 83 inches or more and is sand throughout. The upper 15 inches is yellowish brown, the middle 27 inches is light yellowish brown, and the lower part is very pale brown.

Representative profile of Lakeland sand, 2 to 12 percent slopes, in a wooded area 6½ miles northwest of

Latonia Series

The Latonia series consists of well-drained soils that formed in loamy material on stream terraces.

In a representative profile the surface layer is grayish-brown fine sandy loam about 4 inches thick. The subsoil is sandy loam about 28 inches thick. The upper part is yellowish brown, and the lower part is brownish yellow. The underlying material is white sand mottled with shades of brown that extends to a depth of about 74 inches.

Representative profile of Latonia fine sandy loam 3.75 miles north of Purvis, on U.S. Highway 11, 775 feet east of highway, 30 feet north of woods road south of Black Creek; NE¼SW¼ sec. 26, T. 3 N., R. 14 W.

A1—0 to 4 inches, grayish-brown (10YR 5/2) fine sandy loam; weak, fine and medium, granular structure; very friable; common fine and medium roots; very strongly acid; clear, smooth boundary.

B1—4 to 8 inches, yellowish-brown (10YR 5/4) fine sandy loam; weak, fine, subangular blocky structure; friable; few fine and medium roots; few worm casts; few pockets of uncoated sand grains; very strongly acid; clear, smooth boundary.

B2t—8 to 23 inches, yellowish-brown (10YR 5/6) sandy loam; weak, medium, subangular blocky structure; friable; few fine roots; sand grains coated and bridged with clay; few pockets of uncoated sand

Lucy Series

The Lucy series consists of well-drained soils that formed in loamy material. Slopes are 2 to 17 percent.

In a representative profile the surface layer is dark-gray loamy sand about 3 inches thick, and the subsurface layer is pale-yellow loamy sand about 19 inches thick. Reddish-yellow sandy loam is between depths of 22 and 28 inches. The subsoil is red sandy loam that

A1—0 to 4 inches, dark-gray (10YR 4/1) fine sandy loam; weak, fine, granular structure; friable; very strongly acid; clear, smooth boundary.

A21g—4 to 8 inches, gray (10YR 6/1) fine sandy loam; many, coarse, distinct, yellowish-brown (10YR 5/8) mottles; weak, medium, angular blocky structure; firm, slightly compact; very strongly acid; clear, smooth boundary.

A22g—8 to 16 inches, light-gray (10YR 7/1) fine sandy loam; common, coarse, distinct, yellowish-brown (10YR 5/6) mottles; weak, coarse, angular blocky

2 to 5 percent slopes, in a large wooded area 3¼ miles south of Greenville community, one-eighth of a mile north on woods road, 30 feet east of road; SE¼SE¼ sec. 15, T. 3 N., R. 16 W.

A1—0 to 4 inches, dark grayish-brown (10YR 4/2) fine sandy loam; weak, fine, granular structure; friable; very strongly acid; clear, smooth boundary.

A2—4 to 9 inches, yellowish-brown (10YR 5/4) fine sandy loam; weak, fine, granular structure; friable; very strongly acid; clear, smooth boundary.

B1—9 to 13 inches, yellowish-red (5YR 5/8) sandy loam; weak, medium, subangular blocky structure; friable; few fine roots; few sand grains coated and bridged with clay; few uncoated sand grains; very strongly acid; clear, smooth boundary.

B21t—13 to 26 inches, yellowish-red (5YR 4/8) loam; weak, medium, subangular blocky structure; friable; sand grains coated and bridged with clay; few patchy clay films; very strongly acid; clear, wavy boundary.

B22t&A'2—26 to 37 inches, yellowish-red (5YR 5/6) sandy loam; common, medium, prominent, light yellowish-brown (10YR 6/4) mottles and common, coarse, distinct, dark-brown (7.5YR 4/4) mottles surrounding common medium pockets of uncoated sand grains; weak, medium, subangular blocky structure; friable, mottled areas are compact and brittle; sand grains coated and bridged in matrix; very strongly acid; clear, wavy boundary.

B't—37 to 67 inches, red (2.5YR 4/6) sandy loam; weak, medium, subangular blocky structure; friable; sand grains coated and bridged with clay; very strongly acid.

The A1 horizon is very dark grayish-brown, dark grayish-brown, dark-gray, pale-brown, or grayish-brown fine sandy loam or sandy loam that ranges from 3 to 8 inches in thickness. The A2 horizon is pale brown, brown, light yellowish brown, yellowish brown, or dark yellowish brown. The upper part of the Bt horizon is yellowish-red or red sandy loam or loam. The lower part of the Bt horizon and the A'2 horizon are yellowish-red or strong-brown loamy sand or sandy loam. The B't horizon is red or yellowish-red sandy loam, loam, or sandy clay loam. Reaction is strongly acid or very strongly acid throughout the profile.

McLaurin soils are associated with Benndale, Cahaba, Lakeland, and Lucy soils. They are redder than Benndale soils. They are coarser textured than Cahaba soils, and they have a solum more than 60 inches thick. They do not have the loamy sand A horizon, at least 20 inches thick, that is characteristic of Lucy soils. They are redder and finer textured than Lakeland soils.

McLaurin fine sandy loam, 0 to 2 percent slopes (McA).—This is a well-drained soil on uplands. The surface layer is very dark grayish-brown fine sandy loam about 4 inches thick, and the subsurface layer is pale-brown fine sandy loam about 5 inches thick. The subsoil extends to a depth of about 64 inches. The upper 22

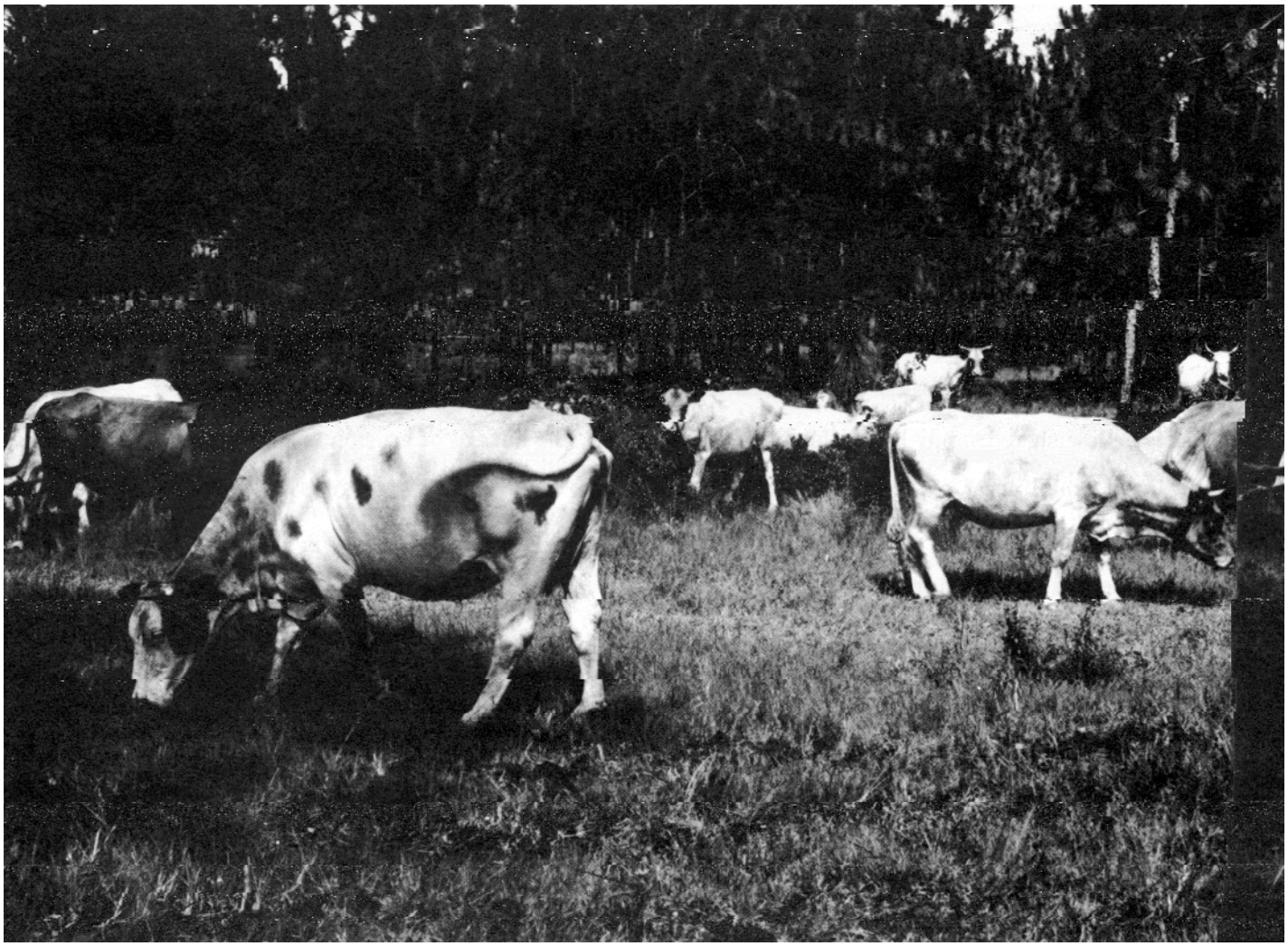


Figure 4.—**Cattle grazing in woodland on McLaurin fine sandy loam, 2 to 5 percent slopes.**

