United States
Department of
Agriculture

Natural
Resources
Conservation
Service

In cooperation with
the Alabama Agricultural
Experiment Station and the
Alabama Soil and Water
Conservation Committee

Soil Survey of Choctaw County, Alabama

How to Use This Soil Survey

General Soil Map

The general soil map, which is the color map preceding the detailed soil maps, shows the survey area divided into groups of associated soils called general soil map units. This map is useful in planning the use and management of large areas.

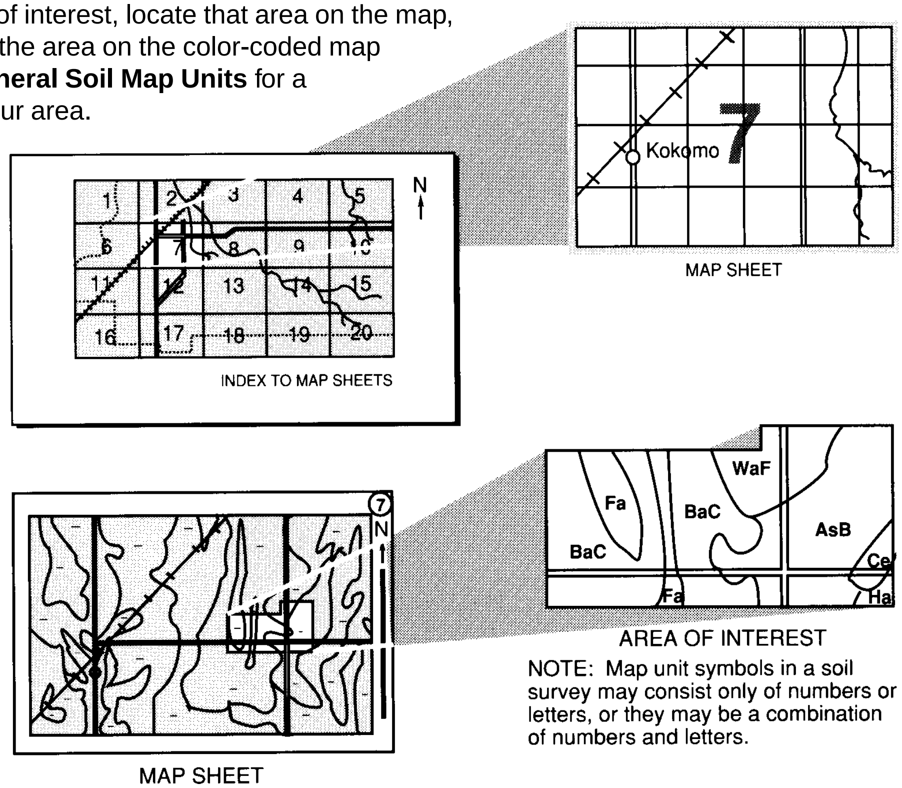
To find information about your area of interest, locate that area on the map, identify the name of the map unit in the area on the color-coded map legend, then refer to the section **General Soil Map Units** for a general description of the soils in your area.

Detailed Soil Maps

The detailed soil maps follow the general soil map. These maps can be useful in planning the use and management of small areas.

To find information about your area of interest, locate that area on the **Index to Map Sheets**, which precedes the soil maps. Note the number of the map sheet and turn to that sheet.

Locate your area of interest on the map sheet. Note the map units symbols that are in that area. Turn to the **Contents**, which lists the map units by symbol and name and shows the page where each map unit is described.



The **Contents** shows which table has data on a specific land use for each detailed soil map unit. Also see the **Contents** for sections of this publication that may address your specific needs.

This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (formerly 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 1998. Soil names and descriptions were approved in 1998. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1998. This survey was made cooperatively by the Natural Resources Conservation Service, the Alabama Agricultural Experiment Station, the Alabama Cooperative Extension System, the Alabama Soil and Water Conservation Committee, and the Alabama Department of Agriculture and Industries. The survey is part of the technical assistance furnished to the Choctaw County Soil and Water Conservation District.

Soil maps in this survey may be copied without permission. Enlargement of these maps, however, could cause misunderstanding of the detail of mapping. If enlarged, maps do not show the small areas of contrasting soils that could have been shown at a larger scale.

Cover: Mt. Ararat, in the east-central part of the county, overlooks large expanses of woodland. Woodland covers about 87 percent of the county. The forest industry is the backbone of the local economy.

Additional information about the Nation's natural resources is available on the Natural Resources Conservation Service home page on the World Wide Web. The address is http://www.nrcs.usda.gov (click on "Technical Resources").

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Issued 2000

Foreword

This soil survey contains information that affects land use planning in this survey area. It contains predictions of soil behavior for selected land uses. The survey also highlights soil limitations, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

This soil survey is designed for many different users. Farmers, ranchers, foresters, and agronomists can use it to evaluate the potential of the soil and the management needed for maximum food and fiber production. Planners, community officials, engineers, developers, builders, and home buyers can use the survey to plan land use, select sites for construction, and identify special practices needed to ensure proper performance. Conservationists, teachers, students, and specialists in recreation, wildlife management, waste disposal, and pollution control can use the survey to help them understand, protect, and enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. The information in this report is intended to identify soil properties that are used in making various land use or land treatment decisions. Statements made in this report are intended to help the land users identify and reduce the effects of soil limitations that affect various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are shallow to bedrock. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

These and many other soil properties that affect land use are described in this soil survey. Broad areas of soils are shown on the general soil map. The location of each soil is shown on the detailed soil maps. Each soil in the survey area is described. Information on specific uses is given for each soil. Help in using this publication and additional information are available at the local office of the Natural Resources Conservation Service or the Cooperative Extension System.

Robert N. Jones
State Conservationist
Natural Resources Conservation Service

Soil Survey of
Choctaw County, Alabama

By Sanderson Page

Fieldwork by Gregory R. Brannon, Shirley J. Brown, Rex H. Chandler, David J. Gray, Delaney B. Johnson, Norman P. Marable, and Sanderson Page

United States Department of Agriculture, Natural Resources Conservation Service,
in cooperation with
the Alabama Agricultural Experiment Station, the Alabama Cooperative Extension System, the Alabama Soil and Water Conservation Committee, the Alabama Department of Agriculture and Industries, and the Choctaw County Commission

Choctaw County is in the southwestern part of Alabama (fig. 1). The total area of the county is 589,470 acres, or about 912 square miles. About 582,000 acres consists of land areas and small bodies of water. About 7,470 acres consists of large areas of water in lakes and rivers. The county is bordered on the west by Wayne, Clarke, and Lauderdale Counties, Mississippi; on the north by Sumter County, Alabama; on the east by Marengo and Clarke Counties, Alabama; and on the south by Washington County, Alabama. The Tombigbee River forms the eastern border of Choctaw County.

Choctaw County is mostly rural. In 1994, it had a population of 16,018 and Butler, the county seat and largest town, had a population of 1,872 (Mobile Press Register, 1995). The towns of Lisman, Gilbertown, and Silas had populations of 481, 235, and 550, respectively. Other communities in the county include Needham, Pennington, and Toxey.

The major land use in the county is forestry. A small acreage is used for cultivated crops, beef cattle, aquaculture, hay, and pasture. The forest products industry, which includes a large paper mill in Pennington, is the mainstay of the local economy.

This soil survey updates an earlier soil survey of Choctaw County published in 1925 (Smith, Lounsbury, and Stroud, 1925). It provides additional information and larger maps, which show the soils in greater detail.

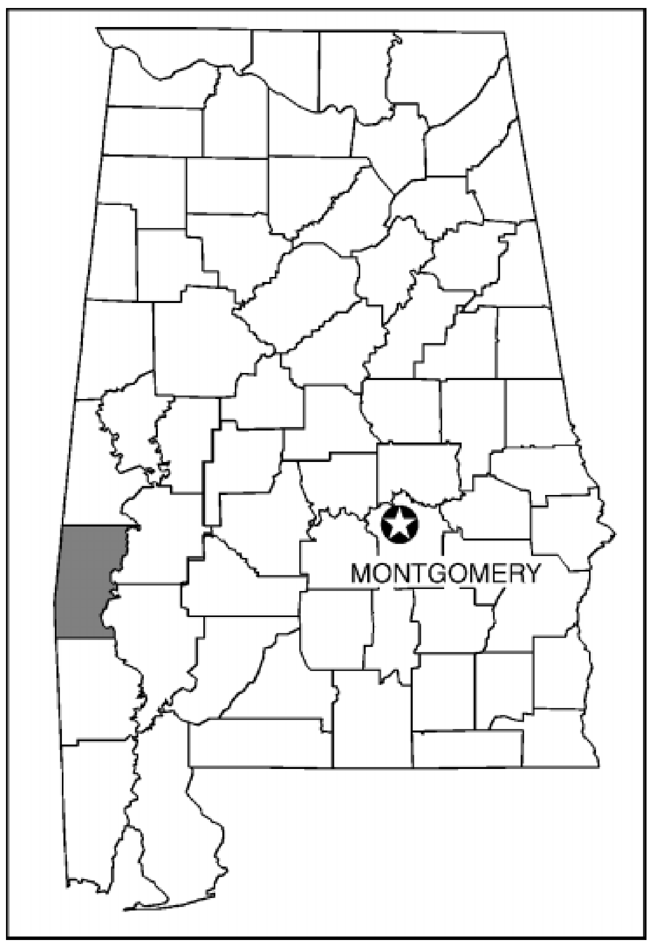

Figure 1.—Location of Choctaw County in Alabama.

General Nature of the County

This section provides general information about the survey area. It describes history and development; transportation facilities; natural resources; physiography, relief, and drainage; and climate.

History and Development

Choctaw County was created by an act of the territorial legislature of Alabama on December 29, 1847. The county was formed from parts of Sumter and Washington Counties. It consists of land originally ceded to the United States by the Choctaw Nation through the treaties of Mount Dexter in 1805 and Dancing Rabbit in 1830 (Southern Historical News, 1986; Toulmin, LaMoreaux, and Lanphere, 1951). Butler was selected as the county seat at the time the county was established.

The county was named in honor of the Choctaw Nation, which occupied the hills of the area and built settlements long before the first Europeans arrived. In the early part of the nineteenth century, settlers from Georgia, Virginia, Tennessee, North Carolina, and South Carolina began to arrive. They were attracted to the area by the mild climate, cheap land, and abundant timber (Southern Historical News, 1986; Toulmin, LaMoreaux, and Lanphere, 1951).

Early settlements, such as Tuscahoma Landing and Oakchia, were mainly located in proximity to the Tombigbee River. In 1925, the county had 25 landings along the river, an average of 1 every 3 miles (Smith, Lounsbury, and Stroud, 1925). The early part of the 20th century witnessed a shift in some of the population centers as roads and railroads gradually replaced the river as the chief arteries of commerce. This shift included the communities of Halsell, Lisman, Land, Gilbertown, Silas, and Cullomburg on a north-south line and Cromwell, Jachin, and Pennington on an east-west line.

Bladon Springs, which is now home to a State park, was once known as the “Saratoga of the South” (Mobile Press Register, 1995). Famed for mineral waters that were believed to have healing qualities, the baths at Bladon Springs were visited by people from across the Nation in the 1800’s. The water was also shipped in barrels via the Tombigbee River to Mobile and from there to ports around the world. It was marketed as a remedy for many ailments.

Early settlers cultivated crops, including corn, sweet potatoes, peanuts, cowpeas, velvet beans, cotton, oats, and hay, and raised cattle, hogs, and poultry. Early industries included feed and grain mills, sawmills, and cotton gins. Early timber harvesting centered on longleaf pine, shortleaf pine, and bottomland hardwoods, such as oak, hickory, and sweetgum. In the 1920’s, about 20 percent of the county was cultivated. By 1948, the acreage had increased to 40 to 50 percent (Smith, Lounsbury, and Stroud, 1925; Toulmin, LaMoreaux, and Lanphere, 1951).

Transportation Facilities

Over the past 150 years, the major mode of transportation in Choctaw County shifted from horse and wagon through steamboat and railroad to automobile. Each shift brought readjustment to the settlement patterns and economy of the county.

Today, the major highways serving the county are U.S. Highway 84, which passes east to west through Silas and Isney; Alabama Highway 10, which passes east to west through Butler and exits the northern corner of the county near Yantley; and Alabama Highway 17, which passes north to south through the center of the county and serves Silas, Gilbertown, and Butler. Numerous hard-surface county roads provide access throughout the county.

Choctaw County is presently served by one railroad, which provides freight service through Pennington and Yantley in the northern part of the county. A municipal airport near Butler serves small, private and commercial aircraft.

The Tombigbee River has been a major avenue of transportation throughout the history of the county. It is navigable throughout its length in Choctaw County and connects the Tennessee River system to ports on the Gulf of Mexico and other inland water systems (fig. 2). Port facilities are available nearby at Demopolis and Jackson.

Natural Resources

Agriculture and forest products have sustained the economy of the county over recorded history. Textile manufacturing and a few other small industries have also been in the county. Where cotton was once king, the main agricultural enterprises are now beef cattle and hog production. Significant growth has also occurred in the pond-raised catfish and bait-fish industry.

Timber is produced on about 87 percent of the land area in the county. It provides raw material for local sawmills and for pulp and paper producers. Woodland also provides habitat for wild game, such as wild turkey, white-tailed deer, and feral hogs. This game attracts hunters from across the Nation. Loblolly pine has largely replaced longleaf pine and shortleaf pine, which were harvested by the early settlers.

Figure 2.—The Tombigbee River, which has served as a major avenue of transportation throughout the history of the county. Tugboats pushing barge loads of oil, coal, sand, gravel, and lumber have replaced the steamboats transporting cotton and passengers from earlier years.

In 1944, oil was discovered in the county and more than 800,000 barrels were produced annually from 62 wells (Pashin et al., 1998; Toulmin, LaMoreaux, and Lanphere, 1951). Today, about 6,000 barrels per month are pumped from 25 wells.

Physiography, Relief, and Drainage

Choctaw County is in the East Gulf Coastal Plain Section of the Coastal Plain physiographic province. Gently rolling to strongly dissected, hilly topography characterizes this area of the lower Coastal Plain.

The soils on the landscape are forming in outcrops of Tertiary-aged material that consists primarily of unconsolidated sand, silt, and clay and lesser amounts of limestone, chalk, siltstone, and claystone. The Tertiary-aged sediments are underlain by Mesozoic and Cenozoic sedimentary rocks that dip southward at 20 to 40 feet per mile (Copeland, 1968). Sedimentary beds that are resistant to erosion form southeasterly trending hilly belts known as cuestas, which are asymmetrical hogback ridges on which the steeper slopes face northward and the opposing slope is long and gentle.

Elevation ranges from about 30 feet above mean sea level on the flood plain along the Tombigbee River in the southeast corner of the county to about 553 feet on Scott Mountain in the west-central part of the county.

Choctaw County lies within two subdivisions of the East Gulf Coastal Plain Section: the Southern Red Hills and the Lime Hills. The Southern Red Hills make up the northern two-thirds of the county. Several somewhat parallel belts of high hills trend northwest to southeast. These hills define the northward leading edge of several cuestas that correspond to the up-dip edge of the Nanafalia Formation in the northern part of the county and to the Tuscahoma sand and Hatchetigbee Formation in the central part. Elevations on the upland ridgetops generally range from 200 to 400 feet, and relief is about 80 to 150 feet. South of the hilly belts, the topography is more gently rolling and includes some comparatively smooth and nearly level interstream divides that contain broad expanses of high terraces.

The Southern Red Hills subdivision has two parts. In the northeast corner of the county, a relatively smooth area known as the "Flatwoods" corresponds to the Porters Creek Formation. The southern part of the Southern Red Hills contains an area known as the "Buhrstone Hills." This area is underlain by the Tallahatta Formation and contains the most rugged topography on the Alabama Coastal Plain. Summits along the northern edge of the cuesta rise 150 to nearly 400 feet above the major streams.

The Lime Hills subdivision is in the southern third of the county. In some areas it is characterized by rugged topography that is attributed to several geologic faults in conjunction with underlying resistant beds of limestone of Eocene and Oligocene age. The Lime Hills comprise an area of soils that are distinctly different from the other soils in the county. The soils in the Lime Hills are forming in materials weathered from marl, limestone, and chalk. Also, the Tallahatta Formation reappears in the area of the Hatchetigbee Anticline in the southeastern part of the county. Relief is commonly 100 to 200 feet in this area.

The streams of Choctaw County dominantly drain into the Tombigbee River. In the southwestern part of the county, however, the Red Creek and other tributaries flow into the Chickasawhay River in Mississippi. The major tributaries of the Tombigbee River, from north to south, are Kinterbish, Clear, Yantley, Boguelichitto, Tuckabum, Wahalak, Tishlarka, Tallawampa, Surveyors, Bogueloosa, Okatuppa, Puss Cuss, Souwilpa, Turkey, Thompson, Sea Warrior, and Seyouyah Creeks. Stream valleys generally are narrow in the upper reaches and become broad flood plains that have widely meandering stream channels in the lower reaches.

Climate

Choctaw County has long, hot summers because moist tropical air from the Gulf of Mexico persistently covers the area. Winters are cool and fairly short. Cold waves are rare and moderate in 1 or 2 days. Precipitation is fairly heavy throughout the year, and prolonged droughts are rare. Summer precipitation, mainly afternoon thunderstorms, is usually adequate for all crops.

Severe local storms, including tornadoes, strike occasionally in or near the area. They are of short duration and cause variable and spotty damage. Every few years, in summer or autumn, a tropical depression or a remnant of a hurricane that has moved inland causes extremely heavy rains for 1 to 3 days.

Table 1 gives data on temperature and precipitation for the survey area as recorded at Thomasville, Alabama, in the period 1961 to 1990. Table 2 shows probable dates of the first freeze in fall and the last freeze in spring. Table 3 provides data on length of the growing season.

In winter, the average temperature is 47 degrees F and the average daily minimum temperature is 35 degrees. The lowest temperature on record, which occurred on January 22, 1985, is -1 degree. In summer, the average temperature is 79 degrees and the average daily maximum temperature is 90 degrees. The highest recorded temperature, which occurred on June 26, 1930, is 108 degrees.

Growing degree days are shown in table 1. They are equivalent to "heat units." During the month, growing degree days accumulate by the amount that the average temperature each day exceeds a base temperature (50 degrees F). The normal monthly accumulation is used to schedule single or successive plantings of a crop between the last freeze in spring and the first freeze in fall.

The total annual precipitation is about 58.5 inches. Of this, 27 inches, or about 47 percent, usually falls in April through September. The growing season for most crops falls within this period. In 2 years out of 10, the rainfall in April through September is less than 12 inches. The heaviest 1-day rainfall during the period of record was 11.1 inches on March 12, 1935. Thunderstorms occur on about 58 days each year, and most occur in July.

The average seasonal snowfall is about 0.4 inch. The greatest snow depth at any one time during the period of record was 4 inches. On the average, no days of the year have at least 1 inch of snow on the ground. The number of such days varies greatly from year to year.

The average relative humidity in midafternoon is about 55 percent. Humidity is higher at night, and the average at dawn is about 89 percent. The sun shines 67 percent of the time possible in summer and 50 percent in winter. The prevailing wind is from the south. Average windspeed is highest, 7.8 miles per hour, in March.

How This Survey Was Made

This survey was made to provide information about the soils and miscellaneous areas in the survey area. The information includes a description of the soils and miscellaneous areas and their location and a discussion of their suitability, limitations, and management for specified uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They dug many holes to study the soil profile, which is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

The soils and miscellaneous areas in the survey area are in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept or model of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

This survey area was mapped at two levels of detail. At the more detailed level, map units are narrowly defined. Map unit boundaries were plotted and verified at closely spaced intervals. At the less detailed level, map units are broadly defined. Boundaries were plotted and verified at wider intervals. In the legend for the detailed soil maps, narrowly defined units are indicated by symbols in which the first letter is a capital and the second is lowercase. For broadly defined units, the first and second letters are capitals.

The descriptions, names, and delineations of the soils in this survey area do not fully agree with those of the soils in adjacent survey areas. Differences are the result of a better knowledge of soils, modifications in series concepts, or variations in the intensity of mapping or in the extent of the soils in the survey areas.

Survey Procedures

The general procedures followed in making this survey are described in the “National Soil Survey Handbook” of the Natural Resources Conservation Service. The earlier soil survey of Choctaw County and “Geology and Ground-Water Resources of Choctaw County, Alabama” were among the references used (Smith, Lounsbury, and Stroud, 1925; Toulmin, LaMoreaux, and Lanphere, 1951).

Before the field work began, preliminary boundaries of landforms were plotted stereoscopically on high altitude aerial photographs. United States Geological Survey topographic maps and aerial photographs were studied to relate land and image features.

Traverses were made on foot and by vehicle, at variable intervals, depending on the complexity of the soil landscape and geology. Soil examinations along the traverses were made at intervals of 50, 100, or 300 feet, depending on the landscape and soil pattern (Johnson, 1961; Steers and Hajek, 1979). Observations of landforms, uprooted trees, vegetation, roadbanks, and animal burrows were made continuously without regard to spacing. Soil boundaries were determined on the basis of soil examinations, observations, and photo interpretation. The soil material was examined with the aid of a spade, a hand auger, or a truck-mounted probe to a depth of 5 feet or more. The pedons described as typical were observed and studied in excavations.

Samples for chemical and physical analyses and engineering test data were taken from the site of the typical pedon of some of the major soils in the survey area. The analyses were made by the Agronomy and Soils Clay Mineralogy Laboratory, Auburn University, Auburn, Alabama; the National Soil Survey Laboratory, Lincoln, Nebraska; and the Alabama Department of Highways and Transportation, Montgomery, Alabama. The results of some of the analyses are published in this soil survey report. Unpublished analyses and the laboratory procedures can be obtained from the laboratories.

High-altitude aerial photography base maps at a scale of 1:24,000 were used for mapping of soil and surface drainage in the field. Cultural features were transferred from U.S. Geological Survey 7.5-minute series topographic maps and were recorded from visual observations. Soil mapping, drainage patterns, and cultural features recorded on base maps were then transferred to half-tone film positives by soil scientists.

General Soil Map Units

The general soil map at the back of this publication shows broad areas that have a distinctive pattern of soils, relief, and drainage. Each map unit on the general soil map is a unique natural landscape. Typically, it consists of one or more major soils or miscellaneous areas and some minor soils or miscellaneous areas. It is named for the major soils or miscellaneous areas. The components of one map unit can occur in another but in a different pattern.

The general soil map can be used to compare the suitability of large areas for general land uses. Areas of suitable soils can be identified on the map. Likewise, areas where the soils are not suitable can be identified.

Because of its small scale, the map is not suitable for planning the management of a farm or field or for selecting a site for a road or building or other structure. The soils in any one map unit differ in slope, depth, drainage, and other characteristics that affect management.

Each map unit is rated for cultivated crops, pasture and hay, woodland, and urban uses in table 4. Cultivated crops are those typically grown in the survey area. Pasture and hay refer to improved, locally grown grasses and legumes. Woodland refers to areas of native or introduced trees. Urban uses include residential, commercial, and industrial developments.

The boundaries of the general soil map units in Choctaw County were matched, where possible, with those of the previously completed surveys of Marengo and Sumter Counties, Alabama, and Clarke and Lauderdale Counties, Mississippi. In a few areas, however, the lines do not join and the names of the map units differ. These differences result mainly because of changes in soil series concepts, differences in map unit design, and changes in soil patterns near survey area boundaries.

1. Urbo-Mooreville-Una

Dominantly level to gently undulating, somewhat poorly drained, moderately well drained, and poorly drained soils that have a loamy or clayey surface layer and a clayey or loamy subsoil; on flood plains

Setting

Location in the survey area: Eastern part
Landscape: Coastal Plain
Landform: Flood plains along the Tombigbee River
Landform position: Urbo—intermediate positions on low ridges and in shallow swales; Mooreville—high, convex parts of low ridges; Una—low positions between ridges (in swales and sloughs)
Slope: 0 to 3 percent

Composition

Percent of the survey area: 6
Urbo soils: 34 percent
Mooreville soils: 26 percent
Una soils: 25 percent
Minor soils: 15 percent, including Annemaine, Bigbee, Cahaba, Latonia, Lenoir, and Riverview soils

Soil Characteristics

Urbo

Surface layer: Dark grayish brown silty clay
Subsoil: Upper part—dark yellowish brown clay loam that has grayish and brownish mottles; next part—light brownish gray and gray clay loam that has brownish mottles; lower part—light brownish gray clay loam that has brownish and reddish mottles
Depth class: Very deep
Drainage class: Somewhat poorly drained
Seasonal high water table: Perched, at a depth of 1.0 to 2.0 feet from December through April
Slope: 0 to 1 percent
Parent material: Clayey alluvium

Mooreville

Surface layer: Very dark grayish brown loam
Subsoil: Upper part—brown loam; next part—dark yellowish brown and yellowish brown clay loam that has grayish and brownish mottles; lower part—yellowish brown loam that has grayish and brownish mottles
Substratum: Upper part—mottled yellowish brown, light brownish gray, and strong brown sandy clay loam; lower part—mottled light brownish gray, yellowish brown, and strong brown sandy loam
Depth class: Very deep
Drainage class: Moderately well drained

Seasonal high water table: Apparent, at a depth of 1.5 to 3.0 feet from December through April
Slope: 0 to 3 percent
Parent material: Loamy alluvium

Una

Surface layer: Dark grayish brown and grayish brown silty clay loam
Subsoil: Upper part—dark grayish brown clay and dark gray silty clay loam having reddish and brownish mottles; next part—mottled dark gray and brown clay; lower part—grayish brown silty clay loam and dark gray silty clay having brownish mottles
Depth class: Very deep
Drainage class: Poorly drained
Seasonal high water table: Perched, at 2.0 feet above the surface to a depth of 0.5 foot from December through July
Slope: 0 to 1 percent
Parent material: Clayey alluvium

Minor soils

- The clayey, moderately well drained Annemaine soils and the somewhat poorly drained Lenoir soils; on low terraces
- The sandy Bigbee soils and the well drained, loamy Cahaba and Latonia soils; on low terraces
- The loamy, well drained Riverview soils on the high parts of natural levees

Use and Management

Major uses: Woodland and wildlife habitat

Cropland
Management concerns: Flooding and wetness

Pasture and hayland
Management concerns: Flooding and wetness

Woodland
Management concerns: Competition from undesirable plants, restricted use of equipment, and seedling mortality

Urban development
Management concerns: Flooding and wetness

2. Lenoir-Izagora-Annemaine

Dominantly level and nearly level, somewhat poorly drained and moderately well drained soils that have a loamy surface layer and a clayey or loamy subsoil; on low terraces

Setting

Location in the survey area: Parallel to the Tombigbee River in the northern part of the county
Landscape: Coastal Plain
Landform: Low terraces
Landform position: Lenoir—flat to slightly concave slopes; Izagora and Annemaine—slightly convex slopes
Slope: 0 to 2 percent

Composition

Percent of the survey area: 2
Lenoir soils: 40 percent
Izagora and similar soils: 25 percent
Annemaine soils: 10 percent
Minor soils: 25 percent, including Bigbee, Cahaba, Latonia, Una, and Urbo soils

Soil Characteristics

Lenoir

Surface layer: Dark grayish brown silt loam
Subsoil: Upper part—yellowish brown loam that has grayish and brownish mottles; next part—grayish brown clay loam and clay having brownish and reddish mottles; lower part—light brownish gray clay that has reddish and brownish mottles
Depth class: Very deep
Drainage class: Somewhat poorly drained
Seasonal high water table: Apparent, at a depth of 1.0 to 2.5 feet from January through March
Slope: 0 to 2 percent
Parent material: Clayey sediments

Izagora

Surface layer: Brown fine sandy loam
Subsurface layer: Light yellowish brown loam
Subsoil: Upper part—brownish yellow loam; next part—yellowish brown loam and light yellowish brown clay loam having brownish, reddish, and grayish mottles; lower part—yellowish brown silty clay loam that has grayish, reddish, and brownish mottles
Depth class: Very deep
Drainage class: Moderately well drained
Seasonal high water table: Perched, at a depth of 2.0 to 3.0 feet from January through March
Slope: 0 to 2 percent
Parent material: Loamy sediments

Annemaine

Surface layer: Brown silt loam
Subsoil: Upper part—yellowish red clay; next part—yellowish red clay that has brownish, reddish, and grayish mottles; lower part—red clay loam that has brownish and grayish mottles
Depth class: Very deep
Drainage class: Moderately well drained

Seasonal high water table: Apparent, at a depth of 1.5 to 2.5 feet from January through March
Slope: 0 to 2 percent
Parent material: Stratified clayey and loamy sediments

Minor soils

- The loamy, well drained Cahaba and Latonia soils and the sandy Bigbee soils; on the slightly higher, more convex parts of the terraces
- The poorly drained, clayey Una soils in old oxbows, sloughs, and other shallow depressions
- The somewhat poorly drained, clayey Urbo soils on flood plains

Use and Management

Major uses: Hayland, pasture, cropland, woodland, and wildlife habitat

Cropland
Management concerns: Wetness

Pasture and hayland
Management concerns: Wetness

Woodland
Management concerns: Competition from undesirable plants and restricted use of equipment

Urban development
Management concerns: Flooding, wetness, restricted permeability, and low strength

3. Izagora-Ochlockonee-Kinston

Dominantly level and nearly level, moderately well drained, well drained, and poorly drained soils that have a loamy surface layer and a loamy subsoil or substratum; on low terraces and flood plains

Setting

Location in the survey area: Parallel to large streams throughout the county
Landscape: Coastal Plain
Landform: Izagora—low terraces; Ochlockonee and Kinston—flood plains
Landform position: Izagora—slightly convex slopes; Ochlockonee—high, convex parts of natural levees; Kinston—low, flat to concave slopes and shallow depressions
Slope: 0 to 2 percent

Composition

Percent of the survey area: 10
Izagora and similar soils: 40 percent
Ochlockonee soils: 18 percent
Kinston and similar soils: 17 percent
Minor soils: 25 percent, including Annemaine, Bibb, Cahaba, Deerford, Iuka, Latonia, Leeper, and McCrory soils

Soil Characteristics

Izagora

Surface layer: Brown fine sandy loam
Subsurface layer: Light yellowish brown loam
Subsoil: Upper part—brownish yellow loam; next part—yellowish brown loam and light yellowish brown clay loam having brownish, reddish, and grayish mottles; lower part—yellowish brown silty clay loam that has grayish, reddish, and brownish mottles
Depth class: Very deep
Drainage class: Moderately well drained
Seasonal high water table: Perched, at a depth of 2.0 to 3.0 feet from January through March
Slope: 0 to 2 percent
Parent material: Loamy sediments

Ochlockonee

Surface layer: Dark brown and dark yellowish brown sandy loam
Substratum: Upper part—very pale brown loamy fine sand; next part—yellowish brown fine sandy loam; lower part—light yellowish brown loamy fine sand
Depth class: Very deep
Drainage class: Well drained
Seasonal high water table: Apparent, at a depth of 3.0 to 5.0 feet from December through April
Slope: 0 to 1 percent
Parent material: Loamy and sandy alluvium

Kinston

Surface layer: Very dark grayish brown fine sandy loam and dark grayish brown sandy loam having brownish mottles
Subsoil: Upper part—light brownish gray loam that has brownish and reddish mottles; next part—greenish gray sandy clay loam that has brownish and reddish mottles; lower part—greenish gray clay loam that has brownish mottles
Substratum: Dark bluish gray clay loam that has reddish mottles
Depth class: Very deep
Drainage class: Poorly drained
Seasonal high water table: Apparent, at the surface to a depth of 1.0 foot from December through May
Slope: 0 to 1 percent
Parent material: Loamy alluvium

Minor soils

- The clayey Annemaine soils on low terraces
- The poorly drained Bibb soils in shallow depressions
- The well drained Cahaba and Latonia soils on low terraces
- The moderately well drained Iuka soils on the intermediate parts of natural levees
- The somewhat poorly drained Leeper soils on flood plains in the southwestern part of the county
- The poorly drained McCrory and somewhat poorly drained Deerford soils on low terraces

Use and Management

Major uses: Pasture, hayland, woodland, and wildlife habitat

Cropland
Management concerns: Izagora—wetness; Ochlockonee and Kinston—flooding and wetness

Pasture and hayland
Management concerns: Izagora—wetness; Ochlockonee and Kinston—flooding and wetness

Woodland
Management concerns: Izagora—restricted use of equipment and competition from undesirable plants; Ochlockonee and Kinston—restricted use of equipment, seedling survival, and competition from undesirable plants

Urban development
Management concerns: Flooding and wetness

4. Savannah-Izagora-Luverne

Dominantly nearly level to strongly sloping, moderately well drained and well drained soils that have a loamy surface layer and a loamy or clayey subsoil; on terraces and uplands