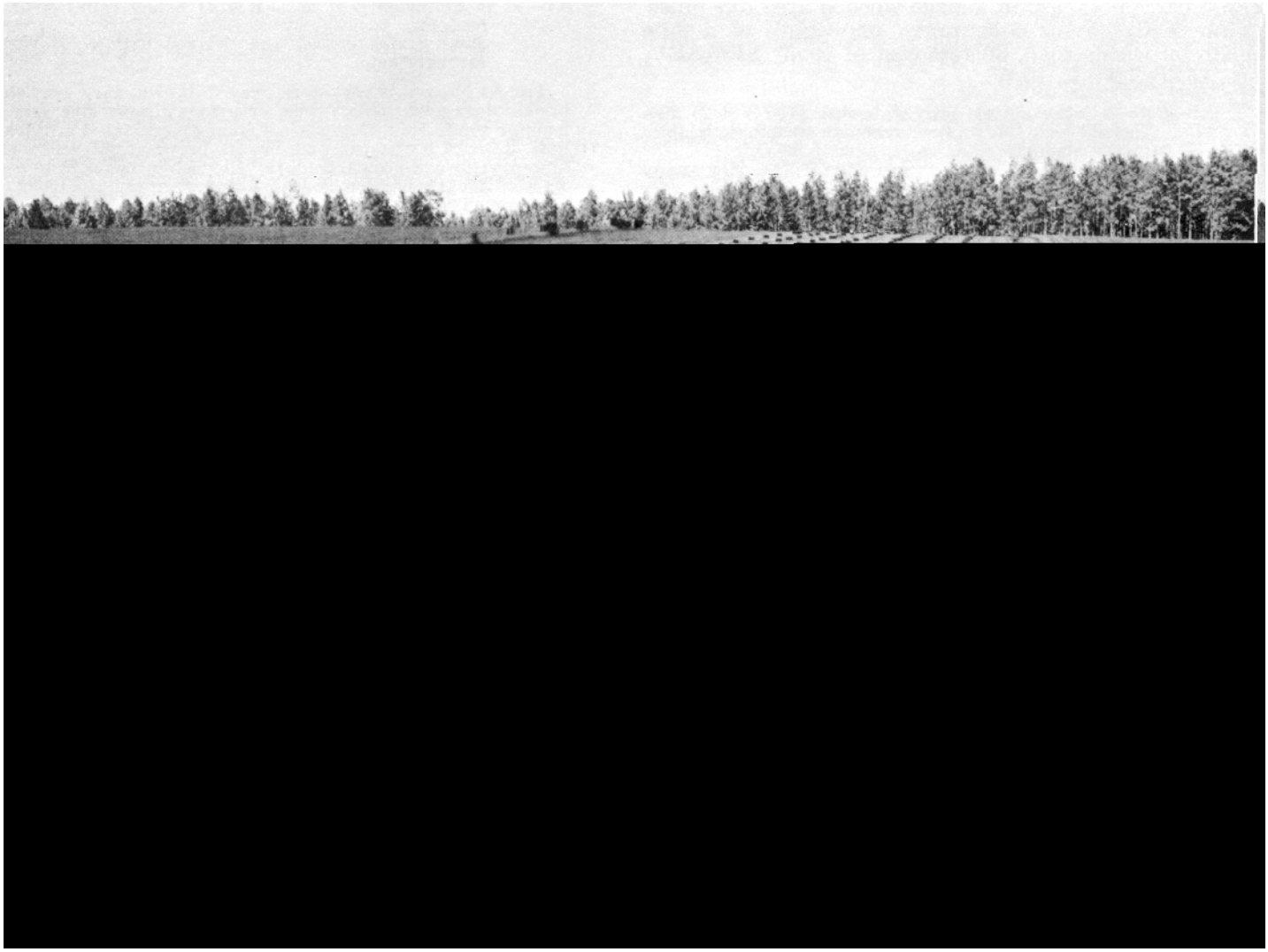


Figure 5.—Coastal bermudagrass hay on McLaurin fine sandy loam, 2 to 5 percent slopes.

inches is yellowish-red sandy loam, the middle 15 inches is strong-brown loamy sand, and the lower part is red sandy loam. Small areas of Benndale and Cahaba soils are included in mapping.

This soil is strongly acid or very strongly acid. Permeability is moderate to moderately rapid, and runoff is slow. The available water capacity is medium. This soil is slightly droughty during periods of low rainfall.

Most of the acreage is wooded. A small acreage is used for row crops or pasture. This soil is well suited to cotton, corn, soybeans, oats, pasture plants, and pine trees.

Contour farming, the return of crop residue, adequate fertilization, and grassed waterways are needed if this soil is used for row crops. Capability unit IIs–1; woodland group 2o1.

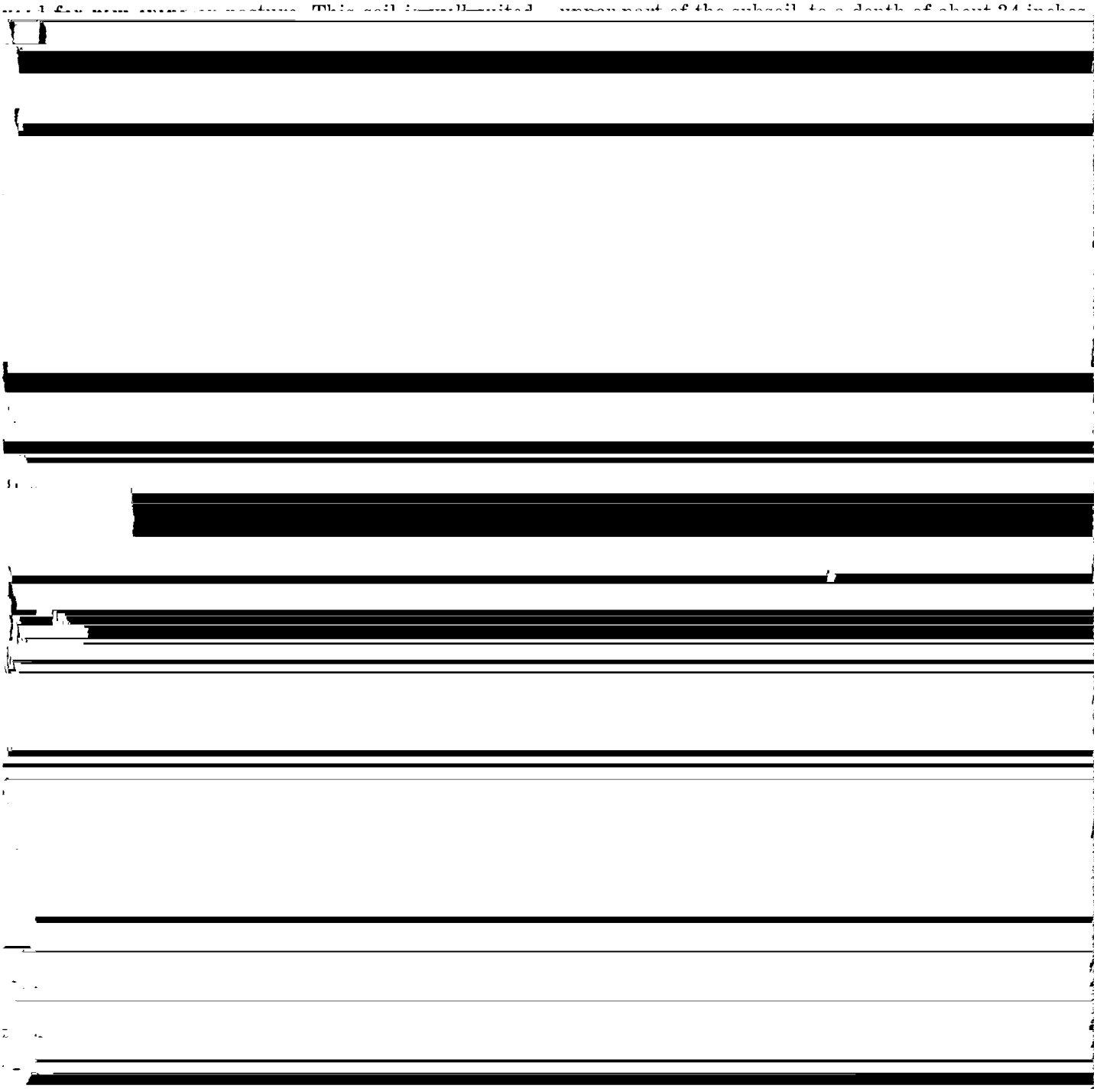
McLaurin fine sandy loam, 2 to 5 percent slopes (McB).—This is a well-drained soil on uplands. It has the profile described as representative of the series. Small areas of Benndale and Cahaba soils are included in mapping. The hazard of erosion is slight in cultivated areas. This soil is slightly droughty.

Most of the acreage is wooded (fig. 4). A small acreage is used for row crops or pasture (fig. 5). This soil is well suited to cotton, corn, soybeans, oats, pasture plants, and pine trees.

Contour farming, stripcropping, the return of crop residue, adequate fertilization, parallel terraces, and grassed waterways are needed if this soil is used for row crops. Capability unit IIe–1; woodland group 2o1.

McLaurin fine sandy loam, 5 to 8 percent slopes (McC).—This is a well-drained soil on uplands. The surface layer is dark grayish-brown fine sandy loam about 6 inches thick, and the subsurface layer is yellowish-brown fine sandy loam about 6 inches thick. The subsoil is yellowish-red sandy loam that extends to a depth of about 60 inches. Small areas of Cahaba and Lucy soils are included in mapping.

This soil is strongly acid or very strongly acid. Permeability is moderate or moderately rapid, and runoff is medium. The available water capacity is medium



to cotton, corn, soybeans, oats, pasture plants, and pine trees.

Contour farming, stripcropping, the return of crop residue, adequate fertilization, parallel terraces, and grassed waterways are needed if this soil is used for row crops. Capability unit IIIe–1; woodland group 2o1.

McLaurin and Cahaba soils, 8 to 12 percent slopes (MhD).—This mapping units consists of well-drained soils on side slopes in the uplands. These soils are associated on the landscape, but in no regular pattern. Some areas are entirely McLaurin or Cahaba soils, but most areas consist of both.

McLaurin soils make up about 56 percent of the

is yellowish-red loam and sandy loam. The lower part is red sandy clay loam that extends to a depth of about 77 inches. These soils are strongly acid or very strongly acid. The available water capacity is medium. Permeability is moderate or moderately rapid, and runoff is medium to rapid.

The well-drained Lucy soils are on the mid and lower slopes. They have the profile described as representative of the series. These soils are strongly acid or very strongly acid. The available water capacity is low in the surface and subsurface layers and medium in the subsoil. Permeability is rapid in the surface and subsurface layers and moderately rapid in the subsoil.

Figure 6.—**Bahiagrass pasture in foreground and longleaf pine in background. The soil is McLaurin-Lucy association, rolling.**

The A1 horizon is very dark grayish brown, black, or dark gray. The upper part of the C horizon is dark grayish-brown, light brownish-gray, or light-gray mucky loamy sand, loamy sand, or sand. The lower part of the C horizon is light gray mottled with shades of brown and yellow or is mottled with shades of brown, gray, and yellow. It is loamy sand or sand to a depth of about 60 inches. Reaction is strongly acid or very strongly acid throughout the profile.

Osier soils are associated with Trebloc soils. They are coarser textured than those soils, and they have less silt in the subsoil.

Pamlico Series

The Pamlico series consists of very poorly drained organic soils underlain by sand. Slopes are 0 to 2 percent.

In a representative profile the surface layer is very dark grayish-brown muck about 8 inches thick. The subsurface layer is very dark gray muck about 40 inches thick. It is underlain by light-gray sand that extends to a depth of about 60 inches.

In Lamar County Pamlico soils are mapped only in an undifferentiated group with Dorovan soils.