Setting

Location in the survey area: Northern and southern parts
Landscape: Coastal Plain
Landform: Savannah—high stream terraces; Izagora—low stream terraces; Luverne—uplands
Landform position: Savannah—broad, nearly level ridgetops and gently sloping side slopes; Izagora—nearly level, slightly convex slopes; Luverne—gently sloping ridgetops and strongly sloping side slopes
Slope: Dominantly 0 to 5 percent, but ranges from 0 to 15 percent

Composition

Percent of the survey area: 9
Savannah soils: 48 percent
Izagora soils: 15 percent
Luverne soils: 10 percent
Minor soils: 27 percent, including Bibb, Deerford, Iuka, McCrory, and Smithdale soils

Soil Characteristics

Savannah

Surface layer: Dark grayish brown and brown silt loam
Subsurface layer: Light olive brown silt loam
Subsoil: Upper part—dark yellowish brown and yellowish brown loam that has reddish, brownish, and grayish mottles; next part—yellowish brown loam fragipan that has brownish, reddish, and grayish mottles; lower part—yellowish brown clay loam that has brownish, grayish, and reddish mottles
Depth class: Moderately deep to a root restricting fragipan
Drainage class: Moderately well drained
Seasonal high water table: Perched, at a depth of 1.5 to 3.0 feet from January through March
Slope: 0 to 5 percent
Parent material: Loamy sediments

Izagora

Surface layer: Brown fine sandy loam
Subsurface layer: Light yellowish brown loam
Subsoil: Upper part—brownish yellow loam; next part—yellowish brown loam and light yellowish brown clay loam having brownish, reddish, and grayish mottles; lower part—yellowish brown silty clay loam that has grayish, reddish, and brownish mottles
Depth class: Very deep
Drainage class: Moderately well drained
Seasonal high water table: Perched, at a depth of 2.0 to 3.0 feet from January through March
Slope: 0 to 2 percent
Parent material: Loamy alluvium

Luverne

Surface layer: Yellowish brown fine sandy loam
Subsurface layer: Brownish yellow sandy loam
Subsoil: Upper part—red clay; next part—red clay that has brownish mottles; lower part—yellowish red clay loam that has reddish, brownish, and grayish mottles
Substratum: Yellowish red clay loam that has reddish, brownish, and grayish mottles

Depth class: Very deep
Drainage class: Well drained
Depth to seasonal high water table: More than 6.0 feet
Slope: 1 to 15 percent
Parent material: Stratified loamy and clayey sediments

Minor soils

- The poorly drained Bibb and moderately well drained Iuka soils on narrow flood plains
- The poorly drained McCrory and somewhat poorly drained Deerford soils on low terraces
- The well drained, loamy Smithdale soils on side slopes

Use and Management

Major uses: Pasture, hayland, woodland, homesites, and cultivated crops

Cropland
Management concerns: Savannah—wetness, erodibility, and low fertility; Izagora—wetness; Luverne—erodibility and low fertility

Pasture and hayland
Management concerns: Savannah—wetness, erodibility, and low fertility; Izagora—wetness; Luverne—erodibility and low fertility

Woodland
Management concerns: Restricted use of equipment and competition from undesirable plants

Urban development
Management concerns: Savannah—wetness, restricted permeability, and low strength; Izagora—flooding, wetness, restricted permeability, and low strength; Luverne—shrink-swell, restricted permeability, and low strength

5. Luverne-Smithdale

Dominantly gently sloping to strongly sloping, well drained soils that have a loamy or sandy surface layer and a clayey or loamy subsoil; on uplands

Setting

Location in the survey area: Northern and southern parts
Landscape: Coastal Plain
Landform: Uplands
Landform position: Gently sloping ridgetops and moderately sloping to steep side slopes
Slope: Dominantly 1 to 15 percent, but ranges from 1 to 35 percent

Composition

Percent of the survey area: 17
Luverne and similar soils: 55 percent
Smithdale soils: 25 percent
Minor soils: 20 percent, including Bibb, Boykin, Conecuh, Halso, Iuka, Izagora, Savannah, and Williamsville soils

Soil Characteristics

Luverne

Surface layer: Yellowish brown sandy loam
Subsurface layer: Brownish yellow sandy loam
Subsoil: Upper part—yellowish red sandy clay; lower part—red sandy clay loam
Substratum: Upper part—mottled red and light brownish gray sandy clay loam; lower part—mottled grayish brown, light brownish gray, and red sandy clay loam
Depth class: Very deep
Drainage class: Well drained
Depth to seasonal high water table: More than 6.0 feet
Slope: 1 to 35 percent
Parent material: Stratified loamy and clayey sediments

Smithdale

Surface layer: Dark brown loamy fine sand
Subsurface layer: Light yellowish brown fine sandy loam
Subsoil: Upper part—red sandy clay loam; lower part—yellowish red sandy loam
Depth class: Very deep
Drainage class: Well drained
Depth to seasonal high water table: More than 6.0 feet
Slope: 2 to 35 percent
Parent material: Loamy sediments

Minor soils

- The poorly drained Bibb and Kinston soils and the moderately well drained Iuka soils; on narrow flood plains
- The clayey, moderately well drained Conecuh and Halso soils on gently sloping and moderately sloping side slopes and ridgetops
- The moderately well drained Izagora and Savannah soils on stream terraces
- The clayey Williamsville soils on ridgetops in the southern part of the county

Use and Management

Major uses: Woodland, pasture, hayland, homesites, and wildlife habitat

Cropland
Management concerns: Erodibility and low fertility

Pasture and hayland
Management concerns: Erodibility, low fertility, and restricted use of equipment

Woodland
Management concerns: Competition from undesirable plants

Urban development
Management concerns: Luverne—slope, shrink-swell, restricted permeability, and low strength; Smithdale—slope

6. Luverne-Smithdale-Boykin

Dominantly gently sloping to steep, well drained soils that have a loamy or sandy surface layer and a clayey or loamy subsoil; on uplands

Setting

Location in the survey area: Northern part
Landscape: Coastal Plain
Landform: Uplands
Landform position: Narrow, gently sloping ridgetops and moderately sloping to steep side slopes
Slope: 1 to 35 percent

Composition

Percent of the survey area: 12
Luverne soils: 65 percent
Smithdale soils: 15 percent
Boykin soils: 10 percent
Minor soils: 10 percent, including Bibb, Iuka, Izagora, and Wadley soils

Soil Characteristics

Luverne

Surface layer: Yellowish brown sandy loam
Subsurface layer: Brownish yellow sandy loam
Subsoil: Upper part—yellowish red sandy clay; lower part—red sandy clay loam
Substratum: Upper part—mottled red and light brownish gray sandy clay loam; lower part—mottled grayish brown, light brownish gray, and red sandy clay loam
Depth class: Very deep
Drainage class: Well drained
Depth to seasonal high water table: More than 6.0 feet
Slope: 1 to 35 percent
Parent material: Stratified loamy and clayey sediments

Smithdale

Surface layer: Dark brown loamy fine sand
Subsurface layer: Light yellowish brown fine sandy loam
Subsoil: Upper part—red sandy clay loam; lower part—yellowish red sandy loam
Depth class: Very deep
Drainage class: Well drained
Depth to seasonal high water table: More than 6.0 feet
Slope: 2 to 35 percent
Parent material: Loamy sediments

Boykin

Surface layer: Dark grayish brown loamy fine sand
Subsurface layer: Light yellowish brown loamy fine sand
Subsoil: Upper part—yellowish red sandy clay loam; next part—strong brown fine sandy loam that has reddish mottles; lower part—strong brown sandy clay loam that has grayish and reddish mottles
Depth class: Very deep
Drainage class: Well drained
Depth to seasonal high water table: More than 6.0 feet
Slope: 2 to 35 percent
Parent material: Sandy and loamy sediments

Minor soils

- The poorly drained Bibb and moderately well drained Iuka soils on narrow flood plains
- The moderately well drained Izagora soils on low terraces
- The sandy, excessively drained Wadley soils on ridgetops

Use and Management

Major uses: Woodland, pasture, and wildlife habitat

Cropland
Management concerns: Luverne and Smithdale—erodibility, restricted use of equipment, and low fertility; Boykin—droughtiness, restricted use of equipment, erodibility, and low fertility

Pasture and hayland
Management concerns: Luverne and Smithdale—erodibility, restricted use of equipment, and low fertility; Boykin—droughtiness, low fertility, and restricted use of equipment

Woodland
Management concerns: Competition from undesirable plants, erodibility, restricted use of equipment, and seedling survival

Urban development
Management concerns: Luverne—shrink-swell, restricted permeability, low strength, and slope; Smithdale—slope; Boykin—slope and droughtiness

7. Smithdale-Boykin-Luverne

Dominantly gently sloping to steep, well drained soils that have a loamy or sandy surface layer and a loamy or clayey subsoil; on uplands

Setting

Location in the survey area: Southern part
Landscape: Coastal Plain
Landform: Uplands
Landform position: Narrow, gently sloping ridgetops and strongly sloping to steep side slopes
Slope: Dominantly 15 to 35 percent, but ranges from 1 to 35 percent

Composition

Percent of the survey area: 17
Smithdale soils: 35 percent
Boykin soils: 25 percent
Luverne and similar soils: 20 percent
Minor soils: 20 percent, including Arundel, Bibb, Cantuche, Iuka, Wadley, and Williamsville soils

Soil Characteristics

Smithdale

Surface layer: Brown and light yellowish brown loamy sand
Subsurface layer: Light yellowish brown loamy sand
Subsoil: Upper part—yellowish red sandy loam; next part—red sandy clay loam; lower part—red sandy loam
Depth class: Very deep
Drainage class: Well drained
Depth to seasonal high water table: More than 6.0 feet
Slope: 2 to 35 percent
Parent material: Loamy sediments

Boykin

Surface layer: Dark grayish brown loamy fine sand
Subsurface layer: Light yellowish brown loamy fine sand
Subsoil: Upper part—yellowish red sandy clay loam; next part—strong brown fine sandy loam that has reddish mottles; lower part—strong brown sandy clay loam that has grayish and reddish mottles
Depth class: Very deep
Drainage class: Well drained
Depth to seasonal high water table: More than 6.0 feet
Slope: 2 to 35 percent
Parent material: Sandy and loamy sediments

Luverne

Surface layer: Dark brown fine sandy loam
Subsurface layer: Brown fine sandy loam
Subsoil: Upper part—red clay loam that has brownish mottles; next part—red clay loam that has brownish mottles; lower part—red clay loam that has brownish mottles and grayish fragments of weathered shale
Substratum: Red sandy clay loam that has brownish mottles and grayish fragments of shale
Depth class: Very deep
Drainage class: Well drained
Depth to seasonal high water table: More than 6.0 feet
Slope: 1 to 35 percent
Parent material: Stratified loamy and clayey sediments

Minor soils

- The moderately deep Arundel and shallow Cantuche soils on the lower parts of side slopes
- The poorly drained Bibb and moderately well drained Iuka soils on narrow flood plains
- The sandy, excessively drained Wadley soils on high ridgetops
- The clayey Williamsville soils on gently sloping and moderately sloping ridgetops

Use and Management

Major uses: Woodland, wildlife habitat, and pasture

Cropland
Management concerns: Smithdale and Luverne—erodibility, restricted use of equipment, and low fertility; Boykin—droughtiness, restricted use of equipment, and low fertility

Pasture and hayland
Management concerns: Smithdale and Luverne—erodibility, restricted use of equipment, and low fertility; Boykin—droughtiness, restricted use of equipment, and low fertility

Woodland
Management concerns: Competition from undesirable plants, erodibility, restricted use of equipment, and seedling survival

Urban development
Management concerns: Smithdale—slope; Boykin—slope and droughtiness; Luverne—shrink-swell, restricted permeability, low strength, and slope

8. Brantley-Okeelala-Smithdale

Dominantly gently sloping to very steep, well drained soils that have a loamy or sandy surface layer and a clayey or loamy subsoil; on uplands

Setting

Location in the survey area: Southern part

Landscape: Coastal Plain
Landform: Uplands
Landform position: Brantley—gently sloping ridgetops and moderately steep to very steep side slopes; Okeelala—moderately steep to very steep side slopes; Smithdale—narrow, gently sloping ridgetops
Slope: 2 to 60 percent

Composition

Percent of the survey area: 10
Brantley and similar soils: 42 percent
Okeelala soils: 18 percent
Smithdale soils: 15 percent
Minor soils: 25 percent, including Bibb, Boswell, Freest, Hannon, Iuka, Leeper, and Toxey soils

Soil Characteristics

Brantley

Surface layer: Dark grayish brown loam
Subsoil: Upper part—reddish brown clay loam; next part—yellowish red clay loam; lower part—strong brown sandy clay loam that has brownish mottles
Substratum: Strong brown sandy loam that has reddish mottles
Depth class: Very deep
Drainage class: Well drained
Depth to seasonal high water table: More than 6.0 feet
Slope: 3 to 60 percent
Parent material: Loamy and clayey sediments

Okeelala

Surface layer: Very dark grayish brown loamy sand
Subsurface layer: Yellowish brown loamy sand
Subsoil: Upper part—yellowish red sandy loam; next part—yellowish red sandy clay loam; lower part—yellowish red sandy loam
Substratum: Yellowish red sandy loam
Depth class: Very deep
Drainage class: Well drained
Depth to seasonal high water table: More than 6.0 feet
Slope: 15 to 60 percent
Parent material: Loamy sediments

Smithdale

Surface layer: Dark brown loamy fine sand
Subsurface layer: Light yellowish brown fine sandy loam
Subsoil: Upper part—red sandy clay loam; lower part—yellowish red sandy loam
Depth class: Very deep
Drainage class: Well drained
Depth to seasonal high water table: More than 6.0 feet
Slope: 2 to 5 percent
Parent material: Loamy sediments

Minor soils

- The poorly drained Bibb and moderately well drained Iuka soils on narrow flood plains
- The moderately well drained, clayey Boswell soils on the lower parts of side slopes
- The moderately well drained Freest soils on terraces
- The clayey Hannon and Toxey soils on gently sloping and moderately sloping ridgetops and benches
- The somewhat poorly drained Leeper soils on flood plains

Use and Management

Major uses: Woodland, wildlife habitat, and pasture

Cropland
Management concerns: Brantley and Okeelala—restricted use of equipment and erodibility; Smithdale—erodibility and low fertility

Pasture and hayland
Management concerns: Brantley and Okeelala—erodibility and restricted use of equipment; Smithdale—erodibility and low fertility

Woodland
Management concerns: Brantley—erodibility, restricted use of equipment, and competition from undesirable plants; Okeelala—erodibility and restricted use of equipment; Smithdale—no significant concerns

Urban development
Management concerns: Brantley—restricted permeability, slope, low strength, and erodibility; Okeelala—slope and erodibility; Smithdale—no significant concerns

9. Brantley-Sumter-Maytag

Dominantly gently sloping to steep, well drained and moderately well drained soils that have a loamy surface layer and a clayey subsoil; on uplands

Setting

Location in the survey area: Southwestern part
Landscape: Blackland Prairie
Landform: Uplands
Landform position: Brantley—gently sloping and moderately sloping ridgetops and moderately steep and steep side slopes; Sumter and Maytag—gently sloping and moderately sloping ridgetops and strongly sloping side slopes
Slope: 3 to 35 percent

Composition

Percent of the survey area: 1.5
Brantley and similar soils: 35 percent
Sumter soils: 21 percent
Maytag soils: 18 percent
Minor soils: 26 percent, including Boswell, Hannon, Leeper, Louin, Okeelala, Oktibbeha, and Wadley soils

Soil Characteristics

Brantley

Surface layer: Dark grayish brown loam
Subsoil: Upper part—reddish brown clay loam; next part—yellowish red clay loam; lower part—strong brown sandy clay loam that has brownish mottles
Substratum: Strong brown sandy loam that has reddish mottles
Depth class: Very deep
Drainage class: Well drained
Depth to seasonal high water table: More than 6.0 feet
Slope: 3 to 35 percent
Parent material: Loamy and clayey sediments

Sumter

Surface layer: Dark grayish brown silty clay loam
Subsoil: Upper part—light yellowish brown silty clay; next part—pale yellow silty clay that has brownish and yellowish mottles; lower part—light gray clay that has brownish and yellowish mottles
Bedrock layer: Soft limestone (chalk)
Depth class: Moderately deep
Drainage class: Well drained
Depth to seasonal high water table: More than 6.0 feet
Slope: 3 to 15 percent
Parent material: Alkaline, loamy and clayey residuum derived from soft limestone (chalk)

Maytag

Surface layer: Dark grayish brown silty clay loam
Subsoil: Upper part—light yellowish brown silty clay that has yellowish mottles; next part—light yellowish brown and light gray silty clay that has brownish and yellowish mottles; lower part—light yellowish brown and light gray silty clay loam that has yellowish mottles
Substratum: Upper part—light gray silty clay that has brownish mottles; lower part—light yellowish brown silty clay that has yellowish mottles
Depth class: Very deep
Drainage class: Moderately well drained
Depth to seasonal high water table: More than 6.0 feet
Slope: 3 to 15 percent
Parent material: Alkaline, clayey residuum derived from soft limestone (chalk)

Minor soils

- The moderately well drained, clayey Boswell soils on the lower parts of side slopes
- The loamy Freest soils on terraces
- The somewhat poorly drained Leeper soils on flood plains
- The loamy Okeelala soils on side slopes at the lower elevations
- The moderately well drained, clayey Hannon and Oktibbeha soils on ridgetops
- The sandy, excessively drained Wadley soils on high ridgetops

Use and Management

Major uses: Pasture, hayland, woodland, and wildlife habitat

Cropland
Management concerns: Brantley—erodibility and restricted use of equipment; Sumter and Maytag—erodibility and tilth

Pasture and hayland
Management concerns: Brantley—erodibility and restricted use of equipment; Sumter and Maytag—erodibility

Woodland
Management concerns: Brantley—erodibility, restricted use of equipment, and competition from undesirable plants; Sumter and Maytag—seedling survival, unsuited to pine trees because of excess alkalinity

Urban development
Management concerns: Brantley—slope, restricted permeability, and low strength; Sumter—shrink-swell, depth to bedrock, and low strength; Maytag—shrink-swell, restricted permeability, low strength, and cutbanks cave

10. Wilcox-Mayhew

Dominantly nearly level to strongly sloping, somewhat poorly drained and poorly drained soils that have a clayey or loamy surface layer and a clayey subsoil; on uplands

Setting

Location in the survey area: Northeastern part
Landscape: Coastal Plain
Landform: Uplands

Landform position: Wilcox—narrow, gently sloping ridgetops and gently sloping to moderately steep side slopes; Mayhew—broad, nearly level ridgetops
Slope: 0 to 15 percent

Composition

Percent of the survey area: 0.5
Wilcox and similar soils: 80 percent
Mayhew soils: 10 percent
Minor soils: 10 percent, including Bibb, Iuka, Luverne, and Savannah soils

Soil Characteristics

Wilcox

Surface layer: Brown silty clay
Subsoil: Upper part—yellowish red clay; next part—red clay that has grayish mottles; lower part—light brownish gray clay that has reddish and brownish mottles
Substratum: Gray clay that has brownish mottles
Bedrock layer: Clayey shale
Depth class: Deep
Drainage class: Somewhat poorly drained
Seasonal high water table: Perched, at a depth of 1.5 to 3.0 feet from January through March
Slope: 1 to 15 percent
Parent material: Acid, clayey sediments and the underlying shale

Mayhew

Surface layer: Dark brown silty clay loam and silty clay
Subsoil: Upper part—light brownish gray silty clay that has brownish and yellowish mottles; next part—grayish brown silty clay that has brownish and reddish mottles; lower part—light brownish gray clay that has brownish and reddish mottles
Bedrock layer: Clayey shale
Depth class: Very deep
Drainage class: Poorly drained
Seasonal high water table: Perched, at the surface to a depth of 1.0 foot from January through March
Slope: 0 to 2 percent
Parent material: Acid, clayey sediments and the underlying shale

Minor soils

- The poorly drained Bibb and moderately well drained Iuka soils on narrow flood plains
- The well drained Luverne soils on high parts of ridgetops
- The loamy Savannah soils on high terraces

Use and Management

Major uses: Woodland and wildlife habitat

Cropland
Management concerns: Wilcox—erodibility and tilth; Mayhew—wetness and tilth

Pasture and hayland
Management concerns: Wilcox—erodibility; Mayhew—wetness

Woodland
Management concerns: Restricted use of equipment, seedling survival, and competition from undesirable plants

Urban development
Management concerns:, Wilcox—shrink-swell, slope, restricted permeability, and low strength; Mayhew—shrink-swell, wetness, restricted permeability, and low strength

11. Arundel-Cantuche-Smithdale

Dominantly gently sloping to very steep, moderately deep soils that have a loamy surface layer and a clayey subsoil; shallow soils that have a loamy surface layer and a loamy subsoil; and very deep soils that have a sandy surface layer and a loamy subsoil; on uplands

Setting

Location in the survey area: Central and southern parts
Landscape: Coastal Plain
Landform: Uplands
Landform position: Narrow, gently sloping ridgetops and steep and very steep side slopes
Slope: 2 to 60 percent

Composition

Percent of the survey area: 15
Arundel and similar soils: 35 percent
Cantuche and similar soils: 21 percent
Smithdale and similar soils: 15 percent
Minor soils: 29 percent, including Bibb, Boykin, Iuka, Lauderdale, Luverne, Rayburn, Wadley, and Williamsville soils

Soil Characteristics

Arundel

Surface layer: Dark brown loam
Subsoil: Upper part—yellowish red clay; lower part—yellowish red clay that has brownish mottles
Bedrock layer: Weathered siltstone (buhrstone)

Depth class: Moderately deep
Drainage class: Well drained
Depth to seasonal high water table: More than 6.0 feet
Slope: 2 to 60 percent
Parent material: Clayey sediments and the underlying claystone or siltstone (buhrstone)

Cantuche

Surface layer: Dark grayish brown very channery sandy loam
Subsurface layer: Dark grayish brown very channery loam
Bedrock layer: Weathered siltstone (buhrstone)
Depth class: Shallow
Drainage class: Well drained
Depth to seasonal high water table: More than 6.0 feet
Slope: 25 to 60 percent
Parent material: Residuum from claystone or siltstone (buhrstone)

Smithdale

Surface layer: Brown loamy sand
Subsurface layer: Light yellowish brown loamy sand
Subsoil: Upper part—yellowish red sandy loam; next part—red sandy clay loam; lower part—red sandy loam
Depth class: Very deep
Drainage class: Well drained
Depth to seasonal high water table: More than 6.0 feet
Slope: 2 to 35 percent
Parent material: Loamy sediments

Minor soils

- The poorly drained Bibb and moderately well drained Iuka soils on narrow flood plains
- The sandy Boykin and Wadley soils on high ridgetops
- The poorly drained McCrory soils on low terraces
- The shallow Lauderdale soils on narrow ridgetops
- The very deep, clayey Luverne and Williamsville soils on high ridgetops and upper side slopes
- The deep, clayey Rayburn soils on toeslopes

Use and Management

Major uses: Woodland, wildlife habitat, and pasture

Cropland
Management concerns: Restricted use of equipment and erodibility

Pasture and hayland
Management concerns: Restricted use of equipment, erodibility, and low fertility

Woodland
Management concerns: Arundel and Cantuche—erodibility, restricted use of equipment, and seedling survival; Smithdale—restricted use of equipment and erodibility

Urban development
Management concerns: Arundel—slope, restricted permeability, shrink-swell, and depth to rock; Cantuche—depth to rock, slope, and small stones; Smithdale—slope

Detailed Soil Map Units

The map units delineated on the detailed maps at the back of this survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this section, along with the maps, can be used to determine the suitability and potential of a unit for specific uses. They also can be used to plan the management needed for those uses. More information about each map unit is given under the heading "Use and Management of the Soils."

A map unit delineation on a map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils or miscellaneous areas. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils and miscellaneous areas are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some "included" areas that belong to other taxonomic classes.

Most included soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, inclusions. They may or may not be mentioned in the map unit description. Other included soils and miscellaneous areas, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, inclusions. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. The included areas of contrasting soils or miscellaneous areas are mentioned in the map unit descriptions. A few included areas may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of included areas in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans, but if intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives the principal hazards and limitations to be considered in planning for specific uses.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Savannah silt loam, 2 to 5 percent slopes, is a phase of the Savannah series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Arundel-Cantuche complex, 25 to 60 percent slopes, stony, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Ochlockonee, Kinston, and Iuka soils, 0 to 1 percent slopes, frequently flooded, is an undifferentiated group in this survey area.

This survey includes *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Pits is an example.

Table 5 gives the acreage and proportionate extent of each map unit. Other tables give properties of the soils and the limitations, capabilities, and potentials for many uses. The Glossary defines many of the terms used in describing the soils or miscellaneous areas.

AnA—Annemaine silt loam, 0 to 2 percent slopes, rarely flooded

Setting

Landscape: Coastal Plain
Landform: Low stream terraces along the Tombigbee River and other major streams
Landform position: Slightly convex slopes
Shape of areas: Oblong
Size of areas: 10 to 300 acres

Composition

Annemaine and similar soils: 90 percent
Dissimilar soils: 10 percent

Typical Profile

Surface layer:
0 to 4 inches—brown silt loam

Subsoil:
4 to 19 inches—yellowish red clay
19 to 35 inches—yellowish red clay that has brownish, reddish, and grayish mottles
35 to 65 inches—red clay loam that has brownish and grayish mottles

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Moderately well drained
Permeability: Slow
Available water capacity: High
Seasonal high water table: Apparent, at a depth of 1.5 to 2.5 feet from January through March
Shrink-swell potential: Moderate
Flooding: Rare
Content of organic matter in the surface layer: Low
Natural fertility: Medium
Depth to bedrock: More than 60 inches

Minor Components

Dissimilar soils:
• The somewhat poorly drained Lenoir soils in the slightly lower, less convex positions
• The poorly drained Bibb soils and the loamy Iuka soils; on narrow flood plains
• The loamy Cahaba and Izagora soils in the slightly higher positions
• The poorly drained Una soils in depressions

Similar soils:
• Scattered areas of Annemaine soils that have a surface layer of fine sandy loam or loam

Land Use

Dominant uses: Woodland and pasture
Other uses: Cropland, hayland, and wildlife habitat

Cropland

Suitability: Well suited
Commonly grown crops: Corn, soybeans, grain sorghum, and cotton
Management concerns: Wetness
Management measures and considerations:
• Installing and maintaining an artificial drainage system reduces wetness and improves productivity.
• Applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Pasture and hayland

Suitability: Well suited
Commonly grown crops: Dallisgrass, tall fescue, coastal bermudagrass, and bahiagrass
Management concerns: Wetness
Management measures and considerations:
• Proper stocking rates and restricted grazing during wet periods help to prevent compaction and keep the pasture in good condition.
• During the establishment, maintenance, or renovation of pasture and hayland, applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Woodland

Suitability: Well suited
Productivity class: Very high for loblolly pine
Management concerns: Equipment use and competition from undesirable plants

Management measures and considerations:
• Restricting the use of standard wheeled and tracked equipment to dry periods helps to prevent rutting and compaction.
• Site preparation practices, such as chopping, prescribed burning, and applying herbicides, help to control competition from unwanted plants.
• Leaving a buffer zone of trees and shrubs adjacent to streams helps to control siltation and provides shade for the surface of the water.

Wildlife habitat

Potential to support habitat for: Openland wildlife and woodland wildlife—good; wetland wildlife—poor
Management concerns: Equipment use
Management measures and considerations:
• Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
• Woodland wildlife habitat can be improved by planting or encouraging the growth of oak trees and suitable understory plants. Prescribed burning every three years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.
• Wetland wildlife habitat can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

Dwellings

Suitability: Poorly suited
Management concerns: Flooding
Management measures and considerations:
• Constructing dwellings on elevated, well-compacted fill material helps to minimize damage from the flooding.

Septic tank absorption fields

Suitability: Poorly suited
Management concerns: Wetness and restricted permeability
Management measures and considerations:
• The local Health Department can be contacted for guidance regarding sanitary facilities.
• Increasing the size of the absorption field improves system performance.
• Installing distribution lines during dry periods minimizes smearing and sealing of trench walls.

Local roads and streets

Suitability: Poorly suited
Management concerns: Low strength
Management measures and considerations:
• Incorporating sand and gravel into the roadbed and compacting the roadbed help to overcome the low strength of the natural soil material.

Interpretive Groups

Land capability classification: IIw
Woodland ordination symbol: 9W for loblolly pine

ArF—Arundel-Cantuche complex, 25 to 60 percent slopes, stony

Setting

Landscape: Uplands on the Coastal Plain
Landform: Hillslopes in the central and southern parts of the county
Landform position: Arundel—convex to slightly concave side slopes; Cantuche—convex nose slopes, side slopes, and shoulder slopes
Shape of areas: Irregular
Size of areas: 40 to 1,200 acres

Composition

Arundel and similar soils: 50 percent
Cantuche and similar soils: 35 percent
Dissimilar soils: 15 percent

Typical Profile

Arundel

Surface layer:
0 to 4 inches—dark brown loam

Subsoil:
4 to 13 inches—yellowish red clay
13 to 21 inches—yellowish red clay
21 to 32 inches—yellowish red clay that has brownish mottles

Bedrock:
32 to 80 inches—weathered, light gray and pale brown siltstone

Cantuche

Surface layer:
0 to 11 inches—dark grayish brown very channery sandy loam and very channery loam

Bedrock:
11 to 80 inches—weathered, light brownish gray siltstone

Soil Properties and Qualities

Depth class: Arundel—moderately deep; Cantuche—shallow

Drainage class: Well drained
Permeability: Arundel—very slow; Cantuche—moderate
Available water capacity: Arundel—moderate; Cantuche—very low
Depth to seasonal high water table: More than 6.0 feet
Shrink-swell potential: Arundel—high; Cantuche—low
Flooding: None
Content of organic matter in the surface layer: Low
Natural fertility: Low
Depth to bedrock: Arundel—20 to 40 inches to soft bedrock; Cantuche—10 to 20 inches to soft bedrock

Minor Components

Dissimilar:
• The sandy Boykin soils on the upper and lower parts of slopes
• The very deep Luverne and Smithdale soils on narrow ridges and the upper and lower parts of slopes
• The deep, moderately well drained Rayburn soils in saddles and on toeslopes
• The poorly drained Bibb and moderately well drained Iuka soils on narrow flood plains
• Cantuche soils on short slopes of more than 60 percent
• Arundel soils that have a slope of less than 25 percent
• Scattered areas of rock outcrop

Similar soils:
• Scattered areas of clayey soils that have more rock fragments in the subsoil than the Arundel soils

Land Use

Dominant uses: Woodland
Other uses: Wildlife habitat

Cropland

Suitability: Unsuited
Management concerns: This map unit is severely limited for crop production because of the very steep slope and stoniness. A site that has better suited soils should be selected.

Pasture and hayland

Suitability: Unsuited
Management concerns: This map unit is severely limited for pasture and hay because of the very steep, complex slope and stoniness. A site that has better suited soils should be selected.

Woodland

Suitability: Poorly suited (fig. 3)
Productivity class: Arundel—very high for loblolly pine; Cantuche—high for loblolly pine

Figure 3.—An area of Arundel-Cantuche complex, 25 to 60 percent slopes, stony, that supports a mixed stand of pine and hardwood. Soils on steep slopes are susceptible to downslope movement. The bent and twisted tree trunks shown here are a result of downslope movement and the compensating tree growth.

Management concerns: Erodibility, equipment use, and seedling survival
Management measures and considerations:
• Installing broad base dips, water bars, and culverts helps to stabilize logging roads, skid trails, and landings. Reseeding disturbed areas with adapted grasses and legumes helps to control erosion and the siltation of streams.
• Establishing a permanent plant cover on roads and landings after the completion of logging helps to control erosion and the siltation of streams.
• Constructing roads, fire lanes, and skid trails on the contour helps to overcome the slope limitations.
• Using cable logging helps to minimize the need for road and trail construction, especially in areas where the slope is more than about 50 percent.

• Planting during wet periods or during periods when the soil is moist for extended periods increases the seedling survival rate.

Wildlife habitat

Potential of the Arundel soil to support habitat for: Openland wildlife—fair; woodland wildlife—good; wetland wildlife—very poor
Potential of the Cantuche soil to support habitat for: Openland wildlife—poor; woodland wildlife and wetland wildlife—very poor
Management concerns: Equipment use and erodibility
Management measures and considerations:
• Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
• Woodland wildlife habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants.
• Wetland wildlife habitat can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

Urban development

Suitability: Unsuited
Management concerns: This map unit is severely limited as a site for urban development because of the very steep slopes and the depth to rock. A site that has better suited soils should be selected.

Interpretive Groups

Land capability classification: VIIe
Woodland ordination symbol: 9R—for loblolly pine in areas of the Arundel soil; 7R—for loblolly pine in areas of the Cantuche soil

AwE—Arundel-Williamsville complex, 15 to 35 percent slopes

Setting

Landscape: Uplands on the Coastal Plain
Landform: Hillslopes in the southern part of the county
Landform position: Arundel—convex to slightly concave slopes on the lower parts of side slopes; Williamsville—convex nose slopes, shoulder slopes, and the upper parts of side slopes
Shape of areas: Irregular
Size of areas: 10 to 200 acres

Composition

Arundel and similar soils: 60 percent
Williamsville and similar soils: 25 percent
Dissimilar soils: 15 percent

Typical Profile

Arundel
Surface layer:
0 to 8 inches—very dark gray and dark grayish brown sandy loam

Subsoil:
8 to 14 inches—dark reddish brown clay that has soft fragments of siltstone
14 to 28 inches—dark reddish brown clay that has soft fragments of siltstone

Substratum:
28 to 36 inches—light olive brown silty clay loam that has soft fragments of siltstone

Bedrock:
36 to 80 inches—weathered siltstone

Williamsville

Surface layer:
0 to 4 inches—brown fine sandy loam

Subsoil:
4 to 15 inches—red clay
15 to 36 inches—dark red clay loam
36 to 50 inches—red sandy clay loam
50 to 62 inches—red and light yellowish brown clay loam

Substratum:
62 to 80 inches—pale olive loam

Soil Properties and Qualities

Depth class: Arundel—moderately deep; Williamsville—very deep
Drainage class: Well drained
Permeability: Arundel—very slow; Williamsville—moderately slow
Available water capacity: Arundel—moderate; Williamsville—high
Depth to seasonal high water table: More than 6.0 feet
Shrink-swell potential: Arundel—high; Williamsville—moderate
Flooding: None
Content of organic matter in the surface layer: Low
Natural fertility: Low
Depth to bedrock: Arundel—20 to 40 inches to soft bedrock; Williamsville—more than 60 inches
Other distinctive properties: Williamsville—greenish glauconitic sand in the substratum

Minor Components

Dissimilar soils:
• The sandy Boykin soils on narrow ridges and the upper parts of slopes
• The loamy Smithdale soils on narrow ridges and the upper parts of slopes
• The deep, moderately well drained Rayburn soils on toeslopes
• The poorly drained Bibb and moderately well drained Iuka soils on narrow flood plains
• The shallow Lauderdale soils on narrow ridges and shoulder slopes
• Arundel soils that have a slope of more than 35 percent

Similar soils:
• Soils that are similar to the Williamsville soil but that do not have glauconitic sands in the subsoil or substratum

Land Use

Dominant uses: Woodland and wildlife habitat
Other uses: Pasture and homesites

Cropland

Suitability: Unsuited
Management concerns: This map unit is severely limited for crop production because of the steep, complex slopes. A site that has better suited soils should be selected.

Pasture and hayland

Suitability: Poorly suited
Commonly grown crops: Coastal bermudagrass and bahiagrass
Management concerns: Erodibility, equipment use, and fertility
Management measures and considerations:
• The slope may limit equipment use in the steeper areas.
• Fencing livestock away from streams helps to prevent steambank erosion and sedimentation.
• During the establishment, maintenance, or renovation of pasture and hayland, applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Woodland

Suitability: Suited
Productivity class: Very high for loblolly pine
Management concerns: Arundel—erodibility, equipment use, and seedling survival; Williamsville—erodibility and equipment use
Management measures and considerations:
• Installing broad base dips, water bars, and culverts helps to stabilize logging roads, skid trails, and landings. Reseeding disturbed areas with adapted grasses and legumes and establishing a permanent plant cover on roads and landings after the completion of logging help to control erosion and the siltation of streams.
• Constructing roads, fire lanes, and skid trails on the contour helps to overcome the slope limitations.
• Unsurfaced roads may be impassable during wet periods because of the high content of clay in these soils.
• Logging when the soil has the proper moisture content helps to prevent rutting in the surface layer and the root damage caused by compaction.
• Special site preparation, such as harrowing and bedding, helps to establish seedlings, reduces the seedling mortality rate, and increases early seedling growth.
• Leaving a buffer zone of trees and shrubs adjacent to streams helps to control siltation and provides shade for the surface of the water.

Wildlife habitat

Potential to support habitat for: Openland wildlife—fair; woodland wildlife—good; wetland wildlife—very poor
Management concerns: Erodibility, equipment use, and fertility
Management measures and considerations:
• Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
• Woodland wildlife habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Prescribed burning every three years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.
• Wetland wildlife habitat can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

Dwellings

Suitability: Poorly suited
Management concerns: Arundel—shrink-swell and slope; Williamsville—slope
Management measures and considerations:
• Reinforcing foundations and footings or backfilling with coarse-textured material helps to strengthen buildings and prevents the damage caused by shrinking and swelling.

• Structures can be designed to conform to the natural slope.
• Land grading or shaping prior to construction minimizes the damage caused by surface flow of water and reduces the hazard of erosion.

Septic tank absorption fields

Suitability: Poorly suited
Management concerns: Arundel—depth to rock, restricted permeability, and slope; Williamsville—restricted permeability and slope
Management measures and considerations:
• The local Health Department can be contacted for guidance regarding sanitary facilities.
• Managing this map unit as a site for septic tank absorption fields is difficult because of the restricted depth of the soils.
• Installing the absorption fields in areas of the deeper Williamsville soil, increasing the size of the field, and installing the distribution lines on the contour can improve system performance.
• Installing distribution lines during dry periods minimizes smearing and sealing of trench walls.

Local roads and streets

Suitability: Poorly suited
Management concerns: Arundel—shrink-swell, low strength, and slope; Williamsville—low strength and slope
Management measures and considerations:
• Incorporating sand and gravel into the roadbed and compacting the roadbed improve the strength of the soil.
• Designing roads to conform to the contour and providing adequate water-control structures, such as culverts, help to maintain the stability of the road.
• Removing as much of the clay that has a high shrink-swell potential as possible and increasing the thickness of the base aggregate improve soil performance.

Interpretive Groups

Land capability classification: VIIe
Woodland ordination symbol: 9R—for loblolly pine in areas of the Arundel soil; 10R—for loblolly pine in areas of the Williamsville soil

BbA—Bibb-Iuka complex, 0 to 1 percent slopes, frequently flooded

Setting

Landscape: Coastal Plain
Landform: Narrow flood plains
Landform position: Bibb—flat or concave slopes on the lower parts of flood plains; Iuka—convex slopes on the high and intermediate parts of natural levees
Shape of areas: Long and narrow
Size of areas: 20 to 500 acres

Composition

Bibb and similar soils: 50 percent
Iuka and similar soils: 35 percent
Dissimilar soils: 15 percent

Typical Profile

Bibb

Surface layer:
0 to 3 inches—dark grayish brown fine sandy loam

Substratum:
3 to 9 inches—gray sandy loam that has brownish mottles
9 to 15 inches—gray sandy loam that has brownish mottles and strata of loamy sand
15 to 45 inches—light brownish gray sandy loam that has yellowish mottles
45 to 60 inches—light brownish gray loamy sand

Iuka

Surface layer:
0 to 9 inches—brown fine sandy loam

Substratum:
9 to 18 inches—yellowish brown sandy loam
18 to 29 inches—light yellowish brown sandy loam that has grayish and brownish mottles
29 to 42 inches—brownish yellow sandy loam that has grayish and yellowish mottles
42 to 60 inches—light gray sandy loam that has brownish and yellowish mottles

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Bibb—poorly drained; Iuka—moderately well drained
Permeability: Moderate
Available water capacity: Moderate
Seasonal high water table: Bibb—apparent, at a depth of 0.5 to 1.0 foot from December through April; Iuka—apparent, at a depth of 1.0 to 3.0 feet from December through April
Shrink-swell potential: Low
Flooding: Frequent
Content of organic matter in the surface layer: Medium
Natural fertility: Medium
Depth to bedrock: More than 60 inches

Minor Components

Dissimilar soils:
• The moderately well drained Izagora soils and well drained Cahaba and Latonia soils; on high knolls and remnants of stream terraces
• The well drained Ochlockonee soils on the slightly higher parts of natural levees

Similar soils:
• Soils that are similar to the Bibb and Iuka soils but that have more clay in the substratum
• Very poorly drained soils in depressions

Land Use

Dominant uses: Woodland and wildlife habitat
Other uses: Pasture and hayland

Cropland

Suitability: Poorly suited
Management concerns: This map unit is severely limited for crop production because of the flooding and wetness. A site that has better suited soils should be selected.

Pasture and hayland

Suitability: Suited to pasture and poorly suited to hayland
Commonly grown crops: Common bermudagrass and bahiagrass
Management concerns: Flooding and wetness
Management measures and considerations:
• Although most flooding occurs during the winter and spring, livestock and hay may be damaged during any time of the year.
• Proper stocking rates and restricted grazing during wet periods help to prevent compaction and keep the pasture in good condition.
• During the establishment, maintenance, or renovation of pasture and hayland, applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Woodland

Suitability: Suited
Productivity class: Very high for loblolly pine and hardwoods
Management concerns: Equipment use, seedling survival, and competition from undesirable plants
Management measures and considerations:
• Restricting the use of standard wheeled and tracked equipment to dry periods helps to prevent rutting and compaction.
• Harvesting timber during the summer reduces the risk of damage from the flooding.
• Bedding the Bibb soil prior to planting helps to establish seedlings and increases the seedling survival rate.
• Site preparation practices, such as chopping and the application of herbicides, help to control competition from unwanted plants.
• Leaving a buffer zone of trees and shrubs adjacent to streams helps to control siltation and provides shade for the surface of the water, thereby improving aquatic habitat.

Wildlife habitat

Potential of the Bibb soil to support habitat for:
Openland wildlife and woodland wildlife—fair; wetland wildlife—good
Potential of the Iuka soil to support habitat for:
Openland wildlife—fair; woodland wildlife—good; wetland wildlife—poor
Management concerns: Equipment use and wetness
Management measures and considerations:
• Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
• Woodland wildlife habitat can be improved by planting or encouraging the growth of oak trees and suitable understory plants.
• Wetland wildlife habitat can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

Urban development

Suitability: Unsuited
Management concerns: This map unit is severely limited as a site for urban development because of the flooding. A site that has better suited soils should be selected.

Interpretive Groups

Land capability classification: Vw
Woodland ordination symbol: 9W—for loblolly pine in areas of the Bibb soil; 11W—for loblolly pine in areas of the Iuka soil

BeB—Bigbee loamy sand, 0 to 5 percent slopes, rarely flooded

Setting

Landscape: Coastal Plain
Landform: Low stream terraces and natural levees along the Tombigbee River and other major streams

Landform position: Flat to convex slopes
Shape of areas: Oblong
Size of areas: 10 to 150 acres

Composition

Bigbee and similar soils: 90 percent
Dissimilar soils: 10 percent

Typical Profile

Surface layer:
0 to 6 inches—dark brown loamy sand

Substratum:
6 to 23 inches—brown loamy sand
23 to 45 inches—light yellowish brown fine sand
45 to 59 inches—brownish yellow sand
59 to 70 inches—very pale brown sand

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Excessively drained
Permeability: Rapid
Available water capacity: Low
Seasonal high water table: Apparent, at a depth of 3.5 to 6.0 feet from January through March
Shrink-swell potential: Low
Flooding: Rare
Content of organic matter in the surface layer: Low
Natural fertility: Low
Depth to bedrock: More than 60 inches

Minor Components

Dissimilar soils:
• The loamy Riverview and Ochlockonee soils in the slightly lower positions on natural levees
• The clayey Urbo soils in narrow drainageways and in depressions
• The loamy Cahaba, Izagora, and Latonia soils in the slightly lower positions on stream terraces
• The poorly drained Kinston soils in depressions

Similar soils:
• Scattered areas of sandy soils that have thin strata of loamy material in the substratum

Land Use

Dominant uses: Woodland and wildlife habitat
Other uses: Cropland, hayland, and pasture

Cropland

Suitability: Suited
Commonly grown crops: Corn and watermelons
Management concerns: Equipment use, droughtiness, nutrient leaching, and fertility
Management measures and considerations:
• Using equipment that has low-pressure tires reduces the slippage and rutting caused by the high content of sand in the soil.
• Using supplemental irrigation and planting crop varieties that are adapted to droughty conditions increase production.
• Conservation tillage, winter cover crops, crop residue management, and crop rotations that include grasses and legumes increase available water capacity, minimize crusting, and improve fertility.
• Using split applications increases the effectiveness of fertilizer and herbicides.
• Applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Pasture and hayland

Suitability: Suited
Commonly grown crops: Coastal bermudagrass and bahiagrass
Management concerns: Equipment use, droughtiness, nutrient leaching, and fertility
Management measures and considerations:
• Using equipment that has low-pressure tires reduces the slippage and rutting caused by the high content of sand.
• Using split applications increases the effectiveness of fertilizer and herbicides.
• During the establishment, maintenance, or renovation of pasture and hayland, applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Woodland

Suitability: Suited
Productivity class: High for loblolly pine
Management concerns: Seedling survival
Management measures and considerations:
• Planting high-quality seedlings in a shallow furrow increases the seedling survival rate.
• Using improved varieties of loblolly pine increases productivity.

Wildlife habitat

Potential to support habitat for: Openland wildlife—fair; woodland wildlife—poor; wetland wildlife—very poor
Management concerns: Droughtiness
Management measures and considerations:
• Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.

• Woodland wildlife habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Prescribed burning every three years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.
• Wetland wildlife habitat can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

Dwellings

Suitability: Poorly suited
Management concerns: Flooding
Management measures and considerations:
• Constructing dwellings on elevated, well-compacted fill material helps to minimize damage from the flooding.

Septic tank absorption fields

Suitability: Poorly suited
Management concerns: Wetness and poor filtering capacity
Management measures and considerations:
• The local Health Department can be contacted for guidance regarding sanitary facilities.
• Using suitable fill material to raise the filter field a sufficient distance above the seasonal high water table improves system performance.
• Measures that improve filtering capacity should be considered. The soil readily absorbs, but does not adequately filter, effluent.

Local roads and streets

Suitability: Suited
Management concerns: Flooding
Management measures and considerations:
• Well-compacted fill material can be used as a road base to help elevate roads above the flooding.

Interpretive Groups

Land capability classification: IIIs
Woodland ordination symbol: 7S for loblolly pine

BgD2—Boswell fine sandy loam, 5 to 12 percent slopes, eroded

Setting

Landscape: Uplands on the Coastal Plain
Landform: Hillslopes in the southern part of the county
Landform position: Footslopes and toeslopes
Shape of areas: Irregular
Size of areas: 10 to 80 acres

Composition

Boswell and similar soils: 85 percent
Dissimilar soils: 15 percent

Typical Profile

Surface layer:
0 to 4 inches—brown fine sandy loam

Subsoil:
4 to 16 inches—red clay
16 to 22 inches—mottled reddish brown, brownish gray, and dark red silty clay
22 to 58 inches—light brownish gray silty clay that has reddish and brownish mottles
58 to 80 inches—light brownish gray clay that has reddish and brownish mottles

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Moderately well drained
Permeability: Very slow
Available water capacity: High
Depth to seasonal high water table: More than 6.0 feet
Shrink-swell potential: High
Flooding: None
Content of organic matter in the surface layer: Low
Natural fertility: Low
Depth to bedrock: More than 60 inches
Other distinctive properties: Slickensides in the lower part of the subsoil

Minor Components

Dissimilar soils:
• The loamy Okeelala soils on the upper parts of slopes
• The alkaline Maytag and Sumter soils on the lower parts of slopes
• Oktibbeha and Hannon soils, which are alkaline in the lower part of the subsoil, on the lower parts of slopes
• Boswell soils that have a slope of more than 12 percent

Similar soils:
• Somewhat poorly drained, clayey soils on the smoother slopes

Land Use

Dominant uses: Woodland and wildlife habitat
Other uses: Pasture

Cropland

Suitability: Poorly suited

Commonly grown crops: Corn and small grains
Management concerns: Erodibility and fertility
Management measures and considerations:
• Contour farming, conservation tillage, crop residue management, stripcropping, and sod-based rotations reduce the hazard of further erosion, stabilize the soils, control surface runoff, and maximize infiltration of water.
• Applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Pasture and hayland

Suitability: Well suited to pasture and suited to hayland
Commonly grown crops: Coastal bermudagrass, tall fescue, and bahiagrass
Management concerns: Erodibility and equipment use
Management measures and considerations:
• Special care should be taken to prevent further erosion when pastures are renovated or seedbeds are established.
• The slope may limit equipment use in the steeper areas when hay is harvested.
• Fencing livestock away from creeks and streams helps to prevent streambank erosion and sedimentation.
• Using rotational grazing and implementing a well planned schedule of clipping and harvesting help to maintain the pasture and increase productivity.

Woodland

Suitability: Well suited
Productivity class: High for loblolly pine
Management concerns: Equipment use, seedling survival, and competition from undesirable plants
Management measures and considerations:
• Logging when the soil has the proper moisture content helps to prevent rutting in the surface layer and the root damage caused by compaction.
• Unsurfaced roads may be impassable during wet periods because of the high content of clay in the soil.
• Special site preparation, such as harrowing and bedding, helps to establish seedlings, reduces the seedling mortality rate, and increases early seedling growth.
• Site preparation practices, such as chopping, prescribed burning, and applying herbicides, help to control competition from unwanted plants.

Wildlife habitat

Potential to support habitat for: Openland wildlife—fair; woodland wildlife—good; wetland wildlife—very poor
Management concerns: Erodibility and fertility
Management measures and considerations:
• Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
• Woodland wildlife habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Prescribed burning every three years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.
• Wetland wildlife habitat can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

Dwellings

Suitability: Poorly suited
Management concerns: Shrink-swell
Management measures and considerations:
• Reinforcing foundations and footings or backfilling with coarse-textured material helps to strengthen buildings and prevents the damage caused by shrinking and swelling.

Septic tank absorption fields

Suitability: Poorly suited
Management concerns: Restricted permeability
Management measures and considerations:
• The local Health Department can be contacted for guidance regarding sanitary facilities.
• Increasing the size of the absorption field improves system performance.
• Installing distribution lines during dry periods helps to control smearing and sealing of trench walls.

Local roads and streets

Suitability: Poorly suited
Management concerns: Low strength, shrink-swell, and cutbanks cave
Management measures and considerations:
• Incorporating sand and gravel into the roadbed, compacting the roadbed, designing roads to conform to the natural slope, removing as much of the clay that has a high shrink-swell potential as possible, and increasing the thickness of the base aggregate improve soil performance.
• Designing roads that incorporate water-control structures, such as culverts, broad base dips, and waterbars, helps to prevent slippage of cut and fill slopes.

Interpretive Groups

Land capability classification: VIe
Woodland ordination symbol: 8C for loblolly pine

BkB—Boykin loamy fine sand, 1 to 5 percent slopes

Setting

Landscape: Uplands on the Coastal Plain
Landform: Ridgetops
Landform position: Convex slopes
Shape of areas: Irregular
Size of areas: 5 to 150 acres

Composition

Boykin and similar soils: 85 percent
Dissimilar soils: 15 percent

Typical Profile

Surface layer:
0 to 5 inches—brown loamy fine sand

Subsurface layer:
5 to 22 inches—light yellowish brown loamy sand

Subsoil:
22 to 33 inches—yellowish red sandy clay loam
33 to 43 inches—yellowish red fine sandy loam
43 to 47 inches—yellowish red sandy clay loam
47 to 51 inches—red fine sandy loam
51 to 80 inches—yellowish red fine sandy loam that has grayish and brownish mottles

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Rapid in the surface and subsurface layers and moderate in the subsoil
Available water capacity: Low
Depth to seasonal high water table: More than 6.0 feet
Shrink-swell potential: Low
Flooding: None
Content of organic matter in the surface layer: Low
Natural fertility: Low
Depth to bedrock: More than 60 inches

Minor Components

Dissimilar soils:
• Scattered areas of the somewhat excessively drained Wadley soils, which have sandy surface and subsurface layers having a combined thickness of more than 40 inches
• The loamy Smithdale and McLaurin soils in the slightly lower positions

Similar soils:
• Scattered areas of Boykin soils that have a surface layer of loamy sand or sand

Land Use

Dominant uses: Woodland and pasture
Other uses: Cropland and hayland

Cropland

Suitability: Suited
Commonly grown crops: Corn, soybeans, watermelons, and truck crops
Management concerns: Droughtiness, nutrient leaching, and fertility
Management measures and considerations:
• Conservation tillage, winter cover crops, crop residue management, and crop rotations that include grasses and legumes increase available water capacity, minimize crusting, and improve fertility.
• Using supplemental irrigation and planting crop varieties that are adapted to droughty conditions increase production.
• Using split applications increases the effectiveness of fertilizer and herbicides.
• Applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Pasture and hayland

Suitability: Well suited
Commonly grown crops: Coastal bermudagrass and bahiagrass
Management concerns: Droughtiness, nutrient leaching, and fertility
Management measures and considerations:
• Using supplemental irrigation and plant varieties that are adapted to droughty conditions increase production.
• Using split applications increases the effectiveness of fertilizer and herbicides.
• During the establishment, maintenance, or renovation of pasture and hayland, applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Woodland

Suitability: Well suited

Productivity class: High for loblolly pine
Management concerns: Seedling survival
Management measures and considerations:
• Planting high-quality seedlings in a shallow furrow increases the seedling survival rate.
• Using improved varieties of loblolly pine increases productivity.

Wildlife habitat

Potential to support habitat for: Openland wildlife—fair; woodland wildlife—good; wetland wildlife—very poor
Management concerns: Droughtiness and fertility
Management measures and considerations:
• Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
• Woodland wildlife habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Prescribed burning every three years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.
• Wetland wildlife habitat can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

Dwellings

Suitability: Well suited
Management concerns: No significant limitations affect dwellings.

Septic tank absorption field

Suitability: Suited
Management concerns: Restricted permeability
Management measures and considerations:
• The local Health Department can be contacted for additional guidance regarding sanitary facilities.
• Increasing the size of the absorption field improves system performance.

Local roads and streets

Suitability: Well suited
Management concerns: No significant limitations affect local roads and streets.

Interpretive Groups

Land capability classification: IIs
Woodland ordination symbol: 8S for loblolly pine

BnE2—Boykin-Luverne-Smithdale complex, 15 to 35 percent slopes, eroded

Setting

Landscape: Uplands on the Coastal Plain
Landform: Hillslopes
Landform position: Boykin—convex nose slopes, upper parts of side slopes, and footslopes; Luverne and Smithdale—shoulder slopes, side slopes, and footslopes
Shape of areas: Irregular
Size of areas: 20 to 1,000 acres

Composition

Boykin and similar soils: 40 percent
Luverne and similar soils: 25 percent
Smithdale and similar soils: 25 percent
Dissimilar soils: 10 percent

Typical Profile

Boykin

Surface layer:
0 to 3 inches—dark grayish brown loamy fine sand

Subsurface layer:
3 to 33 inches—light yellowish brown loamy fine sand

Subsoil:
33 to 48 inches—yellowish red sandy clay loam
48 to 60 inches—strong brown fine sandy loam that has reddish mottles
60 to 80 inches—strong brown sandy clay loam that has grayish and reddish mottles

Luverne

Surface layer:
0 to 3 inches—dark brown fine sandy loam

Subsurface layer:
3 to 7 inches—brown fine sandy loam

Subsoil:
7 to 19 inches—red clay loam that has brownish mottles
19 to 36 inches—red clay loam that has brownish mottles
36 to 49 inches—red clay loam that has brownish mottles and grayish fragments of shale

Substratum:
49 to 80 inches—red sandy clay loam that has yellowish mottles and grayish fragments of shale

Smithdale

Surface layer:
0 to 6 inches—brown and light yellowish brown loamy sand

Subsurface layer:
6 to 13 inches—light yellowish brown loamy sand

Subsoil:
13 to 23 inches—yellowish red sandy loam
23 to 38 inches—red sandy clay loam
38 to 48 inches—red sandy clay loam
48 to 80 inches—red sandy loam

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Boykin—rapid in the surface and subsurface layers and moderate in the subsoil; Luverne—moderately slow; Smithdale—moderate in the upper part of the subsoil and moderately rapid in the lower part
Available water capacity: Boykin—low; Smithdale—moderate; Luverne—high
Depth to seasonal high water table: More than 6.0 feet
Shrink-swell potential: Boykin and Smithdale—low; Luverne—moderate
Flooding: None
Content of organic matter in the surface layer: Low
Natural fertility: Low
Depth to bedrock: More than 60 inches

Minor Components

Dissimilar soils:
• The moderately deep Arundel soils on the upper or lower parts of slopes
• The poorly drained Bibb and moderately well drained Iuka soils on narrow flood plains
• The somewhat excessively drained Wadley soils in positions similar to those of the Boykin soil
• Luverne and Smithdale soils that have a slope of more than 35 percent or less than 15 percent

Similar soils:
• Scattered areas of soils that are similar to the Luverne and Smithdale soils but that have less clay in the substratum

Land Use

Dominant uses: Woodland and wildlife habitat
Other uses: Pasture

Cropland

Suitability: Unsuited
Management concerns: This map unit is severely limited for crop production because of the slope. A site that has better suited soils should be selected.

Pasture and hayland

Suitability: Poorly suited
Commonly grown crops: Coastal bermudagrass and bahiagrass
Management concerns: Erodibility, equipment use, droughtiness, and fertility
Management measures and considerations:
• Special care should be taken to prevent further erosion when pastures are renovated or seedbeds are established.
• The slope may limit equipment use in the steeper areas.
• Using rotational grazing and implementing a well planned schedule of clipping and harvesting help to maintain the pasture and increase productivity.
• During the establishment, maintenance, or renovation of pasture and hayland, applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Woodland

Suitability: Suited
Productivity class: Boykin—high for loblolly pine; Luverne and Smithdale—very high for loblolly pine
Management concerns: Boykin—seedling survival; Luverne and Smithdale—erodibility, equipment use, and competition from undesirable plants
Management measures and considerations:
• Installing broad base dips, water bars, and culverts helps to stabilize logging roads, skid trails, and landings. Reseeding disturbed areas with adapted grasses and legumes helps to control erosion and the siltation of streams.
• Constructing roads, fire lanes, and skid trails on the contour helps to overcome the slope limitations.
• Using tracked or low-pressure ground equipment helps to control rutting and root compaction during harvesting.
• Using equipment that has wide tires or crawler-type equipment and harvesting in the drier summer months improve trafficability.
• Site preparation practices, such as chopping, prescribed burning, and applying herbicides, help to control competition from unwanted plants.
• Leaving a buffer zone of trees and shrubs adjacent to streams helps to control siltation and provides shade for the surface of the water.

Wildlife habitat

Potential to support habitat for: Openland wildlife—fair; woodland wildlife—good; wetland wildlife—very poor
Management concerns: Erodibility, equipment use, and fertility
Management measures and considerations:
• Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
• Woodland wildlife habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Prescribed burning every three years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.
• Wetland wildlife habitat can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

Dwellings

Suitability: Poorly suited
Management concerns: Slope
Management measures and considerations:
• Structures can be designed to conform to the natural slope.
• Land grading or shaping prior to construction minimizes the damage caused by surface flow of water and reduces the hazard of erosion.

Septic tank absorption fields

Suitability: Poorly suited
Management concerns: Boykin and Smithdale—slope; Luverne—restricted permeability and slope
Management measures and considerations:
• The local Health Department can be contacted for guidance regarding sanitary facilities.
• Increasing the size of the absorption field and installing distribution lines on the contour improve system performance.
• Installing distribution lines during dry periods minimizes smearing and sealing of trench walls.

Local roads and streets

Suitability: Poorly suited
Management concerns: Boykin and Smithdale—slope; Luverne—low strength and slope
Management measures and considerations:
• Incorporating sand and gravel into the roadbed and compacting the roadbed improve the strength of the soil.
• Designing roads to conform to the contour and providing adequate water-control structures, such as culverts, help to maintain the stability of the road.

Interpretive Groups

Land capability classification: VIIe
Woodland ordination symbol: 8R—for loblolly pine in areas of the Boykin soil; 9R—for loblolly pine in areas of the Luverne and Smithdale soils

BrE2—Brantley-Okeelala complex, 15 to 35 percent slopes, eroded

Setting

Landscape: Uplands on the Coastal Plain
Landform: Hillslopes in the southern part of the county
Landform position: Brantley—side slopes; Okeelala—nose slopes, footslopes, and shoulder slopes
Shape of areas: Irregular
Size of areas: 10 to 1200 acres

Composition

Brantley and similar soils: 55 percent
Okeelala and similar soils: 30 percent
Dissimilar soils: 15 percent

Typical Profile

Brantley

Surface layer:
0 to 2 inches—dark grayish brown loam

Subsoil:
2 to 4 inches—reddish brown clay loam
4 to 15 inches—red clay
15 to 34 inches—yellowish red clay loam
34 to 54 inches—strong brown sandy clay loam that has brownish mottles

Substratum:
54 to 65 inches—strong brown sandy loam that has reddish mottles

Okeelala

Surface layer:
0 to 2 inches—very dark grayish brown loamy sand

Subsurface layer:
2 to 12 inches—yellowish brown loamy sand

Subsoil:
12 to 16 inches—yellowish red sandy loam
16 to 30 inches—yellowish red sandy clay loam
30 to 52 inches—yellowish red sandy loam

Substratum:
52 to 80 inches—yellowish red sandy loam

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Brantley—slow; Okeelala—moderate
Available water capacity: Brantley—high; Okeelala—moderate
Depth to seasonal high water table: More than 6.0 feet
Shrink-swell potential: Brantley—moderate; Okeelala—low
Flooding: None
Content of organic matter in the surface layer: Low
Natural fertility: Low
Depth to bedrock: More than 60 inches

Minor Components

Dissimilar:
- Boswell soils that have a thicker solum than that of the Brantley and Okeelala soils and that have high shrink-swell potential; on the lower parts of slopes
- Hannon and Toxey soils that have high shrink-swell potential; on shoulder slopes and the upper parts of slopes
- Scattered areas of moderately deep Sumter soils
- The sandy Wadley soils on narrow ridgetops
- The poorly drained Bibb and somewhat poorly drained Leeper soils on narrow flood plains
- Scattered areas of limestone outcrop

Similar soils:
- Scattered areas of soils that are similar to the Brantley soil but that have an alkaline substratum

Land Use

Dominant uses: Woodland and wildlife habitat
Other uses: Pasture

Cropland

Suitability: Unsuited
Management concerns: This map unit is severely limited for crop production because of the slope. A site that has better suited soils should be selected.

Pasture and hayland

Suitability: Poorly suited
Commonly grown crops: Coastal bermudagrass and bahiagrass
Management concerns: Erodibility and equipment use
Management measures and considerations:
- Special care should be taken to prevent further erosion when pastures are renovated or seedbeds are established.
- The slope may limit equipment use in the steeper areas.
- During the establishment, maintenance, or renovation of pasture and hayland, applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Woodland

Suitability: Suited
Productivity class: Very high for loblolly pine
Management concerns: Brantley—erodibility, equipment use, seedling survival, and competition from undesirable plants; Okeelala—erodibility and equipment use
Management measures and considerations:
- Installing broad base dips, water bars, and culverts helps to stabilize logging roads, skid trails, and landings. Reseeding disturbed areas with adapted grasses and legumes helps to control erosion and the siltation of streams.
- Establishing a permanent plant cover on roads and landings after the completion of logging helps to control erosion and the siltation of streams.
- Constructing roads, fire lanes, and skid trails on the contour helps to overcome the slope limitations.
- Using tracked or low-pressure ground equipment helps to control rutting and root compaction during harvesting.
- Site preparation practices, such as prescribed burning and applying herbicides, reduce competition from unwanted plants.

Wildlife habitat

Potential to support habitat for: Openland wildlife—fair; woodland wildlife—good; wetland wildlife—very poor
Management concerns: Erodibility and equipment use
Management measures and considerations:
- Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
- Woodland wildlife habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Prescribed burning every three years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.
- Wetland wildlife habitat can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

Dwellings

Suitability: Poorly suited
Management concerns: Slope
Management measures and considerations:
• Structures can be designed to conform to the natural slope.
• Land grading or shaping prior to construction minimizes the damage caused by surface flow of water and reduces the hazard of erosion.