Representative profile of Pamlico muck in a wooded area of Dorovan and Pamlico mucks 4 miles west of Purvis on Greenville Road, 100 feet north of bridge across Boggy Hollow Creek, east of main stream channel; SE¼SE¼ sec. 11, T. 2 N., R. 15 W.

Oe1—0 to 8 inches, very dark grayish-brown (10YR 3/2) muck; partly decomposed leaves, twigs, and roots; many tree roots; very strongly acid; gradual boundary.

Oa1—8 to 48 inches, very dark gray (10YR 3/1) muck; few tree roots; few sand grains; very strongly acid; abrupt, smooth boundary.

IICg—48 to 60 inches, light-gray (10YR 7/1) sand; single grained; nonsticky; very strongly acid.

The Oe1 horizon is very dark gray or very dark grayish brown and is 40 to 60 percent unrubbed fibers. Live tree roots are common to many. The Oa1 horizon is black or very dark gray muck. Few to common fragments of woody material and a few sunken logs are in places. The IICg horizon is light-gray, light brownish-gray, dark-brown, or very dark grayish-brown sand or loamy sand. Depth to the IICg horizon ranges from 20 to 50 inches. Reaction is strongly acid or very strongly acid throughout the profile.

Pamlico soils are associated with Dorovan soils. They have a sandy horizon within a depth of 60 inches, which does not occur in Dorovan soils.

Prentiss Series

The Prentiss series consists of moderately well drained soils that have a fragipan. These soils formed in loamy material. Slopes are 0 to 12 percent.

In a representative profile the surface layer is very dark grayish-brown fine sandy loam about 4 inches thick. The subsoil extends to a depth of about 65 inches. The upper 23 inches is yellowish-brown loam, and the lower part is a loam fragipan mottled with shades of brown and gray.

Representative profile of Prentiss fine sandy loam, 2

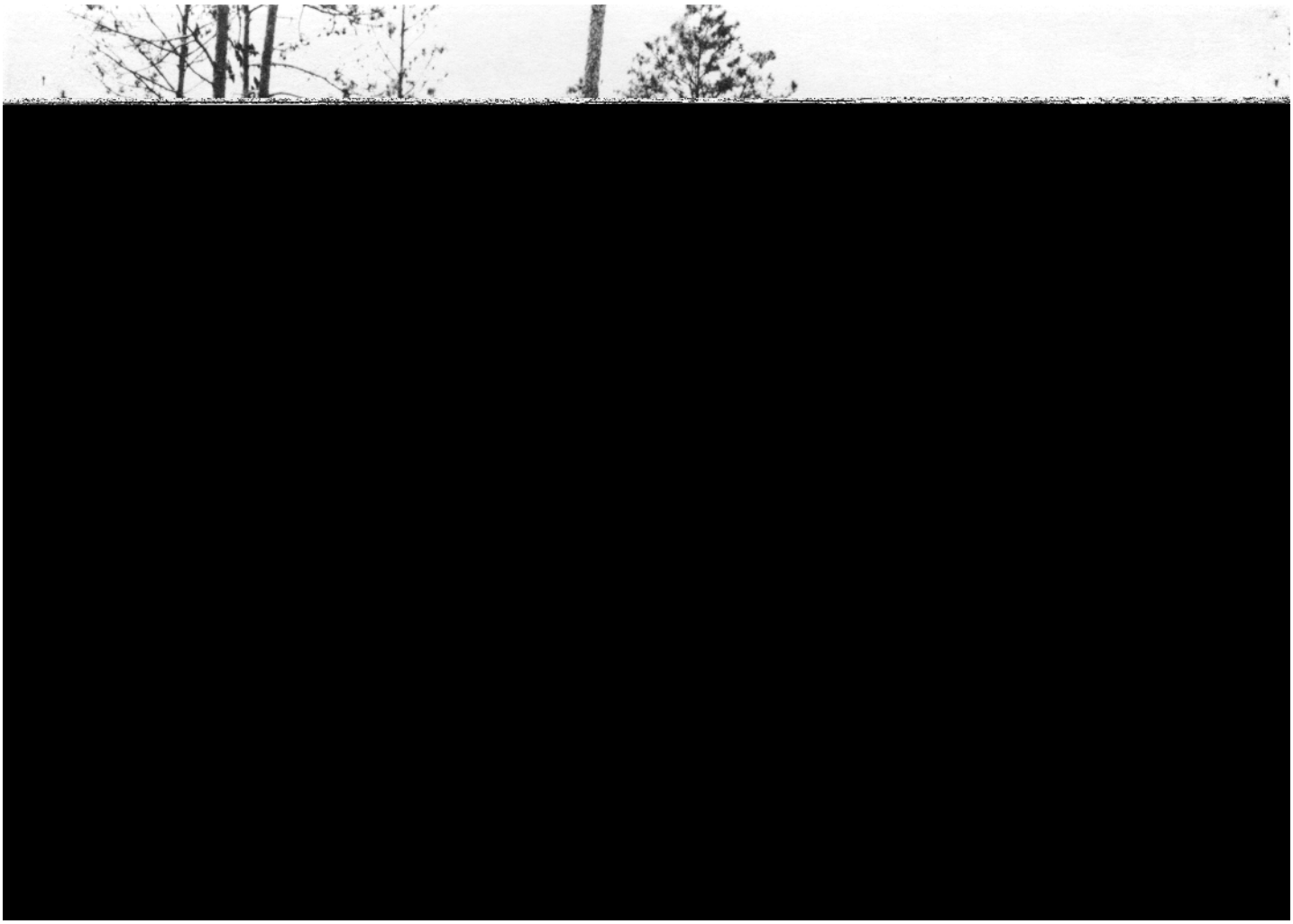


Figure 7.—**Hurricane damage to timber on Prentiss fine sandy loam, 0 to 2 percent slopes. The fragipan in foreground prevented tap roots from developing for sufficient anchorage. Trees on McLaurin fine sandy loam, 2 to 5 percent slopes, in background received less damage from windthrow.**

to 5 percent slopes, in a wooded area 4 miles west of Hardy Street Interchange on Interstate 59, 0.3 mile south of Lake Serene Office on U.S. Highway 98, 30 feet east of blacktop road; NE¼NW¼ sec. 16, T. 4 N., R. 14 W.

A1—0 to 4 inches, very dark grayish-brown (10YR 3/2) fine sandy loam; weak, medium, granular structure; friable; common fine roots; very strongly acid; clear, smooth boundary.

B1—4 to 7 inches, yellowish-brown (10YR 5/4) loam; weak, medium, subangular blocky structure; friable; few medium and coarse roots; very strongly acid; clear, wavy boundary.

B21—7 to 17 inches, yellowish-brown (10YR 5/6) loam; weak, medium, subangular blocky structure; friable; sand grains coated and bridged with clay; few medium and coarse roots; few fine and medium pebbles; very strongly acid; clear, wavy boundary.

B22—17 to 27 inches, yellowish-brown (10YR 5/6) loam; medium, distinct, strong-brown mottles; weak, medium, subangular blocky structure; friable; sand grains coated and bridged with clay; pockets

gray part is less compacted and is coarser textured than brownish part; very strongly acid; clear, wavy boundary.

Bx2—33 to 65 inches, mottled strong-brown (7.5YR 5/6), yellowish-brown (10YR 5/4), and gray (10YR 6/1) loam; weak, coarse, prismatic structure parting to weak, coarse, angular blocky; firm, brownish material is compact and brittle; many voids and vesicles, polygonal cracking, with clay films on vertical faces of cracks; gray material in cracks is fine textured and friable and has a few uncoated sand grains; strong-brown material adjacent to cracks and yellowish-brown material inside the polygons; few fine and medium pebbles; very strongly acid.

The A1 horizon is very dark grayish brown, dark grayish brown, grayish brown, very dark gray, or dark brown. The A2 horizon, where present, is grayish brown or light yellowish brown. The A horizon is silt loam, fine sandy loam, or loam. The B horizon is yellowish-brown or strong-brown loam, sandy loam, or silt loam. In places a few yellowish-red mottles occur in the lower part. The Bx horizon is mottled with shades of gray, brown, yellow, or red or has

Figure 8.—Bahiagrass hay on Prentiss fine sandy loam, 2 to 5 percent slopes, on ridgetops and Prentiss fine sandy loam, 5 to 8

Prentiss fine sandy loam, 5 to 8 percent slopes (PnC).—This is a moderately well drained soil that has a fragipan. The surface layer is dark-gray fine sandy loam about 5 inches thick, and the subsurface layer is grayish-brown fine sandy loam about 3 inches thick. The subsoil is yellowish-brown fine sandy loam in the upper part and strong-brown or yellowish-brown loam in the lower part. A fragipan is at a depth of about 24 inches. It is loam mottled with shades of red, yellow, gray, and brown and extends to a depth of about 60 inches or more. Small areas of Baxterville and Freestone soils and some small areas of eroded soils are included in mapping.

This soil is strongly acid or very strongly acid. Permeability is moderate above the fragipan and mod-

ish-brown silt loam about 2 inches thick, and the subsurface layer is pale-brown silt loam about 7 inches thick. The subsoil extends to a depth of about 64 inches. The upper 22 inches is clay mottled with shades of brown, gray, and red. The lower part is light-gray clay mottled with yellowish brown, reddish brown, and black.

Representative profile of Susquehanna silt loam, 2 to 5 percent slopes, in a wooded area 4 miles southwest of Baxterville, south of oilfield, 1½ miles south of Middle Fork Creek, one-fourth mile east of gravel road; SW¼NE¼ sec. 20, T. 1 N., R. 16 W.

A1—0 to 2 inches, grayish-brown (10YR 5/2) silt loam; weak, medium, granular structure; friable; very strongly acid; abrupt, smooth boundary.
A2—2 to 9 inches, pale-brown (10YR 6/6) silt loam; com-

the lower part is clay mottled with shades of red, yel- and brown. The upper part of the Bt horizon is gray silt

The average height attained by the dominant trees in a stand is variable. Most of this unit supports logging equipment during the dry season. Tree planting is not recommended for the areas in which water ponds. Trees reestablish themselves in ponded areas and drainageways by natural seeding and coppice if openings are sufficient for direct sunlight to reach the surface soil. Trebloc soil in capability unit IVw–1 and woodland group 2w9; Osier soil in capability unit Vw–1 and woodland group 3w3.

Use and Management of the Soils

This section contains information about the use and management of the soils for crops and pasture. The system of capability classification used by the Soil Conservation Service is briefly described, and a table shows estimated acre yields of the principal crops of the county. Information is also given about the woodland and wildlife of the county, about the engineering use of the soils, and about town and country planning.