Septic tank absorption fields

Suitability: Poorly suited
Management concerns: Brantley—restricted permeability and slope; Okeelala—slope
Management measures and considerations:
• The local Health Department can be contacted for guidance regarding sanitary facilities.
• Increasing the size of the absorption field and installing distribution lines on the contour improve system performance.
• Installing distribution lines during dry periods minimizes smearing and sealing of trench walls.

Local roads and streets

Suitability: Poorly suited
Management concerns: Brantley—low strength, slope, and cutbanks cave; Okeelala—slope and cutbanks cave
Management measures and considerations:
• Incorporating sand and gravel into the roadbed and compacting the roadbed improve the strength of the soil.
• Designing roads to conform to the contour and providing adequate water-control structures, such as culverts, help to maintain the stability of the road.
• Designing roads to incorporate structures that remove excess water improves the stability of the cutbanks, which are subject to slumping.

Interpretive Groups

Land capability classification: VIIe
Woodland ordination symbol: 9R for loblolly pine

BrF—Brantley-Okeelala complex, 35 to 60 percent slopes

Setting

Landscape: Uplands on the Coastal Plain
Landform: Hillslopes in the southern part of the county
Landform position: Brantley—side slopes; Okeelala—nose slopes, footslopes, and shoulder slopes
Shape of areas: Irregular
Size of areas: 10 to 800 acres

Composition

Brantley and similar soils: 55 percent
Okeelala and similar soils: 30 percent
Dissimilar soils: 15 percent

Typical Profile

Brantley

Surface layer:
0 to 3 inches—very dark brown fine sandy loam

Subsurface layer:
3 to 10 inches—dark yellowish brown fine sandy loam

Subsoil:
10 to 46 inches—yellowish red sandy clay

Substratum:
46 to 80 inches—yellowish red sandy clay loam that has olive and reddish mottles

Okeelala

Surface layer:
0 to 6 inches—very dark brown and brown fine sandy loam

Subsurface layer:
6 to 16 inches—yellowish brown fine sandy loam

Subsoil:
16 to 27 inches—yellowish red sandy clay loam
27 to 40 inches—strong brown sandy clay loam
47 to 61 inches—strong brown loam

Substratum:
61 to 74 inches—yellowish brown sandy loam
74 to 80 inches—pale brown sandy loam that has dark sand grains

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Brantley—slow; Okeelala—moderate
Available water capacity: Brantley—high; Okeelala—moderate
Depth to seasonal high water table: More than 6.0 feet
Shrink-swell potential: Brantley—moderate; Okeelala—low
Flooding: None
Content of organic matter in the surface layer: Low
Natural fertility: Low
Depth to bedrock: More than 60 inches

Minor Components

Dissimilar:
• Hannon and Toxey soils that have high shrink-swell potential; on shoulder slopes and the upper parts of slopes

• Scattered areas of moderately deep Sumter soils
• The sandy Wadley soils on narrow ridgetops
• Boswell soils, which have high shrink-swell potential, on the lower parts of slopes
• The poorly drained Bibb soils on narrow flood plains
• Scattered areas of limestone outcrop

Similar soils:
• Scattered areas of soils that are similar to the Brantley soil but that have an alkaline substratum

Land Use

Dominant uses: Woodland
Other uses: Wildlife habitat

Cropland

Suitability: Unsuited
Management concerns: This map unit is severely limited for crop production because of the very steep slope. A site that has better suited soils should be selected.

Pasture and hayland

Suitability: Unsuited
Management concerns: This map unit is severely limited for pasture and hay because of the very steep, highly dissected slope. A site that has better suited soils should be selected.

Woodland

Suitability: Poorly suited
Productivity class: High for loblolly pine
Management concerns: Brantley—erodibility, equipment use, seedling survival, and competition from undesirable plants; Okeelala—erodibility and equipment use
Management measures and considerations:
• Installing broad base dips, water bars, and culverts helps to stabilize logging roads, skid trails, and landings. Reseeding disturbed areas with adapted grasses and legumes helps to control erosion and the siltation of streams.
• Establishing a permanent plant cover on roads and landings after the completion of logging helps to control erosion and the siltation of streams.
• Constructing roads, fire lanes, and skid trails on the contour helps to overcome the slope limitations.
• Using cable logging helps to minimize the need for road and trail construction, especially in areas where the slope is more than about 50 percent.
• Leaving a buffer zone of trees and shrubs adjacent to streams helps to control siltation and provides shade for the surface of the water.

Wildlife habitat

Potential to support habitat for: Openland wildlife—poor; woodland wildlife—good; wetland wildlife—very poor
Management concerns: Erodibility and slope
Management measures and considerations:
• Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
• Woodland wildlife habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants.
• Wetland wildlife habitat can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

Urban development

Suitability: Unsuited
Management concerns: This map unit is severely limited as a site for urban development because of the slope. A site that has better suited soils should be selected.

Interpretive Groups

Land capability classification: VIIe
Woodland ordination symbol: 8R for loblolly pine

CaA—Cahaba sandy loam, 0 to 2 percent slopes, rarely flooded

Setting

Landscape: Coastal Plain
Landform: Low stream terraces along the Tombigbee River and other major streams
Landform position: Flat to convex slopes
Shape of areas: Oblong
Size of areas: 5 to 150 acres

Composition

Cahaba and similar soils: 85 percent
Dissimilar soils: 15 percent

Typical Profile

Surface layer:
0 to 9 inches—dark yellowish brown sandy loam

Subsurface layer:
9 to 13 inches—strong brown sandy loam

Subsoil:
13 to 29 inches—yellowish red sandy clay loam

29 to 38 inches—red sandy clay loam
38 to 50 inches—yellowish red sandy loam

Substratum:
50 to 60 inches—strong brown fine sandy loam

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate in the upper part of the subsoil and moderately rapid in the lower part
Available water capacity: Moderate
Depth to seasonal high water table: More than 6.0 feet
Shrink-swell potential: Low
Flooding: Rare
Content of organic matter in the surface layer: Low
Natural fertility: Low
Depth to bedrock: More than 60 inches

Minor Components

Dissimilar soils:
- The yellowish brown Latonia soils that have less clay in the subsoil than the Cahaba soil but that are in similar positions
- The moderately well drained Izagora soils in the slightly lower positions
- The sandy Bigbee soils in positions similar to those of the Cahaba soil
- The clayey Annemaine soils in the slightly lower positions
- The poorly drained Bibb and moderately well drained Iuka soils on narrow flood plains

Similar soils:
- Scattered areas of Cahaba soils that have a surface layer of loamy sand

Land Use

Dominant uses: Woodland and pasture
Other uses: Cropland, hayland, and wildlife habitat

Cropland

Suitability: Well suited
Commonly grown crops: Corn, soybeans, grain sorghum, cotton, and watermelons
Management concerns: No significant limitations affect management of cropland.

Pasture and hayland

Suitability: Well suited
Commonly grown crops: Coastal bermudagrass and bahiagrass (fig. 4)
Management concerns: No significant limitations affect management of pasture and hayland.

Woodland

Suitability: Well suited
Productivity class: Very high for loblolly pine
Management concerns: Competition from undesirable plants
Management measures and considerations:
- Site preparation practices, such as chopping, prescribed burning, and applying herbicides, help to control competition from unwanted plants.
- Leaving a buffer zone of trees and shrubs adjacent to streams helps to control siltation and provides shade for the surface of the water.

Wildlife habitat

Potential to support habitat for: Openland wildlife and woodland wildlife—good; wetland wildlife—very poor
Management concerns: No significant limitations affect wildlife habitat.
Management measures and considerations:
- Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
- Woodland wildlife habitat can be improved by planting or encouraging the growth of oak trees and suitable understory plants. Prescribed burning every three years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.
- Wetland wildlife habitat can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

Dwellings

Suitability: Poorly suited
Management concerns: Flooding
Management measures and considerations:
- Constructing dwellings on elevated, well-compacted fill material helps to minimize damage from the flooding.

Septic tank absorption fields

Suitability: Suited
Management concerns: Flooding
Management measures and considerations:
- Septic tank absorption fields do not function properly during periods of flooding and may be damaged by floodwater.
- The local Health Department can be contacted for guidance regarding sanitary facilities.

Figure 4.—An area of Cahaba sandy loam, 0 to 2 percent slopes, rarely flooded. This well drained soil is well suited to bermudagrass and bahiagrass hay.

Local roads and streets

Suitability: Suited
Management concerns: Flooding
Management measures and considerations:
• Well-compacted fill material can be used as a road base to help elevate roads above the flooding.

Interpretive Groups

Land capability classification: I
Woodland ordination symbol: 10A for loblolly pine

CoC2—Conecuh loam, 3 to 8 percent slopes, eroded

Setting

Landscape: Uplands on the Coastal Plain
Landform: Hillslopes in the northern part of the county
Landform position: Slightly concave to convex side slopes
Shape of areas: Irregular
Size of areas: 10 to 250 acres

Composition

Conecuh and similar soils: 90 percent
Dissimilar soils: 10 percent

Typical Profile

Surface layer:
0 to 5 inches—dark yellowish brown loam

Subsoil:
5 to 13 inches—red clay
13 to 20 inches—red clay that has brownish mottles
20 to 27 inches—mottled light brownish gray, reddish brown, and red clay

27 to 48 inches—light brownish gray clay that has reddish and brownish mottles

Substratum:
48 to 58 inches—light olive gray clay that has brownish mottles
58 to 76 inches—light olive gray clay loam that has brownish mottles

Bedrock:
76 to 80 inches—light olive gray clayey shale

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Moderately well drained
Permeability: Very slow
Available water capacity: Moderate
Depth to seasonal high water table: More than 6.0 feet
Shrink-swell potential: High
Flooding: None
Content of organic matter in the surface layer: Low
Natural fertility: Low
Depth to bedrock: More than 60 inches
Other distinctive properties: Slickensides in the lower part of the subsoil

Minor Components

Dissimilar soils:
• The well drained Luverne soils on the upper parts of slopes
• Scattered areas of soils that are moderately deep to shale
• The poorly drained Bibb soils on narrow flood plains

Similar soils:
• The deep Halso soils on the upper parts of slopes

Land Use

Dominant uses: Woodland and wildlife habitat
Other uses: Pasture

Cropland

Suitability: Poorly suited
Commonly grown crops: Corn and small grains
Management concerns: Erodibility and fertility
Management measures and considerations:
• Contour farming, conservation tillage, crop residue management, stripcropping, and sod-based rotations reduce the hazard of further erosion, stabilize the soils, control surface runoff, and maximize infiltration of water.
• Applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Pasture and hayland

Suitability: Well suited
Commonly grown crops: Coastal bermudagrass, bahiagrass, white clover, and red clover
Management concerns: Erodibility and fertility
Management measures and considerations:
• Special care should be taken to prevent further erosion when pastures are renovated or seedbeds are established.
• Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the rate of germination.
• Fencing livestock away from creeks and streams helps to prevent streambank erosion and sedimentation.
• Using rotational grazing and implementing a well planned schedule of clipping and harvesting help to maintain the pasture and increase productivity.
• During the establishment, maintenance, or renovation of pasture and hayland, applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Woodland

Suitability: Well suited
Productivity class: Very high for loblolly pine
Management concerns: Equipment use, seedling survival, and competition from undesirable plants
Management measures and considerations:
• Logging when the soil has the proper moisture content helps to prevent rutting in the surface layer and the root damage caused by compaction.
• Unsurfaced roads may be impassable during wet periods because of the high content of clay in the soil.
• Special site preparation, such as harrowing and bedding, helps to establish seedlings, reduces the seedling mortality rate, and increases early seedling growth.
• Site preparation practices, such as chopping, prescribed burning, and applying herbicides, help to control competition from unwanted plants.

Wildlife habitat

Potential to support habitat for: Openland wildlife and woodland wildlife—good; wetland wildlife—very poor
Management concerns: Equipment use and erodibility
Management measures and considerations:
• Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and

pasture. These areas provide wildlife with food and a place to rest.
• Woodland wildlife habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Prescribed burning every three years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.
• Wetland wildlife habitat can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

Dwellings

Suitability: Poorly suited
Management concerns: Shrink-swell
Management measures and considerations:
• Reinforcing foundations and footings or backfilling with coarse-textured material helps to strengthen buildings and prevents the damage caused by shrinking and swelling.

Septic tank absorption fields

Suitability: Poorly suited
Management concerns: Restricted permeability
Management measures and considerations:
• The local Health Department can be contacted for guidance regarding sanitary facilities.
• Increasing the size of the absorption field improves system performance.
• Installing distribution lines during dry periods helps to control smearing and sealing of trench walls.

Local roads and streets

Suitability: Poorly suited
Management concerns: Shrink-swell, low strength, and cutbanks cave
Management measures and considerations:
• Incorporating sand and gravel into the roadbed and compacting the roadbed improve the strength of the soil.
• Removing as much of the clay that has a high shrink-swell potential as possible and increasing the thickness of the base aggregate improve soil performance.
• Designing roads that incorporate water-control structures, such as culverts, broad base dips, and waterbars, helps to prevent slippage of cut and fill slopes.

Interpretive Groups

Land capability classification: IVe
Woodland ordination symbol: 9C for loblolly pine

FaA—Fluvaquents, ponded

Setting

Landscape: Coastal Plain
Landform: Flood plains and low terraces
Landform position: Oxbows, sloughs, swales, and other depressional areas
Shape of areas: Rounded or oblong
Size of areas: 10 to 80 acres

Composition

Fluvaquents and similar inclusions: 95 percent
Dissimilar soils: 5 percent

Typical Profile

No typical pedon has been selected.

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Very poorly drained
Permeability: Variable
Available water capacity: Variable
Seasonal high water table: Apparent, at 2.0 feet above the surface to a depth of 1.0 foot from December through July
Shrink-swell potential: Variable
Flooding: Frequent
Content of organic matter in the surface layer: High
Natural fertility: Medium
Depth to bedrock: More than 60 inches

Minor Components

Dissimilar soils:
• The moderately well drained Iuka and Izagora soils and the somewhat poorly drained Lenoir soils; on small knolls and along edges of mapped areas

Similar soils:
• Poorly drained soils that are not subject to long-duration ponding.

Land Use

Dominant uses: Woodland and wildlife habitat

Cropland

Suitability: Unsuited
Management concerns: This map unit is severely limited for crop production because of the flooding, ponding, and wetness. A site that has better suited soils should be selected.

Pasture and hayland

Suitability: Unsuited
Management concerns: This map unit is severely

limited for pasture and hay because of the flooding, ponding, and wetness. A site that has better suited soils should be selected.

Woodland

Suitability: Poorly suited
Productivity class: High for water tupelo and baldcypress
Management concerns: Equipment use and seedling survival
Management measures and considerations:
• Using low-pressure ground equipment helps to prevent rutting of the surface and the damage caused to tree roots by compaction.
• Harvesting timber during the summer reduces the risk of damage from flooding.
• Maintaining drainageways and planting trees that are tolerant of wetness increase the seedling survival rate.

Wildlife habitat

Potential to support habitat for: Openland wildlife and woodland wildlife—poor; wetland wildlife—good
Management concerns: Equipment use, ponding flooding, and wetness
Management measures and considerations:
• Wetland wildlife habitat can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

Urban development

Suitability: Unsuited
Management concerns: This map unit is severely limited as a site for urban development because of the flooding, ponding, and wetness. A site that has better suited soils should be selected.

Interpretive Groups

Land capability classification: VIIw
Woodland ordination symbol: None assigned

FrA—Freest fine sandy loam, 0 to 2 percent slopes

Setting

Landscape: Coastal Plain
Landform: Stream terraces in the southern part of the county
Landform position: Flat and slightly convex slopes
Shape of areas: Oblong
Size of areas: 5 to 150 acres

Composition

Freest and similar soils: 90 percent
Dissimilar soils: 10 percent

Typical Profile

Surface layer:
0 to 3 inches—dark grayish brown fine sandy loam

Subsurface layer:
3 to 6 inches—brown fine sandy loam

Subsoil:
6 to 12 inches—yellowish brown fine sandy loam
12 to 18 inches—yellowish brown loam
18 to 29 inches—dark yellowish brown clay loam that has grayish and reddish mottles
29 to 46 inches—yellowish red clay loam that has grayish and reddish mottles
46 to 61 inches—mottled strong brown, gray, and dark red clay
61 to 80 inches—mottled light gray, strong brown, and reddish brown clay

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Moderately well drained
Permeability: Slow
Available water capacity: High
Seasonal high water table: Perched, at a depth of 1.5 to 2.5 feet from January through March
Shrink-swell potential: Moderate
Flooding: None
Content of organic matter in the surface layer: Low
Natural fertility: Low
Depth to bedrock: More than 60 inches

Minor Components

Dissimilar soils:
• The somewhat poorly drained Leeper soils on narrow flood plains
• Savannah soils that have a fragipan; on higher knolls
• The poorly drained Bibb soils on narrow flood plains

Similar soils:
• A Freest soil that has a slope of more than 2 percent
• Scattered areas of soils that are similar to the Freest soil but that are loamy in the lower part of the subsoil

Land Use

Dominant uses: Woodland and wildlife habitat
Other uses: Pasture and hayland

Cropland

Suitability: Well suited
Commonly grown crops: Corn, soybeans, and small grain
Management concerns: Wetness and fertility
Management measures and considerations:
• Installing and maintaining an artificial drainage system reduces wetness and improves productivity.

• Applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Pasture and hayland

Suitability: Well suited
Commonly grown crops: Dallisgrass, tall fescue, coastal bermudagrass, bahiagrass, and white clover
Management concerns: Wetness
Management measures and considerations:
• Proper stocking rates and restricted grazing during wet periods help to prevent compaction and keep the pasture in good condition.
• During the establishment, maintenance, or renovation of pasture and hayland, applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Woodland

Suitability: Well suited
Productivity class: Very high for loblolly pine
Management concerns: Equipment use and competition from undesirable plants
Management measures and considerations:
• Restricting the use of standard wheeled and tracked equipment to dry periods helps to prevent rutting and compaction.
• Site preparation practices, such as chopping, prescribed burning, and applying herbicides, help to control competition from unwanted plants.
• Leaving a buffer zone of trees and shrubs adjacent to streams helps to control siltation and provides shade for the surface of the water, thereby improving aquatic habitat.

Wildlife habitat

Potential to support habitat for: Openland wildlife and woodland wildlife—good; wetland wildlife—poor
Management concerns: No significant limitations affect wildlife habitat.
Management measures and considerations:
• Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
• Woodland wildlife habitat can be improved by planting or encouraging the growth of oak trees and suitable understory plants. Prescribed burning every three years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.
• Wetland wildlife habitat can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

Dwellings

Suitability: Suited
Management concerns: Shrink-swell
Management measures and considerations:
• Reinforcing foundations and footings or backfilling with coarse-textured material helps to strengthen buildings and prevents the damage caused by shrinking and swelling.

Septic tank absorption fields

Suitability: Poorly suited
Management concerns: Wetness and restricted permeability
Management measures and considerations:
• The local Health Department can be contacted for guidance regarding sanitary facilities.
• Using suitable fill material to raise the filter field a sufficient distance above the seasonal high water table and increasing the size of the field improve system performance.
• Installing distribution lines during dry periods helps to control smearing and sealing of trench walls.

Local roads and streets

Suitability: Poorly suited
Management concerns: Low strength
Management measures and considerations:
• Incorporating sand and gravel into the roadbed and compacting the roadbed improve the strength of the soil.

Interpretive Groups

Land capability classification: IIw
Woodland ordination symbol: 10W for loblolly pine

HaB—Halso silt loam, 1 to 3 percent slopes

Setting

Landscape: Uplands on the Coastal Plain
Landform: Ridgetops in the northern part of the county
Landform position: Slightly convex slopes
Shape of areas: Irregular
Size of areas: 5 to 200 acres

Composition

Halso and similar soils: 85 percent
Dissimilar soils: 15 percent

Typical Profile

Surface layer:
0 to 2 inches—dark grayish brown silt loam
2 to 6 inches—reddish brown silty clay loam

Subsoil:
6 to 12 inches—red clay
12 to 22 inches—red clay that has yellowish, reddish, and grayish mottles
22 to 30 inches—yellowish red clay that has grayish, reddish, and yellowish mottles

Substratum:
30 to 45 inches—light brownish gray clay loam that has brownish mottles

Bedrock:
45 to 80 inches—light brownish gray shale

Soil Properties and Qualities

Depth class: Deep
Drainage class: Moderately well drained
Permeability: Very slow
Available water capacity: High
Depth to seasonal high water table: More than 6.0 feet
Shrink-swell potential: High
Flooding: None
Content of organic matter in the surface layer: Low
Natural fertility: Low
Depth to bedrock: 40 to 60 inches to soft shale

Minor Components

Dissimilar soils:
• The well drained Luverne soils in the slightly higher positions
• The poorly drained Kinston soils in depressions and narrow drainageways

Similar soils:
• The very deep Conecuh soils on the lower parts of slopes or in saddles
• Scattered areas of clayey soils that are moderately deep over bedrock

Land Use

Dominant uses: Woodland and wildlife habitat
Other uses: Pasture and hayland

Cropland

Suitability: Suited
Commonly grown crops: Corn, small grains, and truck crops
Management concerns: Erodibility, tilth, and fertility
Management measures and considerations:
• Terraces and diversions, contour tillage, no-till planting, and crop residue management reduce the hazard of erosion, help to control surface runoff, and maximize rainfall infiltration.
• Tilling when the soil has the proper moisture content helps to prevent clodding and crusting and increases infiltration of water.
• Applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Pasture and hayland

Suitability: Well suited
Commonly grown crops: Coastal bermudagrass, bahiagrass, and white clover
Management concerns: Wetness and fertility
Management measures and considerations:
• Using rotational grazing and implementing a well planned schedule of clipping and harvesting help to maintain the pasture and increase productivity.
• Restricted grazing during wet periods helps to prevent compaction and keeps the pasture in good condition.
• During the establishment, maintenance, or renovation of pasture and hayland, applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Woodland

Suitability: Well suited
Productivity class: Very high for loblolly pine
Management concerns: Equipment use, seedling survival, and competition from undesirable plants
Management measures and considerations:
• Logging when the soil has the proper moisture content helps to prevent rutting in the surface layer and the root damage caused by compaction.
• Unsurfaced roads may be impassable during wet periods because of the high content of clay in the soil.
• Special site preparation, such as harrowing and bedding, helps to establish seedlings, reduces the seedling mortality rate, and increases early seedling growth.
• Site preparation practices, such as chopping, prescribed burning, and applying herbicides, help to control competition from unwanted plants.

Wildlife habitat

Potential to support habitat for: Openland wildlife and woodland wildlife—good; wetland wildlife—very poor

Management concerns: Equipment use and erodibility
Management measures and considerations:
• Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
• Woodland wildlife habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Prescribed burning every three years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.
• Wetland wildlife habitat can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

Dwellings

Suitability: Poorly suited
Management concerns: Shrink-swell
Management measures and considerations:
• Reinforcing foundations and footings or backfilling with coarse-textured material helps to strengthen buildings and prevents the damage caused by shrinking and swelling.

Septic tank absorption fields

Suitability: Poorly suited
Management concerns: Restricted permeability
Management measures and considerations:
• The local Health Department can be contacted for guidance regarding sanitary facilities.
• Increasing the size of the absorption field improves system performance.
• Installing distribution lines during dry periods helps to control smearing and sealing of trench walls.

Local roads and streets

Suitability: Poorly suited
Management concerns: Shrink-swell and low strength
Management measures and considerations:
• Incorporating sand and gravel into the roadbed and compacting the roadbed improve the strength of the soil.
• Removing as much of the clay that has a high shrink-swell potential as possible and increasing the thickness of the base aggregate improve soil performance.

Interpretive Groups

Land capability classification: IIIe
Woodland ordination symbol: 9C for loblolly pine

IzA—Izagora fine sandy loam, 0 to 2 percent slopes, rarely flooded

Setting

Landscape: Coastal Plain
Landform: Low stream terraces along the Tombigbee River and other major streams
Landform position: Flat and slightly convex slopes
Shape of areas: Oblong
Size of areas: 10 to 200 acres

Composition

Izagora and similar soils: 90 percent
Dissimilar soils: 10 percent

Typical Profile

Surface layer:
0 to 7 inches—brown fine sandy loam

Subsurface:
7 to 13 inches—light yellowish brown loam

Subsoil:
13 to 22 inches—brownish yellow loam
22 to 27 inches—yellowish brown loam that has brownish and grayish mottles
27 to 36 inches—yellowish brown loam that has brownish, reddish, and grayish mottles
36 to 47 inches—light yellowish brown clay loam that has brownish, reddish, and grayish mottles
47 to 65 inches—yellowish brown silty clay loam that has grayish, reddish, and brownish mottles

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Moderately well drained
Permeability: Moderate
Available water capacity: High
Seasonal high water table: Perched, at a depth of 2.0 to 3.0 feet from January through March
Shrink-swell potential: Low
Flooding: Rare
Content of organic matter in the surface layer: Low
Natural fertility: Low
Depth to bedrock: More than 60 inches

Minor Components

Dissimilar soils:
• The well drained Cahaba soils in the slightly higher positions
• The poorly drained Bibb and moderately well drained Iuka soils on narrow flood plains

• The poorly drained McCrory and somewhat poorly drained Deerford soils in the lower positions
• The clayey Annemaine soils in positions similar to those of the Izagora soil or slightly lower
• The somewhat poorly drained Lenoir soils in the slightly lower, less convex positions

Similar soils:
• Scattered areas of moderately well drained, loamy soils that decrease in content of clay with depth

Land Use

Dominant uses: Woodland and pasture
Other uses: Cropland and wildlife habitat

Cropland

Suitability: Well suited
Commonly grown crops: Corn, soybeans, grain sorghum, and cotton
Management concerns: Wetness and fertility
Management measures and considerations:
• Installing and maintaining an artificial drainage system reduces wetness and improves productivity.
• Applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Pasture and hayland

Suitability: Well suited
Commonly grown crops: Tall fescue, coastal bermudagrass, bahiagrass, and white clover
Management concerns: Wetness and fertility
Management measures and considerations:
• Proper stocking rates and restricted grazing during wet periods help to prevent compaction and keep the pasture in good condition.
• During the establishment, maintenance, or renovation of pasture and hayland, applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Woodland

Suitability: Well suited
Productivity class: Very high for loblolly pine
Management concerns: Competition from undesirable plants and equipment use
Management measures and considerations:
• Site preparation practices, such as chopping, prescribed burning, and applying herbicides, help to control competition from unwanted plants.
• Logging when the soil has the proper moisture content helps to prevent rutting in the surface layer and the root damage caused by compaction.

Wildlife habitat

Potential to support habitat for: Openland wildlife and woodland wildlife—good; wetland wildlife—poor
Management concerns: No significant limitations affect wildlife habitat.
Management measures and considerations:
• Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
• Woodland wildlife habitat can be improved by planting or encouraging the growth of oak trees and suitable understory plants. Prescribed burning every three years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.
• Wetland wildlife habitat can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

Dwellings

Suitability: Poorly suited
Management concerns: Flooding
Management measures and considerations:
• Constructing dwellings on elevated, well-compacted fill material helps to minimize damage from the flooding.

Septic tank absorption fields

Suitability: Poorly suited
Management concerns: Wetness and restricted permeability
Management measures and considerations:
• The local Health Department can be contacted for guidance regarding sanitary facilities.
• Using suitable fill material to raise the filter field a sufficient distance above the seasonal high water table and increasing the size of the field improve system performance.
• Installing distribution lines during dry periods helps to control smearing and sealing of trench walls.

Local roads and streets

Suitability: Suited
Management concerns: Low strength
Management measures and considerations:
• Incorporating sand and gravel into the roadbed and compacting the roadbed improve the strength of the soil.

Interpretive Groups

Land capability classification: IIw
Woodland ordination symbol: 10W for loblolly pine

LaA—Latonia loamy sand, 0 to 2 percent slopes, rarely flooded

Setting

Landscape: Coastal Plain
Landform: Low stream terraces along the Tombigbee River and other major streams
Landform position: Slightly convex slopes
Shape of areas: Oblong
Size of areas: 10 to 100 acres

Composition

Latonia and similar soils: 85 percent
Dissimilar soils: 15 percent

Typical Profile

Surface layer:
0 to 6 inches—very dark grayish brown loamy sand

Subsoil:
6 to 15 inches—yellowish brown sandy loam
15 to 43 inches—yellowish brown sandy loam

Substratum:
43 to 53 inches—brownish yellow loamy sand
53 to 68 inches—brownish yellow sand

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Moderate
Depth to seasonal high water table: More than 6.0 feet
Shrink-swell potential: Low
Flooding: Rare
Content of organic matter in the surface layer: Low
Natural fertility: Low
Depth to bedrock: More than 60 inches

Minor Components

Dissimilar soils:
• The moderately well drained Izagora soils in the slightly lower positions
• The sandy Bigbee soils on small knolls
• The poorly drained Bibb and moderately well drained Iuka soils on narrow flood plains

Similar soils:
• Scattered areas of Latonia soils that have a surface layer of sandy loam
• Scattered areas of loamy soils that have reddish colors in the subsoil

Land Use

Dominant uses: Woodland and wildlife habitat
Other uses: Cropland, hayland, and pasture

Cropland

Suitability: Well suited
Commonly grown crops: Corn, soybeans, grain sorghum, cotton, and watermelons
Management concerns: Droughtiness and fertility
Management measures and considerations:
• Leaving crop residue on the surface helps to conserve soil moisture.
• Using supplemental irrigation and planting crop varieties that are adapted to droughty conditions increase production.
• Applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Pasture and hayland

Suitability: Well suited
Commonly grown crops: Coastal bermudagrass and bahiagrass
Management concerns: Droughtiness and fertility
Management measures and considerations:
• Using supplemental irrigation and plant varieties that are adapted to droughty conditions increase production.
• During the establishment, maintenance, or renovation of pasture and hayland, applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Woodland

Suitability: Well suited
Productivity class: Very high for loblolly pine
Management concerns: Competition from undesirable plants
Management measures and considerations:
• Site preparation practices, such as chopping, prescribed burning, and applying herbicides, help to control competition from unwanted plants.

Wildlife habitat

Potential to support habitat for: Openland wildlife and woodland wildlife—good; wetland wildlife—very poor
Management concerns: No significant limitations affect wildlife habitat.
Management measures and considerations:
• Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and

pasture. These areas provide wildlife with food and a place to rest.
• Woodland wildlife habitat can be improved by planting or encouraging the growth of oak trees and suitable understory plants. Prescribed burning every three years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.
• Wetland wildlife habitat can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

Dwellings

Suitability: Poorly suited
Management concerns: Flooding
Management measures and considerations:
• Constructing dwellings on elevated, well-compacted fill material helps to minimize damage from the flooding.

Septic tank absorption fields

Suitability: Suited
Management concerns: Poor filtering capacity
Management measures and considerations:
• The local Health Department can be contacted for guidance regarding sanitary facilities.
• Measures that improve filtering capacity should be considered. The soil readily absorbs, but does not adequately filter, effluent.

Local roads and streets

Suitability: Suited
Management concerns: Flooding
Management measures and considerations:
• Well-compacted fill material can be used as a road base to help elevate roads above the flooding.

Interpretive Groups

Land capability classification: IIs
Woodland ordination symbol: 9A for loblolly pine

LdC2—Lauderdale-Arundel complex, 2 to 10 percent slopes, stony, eroded

Setting

Landscape: Uplands on the Coastal Plain
Landform: Narrow ridgetops in the central and southern parts of the county
Landform position: Lauderdale—convex ridge crests and shoulder slopes; Arundel—convex ridge crests, saddles, and side slopes
Shape of areas: Irregular
Size of areas: 5 to 60 acres

Composition

Lauderdale and similar soils: 45 percent
Arundel and similar soils: 40 percent
Dissimilar soils: 15 percent

Typical Profile

Lauderdale
Surface layer:
0 to 3 inches—dark grayish brown silt loam

Subsoil:
3 to 7 inches—yellowish brown clay loam
7 to 16 inches—yellowish brown clay loam

Bedrock:
16 to 80 inches—weathered, grayish brown and yellowish brown claystone

Arundel

Surface layer:
0 to 7 inches—very dark grayish brown and dark grayish brown fine sandy loam

Subsoil:
7 to 23 inches—yellowish red clay
23 to 34 inches—pale olive silty clay loam that has brownish mottles

Bedrock:
34 to 80 inches—weathered, pale olive claystone

Soil Properties and Qualities

Depth class: Lauderdale—shallow; Arundel—moderately deep
Drainage class: Well drained
Permeability: Very slow
Available water capacity: Lauderdale—low; Arundel—moderate
Depth to seasonal high water table: More than 6.0 feet
Shrink-swell potential: Lauderdale—moderate; Arundel—high
Flooding: None
Content of organic matter in the surface layer: Low
Natural fertility: Low
Depth to bedrock: Lauderdale—10 to 20 inches to soft bedrock; Arundel—20 to 40 inches to soft bedrock

Minor Components

Dissimilar soils:
• Cantuche soils that are in positions similar to those of the Lauderdale soil but that have more rock fragments

• The very deep Smithdale and Luverne soils on high knolls

Similar soils:
• Scattered areas of soils that have more rock fragments in the subsoil than the Arundel soils
• Scattered areas of clayey soils that do not have soft bedrock within a depth of 40 inches
• Scattered areas of shallow, clayey soils

Land Use

Dominant uses: Woodland and wildlife habitat
Other uses: Pasture

Cropland

Suitability: Poorly suited
Management concerns: This map unit is severely limited for crop production because of erodibility, restricted rooting depth, surface stoniness, and slope. A site that has better suited soils should be selected.