Crops and Tame Pasture [2]

In general, the soils of Lamar County are low in content of nitrogen, phosphorus, potassium, calcium, and organic matter. Most of the soils used for crops are subject to erosion. Contouring, contour stripcropping, terraces, grassed waterways, and the use of crop residue are needed to control the movement of sediment.

Cover crops or grasses and legumes should be grown in rotation with clean-tilled crops where erosion is a hazard. Crop residue should be shredded and allowed to remain on the soil from harvest until planting time. This practice provides protection for the soil and supplies additional organic material. Proper use of residue reduces erosion, improves soil tilth, and lessens soil compaction and crusting.

Arrowleaf clover, ball clover, crimson clover, and annual lespedeza are the commonly grown legumes.

Good growth of high-quality forage can be obtained if adequate amounts of fertilizer and lime are applied as needed. Other management practices are essential for the survival of stands of high-quality forage and for erosion control. Some of these practices are grazing the different plants to the proper height, rotation grazing to maintain quality forage, renovating pasture to establish or reestablish desirable plants, and controlling brush and weeds.

Capability grouping

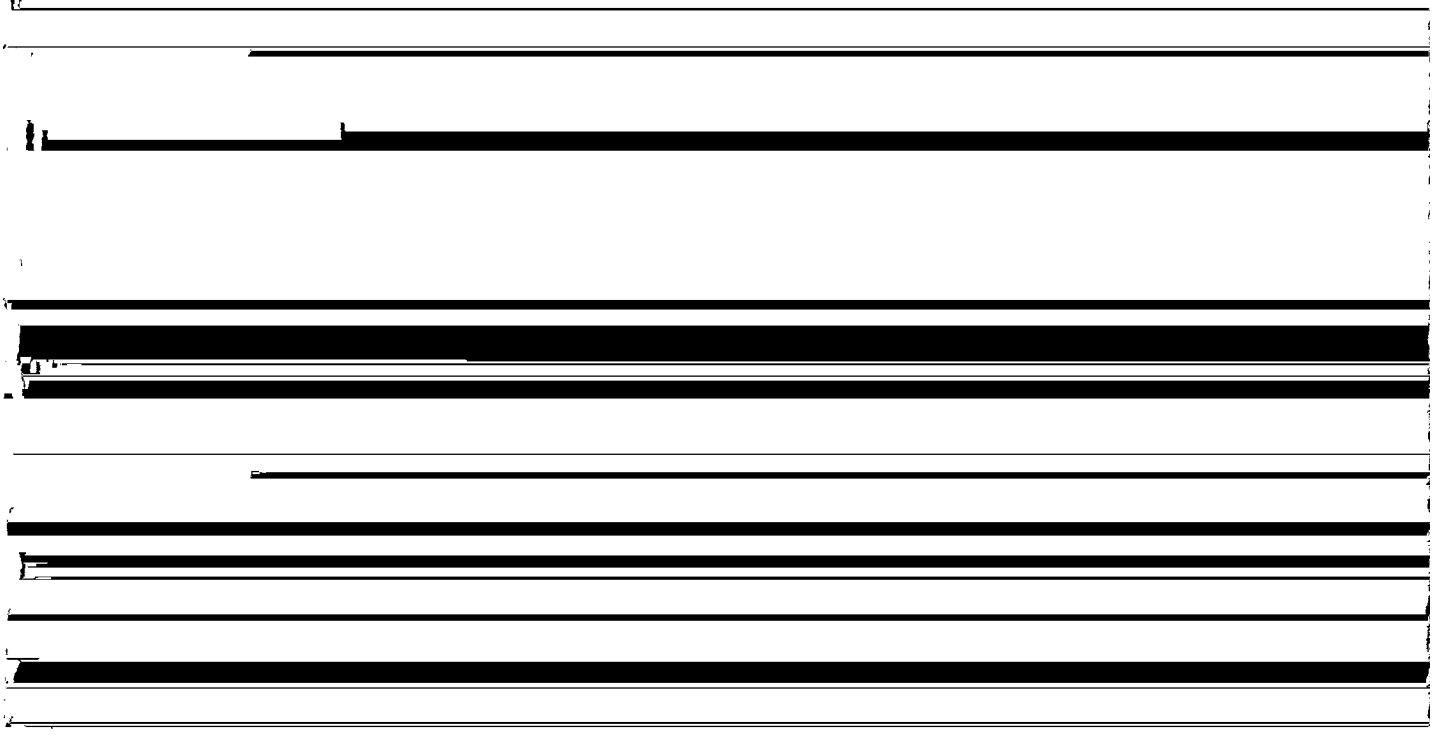
Capability grouping shows, in a general way, the suitability of soils for most kinds of field crops. The soils are grouped according to their limitations when used for field crops, the risk of damage when they are so used, and the way they respond to treatment. The grouping does not take into account major and generally expensive landforming that would change slope, depth, or other characteristics of the soil; does not take into consideration possible but unlikely major reclamation projects; and does not apply to rice, cranberries, horticultural crops, or other crops that require special management.

Those familiar with the capability classification can infer from it much about the behavior of soils when used for other purposes, but this classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for forest trees or engineering.

In the capability system, the kinds of soils are grouped at three levels: the capability class, the subclass, and the unit.

CAPABILITY CLASSES, the broadest groups, are designated by Roman numerals I through VIII. The numerals indicate progressively greater limitations and narrower choices for practical use.

CAPABILITY SUBCLASSES are soil groups within one class; they are designated by adding



of limitation, as defined in the foregoing paragraph; and the Arabic numeral specifically identifies the capability unit within each subclass.

Following is a descriptive outline of the capability classification as it applies in Lamar County. The placement of any mapping unit in the grouping can be learned by turning to the "Guide to Mapping Units" at the back of this survey or by referring to the notation at the end of the description of each mapping unit in

water, either ponding or flooding, that is impractical to remove.

Unit Vw–1.—Nearly level, poorly drained and excessively drained sandy soils and soils that flood frequently.

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

Subclass VIe. Soils that have severe limitations

TABLE 2.—*Estimated average yields per acre of principal crops under high level management*

[Absence of yield indicates crop is not commonly grown on the particular soil]

Soil	Cotton lint	Corn	Soybeans	Oats	Coastal bermuda-grass	Tall fescue	Bahiagrass	Ryegrass
	Lb	*Bu*	*Bu*	*Bu*	*AUM* [1]	*AUM* [1]	*AUM* [1]	*AUM* [1]
Basin fine sandy loam	450	75	25	55	8.0	7.0	8.0	8.0
Baxterville fine sandy loam, 2 to 5 percent slopes	715	75	30	65	10.0	6.5	8.0	8.0
Baxterville fine sandy loam, 5 to 8 percent slopes	650	65	25	55	9.0	6.0	7.0	7.0
Benndale fine sandy loam, 2 to 5 percent slopes	715	75	30	60	10.0	7.0	8.0	8.0
Falkner silt loam, 2 to 5 percent slopes	600	60	30	50	9.0	7.0	9.0	6.0
Freestone-McLaurin-Susquehanna association, rolling	----	----	----	----	7.2	7.0	7.3	----
Freestone, Susquehanna, and Prentiss soils, 5 to 12 percent slopes	----	----	----	----	7.2	7.0	7.3	----
Lakeland sand, 2 to 12 percent slopes	----	----	----	----	5.0	----	5.0	----
Latonia fine sandy loam	750	65	25	65	10.5	----	9.0	8.0
Mashulaville fine sandy loam	----	----	20	----	4.5	7.0	7.0	7.0
McLaurin fine sandy loam, 0 to 2 percent slopes	750	85	25	65	10.5	----	9.0	8.0
McLaurin fine sandy loam, 2 to 5 percent slopes	715	75	30	60	10.0	7.0	8.0	8.0
McLaurin fine sandy loam, 5 to 8 percent slopes	650	70	25	55	9.0	8.0	7.0	7.0
McLaurin and Cahaba soils, 8 to 12 percent slopes	----	50	20	40	6.5	----	6.0	7.5
McLaurin-Lucy association, rolling	----	----	----	----	6.5	----	6.0	7.5
Prentiss fine sandy loam, 0 to 2 percent slopes	750	85	30	65	8.5	7.5	8.5	8.0
Prentiss fine sandy loam, 2 to 5 percent slopes	750	75	30	60	9.0	7.0	8.5	8.0
Prentiss fine sandy loam, 5 to 8 percent slopes	650	70	25	55	8.0	6.0	7.5	7.0
Susquehanna silt loam, 2 to 5 percent slopes	----	----	----	----	8.5	8.0	5.5	----
Susquehanna silt loam, 5 to 12 percent slopes	----	----	----	----	7.0	6.5	5.0	----
Trebloc silt loam	----	----	----	----	6.0	6.0	6.0	----
Trebloc and Osier soils	----	----	----	----	6.0	6.0	6.0	----

[1] AUM, animal-unit-months, is a term used to express the carrying capacity of pasture. It is the number of animal units, or 1,000 pounds of live weight, that can be grazed on an acre of pasture for a period of 30 days.

4. Planting by suitable methods at the proper time and proper seeding rate number of grazing animals for the amount of forage produced prevents damage to desirable tree species

TABLE 3.—*Soil ratings for*

[Sandy alluvial land (Sa) is not assigned to a

Woodland group and soil series	Major hazards and limitations
Group 2o1. Moderately well drained and well drained loams	Erosion hazard, equipment limitation, and plant competition

woodland and forage use

woodland group because it is too variable to rate]