Pasture and hayland

Suitability: Suited to pasture and poorly suited to hayland
Commonly grown crops: Coastal bermudagrass and bahiagrass
Management concerns: Erodibility, equipment use, and restricted rooting depth
Management measures and considerations:
• Special care should be taken to prevent further erosion when pastures are renovated or seedbeds are established.
• The slope and surface stoniness may limit equipment use in the steeper areas when hay is harvested.
• Because of the shallow rooting depth in areas of the Lauderdale soil, managing this map unit in an economical manner for pasture and hay is difficult.

Woodland

Suitability: Suited
Productivity class: Lauderdale—high for loblolly pine; Arundel—very high for loblolly pine
Management concerns: Lauderdale—seedling survival; Arundel—equipment use and seedling survival
Management measures and considerations:
• Logging when the soil has the proper moisture content helps to prevent rutting of the surface and the damage caused to tree roots by compaction.
• Unsurfaced roads may be impassable during wet periods because of the high content of clay in the Arundel soil.
• Special site preparation, such as harrowing and bedding, helps to establish seedlings, reduces the seedling mortality rate, and increases early seedling growth.
• Maintaining plant litter on the surface increases water infiltration and reduces the seedling mortality rate.
• Planting during wet periods or during periods when the soil is moist for extended periods increases the seedling survival rate.

Wildlife habitat

Potential of the Lauderdale soil to support habitat for:
Openland wildlife—poor; woodland wildlife—fair; wetland wildlife—very poor
Potential of the Arundel soil to support habitat for:
Openland wildlife and woodland wildlife—good; wetland wildlife—very poor
Management concerns: Equipment use and erodibility
Management measures and considerations:
• Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
• Woodland wildlife habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Prescribed burning every three years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.
• Wetland wildlife habitat can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

Dwellings

Suitability: Poorly suited
Management concerns: Lauderdale—shrink-swell and depth to rock; Arundel—shrink-swell
Management measures and considerations:
• Reinforcing foundations and footings or backfilling with coarse-textured material helps to strengthen buildings and prevents the damage caused by shrinking and swelling.
• The soft bedrock underlying the soils in this map unit does not require special equipment for excavation. Packing or revegetating the bedrock, however, is difficult if it is used in fill slopes. Areas where the bedrock has been removed are also difficult to revegetate.

Septic tank absorption fields

Suitability: Poorly suited

Management concerns: Depth to rock and restricted permeability
Management measures and considerations:
• This map unit is severely limited for septic tank absorption fields because of the very slow permeability and the restricted depth to rock.
• The local Health Department can be contacted for additional guidance.

Local roads and streets

Suitability: Lauderdale—suited; Arundel—poorly suited
Management concerns: Lauderdale—depth to rock and shrink-swell; Arundel—shrink-swell and low strength
Management measures and considerations:
• The soft bedrock underlying the soils in this map unit does not require special equipment for excavation. Packing or revegetating the bedrock, however, is difficult if it is used in fill slopes. Areas where the bedrock has been removed are also difficult to revegetate.
• Removing as much of the clay that has a high shrink-swell potential as possible and increasing the thickness of the base aggregate improve soil performance.
• Incorporating sand and gravel into the roadbed and compacting the roadbed improve the strength of the soil.

Interpretive Groups

Land capability classification: IVs
Woodland ordination symbol: 6D—for loblolly pine in areas of the Lauderdale soil; 9C—for loblolly pine in areas of the Arundel soil

LeA—Leeper silty clay loam, 0 to 1 percent slopes, frequently flooded

Setting

Landscape: Blackland Prairie
Landform: Flood plains in the southwestern part of the county
Landform position: Flat and slightly concave slopes
Shape of areas: Long and narrow
Size of areas: 200 to 2,500 acres

Composition

Leeper and similar soils: 85 percent
Dissimilar soils: 15 percent

Typical Profile

Surface layer:
0 to 4 inches—very dark grayish brown silty clay loam

Subsoil:
4 to 12 inches—dark grayish brown clay loam that has brownish and grayish mottles
12 to 21 inches—dark grayish brown clay that has brownish mottles
21 to 30 inches—dark gray silty clay that has brownish mottles
30 to 45 inches—gray clay that has brownish mottles

Substratum:
45 to 60 inches—light olive brown clay that has brownish and grayish mottles

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Somewhat poorly drained
Permeability: Very slow
Available water capacity: High
Seasonal high water table: Perched, at a depth of 1.0 to 2.0 feet from December through April
Shrink-swell potential: High
Flooding: Frequent
Content of organic matter in the surface layer: Medium
Natural fertility: High
Depth to bedrock: More than 60 inches
Other distinctive properties: Slightly acid to mildly alkaline throughout the profile

Minor Components

Dissimilar soils:
• The moderately well drained Freest soils on low knolls
• Poorly drained soils in depressions

Similar soils:
• Moderately well drained, clayey soils on slightly convex slopes
• Leeper soils that have a loamy or sandy surface layer

Land Use

Dominant uses: Pasture and hayland
Other uses: Woodland and wildlife habitat

Cropland

Suitability: Poorly suited
Management concerns: Flooding and wetness
Management measures and considerations:
• Because of the potential for flooding during the growing season, managing this map unit for cultivated crops is difficult.
• Using well maintained open ditches and diversions to divert and remove excess water improves productivity.

Pasture and hayland

Suitability: Suited

Commonly grown crops: Common bermudagrass, tall fescue, dallisgrass, Johnsongrass, and white clover
Management concerns: Flooding and wetness
Management measures and considerations:
• Although most flooding occurs during the winter and spring, livestock and hay may be damaged during any time of the year.
• Proper stocking rates and restricted grazing during wet periods help to prevent compaction and keep the pasture in good condition.

Woodland

Suitability: Suited
Productivity class: High for water oak
Management concerns: Equipment use, seedling survival, and competition from undesirable plants
Management measures and considerations:
• Restricting the use of standard wheeled and tracked equipment to dry periods helps to prevent rutting and compaction.
• Harvesting timber during the summer reduces the risk of damage from the flooding.
• Bedding the soil prior to planting helps to establish seedlings and increases the seedling survival rate.
• Site preparation practices, such as chopping and the application of herbicides, help to control competition from unwanted plants.
• Leaving a buffer zone of trees and shrubs adjacent to streams helps to control siltation and provides shade for the surface of the water, thereby improving aquatic habitat.

Wildlife habitat

Potential to support habitat for: Openland wildlife and wetland wildlife—fair; woodland wildlife—good
Management concerns: Equipment use and wetness
Management measures and considerations:
• Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
• Woodland wildlife habitat can be improved by planting or encouraging the growth of oak trees and suitable understory plants.
• Wetland wildlife habitat can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

Urban development

Suitability: Unsuited
Management concerns: This map unit is severely limited as a site for urban development because of the flooding. A site that has better suited soils should be selected.

Interpretive Groups

Land capability classification: IVw
Woodland ordination symbol: 6W for water oak

LfA—Lenoir silt loam, 0 to 2 percent slopes, rarely flooded

Setting

Landscape: Coastal Plain
Landform: Low stream terraces along the Tombigbee River and other major streams
Landform position: Flat and slightly convex slopes
Shape of areas: Oblong
Size of areas: 10 to 300 acres

Composition

Lenoir and similar soils: 90 percent
Dissimilar soils: 10 percent

Typical Profile

Surface layer:
0 to 4 inches—dark grayish brown silt loam

Subsurface layer:
4 to 8 inches—yellowish brown silt loam that has grayish and brownish mottles

Subsoil:
8 to 19 inches—grayish brown clay loam that has brownish and reddish mottles
19 to 38 inches—grayish brown clay that has brownish and reddish mottles
38 to 68 inches—light brownish gray clay that has reddish and brownish mottles
68 to 80 inches—light brownish gray clay that has brownish and reddish mottles

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Somewhat poorly drained
Permeability: Slow
Available water capacity: High
Seasonal high water table: Apparent, at a depth of 1.0 to 2.5 feet from January through March
Shrink-swell potential: Moderate
Flooding: Rare
Content of organic matter in the surface layer: Medium
Natural fertility: Low
Depth to bedrock: More than 60 inches

Minor Components

Dissimilar soils:
• The moderately well drained Annemaine soils in the slightly higher, more convex positions

• The loamy Cahaba and Izagora soils in the slightly higher positions
• The poorly drained Una soils in depressions

Similar soils:
• Scattered areas of Lenoir soils that have a surface layer of fine sandy loam or loam
• Scattered areas of somewhat poorly drained, clayey soils that decrease in content of clay with depth

Land Use

Dominant uses: Woodland and wildlife habitat
Other uses: Cropland, pasture, and hayland

Cropland

Suitability: Suited
Commonly grown crops: Corn, soybeans, grain sorghum, and cotton
Management concerns: Wetness and fertility
Management measures and considerations:
• Using well maintained open ditches and diversions to divert and remove excess water improves productivity.
• Delaying spring planting helps to prevent the clodding and rutting caused by wetness.
• Applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Pasture and hayland

Suitability: Well suited
Commonly grown crops: Dallisgrass, tall fescue, coastal bermudagrass, bahiagrass, and white clover
Management concerns: Wetness and fertility
Management measures and considerations:
• Proper stocking rates and restricted grazing during wet periods help to prevent compaction and keep the pasture in good condition.
• During the establishment, maintenance, or renovation of pasture and hayland, applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Woodland

Suitability: Suited (fig. 5)
Productivity class: Very high for loblolly pine
Management concerns: Equipment use and competition from undesirable plants
Management measures and considerations:
• Restricting the use of standard wheeled and tracked equipment to dry periods helps to prevent rutting and compaction.
• Site preparation practices, such as chopping, prescribed burning, and applying herbicides, help to control competition from unwanted plants.
• Leaving a buffer zone of trees and shrubs adjacent to streams helps to control siltation and provides shade for the surface of the water.

Wildlife habitat

Potential to support habitat for: Openland wildlife and woodland wildlife—good; wetland wildlife—fair
Management concerns: Equipment use
Management measures and considerations:
• Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
• Woodland wildlife habitat can be improved by planting or encouraging the growth of oak trees and suitable understory plants. Prescribed burning every three years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.
• Wetland wildlife habitat can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

Dwellings

Suitability: Poorly suited
Management concerns: Flooding and wetness
Management measures and considerations:
• Constructing dwellings on elevated, well-compacted fill material helps to minimize damage from the flooding.
• Building structures on the highest part of the landscape and using an artificial drainage system reduce the risk of damage from wetness.
• Installing a subsurface drainage system helps to lower the seasonal high water table.

Septic tank absorption fields

Suitability: Poorly suited
Management concerns: Wetness and restricted permeability
Management measures and considerations:
• The local Health Department can be contacted for guidance regarding sanitary facilities.
• Using suitable fill material to raise the filter field a sufficient distance above the seasonal high water table and increasing the size of the field improve system performance.

Figure 5.—Loblolly pine seedlings in an area of Lenoir silt loam, 0 to 2 percent slopes, rarely flooded. In Choctaw County, many areas that previously were used for pasture or cultivated crops have been converted to pine woodland.

• Installing distribution lines during dry periods minimizes smearing and sealing of trench walls.

Local roads and streets

Suitability: Poorly suited
Management concerns: Low strength
Management measures and considerations:
• Incorporating sand and gravel into the roadbed and compacting the roadbed improve the strength of the soil.

Interpretive Groups

Land capability classification: IIIw
Woodland ordination symbol: 9W for loblolly pine

LgA—Louin silty clay, 0 to 2 percent slopes

Setting

Landscape: Blackland Prairie
Landform: Broad upland flats in the southwestern part of the county
Landform position: Flat and slightly concave slopes that have slight gilgai microrelief
Shape of areas: Irregular
Size of areas: 10 to 75 acres

Composition

Louin and similar soils: 90 percent

Dissimilar soils: 10 percent

Typical Profile

Surface layer:
0 to 2 inches—very dark gray silty clay
2 to 8 inches—dark gray clay

Subsoil:
8 to 14 inches—dark yellowish brown clay that has grayish mottles
14 to 30 inches—mottled light brownish gray, yellowish red, and red clay
30 to 38 inches—brownish yellow and gray clay that has yellowish mottles
38 to 54 inches—brownish yellow and gray clay

Substratum:
54 to 76 inches—light gray clay

Bedrock:
76 to 80 inches—soft, light gray limestone (chalk)

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Somewhat poorly drained
Permeability: Very slow
Available water capacity: High
Seasonal high water table: Perched, at a depth of 1.0 to 2.0 feet from January through March
Shrink-swell potential: Very high
Flooding: None
Content of organic matter in the surface layer: Medium
Natural fertility: Medium
Depth to bedrock: More than 60 inches
Other distinctive properties: Depth to a horizon that is neutral or alkaline is more than 36 inches

Minor Components

Dissimilar soils:
- The moderately well drained Hannon and Oktibbeha soils in the slightly higher, more convex positions
- Poorly drained soils in depressions

Similar soils:
- Scattered areas of soils that have more clay in the subsoil than the Louin soil

Land Use

Dominant uses: Pasture and hayland
Other uses: Woodland

Cropland

Suitability: Suited
Commonly grown crops: Corn, soybeans, grain sorghum, and cotton
Management concerns: Equipment use and wetness
Management measures and considerations:
- Using well maintained open ditches and diversions to divert and remove excess water improves productivity.
- Delaying spring planting and tilling when the soil has the proper moisture content help to prevent clodding and rutting.
- Applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Pasture and hayland

Suitability: Suited
Commonly grown crops: Tall fescue, dallisgrass, Johnsongrass, bahiagrass, and white clover
Management concerns: Equipment use and wetness
Management measures and considerations:
- Using rotational grazing and implementing a well planned schedule of clipping and harvesting help to maintain the pasture and increase productivity.
- Using equipment when the soil has the proper moisture content helps to prevent rutting and compaction of the surface.

Woodland

Suitability: Suited
Productivity class: High for loblolly pine
Management concerns: Equipment use, seedling survival, and competition from undesirable plants
Management measures and considerations:
- Restricting the use of standard wheeled and tracked equipment to dry periods helps to prevent rutting and compaction.
- Special site preparation, such as harrowing and bedding, helps to establish seedlings, reduces the seedling mortality rate, and increases early seedling growth.
- Site preparation practices, such as chopping, prescribed burning, and applying herbicides, help to control competition from unwanted plants.

Wildlife habitat

Potential to support habitat for: Openland wildlife—fair; woodland wildlife—good; wetland wildlife—poor
Management concerns: Equipment use and wetness
Management measures and considerations:
- Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
- Woodland wildlife habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Prescribed burning every three years, rotated among several small tracts

of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.
• Wetland wildlife habitat can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

Dwellings

Suitability: Poorly suited
Management concerns: Wetness and shrink-swell
Management measures and considerations:
• Constructing dwellings on raised, well-compacted fill material reduces the risk of damage from wetness.
• Reinforcing foundations and footings or backfilling with coarse-textured material helps to strengthen buildings and prevents the damage caused by shrinking and swelling.

Septic tank absorption fields

Suitability: Unsuited
Management concerns: Wetness and restricted permeability
Management measures and considerations:
• This map unit is severely limited as a site for septic tank absorption fields.
• The local Health Department can be contacted for additional guidance.

Local roads and streets

Suitability: Poorly suited
Management concerns: Shrink-swell, low strength, and cutbanks cave
Management measures and considerations:
• Removing as much of the clay that has a high shrink-swell potential as possible and increasing the thickness of the base aggregate improve soil performance.
• Incorporating sand and gravel into the roadbed and compacting the roadbed improve the strength of the soil.
• Designing roads to incorporate structures that remove excess water improves the stability of the cutbanks, which are subject to slumping.

Interpretive Groups

Land capability classification: IIIw
Woodland ordination symbol: 8C for loblolly pine

LhA—Lucedale fine sandy loam, 0 to 2 percent slopes

Setting

Landscape: Uplands on the Coastal Plain
Landform: Ridgetops in the southwestern part of the county
Landform position: Convex slopes
Shape of areas: Oblong
Size of areas: 5 to 50 acres

Composition

Lucedale and similar soils: 90 percent
Dissimilar soils: 10 percent

Typical Profile

Surface layer:
0 to 5 inches—dark brown fine sandy loam

Subsoil:
5 to 8 inches—dark red sandy clay loam
8 to 17 inches—dark red clay loam
17 to 80 inches—dark red sandy clay loam

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Available water capacity: High
Depth to seasonal high water table: More than 6.0 feet
Shrink-swell potential: Low
Flooding: None
Content of organic matter in the surface layer: Low
Natural fertility: Low
Depth to bedrock: More than 60 inches

Minor Components

Dissimilar soils:
• Lucedale soils that have a slope of more than 2 percent
• Poorly drained soils in shallow depressions

Similar soils:
• Scattered areas of loamy soils that do not have dark red colors throughout the subsoil
• Scattered areas that have more clay in the subsoil than the Lucedale soil

Land Use

Dominant uses: Pasture, hayland, and homesites
Other uses: Woodland and cropland

Cropland

Suitability: Well suited
Commonly grown crops: Corn, cotton, soybeans, and truck crops
Management concerns: No significant limitations affect management of cropland.

Pasture and hayland

Suitability: Well suited
Commonly grown crops: Coastal bermudagrass and bahiagrass
Management concerns: No significant limitations affect management of pasture and hayland.

Woodland

Suitability: Well suited
Productivity class: Very high for loblolly pine
Management concerns: No significant limitations affect management of woodland.

Wildlife habitat

Potential to support habitat for: Openland wildlife and woodland wildlife—good; wetland wildlife—very poor
Management concerns: No significant limitations affect wildlife habitat.
Management measures and considerations:
• Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
• Woodland wildlife habitat can be improved by planting or encouraging the growth of oak trees and suitable understory plants. Prescribed burning every three years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.
• Wetland wildlife habitat can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

Dwellings

Suitability: Well suited
Management concerns: No significant limitations affect dwellings.

Septic tank absorption fields

Suitability: Well suited
Management concerns: No significant limitations affect septic tank absorption fields.

Local roads and streets

Suitability: Well suited
Management concerns: No significant limitations affect local roads and streets.

Interpretive Groups

Land capability classification: I
Woodland ordination symbol: 9A for loblolly pine

LnB—Luverne sandy loam, 1 to 5 percent slopes

Setting

Landscape: Uplands on the Coastal Plain
Landform: Narrow ridgetops
Landform position: Convex slopes
Shape of areas: Irregular
Size of areas: 5 to 150 acres

Composition

Luverne and similar soils: 90 percent
Dissimilar soils: 10 percent

Typical Profile

Surface layer:
0 to 5 inches—yellowish brown sandy loam

Subsurface layer:
5 to 11 inches—brownish yellow sandy loam

Subsoil:
11 to 18 inches—red clay
18 to 29 inches—red clay that has yellowish mottles
29 to 42 inches—yellowish red clay loam that has reddish, yellowish, and grayish mottles

Substratum:
42 to 65 inches—yellowish red clay loam that has reddish, brownish, and grayish mottles

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: High
Depth to seasonal high water table: More than 6.0 feet
Shrink-swell potential: Moderate
Flooding: None
Content of organic matter in the surface layer: Low
Natural fertility: Low
Depth to bedrock: More than 60 inches

Minor Components

Dissimilar soils:
• The sandy Boykin soils on small knolls
• Luverne soils that have a slope of more than 5 percent
• The loamy Smithdale soils in the slightly higher positions
• The moderately well drained Conecuh and Halso soils in the slightly lower, less convex positions

Similar soils:
• Scattered areas of soils that have less clay in the substratum than the Luverne soil

Land Use

Dominant uses: Woodland and wildlife habitat
Other uses: Pasture, hayland, cropland, and homesites

Cropland

Suitability: Suited
Commonly grown crops: Corn, cotton, soybeans, and truck crops
Management concerns: Erodibility and fertility
Management measures and considerations:
• Terraces and diversions, stripcropping, contour tillage, no-till planting, and crop residue management reduce the hazard of erosion, help to control surface runoff, and maximize rainfall infiltration.
• Applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Pasture and hayland

Suitability: Well suited
Commonly grown crops: Coastal bermudagrass, bahiagrass, tall fescue, red clover, and white clover
Management concerns: Erodibility and fertility
Management measures and considerations:
• Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the rate of germination.
• Using rotational grazing and implementing a well planned schedule of clipping and harvesting help to maintain the pasture and increase productivity.
• During the establishment, maintenance, or renovation of pasture and hayland, applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Woodland

Suitability: Well suited (fig. 6)
Productivity class: Very high for loblolly pine
Management concerns: Equipment use and competition from undesirable plants
Management measures and considerations:
• Logging when the soil has the proper moisture content helps to prevent rutting in the surface layer and the root damage caused by compaction.
• Unsurfaced roads may be impassable during wet periods because of the high content of clay in the soil.
• Site preparation practices, such as chopping, prescribed burning, and applying herbicides, help to control competition from unwanted plants.

Wildlife habitat

Potential to support habitat for: Openland wildlife and woodland wildlife—good; wetland wildlife—very poor
Management concerns: Erodibility and fertility
Management measures and considerations:
• Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
• Woodland wildlife habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Prescribed burning every three years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.
• Wetland wildlife habitat can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

Dwellings

Suitability: Suited
Management concerns: Shrink-swell
Management measures and considerations:
• Reinforcing foundations and footings or backfilling with coarse-textured material helps to strengthen buildings and prevents the damage caused by shrinking and swelling.

Septic tank absorption fields

Suitability: Poorly suited
Management concerns: Restricted permeability
Management measures and considerations:
• The local Health Department can be contacted for guidance regarding sanitary facilities.
• Increasing the size of the absorption field improves system performance.
• Installing distribution lines during dry periods helps to control smearing and sealing of trench walls.

Local roads and streets

Suitability: Suited
Management concerns: Low strength
Management measures and considerations:
• Incorporating sand and gravel into the roadbed and compacting the roadbed improve the strength of the soil.

Interpretive Groups

Land capability classification: IIIe
Woodland ordination symbol: 9C for loblolly pine

Figure 6.—A well managed stand of loblolly pine in an area of Luverne sandy loam, 1 to 5 percent slopes. Most areas of this soil are used for timber production and as habitat for turkey and deer.

LnD2—Luverne sandy loam, 5 to 15 percent slopes, eroded

Setting

Landscape: Uplands on the Coastal Plain
Landform: Hillslopes
Landform position: Convex side slopes, backslopes, and shoulder slopes
Shape of areas: Irregular
Size of areas: 20 to 300 acres

Composition

Luverne and similar soils: 85 percent
Dissimilar soils: 15 percent

Typical Profile

Surface layer:
0 to 4 inches—yellowish brown sandy loam

Subsurface layer:
4 to 10 inches—brownish yellow sandy loam

Subsoil:
10 to 15 inches—yellowish red sandy clay
15 to 29 inches—red sandy clay
29 to 49 inches—red sandy clay loam

Substratum:
49 to 59 inches—mottled red and light brownish gray sandy clay loam
59 to 66 inches—mottled grayish brown, light brownish gray, and red sandy clay loam

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: High
Depth to seasonal high water table: More than 6.0 feet
Shrink-swell potential: Moderate

Flooding: None
Content of organic matter in the surface layer: Low
Natural fertility: Low
Depth to bedrock: More than 60 inches

Minor Components

Dissimilar soils:
• The moderately well drained Conecuh and Halso soils on the lower parts of slopes
• The sandy Boykin soils on narrow ridges and on the upper parts of slopes
• The poorly drained Bibb and moderately well drained Iuka soils on narrow flood plains
• The loamy Smithdale soils in positions similar to those of the Luverne soils
• Luverne soils that have a slope of more than 15 percent

Similar soils:
• Scattered areas of soils that have less clay in the substratum than the Luverne soil

Land Use

Dominant uses: Woodland and wildlife habitat
Other uses: Pasture and hayland

Cropland

Suitability: Poorly suited
Commonly grown crops: None
Management concerns: Erodibility, equipment use, and fertility
Management measures and considerations:
• Contour farming, conservation tillage, crop residue management, stripcropping, and sod-based rotations reduce the hazard of further erosion, stabilize the soils, control surface runoff, and maximize infiltration of water.
• The complexity of the slope limits the use of terraces.
• Applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Pasture and hayland

Suitability: Suited
Commonly grown crops: Coastal bermudagrass, bahiagrass, tall fescue, red clover, and white clover
Management concerns: Erodibility, equipment use, and fertility
Management measures and considerations:
• Special care should be taken to prevent further erosion when pastures are renovated or seedbeds are established.
• The slope may limit equipment use in the steeper areas when hay is harvested.
• Fencing livestock away from creeks and streams helps to prevent streambank erosion and sedimentation.
• Using rotational grazing and implementing a well planned schedule of clipping and harvesting help to maintain the pasture and increase productivity.
• During the establishment, maintenance, or renovation of pasture and hayland, applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Woodland

Suitability: Well suited
Productivity class: Very high for loblolly pine
Management concerns: Equipment use, seedling survival, and competition from undesirable plants
Management measures and considerations:
• Logging when the soil has the proper moisture content helps to prevent rutting in the surface layer and the root damage caused by compaction.
• Unsurfaced roads may be impassable during wet periods because of the high content of clay in the soil.
• Special site preparation, such as harrowing and bedding, helps to establish seedlings, reduces the seedling mortality rate, and increases early seedling growth.
• Site preparation practices, such as chopping, prescribed burning, and applying herbicides, help to control competition from unwanted plants.

Wildlife habitat

Potential to support habitat for: Openland wildlife and woodland wildlife—good; wetland wildlife—very poor
Management concerns: Erodibility, equipment use, and fertility
Management measures and considerations:
• Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
• Woodland wildlife habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Prescribed burning every three years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.
• Wetland wildlife habitat can be improved by

constructing shallow ponds that provide open water areas for waterfowl and furbearers.

Dwellings

Suitability: Suited
Management concerns: Slope and shrink-swell
Management measures and considerations:
• Structures can be designed to conform to the natural slope.
• Land grading or shaping prior to construction minimizes the damage caused by surface flow of water and reduces the hazard of erosion.
• Reinforcing foundations and footings or backfilling with coarse-textured material helps to strengthen buildings and prevents the damage caused by shrinking and swelling.

Septic tank absorption fields

Suitability: Poorly suited
Management concerns: Restricted permeability
Management measures and considerations:
• The local Health Department can be contacted for guidance regarding sanitary facilities.
• Increasing the size of the absorption field improves system performance.
• Installing distribution lines during dry periods helps to control smearing and sealing of trench walls.

Local roads and streets

Suitability: Suited
Management concerns: Low strength and slope
Management measures and considerations:
• Incorporating sand and gravel into the roadbed and compacting the roadbed improve the strength of the soil.
• Designing roads to conform to the contour and providing adequate water-control structures, such as culverts, help to maintain the stability of the road.

Interpretive Groups

Land capability classification: VIe
Woodland ordination symbol: 9C for loblolly pine

LnE2—Luverne sandy loam, 15 to 35 percent slopes, eroded

Setting

Landscape: Uplands on the Coastal Plain
Landform: Hillslopes
Landform position: Convex side slopes, backslopes, and toeslopes
Shape of areas: Irregular
Size of areas: 40 to 300 acres

Composition

Luverne and similar soils: 85 percent
Dissimilar soils: 15 percent

Typical Profile

Surface layer:
0 to 4 inches—yellowish brown sandy loam

Subsurface layer:
4 to 10 inches—brownish yellow sandy loam

Subsoil:
10 to 15 inches—yellowish red sandy clay
15 to 29 inches—red sandy clay
29 to 49 inches—red sandy clay loam

Substratum:
49 to 59 inches—mottled red and light brownish gray sandy clay loam
59 to 66 inches—mottled grayish brown, light brownish gray, and red sandy clay loam

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: High
Depth to seasonal high water table: More than 6.0 feet
Shrink-swell potential: Moderate
Flooding: None
Content of organic matter in the surface layer: Low
Natural fertility: Low
Depth to bedrock: More than 60 inches

Minor Components

Dissimilar soils:
• The moderately deep Arundel soils on the lower parts of slopes
• The sandy Boykin soils on narrow ridges and the upper parts of slopes
• The moderately well drained Conecuh and Halso soils on the lower parts of slopes
• The poorly drained Bibb and moderately well drained Iuka soils on narrow flood plains
• The loamy Smithdale soils in positions similar to those of the Luverne soil
• A Luverne soil that has a slope of less than 15 percent or more than 35 percent

Similar soils:
• Scattered areas of soils that have less clay in the substratum than the Luverne soil

Land Use

Dominant uses: Woodland
Other uses: Wildlife habitat

Cropland

Suitability: Unsuited
Management concerns: This map unit is severely limited for crop production because of the slope. A site that has better suited soils should be selected.

Pasture and hayland

Suitability: Poorly suited to pasture and unsuited to hayland
Commonly grown crops: Coastal bermudagrass and bahiagrass
Management concerns: Erodibility, equipment use, and fertility
Management measures and considerations:
• The slope may limit equipment use in the steeper areas.
• Fencing livestock away from streams helps to prevent steambank erosion and sedimentation.
• Using rotational grazing and implementing a well planned schedule of clipping and harvesting help to maintain the pasture and increase productivity.
• During the establishment, maintenance, or renovation of pasture and hayland, applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Woodland

Suitability: Suited
Productivity class: Very high for loblolly pine
Management concerns: Erodibility, equipment use, seedling mortality, and competition from undesirable plants
Management measures and considerations:
• Installing broad base dips, water bars, and culverts helps to stabilize logging roads, skid trails, and landings.
• Establishing a permanent plant cover on roads and landings after the completion of logging helps to control erosion and the siltation of streams.
• Constructing roads, fire lanes, and skid trails on the contour helps to overcome the slope limitations.
• Leaving a buffer zone of trees and shrubs adjacent to streams helps to control siltation and provides shade for the surface of the water.
• Site preparation practices, such as prescribed burning and applying herbicides, reduce competition from unwanted plants.

Wildlife habitat

Potential to support habitat for: Openland wildlife—fair; woodland wildlife—good; wetland wildlife—very poor
Management concerns: Erodibility and equipment use
Management measures and considerations:
• Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
• Woodland wildlife habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Prescribed burning every three years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.
• Wetland wildlife habitat can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

Dwellings

Suitability: Poorly suited
Management concerns: Slope
Management measures and considerations:
• Structures can be designed to conform to the natural slope.
• Land grading or shaping prior to construction minimizes the damage caused by surface flow of water and reduces the hazard of erosion.

Septic tank absorption fields

Suitability: Poorly suited
Management concerns: Restricted permeability and slope
Management measures and considerations:
• The local Health Department can be contacted for guidance regarding sanitary facilities.
• Increasing the size of the absorption field and installing distribution lines on the contour improve system performance.
• Installing distribution lines during dry periods minimizes smearing and sealing of trench walls.

Local roads and streets

Suitability: Suited
Management concerns: Low strength and slope
Management measures and considerations:
• Incorporating sand and gravel into the roadbed and compacting the roadbed improve the strength of the soil.
• Designing roads to conform to the contour and providing adequate water-control structures, such as culverts, help to maintain the stability of the road.