Potential productivity		Species to prefer—		Understory used as forage	
Tree species	Estimated site index	In existing stands	For planting	Principal plants of high value	Estimated yield of air-dried forage by canopy class
					Lb/acre
Loblolly pine Longleaf pine Slash pine	86–95 66–75 86–95	Longleaf pine, loblolly pine, slash pine.	Loblolly pine and slash pine.	Pinehill bluestem, indiangrass, slender bluestem, low panicum.	Open canopy 2,500–2,800; sparse 1,500–2,600; medium 500–1,000; dense 0–500.
Loblolly pine Slash pine Longleaf pine Sweetgum	85–96 85–96 67–78 80–100	Longleaf pine, loblolly pine, slash pine, sweetgum, yellow-poplar, blackgum.	Loblolly pine and slash pine.	Pinehill bluestem, indiangrass, grassleaf goldaster, slender bluestem, longleaf uniola.	Open canopy 1,800–2,200; sparse 1,000–2,000; medium 500–1,000; dense 0–500.
Loblolly pine Slash pine Sweetgum Water oak	85–95 85–95 85–95 85–95	Loblolly pine, slash pine, sweetgum, blackgum, water tupelo.	Loblolly pine and slash pine.	Pinehill bluestem, beaked panicum, grassleaf goldaster, low panicum.	Open canopy 2,000–2,500; sparse 1,200–2,200; medium 600–1,200; dense 200–600.
Loblolly pine Slash pine Sweetgum Water oak	[1] 88–102 [1] 88–102 [1] 90–102 80–98	Loblolly pine, slash pine, spruce pine, sweetgum, blackgum, southern sweetbay, sweetbay, magnolia, water tupelo.	Loblolly pine, slash pine, sweetgum, sycamore.	Pinehill bluestem, beaked panicum, grassleaf goldaster, low panicum.	Open canopy 2,000–2,500; sparse 1,200–2,200; medium 600–1,200; dense 200–600.
Loblolly pine Slash pine Longleaf pine	79–89 79–89 64–77	Longleaf pine, loblolly pine, slash pine.	Loblolly pine, slash pine, longleaf pine.	Pinehill bluestem, slender bluestem, low panicum.	Open canopy 1,400–1,600; sparse 800–1,400; medium 400–800; dense 0–400.
Slash pine Loblolly pine Longleaf pine	72–88 72–88 62–73	Slash pine, loblolly pine, water oak, spruce pine, swamp blackgum, magnolia, southern sweetbay, sweetbay.	Loblolly pine and slash pine.	Pinehill bluestem, toothachegrass, switchgrass, low panicum.	Open canopy 2,200–3,000; sparse 1,200–2,200; medium 800–1,200; dense 400–800.
Loblolly pine Slash pine Sweetgum	72–88 72–88 70–85	Loblolly pine, slash pine, sweetgum, swamp blackgum, red oak, white oak, water tupelo.	Loblolly pine, sweetgum, Shumard oak.	Toothachegrass, switchgrass, low panicum.	Open canopy 2,200–3,000; sparse 1,200–2,200; medium 800–1,200; dense 400.
Loblolly pine Slash pine Longleaf pine	75–89 75–89 60–68	Loblolly pine, slash pine, longleaf pine.	Loblolly pine	Pinehill bluestem, indiangrass, tickclover, beaked panicum, low panicum.	Open canopy 1,800–2,200; sparse 1,000–2,000; medium 500–1,000; dense 0–500.
Loblolly pine Slash pine Longleaf pine	69–81 67–81 56–66	Loblolly pine, slash pine, longleaf pine.	Slash pine, longleaf pine.	Pinehill bluestem, slender bluestem, low panicum, pineywoods dropseed.	Open canopy 1,400–1,600; sparse 800–1,400; medium 400–800; dense 0–400.
Southern sweetbay Sweetbay Blackgum	60–70 60–70 60–70	Southern sweetbay, sweetbay, blackgum, magnolia, water tupelo.	Planting not recommended.	No potential for grazing.	No potential for grazing.

TABLE 4.—*Suitability of soils*

Soil series and map symbols	Elements of wildlife habitat		
	Grain and seed crops	Grasses and legumes	Wild herbaceous upland plants
Basin: Ba	Suited	Well suited	Well suited
Baxterville: BeB, BeC	Well suited	Well suited	Well suited
Benndale: BnB	Well suited	Well suited	Well suited
Dorovan and Pamlico: Dp Rating applies to both soils.	Not suited	Not suited	Not suited
Falkner: FaB	Suited	Well suited	Well suited
Freestone: FmC, FsD For McLaurin and Susquehanna parts of FmC, see their respective series; for Susquehanna and Prentiss parts of FsD, see their respective series.	Suited	Well suited	Well suited
Lakeland: LaD	Poorly suited	Suited	Suited
Latonia: Lt	Well suited	Well suited	Well suited
Lucy Mapped only with McLaurin soils.	Suited	Suited	Well suited
Mashulaville: Ma	Poorly suited	Poorly suited	Suited
McLaurin: McA, McB, McC, MIC For Lucy part of MIC, see Lucy series.	Well suited	Well suited	Well suited
McLaurin and Cahaba: MhD Rating applies to both soils.	Suited	Well suited	Well suited
Osier Mapped only with Trebloc soils.	Not suited	Not suited	Suited
Prentiss:			
PnA, PnB	Well suited	Well suited	Well suited
PnC	Suited	Well suited	Well suited
Sandy alluvial land: Sa. No interpretations; properties too variable.			
Susquehanna: SuB, SuC	Suited	Suited	Suited
Trebloc: Tr, Ts For Osier part of Ts, see Osier series.	Suited	Poorly suited	Suited

severe if very steep slopes make special management necessary or if the soils are wet for more than 3 months in a year.

Seedling mortality refers to the expected loss of seedlings caused by soil characteristics and topographic features, excluding losses caused by plant competition. The limitation is *slight* if no more than 25 percent of the planted or natural stock is lost; *moderate* if 25 to 50 percent is lost; and *severe* if more than 50 percent is likely to die.

occur. Species were selected on the basis of the adaptability, growth, quality, value, and marketability of the products obtained from each.

Production of forage[4]

The amount of forage produced in a woodland area varies with the age of the trees, the density of the canopy, and the forage value of the vegetation. For the purpose of this survey, four canopy classes are rec-

for wildlife habitat

Elements of wildlife habitat—Continued			Classes of wildlife		
Hardwood trees and shrubs	Wetland food and cover plants	Shallow water development	Openland	Woodland	Wetland
Suited	Suited	Suited	Well suited	Suited	Suited.
Well suited	Poorly suited	Not suited	Well suited	Well suited	Not suited.
Well suited	Not suited	Not suited	Well suited	Well suited	Not suited.
Not suited	Suited	Well suited	Not suited	Not suited	Well suited.
Suited	Poorly suited	Poorly suited	Well suited	Suited	Poorly suited.
Suited	Poorly suited	Poorly suited	Well suited	Suited	Poorly suited.
Poorly suited	Not suited	Not suited	Suited	Suited	Not suited.
Suited	Not suited	Not suited	Well suited	Suited	Not suited.
Well suited	Not suited	Not suited	Suited	Well suited	Not suited.
Suited	Well suited	Well suited	Poorly suited	Suited	Well suited.
Well suited	Not suited	Not suited	Well suited	Well suited	Not suited.
Well suited	Not suited	Not suited	Well suited	Well suited	Not suited.
Suited	Well suited	Well suited	Not suited	Suited	Well suited.
Well suited	Poorly suited	Poorly suited	Well suited	Well suited	Poorly suited.
Well suited	Poorly suited	Poorly suited	Well suited	Well suited	Poorly suited.
Suited	Poorly suited	Not suited	Suited	Suited	Not suited.
Suited	Suited	Suited	Poorly suited	Suited	Suited.

tity forage for livestock production. High-value forage is most desirable, moderate-value forage is moderately

In table 4 each of the soils in Lamar County is rated as to its suitability for the elements of wildlife

TABLE 5.—*Estimates of soil*

[An asterisk in the first column indicates that at least one mapping unit in this series is made up of two or more kinds of soil. carefully the instructions for referring to other series

Soil series and map symbols	Depth to seasonal high water table	Depth from surface	Classification		
			USDA texture	Unified	AASHO
		Inches			
Basin: Ba	Within 10 inches.	0–16	Fine sandy loam	SM, ML	A–4
		16–61	Fine sandy loam	SM, ML	A–4
Baxterville: BeB, BeC	More than 30 inches for more than 10 months a year.	0–9	Fine sandy loam	SM	A–4
		9–29	Loam	ML, CL	A–6
		29–68	Clay loam	ML, CL	A–7
Benndale: BnB	More than 48 inches.	0–12	Fine sandy loam	SM, ML	A–4
		12–61	Sandy loam, loam	SM, ML	A–4, A–2
Cahaba Mapped only with McLaurin soils.	More than 60 inches.	0–7	Fine sandy loam	SM	A–4
		7–16	Loam	CL	A–6
		16–61	Sandy loam	SM	A–2, A–4
*Dorovan: Dp For Pamlico part, see Pamlico series.	The water table is at or near the surface.	0–65	Muck	Pt	
Falkner: FaB	About 17 inches during wet periods.	0–3	Loam	ML or CL–ML	A–4
		3–27	Loam	CL	A–6
		27–60	Clay	CH	A–7
*Freestone: FmC, FsD For Susquehanna and Prentiss parts of FsD and Susquehanna and Mc	18 to 28 inches during wet	0–10	Sandy loam	SM, ML	A–4
		10–28	Sandy clay loam	SC or CL	A–6

properties significant in engineering

The soils in such mapping units may have different properties and limitations, and for this reason it is necessary to follow that appear in the first column of this table]

Percentage passing sieve—			Permeability [1]	Available water capacity	Reaction	Shrink-swell potential
No. 10 (2.0 mm)	No. 40 (0.42 mm)	No. 200 (0.074 mm)				
			Inches per hour	*Inches per inch of soil*	*pH*	
100	85–100	40–60	0.63–2.0	0.12–0.15	4.5–5.5	Low.
100	85–100	40–60	0.06–0.20	0.10–0.13	4.5–5.5	Low.
100	70–95	40–50	0.63–2.0	0.10–0.15	4.5–5.5	Low.
100	85–100	60–75	0.20–0.63	0.15–0.20	4.5–5.5	Low.

TABLE 5.—*Estimates of soil properties*

Soil series and map symbols	Depth to seasonal high water table	Depth from surface	Classification		
			USDA texture	Unified	AASHO
		Inches			
Sandy alluvial land: Sa. No valid interpretations can be made; properties too variable.					
Susquehanna: SuB, SuC	The water table fluctuates about 15 inches during wet periods.	0–9	Silt loam	ML	A–4
		9–64	Clay	CH	A–7
*Trebloc: Tr, Ts	The water table fluctuates at a depth of 10 inches or less during wet periods.	0–12	Silt loam	ML	A–4
		12–23	Silty clay loam.	CL–ML	A–7, A–6
For Osier part of Ts, see Osier series.		23–35	Silty clay	CL or CH	A–7
		35–65	Silty clay loam.	CL–ML	A–7

[1] This rating should not be confused with the coefficient (K) used by engineers.

pensive and requires intensive effort; and results are not always satisfactory. *Not suited* indicates that habitat is impractical or impossible to create, improve, or maintain, and unsatisfactory results are probable. The elements of wildlife habitat and classes of wildlife are defined in the following paragraphs.

Grain and seed crops are grain-producing or seed-producing annual plants, such as corn, sorghum, millet, and soybeans.

Grasses and legumes are domestic grasses and legumes that are established by planting and furnish food and cover for wildlife. The grasses include such species as bahiagrass, ryegrass, and panicgrass. Legumes include such species as clover, annual lespedeza, and bush lespedeza.

Wild herbaceous upland plants are native or introduced perennial grasses, forbs, and weeds that provide food and cover for upland wildlife. Examples of these are beggarweed, perennial lespedeza, wild bean, pokeberry, and cheatgrass.

Hardwood trees and shrubs are nonconiferous trees, shrubs, and woody vines that produce fruits, nuts, buds, catkins, or foliage (browse) used extensively as food by wildlife. These plants commonly become established through natural processes, but may be planted. They include such species as oak, beech, cherry, dogwood, viburnum, maple, grape, honeysuckle, greenbrier, and elaeagnus.

Wetland food and cover plants are annual and perennial wild herbaceous plants that grow on moist to wet sites, not including submersed or floating aquatics. These plants furnish food or cover mostly for wetland wildlife. Some examples are smartweed, wild millet, spike rush and other rushes, sedges, burreed, tearthumb, and aneilema.

Shallow water developments are those [illegible] ments to grow submersed aquatics. Both freshwater and brackish water developments are included.

Openland wildlife are quail, doves, cottontail rabbit, fox, meadowlark, field sparrow, and other birds and mammals that normally live on cropland, pasture, meadow, lawn, and other openland areas where grasses, herbs, and shrubby plants grow.

Woodland life are woodcock, thrush, vireo, squirrel, deer, raccoon, wild turkey, and other birds and mammals that normally live in wooded areas where hardwood trees and shrubs and coniferous trees grow.

Wetland wildlife are ducks, geese, rail, heron, shore birds, mink, and other birds and mammals that normally live in wet areas, marshes, and swamps.

Engineering Uses of the Soils [6]

Some soil properties are of special interest to engineers because they affect the construction and maintenance of roads, airports, pipelines, building foundations, facilities for water storage, erosion control structures, drainage systems, and sewage disposal systems. Among the properties most important to engineers are permeability, shear strength, compaction characteristics, soil drainage, shrink-swell potential, consolidation potential, grain size, plasticity, reaction, depth to water table, and topography.

Information about the significant properties of the soils of this county and interpretations of these properties in terms of engineering uses are given in tables 5 and 6. This information can be used by engineers, along with information in other parts of the survey, to—

1. Make studies that will aid in selecting and developing industrial, business, residential, and

significant in engineering—Continued

Percentage passing sieve—			Permeability [1]	Available water capacity	Reaction	Shrink-swell Potential
No. 10 (2.0 mm)	No. 40 (0.42 mm)	No. 200 (0.074 mm)	*Inches per hour*	*Inches per inch of soil*	*pH*	
100	90–100	70–90	0.63–2.0	0.15–0.20	4.5–5.5	Low.
100	90–100	75–95	0–0.06	0.15–0.20	4.5–5.5	High.
	100	70–90	0.63–2.0	0.15–0.20	4.5–5.5	Low.
	100	85–95	0.20–0.63	0.15–0.20	4.5–5.5	Low.
	100	85–95	0.06–0.20	0.10–0.15	4.5–5.5	Moderate.

TABLE 6.—*Engineering*

[An asterisk in the first column indicates that at least one mapping unit in this series ferent properties and limitations, and for this reason it is necessary to follow carefully

Soil series and map symbols	Suitability as source of—			Soil features affecting—
	Topsoil	Sand	Road fill	Highway location
Basin: Ba	Fair: wetness	Poor: improbable source.	Fair: wetness	Wetness
Baxterville: BeB, BeC	Good	Poor: improbable source.	Fair: fair traffic-supporting capacity.	Low or moderate shrink-swell potential; fair traffic-supporting capacity.
Benndale: BnB	Good	Poor: high in fines.	Good to fair: fair traffic-supporting capacity.	Fair traffic-supporting capacity.
Cahaba Mapped only with McLaurin soils.	Fair: fair thickness of suitable material.	Poor: high in fines.	Good	Slope
*Dorovan: Dp For Pamlico part,	Poor: high in organic-matter	Poor: improbable source.	Poor: high in organic-matter	Poor traffic-supporting capacity;

interpretations

is made up of two or more kinds of soil. The soils in such mapping units may have dif-
the instructions for referring to other series that appear in the first column of this table]

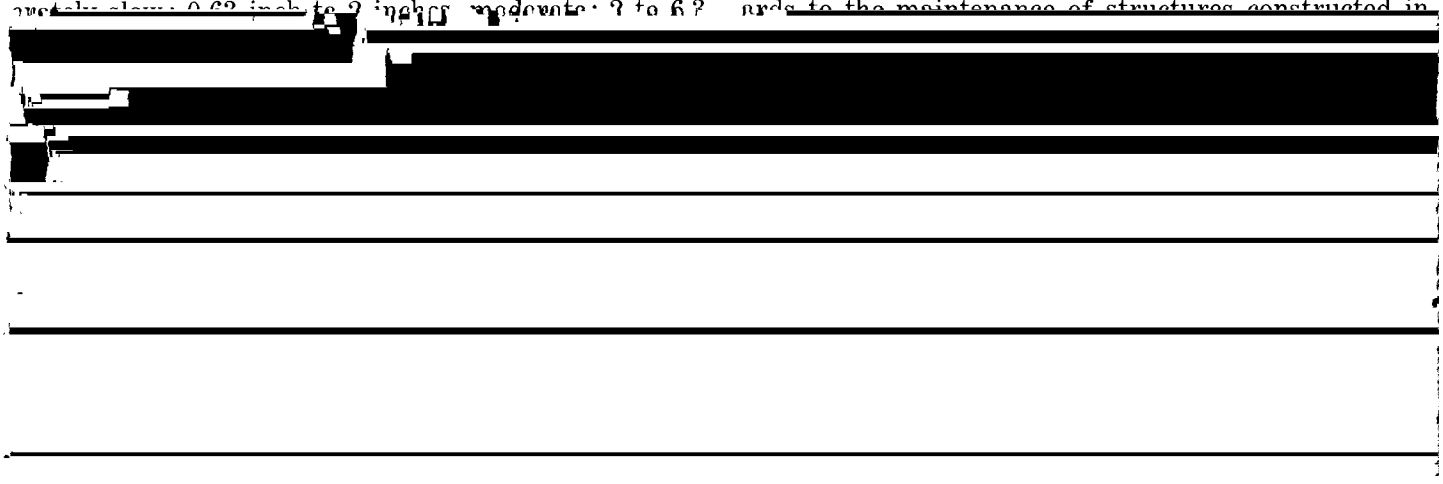
Soil features affecting—Continued				
Farm ponds				
	Agricultural	Irrigation	Terraces and	Waterways

TABLE 6.—*Engineering*

Soil series and map symbols	Suitability as source of—			Soil features affecting—
	Topsoil	Sand	Road fill	Highway location
*McLaurin: McA, McB, McC, MhD, MIC. For Cahaba part of MhD, see Cahaba series; for Lucy part of MIC, see Lucy series.	Good	Poor: improbable source.	Good	Slope
Osier Mapped only with Trebloc soils.	Poor: sandy texture.	Fair: excessive fines.	Poor: wetness	Wetness; flooding
Pamlico Mapped only with Dorovan soils.	Poor: high in organic matter content.	Poor: improbable source.	Poor: high in organic-matter content; poor traffic-supporting capacity.	Poor traffic-supporting capacity; wetness; flooding.
Prentiss: PnA, PnB, PnC	Good	Poor: improbable source.	Fair: fair traffic-supporting capacity; wetness.	Fair traffic-supporting capacity; wetness.
Sandy alluvial land: Sa. No interpretations; material too variable.				
Susquehanna: SuB, SuC	Poor: high in fines.	Poor: improbable source.	Poor: high shrink-swell potential; wetness.	Poor traffic-supporting capacity; wetness.
*Trebloc: Tr, Ts For Osier part of Ts, see Osier series.	Fair: high in fines.	Poor: improbable source.	Poor: poor traffic-supporting capacity; wetness.	Poor traffic-supporting capacity; wetness.

downward through undisturbed soil material. The rate depends largely on texture, porosity, and structure of the soil. A rate of less than 0.06 inch per hour is very slow; 0.06 to 0.2 inch is slow; 0.2 to 0.63 inch, mod-

to be expected in soil material with changes in moisture content. Shrinking and swelling of soils cause much damage to roads, building foundations, and other structures. A high shrink-swell potential indicates haz-



interpretations—Continued

Soil features affecting—Continued					
Farm ponds		Agricultural drainage	Irrigation	Terraces and diversions	Waterways
Reservoir areas	Embankments				
Moderate or moderately rapid permeability.	Fair slope stability; poor resistance to piping and erosion.	Not generally needed: moderate or moderately rapid permeability; slope.	Moderate or moderately rapid permeability; medium available water capacity.	Features generally favorable.	Medium available water capacity; grows good to fair sod; slopes subject to erosion.
Rapid permeability; fluctuation of water level.	Fair slope stability; poor resistance to piping and erosion.	High water table; flooding.	Rapid permeability; medium available water capacity.	Nearly level; generally not needed.	Nearly level; generally not needed.
Unstable material; high in organic-matter content.	Poor slope stability; poor resistance to piping and erosion.	Low position on landscape; poor natural outlets.	Not needed; permanent water table at or near surface.	Water table at or near surface; boggy.	Nearly level; generally not needed.
Moderately slow permeability in fragipan.	Fair slope stability; poor resistance to piping and erosion.	Slopes of 0 to 2 percent need surface drainage.	Moderate permeability above fragipan; medium available water capacity.	Features generally favorable; fragipan at a depth of 27 inches.	Medium available water capacity; grows good sod.
Features generally favorable; very slow permeability.	Fair slope stability.	Not needed: slope.	Very slow permeability; high available water capacity.	Plastic clay difficult to work.	High available water capacity; difficult to establish vegetative cover.
Features generally favorable; slow permeability.	Fair slope stability.	Needs surface drainage.	Slow permeability; high available water capacity.	Nearly level; generally not needed.	High available water capacity; grows fair sod.

Topsoil refers to soil material used to topdress lawns, roadbanks, and the like. The ratings indicate suitability for such use. They are based mainly on fertility and organic-matter content.