Interpretive Groups

Land capability classification: VIIe
Woodland ordination symbol: 9R for loblolly pine

MaA—Mayhew silty clay loam, 0 to 2 percent slopes

Setting

Landscape: Uplands on the Coastal Plain
Landform: Broad ridgetops in the northeastern part of the county
Landform position: Flat to concave slopes that have gilgai microrelief
Shape of areas: Irregular
Size of areas: 20 to 300 acres

Composition

Mayhew and similar soils: 90 percent
Dissimilar soils: 10 percent

Typical Profile

Surface layer:
0 to 2 inches—dark brown silty clay loam
2 to 6 inches—dark brown silty clay

Subsoil:
6 to 22 inches—light brownish gray silty clay that has brownish and yellowish mottles
22 to 42 inches—grayish brown silty clay that has brownish and reddish mottles
42 to 60 inches—light brownish gray clay that has brownish and reddish mottles

Bedrock:
60 to 80 inches—weathered shale

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Poorly drained
Permeability: Very slow
Available water capacity: High
Seasonal high water table: Perched, at the surface to a depth of 1.0 foot from January through March
Shrink-swell potential: High
Flooding: None
Content of organic matter in the surface layer: Medium
Natural fertility: Low
Depth to bedrock: 60 or more inches to soft shale
Other distinctive properties: Slickensides in the lower part of the subsoil

Minor Components

Dissimilar soils:
• The somewhat poorly drained Wilcox soils in the slightly higher, more convex positions

Land Use

Dominant uses: Woodland and wildlife habitat

Cropland

Suitability: Suited
Commonly grown crops: Corn, soybeans, and grain sorghum
Management concerns: Equipment use and wetness
Management measures and considerations:
• Using equipment when the soil has the proper moisture content helps to prevent the rutting and compaction of the surface caused by the high content of clay.
• Installing a drainage system that includes open ditches and land shaping increase productivity.

Pasture and hayland

Suitability: Suited
Commonly grown crops: Tall fescue, bahiagrass, dallisgrass, and white clover
Management concerns: Equipment use and wetness
Management measures and considerations:
• Using equipment when the soil has the proper moisture content helps to prevent the rutting and compaction of the surface caused by the high content of clay.
• Using rotational grazing and implementing a well planned schedule of clipping and harvesting help to maintain the pasture and increase productivity.
• Proper stocking rates and restricted grazing during wet periods help to prevent compaction and keep the pasture in good condition.

Woodland

Suitability: Suited
Productivity class: Very high for loblolly pine
Management concerns: Equipment use, seedling survival, and competition from undesirable plants
Management measures and considerations:
• Using low-pressure ground equipment and logging when the soil has the proper moisture content help to prevent rutting of the surface and the damage caused to tree roots by soil compaction.
• Unsurfaced roads may be impassable during wet periods because of the high content of clay in the soil.
• Bedding the soil prior to planting helps to establish seedlings and increases the seedling survival rate.
• Site preparation practices, such as chopping, prescribed burning, and applying herbicides, help to control competition from unwanted plants.

Wildlife habitat

Potential to support habitat for: Openland wildlife, woodland wildlife, and wetland wildlife—fair
Management concerns: Wetness and equipment use
Management measures and considerations:
• Openland wildlife habitat can be improved by leaving

undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
• Woodland wildlife habitat can be improved by planting or encouraging the growth of oak trees and suitable understory plants. Prescribed burning every three years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.
• Wetland wildlife habitat can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

Dwellings

Suitability: Poorly suited
Management concerns: Wetness and shrink-swell
Management measures and considerations:
• Constructing dwellings on raised, well-compacted fill material reduces the risk of damage from wetness.
• Reinforcing foundations and footings or backfilling with coarse-textured material helps to strengthen buildings and prevents the damage caused by shrinking and swelling.

Septic tank absorption fields

Suitability: Unsuited
Management concerns: Wetness and restricted permeability
Management measures and considerations:
• This map unit is severely limited as a site for septic tank absorption fields.
• The local Health Department can be contacted for additional guidance.

Local roads and streets

Suitability: Poorly suited
Management concerns: Shrink-swell, low strength, wetness, and cutbanks cave
Management measures and considerations:
• Removing as much of the clay that has a high shrink-swell potential as possible and increasing the thickness of the base aggregate improve soil performance.
• Incorporating sand and gravel into the roadbed and compacting the roadbed improve the strength of the soil.
• Constructing roads on raised, well-compacted fill material helps to overcome the wetness.
• Designing roads to incorporate structures that remove excess water improves the stability of the cutbanks, which are subject to slumping.

Interpretive Groups

Land capability classification: IIIw
Woodland ordination symbol: 9W for loblolly pine

MdA—McCrory-Deerford complex, 0 to 2 percent slopes, occasionally flooded

Setting

Landscape: Coastal Plain
Landform: Low stream terraces
Landform position: McCrory—slightly concave slopes; Deerford—slightly convex slopes in the slightly higher positions
Shape of areas: Oblong
Size of areas: 5 to 250 acres

Composition

McCrory and similar soils: 65 percent
Deerford and similar soils: 25 percent
Dissimilar soils: 10 percent

Typical Profile

McCrory

Surface layer:
0 to 4 inches—dark grayish brown loam

Subsoil:
4 to 10 inches—grayish brown and light brownish gray loam that has brownish mottles
10 to 22 inches—gray clay loam that has brownish and grayish mottles
22 to 36 inches—light brownish gray clay loam that has brownish mottles
36 to 50 inches—light brownish gray clay loam that has brownish and reddish mottles
50 to 63 inches—light brownish gray sandy clay loam that has brownish and yellowish mottles

Substratum:
63 to 80 inches—light brownish gray very fine sandy loam that has brownish mottles

Deerford

Surface layer:
0 to 3 inches—very dark grayish brown loam

Subsurface layer:
3 to 7 inches—grayish brown very fine sandy loam that has brownish mottles
7 to 10 inches—light brownish gray and pale brown very fine sandy loam that has brownish mottles

Subsoil:
10 to 20 inches—light olive brown sandy clay loam and light yellowish brown very fine sandy loam having grayish and brownish mottles
20 to 27 inches—light olive brown sandy clay loam and light gray very fine sandy loam having grayish and yellowish mottles
27 to 35 inches—light olive brown clay loam and light gray very fine sandy loam having grayish and brownish mottles
35 to 49 inches—light brownish gray loam that has brownish and yellowish mottles
49 to 61 inches—light brownish gray very fine sandy loam that has brownish mottles

Substratum:
61 to 80 inches—light gray very fine sandy loam that has brownish mottles

Soil Properties and Qualities

Depth class: Very deep
Drainage class: McCrory—poorly drained; Deerford—somewhat poorly drained
Permeability: Slow
Available water capacity: Moderate
Seasonal high water table: McCrory—perched, at a depth of 0.5 to 1.0 foot from December through April; Deerford—perched, at a depth of 0.5 to 1.5 feet from December through April
Shrink-swell potential: Low
Flooding: Occasional
Content of organic matter in the surface layer: Medium
Natural fertility: Low
Depth to bedrock: More than 60 inches
Other distinctive properties: The subsoil contains a significant amount of exchangeable sodium.

Minor Components

Dissimilar soils:
• The moderately well drained Izagora soils in the slightly higher positions
• The poorly drained Bibb and moderately well drained Iuka soils on narrow flood plains

Similar soils:
• Scattered areas of soils that are similar to the McCrory and Deerford soils but that do not have a significant amount of exchangeable sodium within a depth of 40 inches

Land Use

Dominant uses: Woodland and wildlife habitat
Other uses: Pasture and hayland

Cropland

Suitability: Poorly suited
Commonly grown crops: Soybeans and grain sorghum
Management concerns: Flooding and wetness
Management measures and considerations:
• Harvesting row crops as soon as possible reduces the risk of damage from the flooding.
• Installing and maintaining a drainage system that includes open ditches, perforated tile, or land shaping increases productivity of these soils.
• Tilling when the soil has the proper moisture content helps to prevent clodding and crusting.

Pasture and hayland

Suitability: Suited
Commonly grown crops: Bahiagrass, common bermudagrass, and white clover
Management concerns: Flooding and wetness
Management measures and considerations:
• Although most flooding occurs during the winter and spring, livestock and hay may be damaged during any time of the year.
• Proper stocking rates and restricted grazing during wet periods help to prevent compaction and keep the pasture in good condition.
• Using rotational grazing and implementing a well planned schedule of clipping and harvesting help to maintain the pasture and increase productivity.

Woodland

Suitability: Suited
Productivity class: McCrory—high for loblolly pine; Deerford—very high for loblolly pine
Management concerns: Equipment use and competition from undesirable plants
Management measures and considerations:
• Because of the elevated content of exchangeable sodium, which hinders growth and causes higher than normal mortality in seedlings and mature trees, managing this map unit for loblolly pine is difficult.
• Restricting the use of standard wheeled and tracked equipment to dry periods helps to prevent rutting and compaction.
• Site preparation practices, such as chopping, prescribed burning, and applying herbicides, help to control competition from unwanted plants.
• Leaving a buffer zone of trees and shrubs adjacent to streams helps to control siltation and provides shade for the surface of the water, thereby improving aquatic habitat.

Wildlife habitat

Potential to support habitat for: Openland wildlife, woodland wildlife, and wetland wildlife—fair
Management concerns: Equipment use and wetness
Management measures and considerations:
• Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
• Woodland wildlife habitat can be improved by planting or encouraging the growth of oak trees and suitable understory plants. Prescribed burning every three years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.
• Wetland wildlife habitat can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

Urban development

Suitability: Unsuited
Management concerns: This map unit is severely limited as a site for urban development because of the flooding, wetness, and restricted permeability. A site that has better suited soils should be selected.

Interpretive Groups

Land capability classification: IVw
Woodland ordination symbol: 6W—for water oak in areas of the McCrory soil; 9W—for loblolly pine in areas of the Deerford soil

MnB—McLaurin fine sandy loam, 2 to 5 percent slopes

Setting

Landscape: Uplands on the Coastal Plain
Landform: Broad ridgetops in the southwestern part of the county
Landform position: Convex slopes
Shape of areas: Irregular
Size of areas: 15 to 150 acres

Composition

McLaurin and similar soils: 85 percent
Dissimilar soils: 15 percent

Typical Profile

Surface layer:
0 to 6 inches—dark grayish brown and brown fine sandy loam

Subsurface layer:
6 to 9 inches—dark yellowish brown fine sandy loam

Subsoil:
9 to 14 inches—yellowish red fine sandy loam
14 to 22 inches—red loam
22 to 36 inches—yellowish red fine sandy loam
36 to 48 inches—yellowish red fine sandy loam and light brown loamy fine sand
48 to 80 inches—yellowish red sandy loam

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate
Depth to seasonal high water table: More than 6.0 feet
Shrink-swell potential: Low
Flooding: None
Content of organic matter in the surface layer: Low
Natural fertility: Low
Depth to bedrock: More than 60 inches

Minor Components

Dissimilar soils:
• Scattered areas of Smithdale soils that have more clay in the upper part of the subsoil than the McLaurin soil
• The sandy Boykin and Wadley soils on small knolls

Similar soils:
• Scattered areas of a McLaurin soil that has a surface layer of loamy sand or loamy fine sand

Land Use

Dominant uses: Cropland, pasture, and hayland
Other uses: Woodland and homesites

Cropland

Suitability: Well suited
Commonly grown crops: Corn, small grains, soybeans, truck crops, and watermelons
Management concerns: Erodibility, droughtiness, and fertility
Management measures and considerations:
• Terraces and diversions, stripcropping, contour tillage, no-till planting, and crop residue management reduce the hazard of erosion, help to control surface runoff, and maximize rainfall infiltration.
• Supplemental irrigation increases crop production.
• Applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Figure 7.—An area of McLaurin fine sandy loam, 2 to 5 percent slopes. This soil is well suited to pasture, hay, and cultivated crops.

Pasture and hayland

Suitability: Well suited (fig. 7)
Commonly grown crops: Coastal bermudagrass, bahiagrass, and red clover
Management concerns: Erodibility and fertility
Management measures and considerations:
• Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the rate of germination.
• Using rotational grazing and implementing a well planned schedule of clipping and harvesting help to maintain the pasture and increase productivity.
• During the establishment, maintenance, or renovation of pasture and hayland, applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Woodland

Suitability: Well suited
Productivity class: High for loblolly pine
Management concerns: No significant limitations affect management of woodland.

Wildlife habitat

Potential to support habitat for: Openland wildlife and woodland wildlife—good; wetland wildlife—very poor
Management concerns: No significant limitations affect wildlife habitat.
Management measures and considerations:
• Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
• Woodland wildlife habitat can be improved by planting or encouraging the growth of oak trees and suitable understory plants. Prescribed burning every three years, rotated among several small tracts of land, can increase the amount of palatable browse for

deer and the number of seed-producing plants for quail and turkey.

• Wetland wildlife habitat can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

Dwellings

Suitability: Well suited
Management concerns: No significant limitations affect dwellings.

Septic tank absorption fields

Suitability: Well suited
Management concerns: No significant limitations affect septic tank absorption fields.

Local roads and streets

Suitability: Well suited
Management concerns: No significant limitations affect local roads and streets.

Interpretive Groups

Land capability classification: IIe
Woodland ordination symbol: 8A for loblolly pine

OKA—Ochlockonee, Kinston, and Iuka soils, 0 to 1 percent slopes, frequently flooded

Setting

Landscape: Coastal Plain
Landform: Broad flood plains
Landform position: Ochlockonee and Iuka—convex slopes on high and intermediate parts of natural levees; Kinston—flat to concave slopes on the lower parts of flood plains
Shape of areas: Long and narrow
Size of areas: 200 to 3,000 acres

Composition

The composition of this map unit is variable. Some areas consist mainly of the Ochlockonee soil, some consist mainly of Kinston or Iuka soils, and others contain all three soils in variable proportions.

The composition of a representative unit is Ochlockonee and similar soils, 40 percent; Kinston and similar soils, 30 percent; Iuka and similar soils, 20 percent; and dissimilar soils, 10 percent.

Typical Profile

Ochlockonee

Surface layer:
0 to 10 inches—dark brown and dark yellowish brown sandy loam

Substratum:
10 to 14 inches—very pale brown loamy fine sand
14 to 30 inches—yellowish brown fine sandy loam
30 to 60 inches—light yellowish brown loamy fine sand

Kinston

Surface layer:
0 to 4 inches—very dark grayish brown and dark grayish brown fine sandy loam that has brownish mottles

Substratum:
4 to 12 inches—light brownish gray loam that has brownish and reddish mottles
12 to 15 inches—greenish gray sandy clay loam that has reddish mottles
15 to 29 inches—greenish gray sandy clay loam that has brownish and reddish mottles
29 to 33 inches—greenish gray clay loam that has brownish mottles
33 to 60 inches—dark bluish gray clay loam that has reddish mottles

Iuka

Surface layer:
0 to 6 inches—brown fine sandy loam

Substratum:
6 to 15 inches—dark yellowish brown fine sandy loam that has brownish mottles
15 to 22 inches—yellowish brown fine sandy loam that has brownish and grayish mottles
22 to 32 inches—yellowish brown loam that has grayish and brownish mottles
32 to 60 inches—light brownish gray loam that has brownish mottles

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Ochlockonee—well drained; Kinston—poorly drained; Iuka—moderately well drained
Permeability: Moderate
Available water capacity: Ochlockonee and Iuka—moderate; Kinston—high
Seasonal high water table: Ochlockonee—apparent, at a depth of 3.0 to 5.0 feet from December through April; Kinston—apparent, at the surface to a depth of 1.0 foot from December through May; Iuka—apparent, at a depth of 1.0 to 3.0 feet from December through April

Shrink-swell potential: Low
Flooding: Frequent for brief periods, mainly in winter and spring
Content of organic matter in the surface layer: Ochlockonee—low; Kinston and Iuka—medium
Natural fertility: Medium
Depth to bedrock: More than 60 inches

Minor Components

Dissimilar soils:
• The loamy Cahaba, Izagora, and Latonia soils on low knolls and remnants of terraces
• The sandy Bigbee and loamy Riverview and Mooreville soils in positions similar to those of the Ochlockonee soil
• Very poorly drained or ponded soils in depressions

Similar soils:
• Somewhat poorly drained, loamy soils in positions similar to those of the Iuka soil

Land Use

Dominant uses: Woodland and wildlife habitat
Other uses: Pasture and hayland

Cropland

Suitability: Poorly suited
Management concerns: This map unit is severely limited for crop production because of the flooding and wetness. A site that has better suited soils should be selected.

Pasture and hayland

Suitability: Suited to pasture and poorly suited to hayland
Commonly grown crops: Common bermudagrass, bahiagrass, and white clover
Management concerns: Flooding and wetness
Management measures and considerations:
• Although most flooding occurs during the winter and spring, livestock and hay may be damaged during any time of the year.
• Proper stocking rates and restricted grazing during wet periods help to prevent compaction and keep the pasture in good condition.
• During the establishment, maintenance, or renovation of pasture and hayland, applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Woodland

Suitability: Suited
Productivity class: Very high for loblolly pine
Management concerns: Equipment use, seedling survival, competition from undesirable plants
Management measures and considerations:
• Restricting the use of standard wheeled and tracked equipment to dry periods helps to prevent rutting and compaction.
• Harvesting timber during the summer reduces the risk of damage from the flooding.
• Bedding the Kinston soil prior to planting helps to establish seedlings and increases the seedling survival rate.
• Site preparation practices, such as chopping and the application of herbicides, help to control competition from unwanted plants.
• Leaving a buffer zone of trees and shrubs adjacent to streams helps to control siltation and provides shade for the surface of the water, thereby improving aquatic habitat.

Wildlife habitat

Potential of the Ochlockonee soil to support habitat for: Openland wildlife—fair; woodland wildlife—good; wetland wildlife—very poor
Potential of the Kinston soil to support habitat for: Openland wildlife and woodland wildlife—poor; wetland wildlife—fair
Potential of the Iuka soil to support habitat for: Openland wildlife—fair; woodland wildlife—good; wetland wildlife—poor
Management concerns: Equipment use, flooding, and wetness (fig. 8)
Management measures and considerations:
• Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
• Woodland wildlife habitat can be improved by planting or encouraging the growth of oak trees and suitable understory plants.
• Wetland wildlife habitat can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

Urban development

Suitability: Unsuited
Management concerns: This map unit is severely limited as a site for urban development because of the flooding and wetness. A site that has better suited soils should be selected.

Interpretive Groups

Land capability classification: Vw
Woodland ordination symbol: 11W—for loblolly pine in areas of the Ochlockonee and Iuka soils; 9W—for loblolly pine in areas of the Kinston soil

Figure 8.—Bottomland hardwood forest in an area of Ochlockonee, Kinston, and Iuka soils, 0 to 1 percent slopes, frequently flooded. Such areas provide habitat for deer, turkey, squirrel, songbirds, and waterfowl. Flooding and wetness are limitations affecting most uses.

OtB—Oktibbeha clay, 1 to 5 percent slopes

Setting

Landscape: Blackland Prairie
Landform: Broad ridgetops in the southwestern part of the county
Landform position: Slightly convex slopes
Shape of areas: Irregular
Size of areas: 10 to 60 acres

Composition

Oktibbeha and similar soils: 90 percent
Dissimilar soils: 10 percent

Typical Profile

Surface layer:
0 to 2 inches—brown clay

Subsoil:
2 to 17 inches—yellowish red clay that has reddish and brownish mottles
17 to 24 inches—brown clay that has reddish, grayish, and brownish mottles
24 to 36 inches—yellowish brown clay that has grayish mottles
36 to 61 inches—brownish yellow and pale brown silty clay that has grayish and yellowish mottles

Substratum:
61 to 80 inches—light yellowish brown soft limestone (chalk)

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Moderately well drained
Permeability: Very slow
Available water capacity: Moderate
Depth to seasonal high water table: More than 6.0 feet
Shrink-swell potential: Very high
Flooding: None
Content of organic matter in the surface layer: Medium
Natural fertility: Medium
Depth to bedrock: More than 60 inches
Other distinctive properties: Alkaline at a depth of 30 to 50 inches

Minor Components

Dissimilar soils:
• The alkaline Maytag and Sumter soils on the upper parts of slopes
• The somewhat poorly drained Louin soils in the slightly lower, more concave positions

Similar soils:
• Scattered areas of soils that have limestone bedrock at a depth of 40 to 60 inches
• Scattered areas of reddish, clayey soils that are alkaline within a depth of 30 inches

Land Use

Dominant uses: Woodland and pasture
Other uses: Wildlife habitat

Cropland

Suitability: Suited
Commonly grown crops: Corn, soybeans, small grains, and truck crops
Management concerns: Erodibility, equipment use, and tilth
Management measures and considerations:
• Stripcropping, contour tillage, no-till planting, and crop residue management reduce the hazard of erosion, help to control surface runoff, and maximize rainfall infiltration.
• Using equipment when the soil has the proper moisture content helps to prevent the rutting and compaction of the surface caused by the high content of clay.
• Tilling when the soil has the proper moisture content helps to prevent clodding and crusting and increases infiltration of water.
• Applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Pasture and hayland

Suitability: Well suited
Commonly grown crops: Tall fescue, dallisgrass, Johnsongrass, bahiagrass, and white clover
Management concerns: Erodibility, equipment use, and root penetration
Management measures and considerations:
• Using rotational grazing and implementing a well planned schedule of clipping and harvesting help to maintain the pasture and increase productivity.
• Using equipment when the soil has the proper moisture content helps to prevent the rutting and compaction of the surface caused by the high content of clay.
• A rotation that includes perennial grasses and legumes helps to penetrate and break up the clayey root zone.
• During the establishment, maintenance, or renovation of pasture and hayland, applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Woodland

Suitability: Suited
Productivity class: Very high for loblolly pine
Management concerns: Seedling survival
Management measures and considerations:
• Special site preparation, such as harrowing and bedding, helps to establish seedlings, reduces the seedling mortality rate, and increases early seedling growth.

Wildlife habitat

Potential to support habitat for: Openland wildlife—fair; woodland wildlife—good; wetland wildlife—very poor
Management concerns: Equipment use
Management measures and considerations:
• Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
• Woodland wildlife habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Prescribed burning every three years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.
• Wetland wildlife habitat can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

Dwellings

Suitability: Poorly suited

Management concerns: Shrink-swell
Management measures and considerations:
• Reinforcing foundations and footings or backfilling with coarse-textured material helps to strengthen buildings and prevents the damage caused by shrinking and swelling.

Septic tank absorption fields

Suitability: Unsuited
Management concerns: Restricted permeability
Management measures and considerations:
• This map unit is severely limited as a site for septic tank absorption fields.
• The local Health Department can be contacted for additional guidance.

Local roads and streets

Suitability: Poorly suited
Management concerns: Shrink-swell potential, low strength, and cutbanks cave
Management measures and considerations:
• Removing as much of the clay that has a high shrink-swell potential as possible and increasing the thickness of the base aggregate improve soil performance.
• Incorporating sand and gravel into the roadbed and compacting the roadbed improve the strength of the soil.
• Designing roads to incorporate structures that remove excess water improves the stability of the cutbanks, which are subject to slumping.

Interpretive Groups

Land capability classification: IIIe
Woodland ordination symbol: 9C for loblolly pine

Pt—Pits

Setting

Landscape: Uplands on the Coastal Plain
Landform: Ridgetops, hillslopes, and terraces
Landform position: Summits, shoulder slopes, side slopes, and interfluves
Shape of areas: Rectangular or horseshoe shaped
Size of areas: 5 to 20 acres

Composition

Pits: 90 percent
Dissimilar soils: 10 percent

This map unit consists of open excavations from which the original soil and underlying material have been removed for use at another location. Typically, the remaining material consists of strata of sand, gravel, and mixed earthy materials. No typical pedon has been selected.

Properties and Qualities

Depth class: Variable
Drainage class: Variable
Permeability: Variable
Available water capacity: Variable
Depth to seasonal high water table: Variable
Shrink-swell potential: Variable
Flooding: None to rare
Content of organic matter in the surface layer: Very low
Natural fertility: Low
Depth to bedrock: More than 60 inches
Other distinctive properties: Discontinuous layers, streaks, or pockets of variable texture

Minor Components

Dissimilar:
• Boykin, Luverne, Smithdale, Wadley, and Williamsville soils near edges of mapped areas on uplands
• Bigbee, Cahaba, Izagora, and Savannah soils on edges of mapped areas on terraces
• Small depressions that are intermittently ponded

Land Use

Dominant uses: Source of sand, gravel, clay, and fill material
Other uses: Unsuited to most other uses

Extensive reclamation efforts are required to make areas suitable for use as cropland, pasture, hayland, woodland, or homesites or for wildlife habitat. Onsite investigation and testing are needed to determine the suitability of areas of this unit for any use.

Interpretive Groups

Land capability classification: VIIIs
Woodland ordination symbol: None assigned

RbD2—Rayburn silt loam, 5 to 15 percent slopes, eroded

Setting

Landscape: Uplands on the Coastal Plain
Landform: Hillslopes in the southern part of the county
Landform position: Footslopes and toeslopes
Shape of areas: Irregular
Size of areas: 5 to 400 acres

Composition

Rayburn and similar soils: 85 percent

Dissimilar soils: 15 percent

Typical Profile

Surface layer:
0 to 2 inches—dark brown silt loam

Subsurface layer:
2 to 5 inches—light yellowish brown silt loam

Subsoil:
5 to 12 inches—red clay
12 to 19 inches—yellowish red clay that has reddish and grayish mottles
19 to 34 inches—light olive gray silty clay
34 to 43 inches—light olive gray silty clay that has brownish mottles
43 to 55 inches—light olive gray silty clay that has yellowish mottles

Bedrock:
55 to 65 inches—weathered, light olive gray siltstone

Soil Properties and Qualities

Depth class: Deep
Drainage class: Moderately well drained
Permeability: Very slow
Available water capacity: High
Seasonal high water table: Perched, at a depth of 2.5 to 4.5 feet from January through March
Shrink-swell potential: High
Flooding: None
Content of organic matter in the surface layer: Low
Natural fertility: Low
Depth to bedrock: 40 to 60 inches to soft bedrock

Minor Components

Dissimilar soils:
• The loamy Smithdale soils and very deep Luverne soils; on narrow ridges
• The moderately deep, well drained Arundel soils on the upper parts of slopes
• The poorly drained Bibb and moderately well drained Iuka soils on narrow flood plains

Similar soils:
• Scattered areas of clayey soils that are very deep over bedrock
• Rayburn soils that have a slope of more than 15 percent

Land Use

Dominant uses: Woodland and wildlife habitat
Other uses: Pasture and hayland

Cropland

Suitability: Poorly suited
Commonly grown crops: Corn and small grains
Management concerns: Erodibility, equipment use, and tilth
Management measures and considerations:
• Contour farming, conservation tillage, crop residue management, stripcropping, and sod-based rotations reduce the hazard of further erosion, stabilize the soils, control surface runoff, and maximize infiltration of water.
• The complexity of the slope limits the use of terraces.
• Tilling when the soil has the proper moisture content helps to prevent clodding and crusting and increases infiltration of water.
• Applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Pasture and hayland

Suitability: Well suited to pasture and suited to hayland
Commonly grown crops: Coastal bermudagrass, bahiagrass, tall fescue, and white clover
Management concerns: Erodibility, equipment use, and fertility
Management measures and considerations:
• Special care should be taken to prevent further erosion when pastures are renovated or seedbeds are established.
• The slope may limit equipment use in the steeper areas when hay is harvested.
• Using rotational grazing and implementing a well planned schedule of clipping and harvesting help to maintain the pasture and increase productivity.
• During the establishment, maintenance, or renovation of pasture and hayland, applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Woodland

Suitability: Well suited
Productivity class: Very high for loblolly pine
Management concerns: Erodibility, equipment use, seedling mortality, and competition from undesirable plants
Management measures and considerations:
• Installing broad base dips, water bars, and culverts helps to stabilize logging roads, skid trails, and landings. Reseeding disturbed areas with adapted grasses and legumes helps to control erosion and the siltation of streams.
• Logging when the soil has the proper moisture content helps to prevent rutting in the surface layer and the root damage caused by compaction.

• Unsurfaced roads may be impassable during wet periods because of the high content of clay in the soil.
• Site preparation practices, such as chopping, prescribed burning, and applying herbicides, help to control competition from unwanted plants.
• Special site preparation, such as harrowing and bedding, helps to establish seedlings, reduces the seedling mortality rate, and increases early seedling growth.

Wildlife habitat

Potential to support habitat for: Openland wildlife and woodland wildlife—good; wetland wildlife—very poor
Management concerns: Erodibility and equipment use
Management measures and considerations:
• Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
• Woodland wildlife habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Prescribed burning every three years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.
• Wetland wildlife habitat can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

Dwellings

Suitability: Poorly suited
Management concerns: Slope and shrink-swell
Management measures and considerations:
• Structures can be designed to conform to the natural slope.
• Land grading or shaping prior to construction minimizes the damage caused by surface flow of water and reduces the hazard of erosion.
• Reinforcing foundations and footings or backfilling with coarse-textured material helps to strengthen buildings and prevents the damage caused by shrinking and swelling.

Septic tank absorption fields

Suitability: Unsuited
Management concerns: Restricted permeability and wetness
Management measures and considerations:
• This map unit is severely limited as a site for septic tank absorption fields.
• The local Health Department can be contacted for guidance regarding sanitary facilities.

Local roads and streets

Suitability: Poorly suited
Management concerns: Shrink-swell and low strength
Management measures and considerations:
• Removing as much of the clay that has a high shrink-swell potential as possible and increasing the thickness of the base aggregate improve soil performance.
• Incorporating sand and gravel into the roadbed and compacting the roadbed improve the strength of the soil.
• Designing roads to conform to the contour and providing adequate water-control structures, such as culverts, help to maintain the stability of the road.

Interpretive Groups

Land capability classification: VIe
Woodland ordination symbol: 9C for loblolly pine

RvA—Riverview loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landscape: Coastal Plain
Landform: Natural levees along the Tombigbee River
Landform position: Flat and slightly convex slopes
Shape of areas: Long and narrow
Size of areas: 20 to 500 acres

Composition

Riverview and similar soils: 85 percent
Dissimilar soils: 15 percent

Typical Profile

Surface layer:
0 to 5 inches—dark brown loam

Subsoil:
5 to 9 inches—brown loam
9 to 12 inches—dark yellowish brown clay loam
12 to 33 inches—dark yellowish brown loam
33 to 51 inches—dark yellowish brown fine sandy loam

Substratum:
51 to 61 inches—brown fine sandy loam
61 to 80 inches—dark yellowish brown loam

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Available water capacity: High

Figure 9.—An area of Riverview loam, 0 to 2 percent slopes, occasionally flooded. Good crops of cotton and soybeans can be produced in areas of this soil in most years. The flooding, however, delays planting or damages crops in some years. The woodland in the background is an area of Urbo-Mooreville-Una complex, gently undulating, frequently flooded.

Seasonal high water table: Apparent, at a depth of 3.0 to 5.0 feet from December through April
Shrink-swell potential: Low
Flooding: Occasional
Content of organic matter in the surface layer: Low
Natural fertility: Medium
Depth to bedrock: More than 60 inches

Minor Components

Dissimilar soils:
- The sandy Bigbee soils in the slightly higher, more convex positions
- The clayey, somewhat poorly drained Urbo soils in the lower positions
- The poorly drained Una soils in small depressions

Similar soils:
- Scattered areas of loamy soils that have less clay in the subsoil than the Riverview soil
- Scattered areas of loamy soils that have a buried surface layer within a depth of 20 to 40 inches

Land Use

Dominant uses: Woodland and wildlife habitat
Other uses: Cropland, hayland, and pasture

Cropland

Suitability: Well suited
Commonly grown crops: Cotton, corn, soybeans, and grain sorghum (fig. 9)
Management concerns: Flooding
Management measures and considerations:
- Although most flooding occurs during the winter months, crop loss can occur during the growing season.
- Harvesting row crops as soon as possible reduces the risk of damage from the flooding.

Pasture and hayland

Suitability: Well suited
Commonly grown crops: Coastal bermudagrass, bahiagrass, and white clover

Management concerns: Flooding
Management measures and considerations:
• Although most flooding occurs during the winter and spring, livestock and hay may be damaged during any time of the year.
• Using rotational grazing and implementing a well planned schedule of clipping and harvesting help to maintain the pasture and increase productivity.

Woodland

Suitability: Well suited
Productivity class: Very high for loblolly pine
Management concerns: Flooding
Management measures and considerations:
• Harvesting timber during the summer reduces the risk of damage from the flooding.

Wildlife habitat

Potential to support habitat for: Openland wildlife and woodland wildlife—good; wetland wildlife—poor
Management concerns: No significant limitations affect wildlife habitat.
Management measures and considerations:
• Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
• Woodland wildlife habitat can be improved by planting or encouraging the growth of oak trees and suitable understory plants. Prescribed burning every three years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.
• Wetland wildlife habitat can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

Dwellings

Suitability: Unsuited
Management concerns: This map unit is severely limited as a site for urban development because of the flooding. A site that has better suited soils should be selected.

Septic tank absorption fields

Suitability: Poorly suited
Management concerns: Flooding and wetness
Management measures and considerations:
• The local Health Department can be contacted for guidance regarding sanitary facilities.
• Using suitable fill material to raise the filter field a sufficient distance above the seasonal high water table improves system performance.

Local roads and streets

Suitability: Suited
Management concerns: Flooding
Management measures and considerations:
• Well-compacted fill material can be used as a road base to help elevate roads above the flooding.

Interpretive Groups

Land capability classification: IIw
Woodland ordination symbol: 11A for loblolly pine

SaA—Savannah silt loam, 0 to 2 percent slopes

Setting

Landscape: Coastal Plain
Landform: High stream terraces
Landform position: Flat and slightly convex slopes
Shape of areas: Irregular
Size of areas: 20 to 150 acres

Composition

Savannah and similar soils: 90 percent
Dissimilar soils: 10 percent

Typical Profile

Surface layer:
0 to 7 inches—dark grayish brown and brown silt loam

Subsurface layer:
7 to 11 inches—light olive brown silt loam

Subsoil:
11 to 24 inches—dark yellowish brown loam
24 to 30 inches—yellowish brown loam that has reddish, brownish, and grayish mottles
30 to 65 inches—yellowish brown loam fragipan that has brownish, reddish, and grayish mottles
65 to 80 inches—yellowish brown clay loam that has brownish, grayish, and reddish mottles

Soil Properties and Qualities

Depth class: Moderately deep to a root restricting fragipan
Drainage class: Moderately well drained
Permeability: Moderately slow
Available water capacity: Moderate
Seasonal high water table: Perched, at a depth of 1.5 to 3.0 feet from January through March
Shrink-swell potential: Low
Flooding: None
Content of organic matter in the surface layer: Low

Natural fertility: Low
Depth to bedrock: More than 60 inches

Minor Components

Dissimilar soils:
• The poorly drained Bibb soils on narrow flood plains
• Izagora soils, which do not have a fragipan, in the lower positions
• The well drained Smithdale soils, which do not have a fragipan, on the slightly higher knolls
• Savannah soils that have a slope of more than 2 percent

Similar soils:
• Scattered areas of Savannah soils that have a surface layer of fine sandy loam or loam

Land Use

Dominant uses: Woodland, pasture, and hayland
Other uses: Cropland and homesites

Cropland

Suitability: Well suited
Commonly grown crops: Corn, cotton, soybeans, and grain sorghum
Management concerns: Wetness, root penetration, and fertility
Management measures and considerations:
• Installing and maintaining an artificial drainage system reduces wetness and improves productivity.
• Chisel plowing and subsoiling help to break through hardpans, increasing root penetration and rainfall infiltration.
• Applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Pasture and hayland

Suitability: Well suited
Commonly grown crops: Bahiagrass and coastal bermudagrass
Management concerns: Wetness, root penetration, and fertility
Management measures and considerations:
• Proper stocking rates and restricted grazing during wet periods help to prevent compaction and keep the pasture in good condition.
• Chisel plowing and subsoiling when seedbeds are prepared help to break through hardpans, increasing root penetration and rainfall infiltration.
• During the establishment, maintenance, or renovation of pasture and hayland, applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Woodland

Suitability: Well suited
Productivity class: Very high for loblolly pine
Management concerns: Competition from undesirable plants
Management measures and considerations:
• Site preparation practices, such as chopping, prescribed burning, and applying herbicides, help to control competition from unwanted plants.

Wildlife habitat

Potential to support habitat for: Openland wildlife and woodland wildlife—good; wetland wildlife—poor
Management concerns: No significant limitations affect wildlife habitat.
Management measures and considerations:
• Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
• Woodland wildlife habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Prescribed burning every three years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.
• Wetland wildlife habitat can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

Dwellings

Suitability: Suited
Management concerns: Wetness
Management measures and considerations:
• Installing a subsurface drainage system helps to lower the seasonal high water table.

Septic tank absorption fields

Suitability: Poorly suited
Management concerns: Wetness and restricted permeability
Management measures and considerations:
• The local Health Department can be contacted for guidance regarding sanitary facilities.
• Using suitable fill material to raise the filter field a sufficient distance above the seasonal high water table and increasing the size of the field improve system performance.
• Installing distribution lines during dry periods minimizes smearing and sealing of trench walls.

Local roads and streets

Suitability: Suited

Management concerns: Low strength and wetness
Management measures and considerations:
• Incorporating sand and gravel into the roadbed and compacting the roadbed improve the strength of the soil.
• Constructing roads on raised, well-compacted fill material helps to overcome the wetness.

Interpretive Groups

Land capability classification: IIw
Woodland ordination symbol: 9W for loblolly pine

SaB—Savannah silt loam, 2 to 5 percent slopes

Setting

Landscape: Coastal Plain
Landform: High stream terraces
Landform position: Convex side slopes
Shape of areas: Irregular
Size of areas: 10 to 150 acres

Composition

Savannah and similar soils: 90 percent
Dissimilar soils: 10 percent

Typical Profile

Surface layer:
0 to 7 inches—dark grayish brown and brown silt loam

Subsurface layer:
7 to 11 inches—light olive brown silt loam

Subsoil:
11 to 24 inches—dark yellowish brown loam
24 to 30 inches—yellowish brown loam that has reddish, brownish, and grayish mottles
30 to 65 inches—yellowish brown loam fragipan that has brownish, reddish, and grayish mottles
65 to 80 inches—yellowish brown clay loam that has brownish, grayish, and reddish mottles

Soil Properties and Qualities

Depth class: Moderately deep to a root restricting fragipan
Drainage class: Moderately well drained
Permeability: Moderately slow
Available water capacity: Moderate
Seasonal high water table: Perched, at a depth of 1.5 to 3.0 feet from January through March
Shrink-swell potential: Low
Flooding: None
Content of organic matter in the surface layer: Low
Natural fertility: Low
Depth to bedrock: More than 60 inches

Minor Components

Dissimilar soils:
• The poorly drained Bibb soils on narrow flood plains
• Izagora soils, which do not have a fragipan, in positions similar to those of the Savannah soil
• The well drained Smithdale soils, which do not have a fragipan, on the upper parts of slopes
• Savannah soils that have a slope of less than 2 percent

Similar soils:
• Scattered areas of Savannah soils that have a surface layer of fine sandy loam or loam

Land Use

Dominant uses: Woodland, pasture, and hayland
Other uses: Cropland and homesites

Cropland

Suitability: Well suited
Commonly grown crops: Corn, cotton, soybeans, and grain sorghum
Management concerns: Erodibility, droughtiness, and root penetration
Management measures and considerations:
• Terraces and diversions, contour tillage, no-till planting, and crop residue management reduce the hazard of erosion, help to control surface runoff, and maximize rainfall infiltration.
• Chisel plowing and subsoiling help to break through hardpans, increasing root penetration and rainfall infiltration.
• Applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Pasture and hayland

Suitability: Well suited
Commonly grown crops: Bahiagrass and coastal bermudagrass
Management concerns: Wetness, root penetration, and fertility
Management measures and considerations:
• Proper stocking rates and restricted grazing during wet periods help to prevent compaction and keep the pasture in good condition.
• Chisel plowing and subsoiling when seedbeds are prepared help to break through hardpans, increasing root penetration and rainfall infiltration.
• During the establishment, maintenance, or renovation of pasture and hayland, applying lime and

fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Woodland

Suitability: Well suited
Productivity class: Very high for loblolly pine
Management concerns: Competition from undesirable plants
Management measures and considerations:
• Site preparation practices, such as chopping, prescribed burning, and applying herbicides, help to control competition from unwanted plants.

Wildlife habitat

Potential to support habitat for: Openland wildlife and woodland wildlife—good; wetland wildlife—poor
Management concerns: No significant limitations affect wildlife habitat.
Management measures and considerations:
• Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
• Woodland wildlife habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Prescribed burning every three years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.
• Wetland wildlife habitat can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

Dwellings

Suitability: Suited
Management concerns: Wetness
Management measures and considerations:
• Installing a subsurface drainage system helps to lower the seasonal high water table.

Septic tank absorption fields

Suitability: Poorly suited
Management concerns: Wetness and restricted permeability
Management measures and considerations:
• The local Health Department can be contacted for guidance regarding sanitary facilities.
• Using suitable fill material to raise the filter field a sufficient distance above the seasonal high water table and increasing the size of the field improve system performance.
• Installing distribution lines during dry periods minimizes smearing and sealing of trench walls.

Local roads and streets

Suitability: Suited
Management concerns: Low strength and wetness
Management measures and considerations:
• Incorporating sand and gravel into the roadbed, compacting the roadbed, and designing roads to conform to the natural slope improves soil performance.
• Constructing roads on raised, well-compacted fill material helps to overcome the wetness.

Interpretive Groups

Land capability classification: IIe
Woodland ordination symbol: 9W for loblolly pine

SmB—Smithdale sandy loam, 2 to 5 percent slopes

Setting

Landscape: Uplands on the Coastal Plain
Landform: Ridgetops
Landform position: Convex slopes
Shape of areas: Irregular
Size of areas: 5 to 250 acres

Composition

Smithdale and similar soils: 85 percent
Dissimilar soils: 15 percent

Typical Profile

Surface layer:
0 to 5 inches—brown sandy loam

Subsoil:
5 to 36 inches—red sandy clay loam
36 to 58 inches—red sandy clay loam
58 to 65 inches—red sandy loam

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate in the upper part of the subsoil and moderately rapid in the lower part
Available water capacity: High
Depth to seasonal high water table: More than 6.0 feet
Shrink-swell potential: Low
Flooding: None
Content of organic matter in the surface layer: Low
Natural fertility: Low
Depth to bedrock: More than 60 inches

Minor Components

Dissimilar soils:
• The sandy Boykin and Wadley soils on small knolls
• The clayey Luverne and Williamsville soils on the lower parts of slopes
• The moderately deep Arundel soils on the lower parts of slopes and in saddles
• Smithdale soils that have a slope of more than 5 percent

Similar soils:
• Scattered areas of reddish or brownish soils that have less clay in the subsoil than the Smithdale soil
• Scattered areas of soils that are loamy sand or sand in the lower part of the subsoil

Land Use

Dominant uses: Woodland and wildlife habitat
Other uses: Pasture, hayland, cropland, and homesites

Cropland

Suitability: Suited
Commonly grown crops: Corn, watermelons, and truck crops
Management concerns: Erodibility and fertility
Management measures and considerations:
• Terraces and diversions, stripcropping, contour tillage, no-till planting, and crop residue management reduce the hazard of erosion, help to control surface runoff, and maximize rainfall infiltration.
• The complexity of the slope limits the use of terraces in narrow areas of the map unit.
• Applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Pasture and hayland

Suitability: Well suited
Commonly grown crops: Coastal bermudagrass and bahiagrass
Management concerns: Erodibility and fertility
Management measures and considerations:
• Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the rate of germination.
• Using rotational grazing and implementing a well planned schedule of clipping and harvesting help to maintain the pasture and increase productivity.
• During the establishment, maintenance, or renovation of pasture and hayland, applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Woodland

Suitability: Well suited
Productivity class: Very high for loblolly pine
Management concerns: No significant limitations affect management of woodland.

Wildlife habitat

Potential to support habitat for: Openland wildlife and woodland wildlife—good; wetland wildlife—very poor
Management concerns: No significant limitations affect wildlife habitat.
Management measures and considerations:
• Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
• Woodland wildlife habitat can be improved by planting or encouraging the growth of oak trees and suitable understory plants. Prescribed burning every three years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.
• Wetland wildlife habitat can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

Dwellings

Suitability: Well suited
Management concerns: No significant limitations affect dwellings.

Septic tank absorption fields

Suitability: Well suited
Management concerns: No significant limitations affect septic tank absorption fields.

Local roads and streets

Suitability: Well suited
Management concerns: No significant limitations affect local roads and streets.

Interpretive Groups

Land capability classification: IIe
Woodland ordination symbol: 9A for loblolly pine

SmD—Smithdale loamy fine sand, 5 to 15 percent slopes

Setting

Landscape: Uplands on the Coastal Plain

Landform: Hillslopes
Landform position: Convex side slopes
Shape of areas: Irregular
Size of areas: 10 to 300 acres

Composition

Smithdale and similar soils: 85 percent
Dissimilar soils: 15 percent

Typical Profile

Surface layer:
0 to 5 inches—dark brown loamy fine sand

Subsurface layer:
5 to 13 inches—light yellowish brown fine sandy loam

Subsoil:
13 to 49 inches—red sandy clay loam
49 to 65 inches—yellowish red sandy loam

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate in the upper part of the subsoil and moderately rapid in the lower part
Available water capacity: High
Depth to seasonal high water table: More than 6.0 feet
Shrink-swell potential: Low
Flooding: None
Content of organic matter in the surface layer: Low
Natural fertility: Low
Depth to bedrock: More than 60 inches

Minor Components

Dissimilar soils:
• The sandy Boykin and Wadley soils on narrow ridges and on the upper parts of slopes
• The clayey Luverne and Williamsville soils on the lower parts of slopes
• The moderately deep Arundel soils on the lower parts of slopes
• Smithdale soils that have a slope of more than 15 percent
• The poorly drained Bibb and moderately well drained Iuka soils on narrow flood plains

Similar soils:
• Scattered areas of reddish or brownish soils that have less clay in the subsoil than the Smithdale soil
• Scattered areas of a Smithdale soil that has a surface layer of sandy loam or fine sandy loam

Land Use

Dominant uses: Woodland
Other uses: Pasture and hayland

Cropland

Suitability: Poorly suited
Commonly grown crops: Corn, watermelons, and small grains
Management concerns: Erodibility, equipment use, and fertility
Management measures and considerations:
• Terraces and diversions, conservation tillage, stripcropping, contour farming, crop residue management, and a rotation that includes soil conserving crops reduce the hazard of erosion, help to control surface runoff, and maximize rainfall infiltration.
• Cultivation should be restricted to the less sloping areas.
• Applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Pasture and hayland

Suitability: Well suited to pasture; suited to hayland
Commonly grown crops: Coastal bermudagrass and bahiagrass
Management concerns: Erodibility, equipment use, and fertility
Management measures and considerations:
• The slope may limit equipment use in the steeper areas when hay is harvested.
• Fencing livestock away from creeks and streams helps to prevent streambank erosion and sedimentation.
• Using rotational grazing and implementing a well planned schedule of clipping and harvesting help to maintain the pasture and increase productivity.
• During the establishment, maintenance, or renovation of pasture and hayland, applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Woodland

Suitability: Well suited
Productivity class: Very high for loblolly pine
Management concerns: No significant limitations affect management of woodland.

Wildlife habitat

Potential to support habitat for: Openland wildlife and woodland wildlife—good; wetland wildlife—very poor
Management concerns: Equipment use and erodibility
Management measures and considerations:
• Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.

• Woodland wildlife habitat can be improved by planting or encouraging the growth of oak trees and suitable understory plants. Prescribed burning every three years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.
• Wetland wildlife habitat can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

Dwellings

Suitability: Suited
Management concerns: Slope
Management measures and considerations:
• Structures can be designed to conform to the natural slope.
• Land grading or shaping prior to construction minimizes the damage caused by surface flow of water and reduces the hazard of erosion.

Septic tank absorption fields

Suitability: Suited
Management concerns: Slope
Management measures and considerations:
• Installing distribution lines on the contour improves performance of septic tank absorption fields.

Local roads and streets

Suitability: Suited
Management concerns: Slope
Management measures and considerations:
• Designing roads to conform to the contour and providing adequate water-control structures, such as culverts, help to maintain the stability of the road.

Interpretive Groups

Land capability classification: IVe
Woodland ordination symbol: 9A for loblolly pine

StD2—Sumter-Maytag complex, 3 to 8 percent slopes, eroded

Setting

Landscape: Blackland Prairie
Landform: Narrow ridgetops in the southwestern part of the county
Landform position: Convex ridge crests and side slopes
Shape of areas: Irregular
Size of areas: 10 to 150 acres

Composition

Sumter and similar soils: 50 percent
Maytag and similar soils: 40 percent
Dissimilar soils: 10 percent

Typical Profile

Sumter

Surface layer:
0 to 5 inches—dark grayish brown silty clay loam

Subsoil:
5 to 10 inches—light yellowish brown silty clay
10 to 17 inches—pale yellow silty clay that has brownish and yellowish mottles
17 to 27 inches—light gray clay that has brownish and yellowish mottles

Bedrock:
27 to 80 inches—soft limestone (chalk)

Maytag

Surface layer:
0 to 5 inches—dark grayish brown silty clay loam

Subsoil:
5 to 11 inches—light yellowish brown silty clay that has yellowish mottles
11 to 30 inches—light yellowish brown and light gray silty clay that has yellowish mottles
30 to 42 inches—light yellowish brown and light gray silty clay that has brownish mottles
42 to 52 inches—light yellowish brown and light gray silty clay loam that has yellowish mottles

Substratum:
52 to 70 inches—light gray silty clay that has brownish mottles
70 to 80 inches—light yellowish brown silty clay that has yellowish mottles

Soil Properties and Qualities

Depth class: Sumter—moderately deep; Maytag—very deep
Drainage class: Sumter—well drained; Maytag—moderately well drained
Permeability: Slow
Available water capacity: Sumter—low; Maytag—moderate
Depth to seasonal high water table: More than 6.0 feet
Shrink-swell potential: High
Flooding: None
Content of organic matter in the surface layer: Medium
Natural fertility: High
Depth to bedrock: Sumter—20 to 40 inches to soft bedrock; Maytag—more than 60 inches

Other distinctive properties: Alkaline reaction and accumulations of calcium carbonate throughout the profile

Minor Components

Dissimilar soils:
• Scattered areas of soils that are shallow over soft bedrock
• Oktibbeha and Hannon soils, which are acid in the upper part of the subsoil, on the lower parts of slopes

Similar soils:
• Scattered areas of alkaline soils that have bedrock at a depth of 40 to 60 inches
• Scattered areas of soils that are similar to the Sumter soil but that have less clay and more glauconitic sand in the subsoil

Land Use

Dominant uses: Pasture and hayland
Other uses: Woodland and homesites

Cropland

Suitability: Poorly suited
Commonly grown crops: Soybeans and small grains
Management concerns: Erodibility and tilth
Management measures and considerations:
• Contour farming, conservation tillage, crop residue management, stripcropping, and sod-based rotations reduce the hazard of further erosion, stabilize the soil, control surface runoff, and maximize infiltration of water.
• Incorporating crop residue into the soil or leaving residue on the surface and tilling during dry periods help to minimize clodding and crusting and maximize infiltration of water.

Pasture and hayland

Suitability: Suited (fig. 10)
Commonly grown crops: Tall fescue, dallisgrass, Johnsongrass, and bahiagrass
Management concerns: Sumter—erodibility and droughtiness; Maytag—erodibility
Management measures and considerations:
• Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the rate of germination.
• Special care should be taken to prevent further erosion when pastures are renovated or seedbeds are established.
• Because of the restricted rooting depth in the Sumter soil and the low available water capacity, managing this map unit in an economical manner for pasture and hay is difficult.
• Using rotational grazing and implementing a well planned schedule of clipping and harvesting help to maintain the pasture and increase productivity.

Woodland

Suitability: Suited to eastern redcedar; unsuited to loblolly pine
Productivity class: Moderate for eastern redcedar
Management concerns: Erodibility, equipment use, and seedling survival
Management measures and considerations:
• This map unit is unsuited to pine production because the soils are too alkaline.
• Planting appropriate species as recommended by a forester helps to maximize productivity and to ensure planting success.
• Installing broad base dips, water bars, and culverts helps to stabilize logging roads, skid trails, and landings. Reseeding disturbed areas with adapted grasses and legumes helps to control erosion and the siltation of streams.
• Unsurfaced roads may be impassable during wet periods because of the high content of clay in these soils.

Wildlife habitat

Potential to support habitat for: Openland wildlife and woodland wildlife—fair; wetland wildlife—very poor
Management concerns: Equipment use and erodibility
Management measures and considerations:
• Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
• Woodland wildlife habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants.
• Wetland wildlife habitat can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

Dwellings

Suitability: Poorly suited
Management concerns: Shrink-swell
Management measures and considerations:
• Reinforcing foundations and footings or backfilling with coarse-textured material helps to strengthen foundations and prevents the damage caused by shrinking and swelling.

Septic tank absorption fields

Suitability: Unsuited
Management concerns: Sumter—depth to rock and

Figure 10.—An area of Sumter-Maytag complex, 3 to 8 percent slopes, eroded, which is suited to pasture and hay.

restricted permeability; Maytag—restricted permeability
Management measures and considerations:
• This map unit is severely limited as a site for septic tank absorption fields.
• The local Health Department can be contacted for additional guidance.

Local roads and streets

Suitability: Poorly suited
Management concerns: Sumter—shrink-swell and low strength; Maytag—shrink-swell, low strength, and cutbanks cave
Management measures and considerations:
• Removing as much of the clay that has a high shrink-swell potential as possible and increasing the thickness of the base aggregate improve soil performance.
• Incorporating sand and gravel into the roadbed and compacting the roadbed improve the strength of the soil.
• Designing roads to incorporate structures that remove excess water improves the stability of the cutbanks, which are subject to slumping.

Interpretive Groups

Land capability classification: IVe
Woodland ordination symbol: 3C for eastern redcedar

StE2—Sumter-Maytag complex, 8 to 15 percent slopes, eroded

Setting

Landscape: Blackland Prairie
Landform: Hillslopes in the southwestern part of the county

Landform position: Convex side slopes
Shape of areas: Irregular
Size of areas: 15 to 200 acres

Composition

Sumter and similar soils: 45 percent
Maytag and similar soils: 40 percent
Dissimilar soils: 15 percent

Typical Profile

Sumter

Surface layer:
0 to 2 inches—dark gray silty clay loam
2 to 6 inches—grayish brown clay

Subsoil:
6 to 11 inches—light olive brown and grayish brown clay
11 to 24 inches—light brownish gray silty clay that has yellowish mottles
24 to 29 inches—light gray clay that has brownish mottles

Bedrock:
29 to 80 inches—soft limestone (chalk)

Maytag

Surface layer:
0 to 2 inches—dark grayish brown silty clay loam
2 to 6 inches—light olive brown silty clay

Subsoil:
6 to 10 inches—pale yellow clay that has brownish mottles
10 to 24 inches—pale yellow and pale olive clay that has brownish and yellowish mottles
24 to 50 inches—pale yellow clay that has brownish and grayish mottles

Substratum:
50 to 80 inches—light gray silty clay loam that has yellowish mottles

Soil Properties and Qualities

Depth class: Sumter—moderately deep; Maytag—very deep
Drainage class: Sumter—well drained; Maytag—moderately well drained
Permeability: Slow
Available water capacity: Sumter—low; Maytag—moderate
Depth to seasonal high water table: More than 6.0 feet
Shrink-swell potential: High
Flooding: None
Content of organic matter in the surface layer: Medium
Natural fertility: High
Depth to bedrock: Sumter—20 to 40 inches to soft bedrock; Maytag—more than 60 inches
Other distinctive properties: Alkaline reaction and accumulations of calcium carbonate throughout the profile

Minor Components

Dissimilar:
• Scattered areas of soils that are shallow over soft bedrock
• Oktibbeha and Hannon soils, which are acid in the upper part of the subsoil, on the lower parts of slopes
• The somewhat poorly drained Leeper soils on narrow flood plains
• Scattered areas of limestone rock outcrop

Similar soils:
• Scattered areas of alkaline soils that have bedrock at a depth of 40 to 60 inches
• Scattered areas of soils that are similar to the Sumter soil but that have less clay and more glauconitic sand in the subsoil

Land Use

Dominant uses: Woodland and wildlife habitat
Other uses: Pasture

Cropland

Suitability: Unsuited
Management concerns: This map unit is severely limited for crop production because of the slope, erosion, and poor tilth. A site that has better suited soils should be selected.

Pasture and hayland

Suitability: Suited to pasture and poorly suited to hayland
Commonly grown crops: Tall fescue, dallisgrass, Johnsongrass, and bahiagrass
Management concerns: Sumter—erodibility, equipment use, and droughtiness; Maytag—erodibility and equipment use
Management measures and considerations:
• Special care should be taken to prevent further erosion when pastures are renovated or seedbeds are established.
• The slope may limit equipment use in the steeper areas when hay is harvested.
• Because of the restricted rooting depth in the Sumter soil and the low available water capacity, managing this map unit in an economical manner for pasture and hay is difficult.

Woodland

Suitability: Suited to eastern redcedar; unsuited to loblolly pine
Productivity class: Moderate for eastern redcedar
Management concerns: Erodibility, equipment use, and seedling survival
Management measures and considerations:
• This map unit is unsuited to pine timber production because the soils are too alkaline.
• Planting appropriate species as recommended by a forester helps to maximize productivity and to ensure planting success.
• Installing broad base dips, water bars, and culverts helps to stabilize logging roads, skid trails, and landings. Reseeding disturbed areas with adapted grasses and legumes helps to control erosion and the siltation of streams.
• Unsurfaced roads may be impassable during wet periods because of the high content of clay in these soils.

Wildlife habitat

Potential to support habitat for: Openland wildlife and woodland wildlife—fair; wetland wildlife—very poor
Management concerns: Equipment use and erodibility
Management measures and considerations:
• Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
• Woodland wildlife habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants.
• Wetland wildlife habitat can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

Dwellings

Suitability: Poorly suited
Management concerns: Shrink-swell and slope
Management measures and considerations:
• Reinforcing foundations and footings or backfilling with coarse-textured material helps to strengthen foundations and prevents the damage caused by shrinking and swelling.
• Structures can be designed to conform to the natural slope.

Septic tank absorption fields

Suitability: Unsuited
Management concerns: Sumter—depth to rock and restricted permeability; Maytag—restricted permeability
Management measures and considerations:
• This map unit is severely limited as a site for septic tank absorption fields.
• The local Health Department can be contacted for additional guidance.

Local roads and streets

Suitability: Poorly suited
Management concerns: Sumter—shrink-swell and low strength; Maytag—shrink-swell, low strength, and cutbanks cave
Management measures and considerations:
• Removing as much of the clay that has a high shrink-swell potential as possible and increasing the thickness of the base aggregate improve soil performance.
• Incorporating sand and gravel into the roadbed and compacting the roadbed improve the strength of the soil.
• Designing roads to incorporate structures that remove excess water improves the stability of the cutbanks, which are subject to slumping.

Interpretive Groups

Land capability classification: VIe
Woodland ordination symbol: 3C for eastern redcedar

ToC2—Toxey-Brantley-Hannon complex, 3 to 8 percent slopes, eroded

Setting

Landscape: Blackland Prairie
Landform: Narrow ridgetops and benches in the southwestern part of the county
Landform position: Toxey—ridge crests and side slopes; Brantley—convex knolls and the upper parts of slopes; Hannon—slightly convex ridge crests and side slopes
Shape of areas: Irregular
Size of areas: 10 to 100 acres

Composition

Toxey and similar soils: 45 percent
Brantley and similar soils: 30 percent
Hannon and similar soils: 20 percent
Dissimilar soils: 5 percent

Typical Profile

Toxey

Surface layer:
0 to 3 inches—very dark gray clay

Subsoil:
3 to 15 inches—olive brown and pale olive clay that has brownish mottles
15 to 24 inches—pale olive silty clay that has brownish mottles

Substratum:
24 to 44 inches—pale yellow silty clay
44 to 80 inches—stratified brownish yellow silty clay loam and pale olive and strong brown clay loam

Brantley

Surface layer:
0 to 2 inches—dark brown fine sandy loam

Subsoil:
2 to 8 inches—brown sandy clay
8 to 21 inches—red clay
21 to 40 inches—yellowish red and strong brown clay loam
40 to 66 inches—strong brown sandy clay loam that has reddish mottles

Substratum:
66 to 92 inches—strong brown sandy clay loam that has reddish, brownish, and grayish mottles

Hannon

Surface layer:
0 to 3 inches—dark brown clay

Subsoil:
3 to 13 inches—red clay
13 to 24 inches—red clay that has brownish and grayish mottles
24 to 29 inches—light olive brown clay that has grayish mottles

Substratum:
29 to 80 inches—stratified olive yellow clay loam and light gray silty clay loam having brownish mottles

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Toxey and Hannon—moderately well drained; Brantley—well drained
Permeability: Toxey and Hannon—very slow; Brantley—slow
Available water capacity: Brantley—high; Toxey and Hannon—moderate
Depth to seasonal high water table: More than 6.0 feet
Shrink-swell potential: Toxey—high; Brantley—moderate; Hannon—very high
Flooding: None
Content of organic matter in the surface layer: Toxey and Hannon—medium; Brantley—low
Natural fertility: Toxey and Hannon—medium; Brantley—low
Depth to bedrock: More than 60 inches
Depth to an alkaline horizon: Toxey—10 to 35 inches; Brantley—more than 60 inches; Hannon—15 to 30 inches

Minor Components

Dissimilar:
• The moderately deep Sumter soils in positions similar to those of the Toxey soil
• The loamy Okeelala soils on high knolls
• Scattered areas of shallow soils and limestone rock outcrop
• Loamy and clayey soils that have a slope of more than 8 percent

Similar soils:
• Scattered areas of clayey soils that are moderately deep or deep over soft limestone bedrock

Land Use

Dominant uses: Woodland and wildlife habitat
Other uses: Pasture

Cropland

Suitability: Poorly suited
Commonly grown crops: Corn and small grains
Management concerns: Erodibility, equipment use, and tilth
Management measures and considerations:
• Contour farming, conservation tillage, crop residue management, stripcropping, and sod-based rotations reduce the hazard of further erosion, stabilize the soil, control surface runoff, and maximize infiltration of water.
• Using equipment when the soil has the proper moisture content helps to prevent the rutting and compaction of the surface caused by the high content of clay.
• Applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Pasture and hayland

Suitability: Suited
Commonly grown crops: Tall fescue, bahiagrass, dallisgrass, and Johnsongrass
Management concerns: Erodibility, equipment use, root penetration, and tilth
Management measures and considerations:
• Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the rate of germination.

• A rotation that includes perennial grasses and legumes helps to penetrate and break up the clayey root zone.
• Using rotational grazing and implementing a well planned schedule of clipping and harvesting help to maintain the pasture and increase productivity.
• Proper stocking rates and restricted grazing during wet periods help to prevent compaction and keep the pasture in good condition.
• During the establishment, maintenance, or renovation of pasture and hayland, applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Woodland

Suitability: Suited
Productivity class: High for loblolly pine
Management concerns: Equipment use, seedling mortality, and competition from undesirable species
Management measures and considerations:
• Planting an appropriate species as recommended by a forester helps to maximize productivity and to ensure planting success.
• Logging when the soil has the proper moisture content helps to prevent rutting of the surface and the damage caused to tree roots by soil compaction (fig. 11).
• Unsurfaced roads may be impassable during wet periods because of the high content of clay in these soils.
• Special site preparation, such as harrowing and bedding, helps to establish seedlings, reduces the seedling mortality rate, and increases early seedling growth.
• Site preparation practices, such as chopping, prescribed burning, and applying herbicides, help to control competition from unwanted plants.

Wildlife habitat

Potential of the Toxey soil to support habitat for: Openland wildlife and wetland wildlife—poor; woodland wildlife—fair
Potential of the Brantley soil to support habitat for: Openland wildlife and woodland wildlife—good; wetland wildlife—very poor
Potential of the Hannon soil to support habitat for: Openland wildlife—fair; woodland wildlife—good; wetland wildlife—poor
Management concerns: Equipment use and erodibility
Management measures and considerations:
• Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
• Woodland wildlife habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Prescribed burning every three years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.
• Wetland wildlife habitat can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

Figure 11.—A road in an area of the Toxey-Brantley-Hannon complex, 3 to 8 percent slopes, eroded. Roads and trails in areas of this map unit become almost impassable during wet weather. Timber management and harvesting operations should be planned for the drier periods of the year.

Dwellings

Suitability: Toxey and Hannon—poorly suited; Brantley—suited

Management concerns: Shrink-swell
Management measures and considerations:
• Reinforcing foundations and footings or backfilling with coarse-textured material helps to strengthen foundations and prevents the damage caused by shrinking and swelling.

Septic tank absorption fields

Suitability: Toxey and Hannon—unsuited; Brantley—poorly suited
Management concerns: Restricted permeability
Management measures and considerations:
• This map unit is severely limited as a site for septic tank absorption fields.
• The local Health Department can be contacted for additional guidance.
• Onsite investigation is needed to identify which areas in the unit are most suitable for septic tank absorption fields.

Local roads and streets

Suitability: Poorly suited
Management concerns: Toxey—shrink-swell and low strength; Brantley—low strength and cutbanks cave; Hannon—shrink-swell, low strength, and cutbanks cave
Management measures and considerations:
• Removing as much of the clay that has a high shrink-swell potential as possible and increasing the thickness of the base aggregate improve soil performance.
• Incorporating sand and gravel into the roadbed and compacting the roadbed improve the strength of the soil.
• Designing roads to incorporate structures that remove excess water improves the stability of the cutbanks, which are subject to slumping.