Ratings for sand are based on the probability that areas of the soil contain deposits of sand coarser than 0.08 millimeter in diameter. Sand is commonly used highways. The entire profile of undisturbed soil is considered. On soils that are ponded, roads must be constructed on high embankment sections or must be provided with surface and subsurface drains. On soils that are flooded, such as those of the Trebloc and Osier series, roads must be constructed on continuous embankments several feet above the usual level of flood

TABLE 7.—*Degree and kind of soil limitations*

[An asterisk in the first column indicates that at least

Soil series and map symbols	Small buildings [1]	Sewage lagoons	Septic tank absorption fields
Basin: Ba	Severe: wetness	Slight	Severe: slow permeability; wetness.
Baxterville: BeB, BeC	Moderate: medium bearing strength.	Moderate: slope; moderately slow permeability.	Severe: moderately slow permeability.
Benndale: BnB	Moderate: medium bearing strength.	Moderate: slope; moderate permeability.	Slight
Cahaba Mapped only with McLaurin soils.	Moderate: slope	Severe: slope	Moderate to severe: slope

to be considered in town and country planning

is made up of two or more kinds of soil. The soils in such mapping units may have dif-
the instructions for referring to other series that appear in the first column of this table]

Camp areas	Picnic areas	Playgrounds	Paths and trails
Moderate: wetness	Moderate: wetness	Moderate: wetness	Moderate: wetness.
Slight	Slight	Moderate to severe: slope	Slight.
Slight	Slight	Moderate: slope	Slight.
Moderate: slope	Moderate: slope	Severe: slope	Slight.

level soils in the county require drainage for crops, but the gently sloping to strongly sloping soils generally do not.

Irrigation systems are affected by such features as slope, erodibility, permeability, and drainage.

Terraces and diversions are essential for effective

Septic tank absorption fields are systems of subsurface tile lines that distribute effluent from a septic tank into the natural soil. The soil material between depths of 18 and 72 inches is evaluated. Soils that have *slight* limitations have rapid or moderately rapid per-

state. Soils that have *slight* limitations have slopes of less than 12 percent, have good traffic-supporting capacity, have a water table below a depth of 20 inches during the season of use, and do not flood more than once a year during the season of use. Soils that have *moderate* limitations have features generally favorable for this use, with the exception of one or more of the following: poor traffic-supporting capacity, slopes between 12 and 25 percent, and flooding two or three times during period of use. Soils that have *severe* limitations have a water table above a depth of 20 inches during the season of use, slopes of more than 25 percent, or flooding more than three times during the season of use.

Formation and Classification of the Soils

This section has three main parts. The first describes the five major factors of soil formation; the second, the processes involved in soil horizon differentiation; and the third, the system of classifying soils and the placement of the soils of Lamar County in the nationwide classification system.

Factors of Soil Formation

Soil is the product of interaction of five major factors of soil formation: climate, living organisms, parent material, relief, and time. The kind of soil formed in one area differs from the kind formed in another area if there has been a difference between the two areas in climate, vegetation, or any other factor of soil formation.

Climate

Lamar County has the warm, humid, subtropical climate characteristic of much of the southeastern United States. This type of climate affects the physical, chemical, and biological relationships in soils, primarily through high temperatures and precipitation.

Water dissolves minerals, supports biological activity, and transports minerals and organic residue in the soil profile. The amount of water that percolates through the soil depends mainly on rainfall, relative humidity, and the physiographic position, topography, and permeability of the soil.

Living organisms

Plants, animals, insects, bacteria, and fungi affect the formation of soils. Gains in organic matter and nitrogen, gains or losses in plant nutrients, and alterations in structure and porosity are some of the changes caused by living organisms.

Vegetation, mainly pine trees, has probably affected soil formation in Lamar County more than other living organisms. Soils on uplands formed under dense forests dominated by pine trees, and soils on flood plains formed under mixed hardwood and pine forest. Forming under trees rather than grasses has contributed to the low organic-matter content of these soils.

Earthworms and other small invertebrates are most active in the upper part of the soil and continuously mix the soil. Rodents and other animals burrow in the soil and contribute to mixing. Little is known about fungi and other micro-organisms in the soils of Lamar County, but it is known that micro-organisms aid in weathering, decomposing organic matter, and fixing nitrogen in the soil.

Parent material

Parent material, the unconsolidated mass from which soil forms, has much to do with the chemical and mineralogical composition of the soil. The parent material of the soils in Lamar County is mainly marine deposits of sandy, loamy, and clayey material.

The clayey soils formed mostly in Hattiesburg clay and Pascagoula clay formations of Miocene age. The loamy and sandy soils are derived mostly from the Citronelle Formation of Pliocene age. Soils on flood plains are derived from material on the nearby uplands. Organic soils formed in an accumulation of plant debris under saturated conditions.

Soils formed in Hattiesburg clay and Pascagoula clay are generally less weathered and contain more bases than those derived from the Citronelle Formation.

Relief

Relief affects soil formation through its influence on drainage, erosion, plant cover, and soil temperature. The relief in Lamar County ranges from nearly level to steep. Most of the nearly level land is on flood plains or stream terraces.

Many of these soils are poorly drained or very poorly drained. Soils on ridgetops are mostly gently sloping or moderately sloping and have better drained horizons than the steeper soils. The steep soils are generally between the ridgetops and the flood plains and have more runoff. They generally show less horizon development than soils on the ridgetops.

Time

The length of time required for soil development depends largely on the effects of the other four factors of soil formation. Less time is generally required for a soil to develop in warm humid regions where the vegetation is luxuriant than in cold dry regions where the vegetation is scant. Also, other factors being equal, less time is required if the parent material is coarse textured than if it is fine textured.

Fairly stable, nearly level soils on interstream divides have more strongly developed horizons than sloping soils in which the rate of geologic erosion approaches that of soil development and a smaller amount of total rainfall percolates through the profile. Soils on the flood plain of Lamar County formed in deposits washed from uplands. However, many of these soils are old enough and have received such a small amount of sediment in recent times that they have formed thick, well-developed horizons.

Processes of Horizon Differentiation

The processes involved in the formation of soil horizons are the accumulation of organic matter, the leaching of calcium carbonates and bases, the reduction and transfer of iron, and the formation and translocation of silicate clay materials. More than one of these processes have been active in most soils.

The accumulation of organic matter in the upper

TABLE 8.—*Classification of soil series*

Series	Family	Subgroup	Order
Basin	Coarse-loamy, siliceous, thermic	Fragiaquic Paleudults	Ultisols.
Baxterville	Fine-loamy, siliceous, thermic	Plinthic Paleudults	Ultisols.
Benndale	Coarse-loamy, siliceous, thermic	Typic Paleudults	Ultisols.
Cahaba [1]	Fine-loamy, siliceous, thermic	Typic Hapludults	Ultisols.
Dorovan	Dysic thermic	Typic Medisaprists	Histosols.
Falkner [2]	Fine-silty, siliceous, thermic	Aquic Paleudalfs	Alfisols.
Freestone	Fine-loamy, siliceous, thermic	Gloss-Aquic Paleudalfs	Alfisols.
Lakeland	Siliceous, thermic, coated	Typic Quartzipsamments	Entisols.
Latonia	Coarse-loamy, siliceous, thermic	Typic Hapludults	Ultisols.
Lucy	Loamy, siliceous, thermic	Arenic Paleudults	Ultisols.
Mashulaville	Coarse-loamy, siliceous, thermic	Typic Fragiaquults	Ultisols.
McLaurin	Coarse-loamy, siliceous, thermic	Typic Hapludults	Ultisols.
Osier	Siliceous, thermic	Typic Psammaquents	Entisols.
Pamlico	Sandy, dysic, thermic	Terric Medisaprists	Histosols.
Prentiss	Coarse-loamy, siliceous, thermic	Glossic Fragiudults	Ultisols.
Susquehanna	Fine, montmorillonitic, thermic	Vertic Paleudalfs	Alfisols.
Trebloc	Fine-silty, siliceous, thermic	Typic Paleaquults	Ultisols.

[1] These soils are taxadjuncts to the Cahaba series. They have a slightly thicker solum than is defined as the range for the series.

[2] These soils are taxadjuncts to the Falkner series. They have less clay and more sand in the upper part of the Bt horizon than is defined as the range for the series.

part of the profile is important in the formation of an A1 horizon. The soils of Lamar County range from very low to high in organic-matter content.

Carbonates and bases have been strongly leached from nearly all the soils of this county. This leaching has contributed to the formation of horizons. Some soil scientists agree that leaching of bases from the upper horizons of a soil generally precedes the translocation of silicate clay materials.

The reduction and transfer of iron is evident in the poorly drained soils and is indicated by a gray color, or gleying, in the subsoil. Some horizons contain yellowish-red and strong-brown mottles and concretions, an indication of the segregation of iron.

In some soils of Lamar County, the translocation of clay minerals has contributed to the development of horizons. The eluviated A2 horizon is generally lighter in color and has less clay than the Bt horizon because the clay has moved downward. The Bt horizon has thin clay films on ped surfaces and, in places, it also has clay coatings and bridgings of sand grains.

ORDER. The ten soil orders recognized are Entisols, Vertisols, Inceptisols, Aridisols, Mollisols, Spodosols, Alfisols, Ultisols, Oxisols, and Histosols. The properties used to differentiate among soil orders are those that tend to give broad climatic groupings of soils. The two exceptions to this are Entisols and Histosols.

Four soil orders are represented in Lamar County. These are Alfisols, Entisols, Ultisols, and Histosols. Alfisols have a clay-enriched B horizon that is high in base saturation. Entisols are recent soils; they lack genetic horizons or have only the beginning of such horizons. Ultisols are mineral soils that are restricted to humid climates. They are commonly old land surfaces that are highly weathered, strongly developed, and have a low base saturation. Histosols formed in organic material composed of muck or peat.

SUBORDER. Each order is divided into suborders, based primarily on characteristics that seem to produce classes that have the greatest genetic similarity. The suborders narrow the broad climatic range permitted in the order. The soil properties used to sepa-

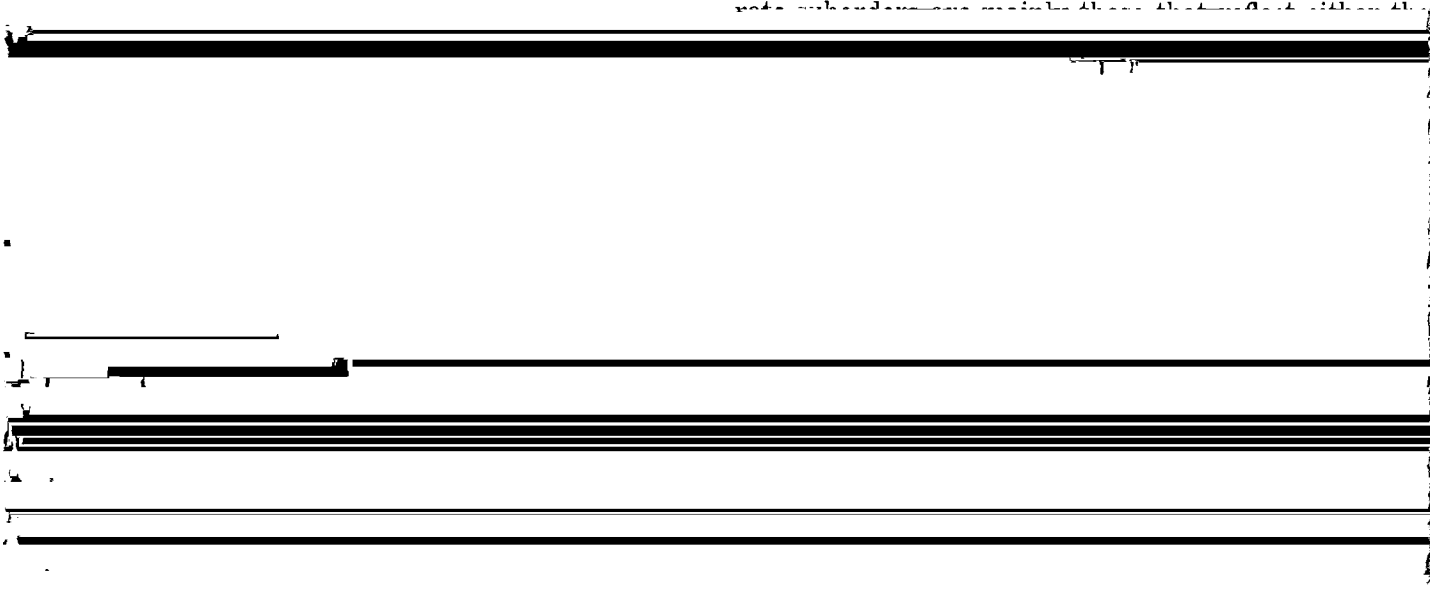


TABLE 9.—*Average and annual precipitation for period 1931 to 1960*

Reporting Station	Average inches of precipitation												
	January	February	March	April	May	June	July	August	September	October	November	December	Total
Columbia	5.04	5.32	6.34	5.67	4.90	4.93	6.17	4.37	4.34	2.92	3.99	5.78	59.77
Hattiesburg	4.74	5.32	6.73	5.52	5.16	4.16	6.79	5.12	4.21	2.70	4.05	5.68	60.18
Poplarville	4.63	5.04	6.58	5.24	5.07	5.04	7.05	5.70	4.99	2.49	4.29	5.69	61.81

are used for engineering. Among the properties considered are texture, mineralogy, reaction, soil temperature, permeability, thickness of horizons, and consistence.

SERIES. The series has the narrowest range of characteristics of the categories in the classification system and is named after a local place or post office. It is described fully in the section "How This Survey Was Made."

General Nature of the County

Lamar County was established in 1904 from what was formerly part of Marion County. The estimated population in 1969 was 15,060.

The county is mainly rural but has some industries, mostly wood and clothing, in Lumberton, Purvis, and Sumrall. Oil is probably the most important mineral resource in Lamar County. The Baxterville field is almost entirely within the county. A refinery near Purvis is supplied by pipeline from this field.

Lamar County has a good highway and secondary road system. Interstate Highway 59 roughly parallels the Lamar-Forest County line and links New Orleans and Birmingham. U.S. Highway 98 crosses the northern third of the county and runs east and west. U.S. Highway 11 runs north and south through Purvis and Lumberton. State Highways 42, 44, 13, and 589 cross the county.

Physiography, Relief, and Drainage

Lamar County is in the southeastern part of the State. The relief ranges from nearly level on flood plains and mostly gently sloping on ridgetops to steep on side slopes.

Elevations range from slightly more than 400 to less than 200 feet above sea level. The highest elevation of the county is near the northwestern corner. The lowest elevation is along flood plains of the major streams. Approximately three-fourths of the county drains south and east into Bowie Creek, Leaf and Pascagoula Rivers. and one-fourth drains west and

high precipitation of 87.8 inches occurred in 1961, and a 30-year low of 37.8 inches in 1963.

Temperatures climb to 90° or warmer an average of about 90 to 105 days per year, mainly from May to October. During July and August, Lamar County is estimated to average temperatures of 90° or higher on 4 out of 5 days. In most years the temperature rises into the upper nineties or lower one hundreds. The average summer temperature is about 81°, and July is the hottest month in most years. Occasionally during summer the pressure distribution alters to bring westerly or northerly winds. When the period of change is extended, it results in a period of hotter, drier weather. If this period is prolonged, drought conditions may develop.

Temperatures drop to 32° or colder an average of about 20 to 30 days per year, mainly from November to March. In fall the average date for the first occurrence of 32° or lower is in the early and middle part of November. In some years this date has been later than December 31. Temperatures drop below 20° in about half the years. On the whole, the average temperature in winter is about 52°. In spring the last occurrence of 32° or colder has an average date in the middle or late part of March. Between the last occurrence of 32° or colder in spring and the first in fall is a freeze-free period of about 225 to 240 days.

The average rainfall during the growing season is 32.4 inches. The wettest months are March and July in most years, and the driest months are September, October, and November in 5 out of 7 years. Table 9 shows rainfall recorded at three nearby weather stations (*5*).

The prevailing winds from the Gulf of Mexico provide a moist, subtropical climate favorable to the development of thunderstorms. During the warmer months, most rain is associated with afternoon and evening thunderstorms. Rain associated with summer thunderstorms is erratic and usually varies considerably within the county on a given day. Late in fall, in winter, and early in spring precipitation is associated with passing weather systems. Thunderstorms occur an average of 65 to 75 days a year.

Snow is not of much economic importance in the

Farming

The main farm products grown in Lamar County are timber, cattle, and soybeans.

About 73 percent of the county is commercial forest. Beef cattle are the most important of the livestock enterprises. The estimated number of cows and calves in January 1971 was 26,000 head. Soybeans is the most important cultivated crop; about 6,300 acres was harvested in 1970. Several pecan orchards and one large pecan nursery are near Lumberton.

Literature Cited

[redacted]

in rows that are at right angles to the natural direction of the slope or that are parallel to terrace grade.

Coppice. A newly cutover area in which sprouts are growing up.

Diversion, or diversion terrace. A ridge of earth, generally a terrace, that is built to divert runoff from its natural course and, thus, to protect areas downslope from the effects of such runoff.

Fragipan. A loamy, brittle, subsurface horizon that is very low in organic-matter content and clay but is rich in silt or very fine sand. The layer is seemingly cemented. When dry, it is hard or very hard and has a high bulk density in comparison with the horizon or horizons above it. When moist, the fragipan tends to rupture suddenly if pressure is applied, rather than to deform slowly. The layer is generally mottled, is slowly or very slowly permeable to water, and has few or many bleached fracture planes that form polygons. Fragipans are a few inches to several feet thick; they generally occur below the B horizon, 15 to 40 inches below the surface.

[redacted]

Reaction, soil. The degree of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is precisely neutral in reaction because it is neither acid nor alkaline. An acid, or "sour," soil is one that gives an acid reaction; an alkaline soil is one that is alkaline in reaction. In words, the degrees of acidity or alkalinity are expressed thus:

	pH		*pH*
Extremely acid	Below 4.5	Neutral	6.6 to 7.3
Very strongly acid	4.5 to 5.0	Mildly alkaline	7.4 to 7.8
Strongly acid	5.1 to 5.5	Moderately alkaline	7.9 to 8.4

Structure, soil. The arrangement of primary soil particles into compound particles or clusters that are separated from adjoining aggregates and have properties unlike those of an equal mass of unaggregated primary soil particles. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal,) *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grained* (each grain by itself, as in dune sand) or *massive* (the particles adhering together without any

GUIDE TO MAPPING UNITS

For a full description of a mapping unit, read both the description of the mapping unit and that of the soil series to which the mapping unit belongs. Other information is given in tables as follows:

Acreage and extent, table 1, page 5.
Predicted yields, table 2, page 23.
Woodland, table 3, page 24.
Engineering, tables 5 and 6, pages 28 to 35.

Map symbol	Mapping unit	Page	Capability unit	Woodland group
			Symbol	Number
Ba	Basin fine sandy loam	5	IIIw-1	2w8
BeB	Baxterville fine sandy loam, 2 to 5 percent slopes	6	IIe-1	2o1
BeC	Baxterville fine sandy loam, 5 to 8 percent slopes	6	IIIe-1	2o1
BnB	Benndale fine sandy loam, 2 to 5 percent slopes	7	IIe-1	2o1
Dp	Dorovan and Pamlico mucks 1/	8	VIIw-1	4w9
FaB	Falkner silt loam, 2 to 5 percent slopes	9	IIIe-2	2w8
FmC	Freestone-McLaurin-Susquehanna association, rolling 1/	9	------	---
	Freestone soils	--	VIIe-1	2w8
	McLaurin soils	--	VIe-1	2o1
	Susquehanna soils	--	VIIe-1	3c2
FsD	Freestone, Susquehanna, and Prentiss soils, 5 to 12 percent slopes	10	------	---
	Freestone soils	--	VIe-2	2w8
	Susquehanna soils	--	VIe-2	3c2
	Prentiss soils	--	IVe-1	2o7
LaD	Lakeland sand, 2 to 12 percent slopes	11	VIs-1	4s3
Lt	Latonia fine sandy loam	11	IIs-1	2o1
Ma	Mashulaville fine sandy loam	12	IVw-1	3w9
McA	McLaurin fine sandy loam, 0 to 2 percent slopes	13	IIs-1	2o1
McB	McLaurin fine sandy loam, 2 to 5 percent slopes	14	IIe-1	2o1
McC	McLaurin fine sandy loam, 5 to 8 percent slopes	14	IIIe-1	2o1
MhD	McLaurin and Cahaba soils, 8 to 12 percent slopes	15	IVe-2	2o1
MlC	McLaurin-Lucy association, rolling 1/	15	------	---
	McLaurin soils	--	VIe-1	2o1
	Lucy soils	--	VIs-1	3s2
PnA	Prentiss fine sandy loam, 0 to 2 percent slopes	18	IIw-1	2o7
PnB	Prentiss fine sandy loam, 2 to 5 percent slopes	18	IIe-2	2o7
PnC	Prentiss fine sandy loam, 5 to 8 percent slopes	19	IIIe-3	2o7
Sa	Sandy alluvial land	19	Vw-1	---
SuB	Susquehanna silt loam, 2 to 5 percent slopes	19	IVe-3	3c2
SuC	Susquehanna silt loam, 5 to 12 percent slopes	19	VIe-2	3c2
Tr	Trebloc silt loam	20	IVw-1	2w9
Ts	Trebloc and Osier soils 1/	20	------	---
	Trebloc soils	--	IVw-1	2w9
	Osier soils	--	Vw-1	3w3

1/ The delineations are much larger and the composition of these units is more variable than other mapping units in the county. Mapping has been controlled well enough, however, for the anticipated use of the soils.

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