Interpretive Groups

Land capability classification: IVe
Woodland ordination symbol: 7C—for loblolly pine in areas of the Toxey soil; 8A—for loblolly pine in areas of the Brantley soil; 8C—for loblolly pine in areas of the Hannon soil

UnA—Una clay, ponded

Setting

Landscape: Coastal Plain
Landform: Flood plains
Landform position: Oxbows, sloughs, swales, and other depressional areas
Shape of areas: Oblong
Size of areas: 5 to 120 acres

Composition

Una and similar soils: 90 percent
Dissimilar soils: 10 percent

Typical Profile

Surface layer:
0 to 4 inches—dark gray clay that has brownish mottles

Subsoil:
4 to 15 inches—gray clay that has brownish, reddish, and grayish mottles
15 to 60 inches—gray clay that has brownish and yellowish mottles

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Poorly drained
Permeability: Very slow
Available water capacity: High
Seasonal high water table: Perched, at 2.0 feet above the surface to a depth of 0.5 foot from December to July
Shrink-swell potential: High
Flooding: Frequent
Content of organic matter in the surface layer: Medium
Natural fertility: Medium
Depth to bedrock: More than 60 inches

Minor Components

Dissimilar soils:
• The somewhat poorly drained Urbo soils in the slightly higher, more convex positions

Similar soils:
• Scattered areas of Una soils that have a loamy surface layer

Land Use

Dominant uses: Woodland and wildlife habitat

Cropland

Suitability: Unsuited
Management concerns: This map unit is severely limited for crop production because of the flooding, ponding, and wetness. A site that has better suited soils should be selected.

Pasture and hayland

Suitability: Unsuited
Management concerns: This map unit is severely limited for pasture and hay because of the flooding, ponding, and wetness. A site that has better suited soils should be selected.

Woodland

Suitability: Poorly suited
Productivity class: High for water tupelo and baldcypress
Management concerns: Equipment use and competition from undesirable plants
Management measures and considerations:
• The best method for reforesting areas of this soil is by managing for natural regeneration of hardwoods.
• Logging when the soil has the proper moisture content and using low-pressure ground equipment help to control rutting and the root damage caused by compaction.
• Harvesting timber during the summer reduces the risk of damage from flooding.
• Unsurfaced roads may be impassable during wet periods because of the high content of clay in the soil.
• Site preparation practices, such as chopping and the application of herbicides, help to control competition from unwanted plants.

Wildlife habitat

Potential to support habitat for: Openland wildlife and woodland wildlife—very poor; wetland wildlife—good
Management concerns: Equipment use, ponding, flooding, and wetness
Management measures and considerations:
• Wetland wildlife habitat can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers and by creating openings in the canopy. The openings encourage the growth of seed-producing grasses and forbs.

Urban development

Suitability: Unsuited
Management concerns: This map unit is severely limited as a site for urban development because of the flooding, ponding, and wetness. A site that has better suited soils should be selected.

Interpretive Groups

Land capability classification: VIIw
Woodland ordination symbol: 6W for water tupelo

UrB—Urbo-Mooreville-Una complex, gently undulating, frequently flooded

Setting

Landscape: Coastal Plain
Landform: Flood plains along the Tombigbee River
Landform position: Urbo—lower parts of low ridges and in shallow swales; Mooreville—high parts of low ridges; Una—swales and sloughs (fig. 12)
Shape of areas: Oblong
Size of areas: 100 to 12,000 acres

Composition

Urbo and similar soils: 40 percent
Mooreville and similar soils: 35 percent
Una and similar soils: 15 percent
Dissimilar soils: 10 percent

Typical Profile

Urbo

Surface layer:
0 to 9 inches—dark grayish brown silty clay

Subsoil:
9 to 14 inches—dark yellowish brown clay loam that has grayish and brownish mottles
14 to 26 inches—light brownish gray clay loam that has brownish mottles
26 to 43 inches—gray clay loam that has brownish mottles
43 to 67 inches—light brownish gray clay loam that has brownish and reddish mottles
67 to 80 inches—light brownish gray clay that has reddish and brownish mottles

Mooreville

Surface layer:
0 to 3 inches—very dark grayish brown loam

Subsoil:
3 to 8 inches—brown loam
8 to 18 inches—dark yellowish brown clay loam
18 to 41 inches—yellowish brown clay loam that has grayish and brownish mottles
41 to 51 inches—yellowish brown loam that has grayish and brownish mottles

Substratum:
51 to 72 inches—mottled yellowish brown, light brownish gray, and strong brown sandy clay loam
72 to 80 inches—mottled light brownish gray, yellowish brown, and strong brown sandy loam

Una

Surface layer:
0 to 5 inches—dark grayish brown and grayish brown silty clay loam

Subsoil:
5 to 15 inches—dark grayish brown clay that has brownish and reddish mottles

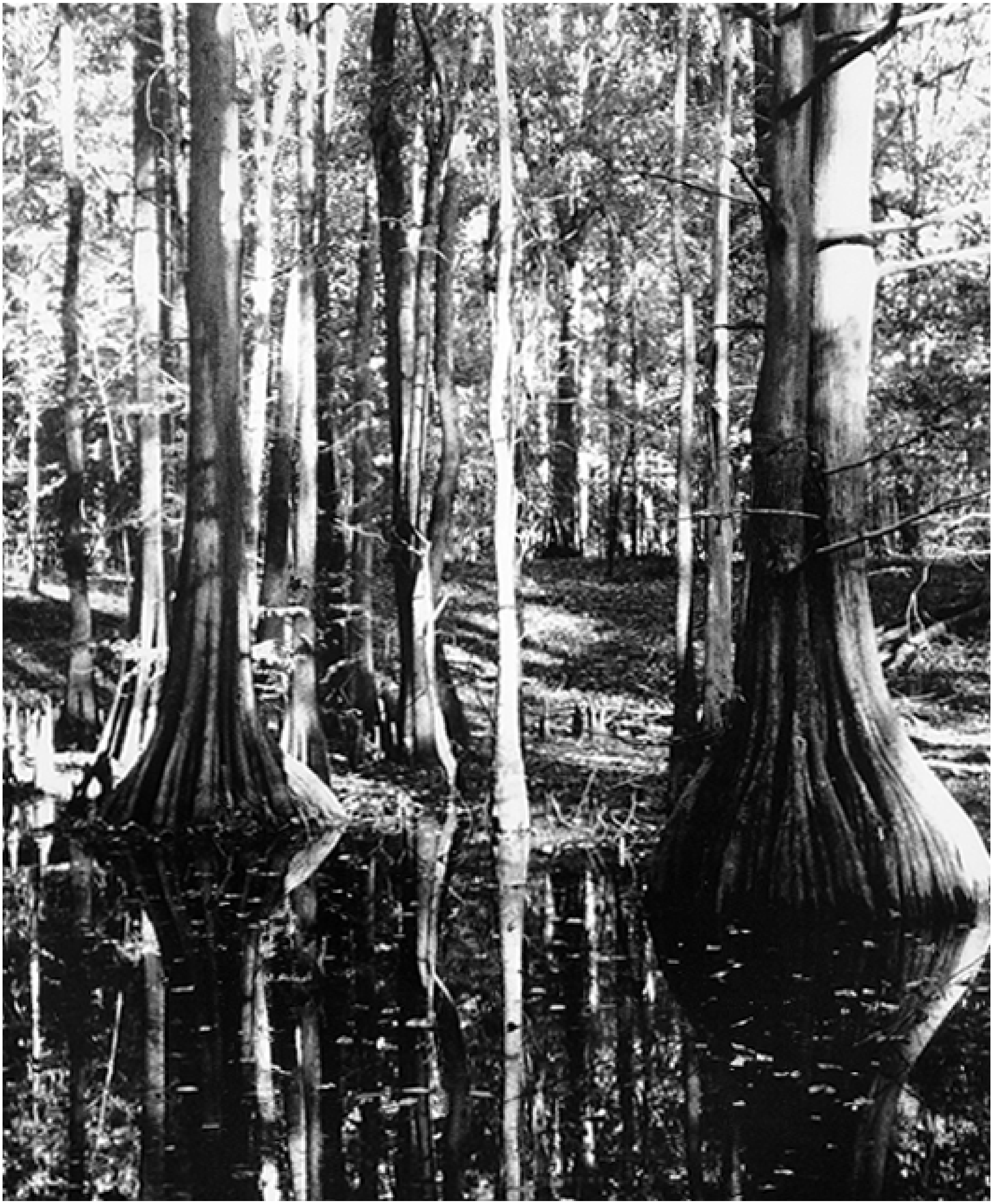

Figure 12.—An area of Urbo-Mooreville-Una complex, gently undulating, frequently flooded. Una soils, ponded, are in the low swales in the foreground. The Urbo and Mooreville soils are on the low ridges in the background. The swollen or enlarged lower trunks of the baldcypress trees are adaptations that help the trees tolerate the excessive wetness of the Una soils.

15 to 27 inches—dark gray silty clay loam that has brownish mottles
27 to 41 inches—mottled dark gray and brown clay
41 to 49 inches—grayish brown silty clay loam that has brownish mottles
49 to 60 inches—dark gray silty clay that has brownish mottles

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Urbo—somewhat poorly drained; Mooreville—moderately well drained; Una—poorly drained
Permeability: Urbo and Una—very slow; Mooreville—moderate
Available water capacity: High
Seasonal high water table: Urbo—perched, at a depth of 1.0 to 2.0 feet from December through April; Mooreville—apparent, at a depth of 1.5 to 3.0 feet from December through April; Una—perched, at 2.0 feet above the surface to a depth of 0.5 foot from December through July
Shrink-swell potential: Urbo and Una—high; Mooreville—moderate
Flooding: Frequent
Content of organic matter in the surface layer: Urbo and Mooreville—medium; Una—high
Natural fertility: Medium
Depth to bedrock: More than 60 inches

Minor Components

Dissimilar soils:
• The clayey, moderately well drained Annemaine soils and the somewhat poorly drained Lenoir soils; on low knolls and remnants of terraces
• The loamy, well drained Cahaba and Latonia and moderately well drained Izagora soils; on low knolls and remnants of terraces
• The sandy Bigbee soils in the slightly higher positions on low ridges

Similar soils:
• Clayey, moderately well drained soils that have a brownish subsoil
• Well drained, loamy soils on high parts of low ridges

Land Use

Dominant uses: Woodland and wildlife habitat
Other uses: Cropland and pasture

Cropland

Suitability: Poorly suited
Management concerns: This map unit is severely limited for crop production because of the flooding and wetness. A site that has better suited soils should be selected.

Pasture and hayland

Suitability: Suited to pasture and poorly suited to hayland
Commonly grown crops: Common bermudagrass, bahiagrass, and white clover
Management concerns: Equipment use, flooding, and wetness
Management measures and considerations:
• Using equipment when the soil has the proper moisture content helps to prevent the rutting and compaction of the surface caused by the high content of clay.
• Although most flooding occurs during the winter and spring, livestock and hay may be damaged during any time of the year.
• Proper stocking rates and restricted grazing during wet periods help to prevent compaction and keep the pasture in good condition.

Woodland

Suitability: Suited to loblolly pine and hardwood
Productivity class: Urbo and Mooreville—very high for loblolly pine; Una—high for water tupelo and baldcypress
Management concerns: Equipment use, seedling survival, and competition from undesirable plants
Management measures and considerations:
• Restricting the use of standard wheeled and tracked equipment to dry periods helps to prevent rutting and compaction.
• Harvesting timber during the summer reduces the risk of damage from the flooding.
• Bedding the Urbo and Una soils prior to planting helps to establish seedlings and increases the seedling survival rate.
• Site preparation practices, such as chopping and the application of herbicides, help to control competition from unwanted plants.
• Leaving a buffer zone of trees and shrubs adjacent to streams helps to control siltation and provides shade for the surface of the water, thereby improving aquatic habitat.

Wildlife habitat

Potential of the Urbo soil to support habitat for:
Openland wildlife, woodland wildlife, and wetland wildlife—fair
Potential of the Mooreville soil to support habitat for:
Openland wildlife—fair; woodland wildlife—good; wetland wildlife—poor

Potential of the Una soil to support habitat for:
Openland wildlife and woodland wildlife—very poor; wetland wildlife—good
Management concerns: Equipment use and wetness
Management measures and considerations:
• Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
• Woodland wildlife habitat can be improved by planting or encouraging the growth of oak trees and suitable understory plants.
• Wetland wildlife habitat can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

Urban development

Suitability: Unsuited
Management concerns: This map unit is severely limited as a site for urban development because of the flooding and wetness. A site that has better suited soils should be selected.

Interpretive Groups

Land capability classification: Vw
Woodland ordination symbol: 10W for loblolly pine in areas of the Urbo soil; 11W for loblolly pine in areas of the Mooreville soil; 6W for water tupelo in areas of the Una soil

WaB—Wadley loamy fine sand, 1 to 5 percent slopes

Setting

Landscape: Uplands on the Coastal Plain
Landform: Ridgetops
Landform position: Convex slopes
Shape of areas: Irregular
Size of areas: 5 to 50 acres

Composition

Wadley and similar soils: 90 percent
Dissimilar soils: 10 percent

Typical Profile

Surface layer:
0 to 7 inches—dark grayish brown loamy fine sand

Subsurface layer:
7 to 21 inches—light yellowish brown loamy sand
21 to 37 inches—pale brown loamy sand
37 to 55 inches—reddish yellow loamy sand

Subsoil:
55 to 73 inches—yellowish red sandy loam
73 to 80 inches—red sandy clay loam

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Somewhat excessively drained
Permeability: Rapid in the surface and subsurface layers and moderate in the subsoil
Available water capacity: Low
Depth to seasonal high water table: More than 6.0 feet
Shrink-swell potential: Low
Flooding: None
Content of organic matter in the surface layer: Low
Natural fertility: Low
Depth to bedrock: More than 60 inches

Minor Components

Dissimilar soils:
• The loamy Smithdale and clayey Luverne soils on the lower parts of slopes
• Wadley soils that have a slope of more than 5 percent

Similar soils:
• Scattered areas of sandy soils that do not have a loamy subsoil within a depth of 80 inches
• Scattered areas of soils that have a loamy subsoil within a depth of 20 to 40 inches

Land Use

Dominant uses: Woodland
Other uses: Pasture and hayland

Cropland

Suitability: Poorly suited
Commonly grown crops: Truck crops and watermelons
Management concerns: Droughtiness, nutrient leaching, and fertility
Management measures and considerations:
• Conservation tillage, winter cover crops, crop residue management, and crop rotations that include grasses and legumes increase available water capacity and improve fertility.
• Using supplemental irrigation and planting crop varieties that are adapted to droughty conditions increase production.
• Using split applications increases the effectiveness of fertilizer and herbicides.
• Applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Pasture and hayland

Suitability: Suited
Commonly grown crops: Coastal bermudagrass and bahiagrass
Management concerns: Droughtiness, nutrient leaching, and fertility
Management measures and considerations:
- Using supplemental irrigation and plant varieties that are adapted to droughty conditions increase production.
- Using split applications increases the effectiveness of fertilizer and herbicides.
- During the establishment, maintenance, or renovation of pasture and hayland, applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Woodland

Suitability: Suited
Productivity class: High for loblolly pine
Management concerns: Seedling survival
Management measures and considerations:
- Planting high-quality seedlings in a shallow furrow increases the seedling survival rate.
- Using improved varieties of loblolly pine increases productivity.

Wildlife habitat

Potential to support habitat for: Openland wildlife—fair; woodland wildlife—poor; wetland wildlife—very poor
Management concerns: Droughtiness and equipment use
Management measures and considerations:
- Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
- Woodland wildlife habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Prescribed burning every three years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.
- Wetland wildlife habitat can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

Dwellings

Suitability: Well suited
Management concerns: No significant limitations affect dwellings.

Septic tank absorption fields

Suitability: Well suited
Management concerns: No significant limitations affect septic tank absorption fields.

Local roads and streets

Suitability: Suited
Management concerns: Cutbanks cave
Management measures and considerations:
- Cutbanks are unstable and are subject to slumping.

Interpretive Groups

Land capability classification: IIIs
Woodland ordination symbol: 8S for loblolly pine

WcB—Wilcox silty clay, 1 to 5 percent slopes

Setting

Landscape: Uplands on the Coastal Plain
Landform: Narrow ridgetops in the northeastern part of the county
Landform position: Slightly convex slopes
Shape of areas: Irregular
Size of areas: 15 to 200 acres

Composition

Wilcox and similar soils: 90 percent
Dissimilar soils: 10 percent

Typical Profile

Surface layer:
0 to 3 inches—very dark grayish brown silty clay

Subsoil:
3 to 9 inches—red clay
9 to 13 inches—red clay that has grayish mottles
13 to 20 inches—red clay that has grayish and brownish mottles
20 to 35 inches—light brownish gray clay that has reddish and brownish mottles

Substratum:
35 to 60 inches—grayish brown clayey shale and grayish brown clay

Bedrock:
60 to 80 inches—weathered clayey shale

Soil Properties and Qualities

Depth class: Deep
Drainage class: Somewhat poorly drained
Permeability: Very slow

Available water capacity: Moderate
Seasonal high water table: Perched, at a depth of 1.5 to 3.0 feet from January through March
Shrink-swell potential: Very high
Flooding: None
Content of organic matter in the surface layer: Low
Natural fertility: Low
Depth to bedrock: 40 to 60 inches to soft bedrock
Other distinctive properties: Slickensides in the lower part of the subsoil

Minor Components

Dissimilar soils:
• The poorly drained Mayhew soils in slightly concave positions
• The well drained Luverne soils on the higher knolls
• Wilcox soils that have a slope of more than 5 percent

Similar soils:
• Scattered areas of soils that do not have soft bedrock within a depth of 60 inches

Land Use

Dominant uses: Woodland and wildlife habitat

Cropland

Suitability: Suited
Commonly grown crops: Corn, soybeans, and grain sorghum
Management concerns: Erodibility, equipment use, and tilth
Management measures and considerations:
• Stripcropping, contour tillage, no-till planting, and crop residue management reduce the hazard of erosion, help to control surface runoff, and maximize rainfall infiltration.
• Using equipment when the soil has the proper moisture content helps to prevent the rutting and compaction of the surface caused by the high content of clay.
• Incorporating crop residue into the surface layer or leaving residue on the surface and tilling when the soil has the proper moisture content minimize clodding and crusting and maximize infiltration of water.

Pasture and hayland

Suitability: Well suited
Commonly grown crops: Tall fescue, dallisgrass, coastal bermudagrass, bahiagrass, and white clover
Management concerns: Erodibility, equipment use, and root penetration
Management measures and considerations:
• Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the rate of germination.
• Using equipment when the soil has the proper moisture content helps to prevent the rutting and compaction of the surface caused by the high content of clay.
• Proper stocking rates and restricted grazing during wet periods help to prevent compaction and keep the pasture in good condition.
• A rotation that includes perennial grasses and legumes helps to penetrate and break up the clayey root zone.

Woodland

Suitability: Suited
Productivity class: Very high for loblolly pine
Management concerns: Equipment use, seedling survival, and competition from undesirable plants
Management measures and considerations:
• Restricting the use of standard wheeled and tracked equipment to dry periods helps to prevent rutting and compaction.
• Unsurfaced roads may be impassable during wet periods because of the high content of clay in the soil.
• Special site preparation, such as harrowing and bedding, helps to establish seedlings, reduces the seedling mortality rate, and increases early seedling growth.
• Site preparation practices, such as chopping, prescribed burning, and applying herbicides, help to control competition from unwanted plants.

Wildlife habitat

Potential to support habitat for: Openland wildlife and woodland wildlife—good; wetland wildlife—poor
Management concerns: Equipment use and tilth
Management measures and considerations:
• Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
• Woodland wildlife habitat can be improved by planting or encouraging the growth of oak trees and suitable understory plants. Prescribed burning every three years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.
• Wetland wildlife habitat can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

Dwellings

Suitability: Poorly suited
Management concerns: Shrink-swell

Management measures and considerations:
• Reinforcing foundations and footings or backfilling with coarse-textured material helps to strengthen buildings and prevents the damage caused by shrinking and swelling.

Septic tank absorption fields

Suitability: Unsuited
Management concerns: Wetness and restricted permeability
Management measures and considerations:
• This map unit is severely limited as a site for septic tank absorption fields.
• The local Health Department can be contacted for additional guidance.

Local roads and streets

Suitability: Poorly suited
Management concerns: Shrink-swell, low strength, and cutbanks cave
Management measures and considerations:
• Removing as much of the clay that has a high shrink-swell potential as possible and increasing the thickness of the base aggregate improve soil performance.
• Incorporating sand and gravel into the roadbed and compacting the roadbed improve the strength of the soil.
• Designing roads to incorporate structures that remove excess water improves the stability of the cutbanks, which are subject to slumping.

Interpretive Groups

Land capability classification: IIIe
Woodland ordination symbol: 9C for loblolly pine

WcD2—Wilcox silty clay, 5 to 15 percent slopes, eroded

Setting

Landscape: Uplands on the Coastal Plain
Landform: Hillslopes in the northeastern part of the county
Landform position: Convex side slopes
Shape of areas: Irregular
Size of areas: 40 to 300 acres

Composition

Wilcox and similar soils: 90 percent
Dissimilar soils: 10 percent

Typical Profile

Surface layer:
0 to 3 inches—very dark grayish brown silty clay

Subsoil:
3 to 9 inches—red clay
9 to 13 inches—red clay that has grayish mottles
13 to 20 inches—red clay that has grayish and brownish mottles
20 to 35 inches—light brownish gray clay that has reddish and brownish mottles

Substratum:
35 to 60 inches—grayish brown clayey shale and grayish brown clay

Bedrock:
60 to 80 inches—weathered clayey shale

Soil Properties and Qualities

Depth class: Deep
Drainage class: Somewhat poorly drained
Permeability: Very slow
Available water capacity: Moderate
Seasonal high water table: Perched, at a depth of 1.5 to 3.0 feet from January through March
Shrink-swell potential: Very high
Flooding: None
Content of organic matter in the surface layer: Low
Natural fertility: Medium
Depth to bedrock: 40 to 60 inches to soft bedrock
Other distinctive properties: Slickensides in the lower part of the subsoil

Minor Components

Dissimilar soils:
• The poorly drained Bibb and Una soils in narrow drainageways
• The well drained Luverne soils on narrow ridges and on the upper parts of slopes
• Wilcox soils that have a slope of more than 15 percent

Similar soils:
• Scattered areas of soils that do not have soft bedrock within a depth of 60 inches

Land Use

Dominant uses: Woodland and wildlife habitat

Cropland

Suitability: Poorly suited
Commonly grown crops: Corn, soybeans, and grain sorghum
Management concerns: Erodibility, equipment use, and tilth
Management measures and considerations:
• Contour farming, conservation tillage, crop residue management, stripcropping, and sod-based rotations

reduce the hazard of further erosion, stabilize the soil, control surface runoff, and maximize infiltration of water.
• Using equipment when the soil has the proper moisture content helps to prevent the rutting and compaction of the surface caused by the high content of clay.
• Incorporating crop residue into the surface layer or leaving residue on the surface and tilling when the soil has the proper moisture content minimize clodding and crusting and maximize infiltration of water.

Pasture and hayland

Suitability: Suited to pasture and poorly suited to hayland
Commonly grown crops: Tall fescue, coastal bermudagrass, bahiagrass, dallisgrass, and white clover
Management concerns: Erodibility, equipment use, and root penetration
Management measures and considerations:
• Special care should be taken to prevent further erosion when pastures are renovated or seedbeds are established.
• The slope may limit equipment use in the steeper areas when hay is harvested.
• Using equipment when the soil has the proper moisture content helps to prevent the rutting and compaction of the surface caused by the high content of clay.
• A rotation that includes perennial grasses and legumes helps to penetrate and break up the clayey root zone.
• Using rotational grazing and implementing a well planned schedule of clipping and harvesting help to maintain the pasture and increase productivity.

Woodland

Suitability: Suited
Productivity class: Very high for loblolly pine
Management concerns: Erodibility, equipment use, seedling mortality, and competition from undesirable plants
Management measures and considerations:
• Leaving a buffer zone of trees and shrubs adjacent to streams helps to control siltation and provides shade for the surface of the water, thereby improving aquatic habitat.
• Installing broad base dips, water bars, and culverts helps to stabilize logging roads, skid trails, and landings. Reseeding disturbed areas with adapted grasses and legumes helps to control erosion and the siltation of streams.
• Restricting the use of standard wheeled and tracked equipment to dry periods helps to prevent rutting and compaction.
• Unsurfaced roads may be impassable during wet periods because of the high content of clay in the soil.
• Special site preparation, such as harrowing and bedding, helps to establish seedlings, reduces the seedling mortality rate, and increases early seedling growth.
• Site preparation practices, such as chopping, prescribed burning, and applying herbicides, help to control competition from unwanted plants.

Wildlife habitat

Potential to support habitat for: Openland wildlife and woodland wildlife—good; wetland wildlife—poor
Management concerns: Erodibility and equipment use
Management measures and considerations:
• Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
• Woodland wildlife habitat can be improved by planting or encouraging the growth of oak trees and suitable understory plants. Prescribed burning every three years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.
• Wetland wildlife habitat can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

Dwellings

Suitability: Poorly suited
Management concerns: Shrink-swell and slope
Management measures and considerations:
• Reinforcing foundations and footings or backfilling with coarse-textured material helps to strengthen buildings and prevents the damage caused by shrinking and swelling.
• Structures can be designed to conform to the contour and natural shape of the slope or can be built in the less sloping areas.

Septic tank absorption fields

Suitability: Unsuited
Management concerns: Wetness and restricted permeability
Management measures and considerations:
• This map unit is severely limited as a site for septic tank absorption fields.
• The local Health Department can be contacted for additional guidance.

Local roads and streets

Suitability: Poorly suited
Management concerns: Shrink-swell, low strength, and cutbanks cave
Management measures and considerations:
• Removing as much of the clay that has a high shrink-swell potential as possible and increasing the thickness of the base aggregate improve soil performance.
• Incorporating sand and gravel into the roadbed and compacting the roadbed improve the strength of the soil.
• Designing roads to incorporate structures that remove excess water improves the stability of the cutbanks, which are subject to slumping.

Interpretive Groups

Land capability classification: VIe
Woodland ordination symbol: 9C for loblolly pine

WmC—Williamsville fine sandy loam, 2 to 8 percent slopes

Setting

Landscape: Uplands on the Coastal Plain
Landform: Narrow ridgetops in the southern part of the county
Landform position: Crests and shoulder slopes
Shape of areas: Irregular
Size of areas: 20 to 200 acres

Composition

Williamsville and similar soils: 90 percent
Dissimilar soils: 10 percent

Typical Profile

Surface layer:
0 to 5 inches—dark grayish brown fine sandy loam

Subsurface layer:
5 to 14 inches—brown fine sandy loam

Subsoil:
14 to 17 inches—yellowish red and yellowish brown fine sandy loam
17 to 43 inches—dark red and red clay
43 to 59 inches—red sandy clay loam

Substratum:
59 to 80 inches—red sandy clay loam that has olive brown mottles

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: High
Depth to seasonal high water table: More than 6.0 feet
Shrink-swell potential: Moderate
Flooding: None
Content of organic matter in the surface layer: Low
Natural fertility: Low
Depth to bedrock: More than 60 inches
Other distinctive properties: Greenish glauconitic sand in the substratum

Minor Components

Dissimilar soils:
• The sandy Boykin soils on small knolls
• The moderately deep Arundel soils and deep, moderately well drained Rayburn soils; in saddles and on the lower parts of slopes
• The loamy Smithdale soils on the slightly higher parts of ridgetops

Similiar:
• Scattered areas of clayey soils that do not have greenish, glauconitic sand in the substratum

Land Use

Dominant uses: Woodland
Other uses: Pasture and hayland

Cropland

Suitability: Poorly suited
Commonly grown crops: Corn, small grains, and truck crops
Management concerns: Erodibility and fertility
Management measures and considerations:
• Stripcropping, contour tillage, no-till planting, and crop residue management reduce the hazard of erosion, help to control surface runoff, and maximize rainfall infiltration.
• Applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Pasture and hayland

Suitability: Well suited
Commonly grown crops: Coastal bermudagrass and bahiagrass
Management concerns: Erodibility and fertility
Management measures and considerations:
• Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the rate of germination.

• During the establishment, maintenance, or renovation of pasture and hayland, applying lime and fertilizer on the basis of soil testing increases the availability of nutrients to plants and maximizes productivity.

Woodland

Suitability: Well suited
Productivity class: Very high for loblolly pine
Management concerns: Equipment use and competition from undesirable plants
Management measures and considerations:
• Logging when the soil has the proper moisture content helps to prevent rutting in the surface layer and the root damage caused by compaction.
• Site preparation practices, such as chopping, prescribed burning, and applying herbicides, help to control competition from unwanted plants.

Wildlife habitat

Potential to support habitat for: Openland wildlife and woodland wildlife—good; wetland wildlife—very poor
Management concerns: Erodibility and fertility
Management measures and considerations:
• Openland wildlife habitat can be improved by leaving undisturbed areas of vegetation around cropland and pasture. These areas provide wildlife with food and a place to rest.
• Woodland wildlife habitat can be improved by planting appropriate vegetation, maintaining the existing plant cover, or promoting the natural establishment of desirable plants. Prescribed burning every three years, rotated among several small tracts of land, can increase the amount of palatable browse for deer and the number of seed-producing plants for quail and turkey.
• Wetland wildlife habitat can be improved by constructing shallow ponds that provide open water areas for waterfowl and furbearers.

Dwellings

Suitability: Suited
Management concerns: Shrink-swell
Management measures and considerations:
• Reinforcing foundations and footings or backfilling with coarse-textured material helps to strengthen buildings and prevents the damage caused by shrinking and swelling.

Septic tank absorption fields

Suitability: Poorly suited
Management concerns: Restricted permeability
Management measures and considerations:
• The local Health Department can be contacted for guidance regarding sanitary facilities.
• Increasing the size of the absorption field and placing the distribution lines on the contour improve system performance.
• Installing distribution lines during dry periods helps to control smearing and sealing of trench walls.

Local roads and streets

Suitability: Poorly suited
Management concerns: Low strength
Management measures and considerations:
• Incorporating sand and gravel into the roadbed and compacting the roadbed improve the strength of the soil.

Interpretive Groups

Land capability classification: IVe
Woodland ordination symbol: 10C for loblolly pine

Prime Farmland

Prime farmland is one of several kinds of important farmland defined by the U.S. Department of Agriculture. It is of major importance in meeting the Nation's short- and long-range needs for food and fiber. Because the supply of high-quality farmland is limited, the U.S. Department of Agriculture recognizes that responsible levels of government, as well as individuals, should encourage and facilitate the wise use of our Nation's prime farmland.

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, woodland, or other land, but it is not urban or built-up land or water areas. The soil qualities, growing season, and moisture supply are those needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied. In general, prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, an acceptable salt and sodium content, and few or no rocks. It is permeable to water and air. It is not excessively erodible or saturated with water for long periods, and it either is not frequently flooded during the growing season or is protected from flooding. The slope ranges mainly from 0 to 5 percent. More detailed information about the criteria for prime farmland is available at the local office of the Natural Resources Conservation Service.

About 158,000 acres in the survey area, or nearly 27 percent of the total acreage, meets the soil requirements for prime farmland. Scattered areas of this land are throughout the county, mainly in general soil map units 2, 3, 4, and 5, which are described under the heading "General Soil Map Units." Less than 3,000 acres of this prime farmland is used for crops. The crops grown on this land include cotton, corn, soybeans, and grain sorghum.

The map units in the survey area that are considered prime farmland are listed at the end of this section. This list does not constitute a recommendation for a particular land use. On some soils included in the list, measures that overcome a hazard or limitation, such as flooding, wetness, and droughtiness, are needed. Onsite evaluation is needed to determine whether or not the hazard or limitation has been overcome by corrective measures. The extent of each listed map unit is shown in table 5. The location is shown on the detailed soil maps at the back of this publication. The soil qualities that affect use and management are described under the heading "Detailed Soil Map Units."

The map units that meet the requirements for prime farmland are:

AnA	Annemaine silt loam, 0 to 2 percent slopes, rarely flooded
CaA	Cahaba sandy loam, 0 to 2 percent slopes, rarely flooded
FrA	Freest fine sandy loam, 0 to 2 percent slopes
HaB	Halso silt loam, 1 to 3 percent slopes
IzA	Izagora fine sandy loam, 0 to 2 percent slopes, rarely flooded
LaA	Latonia loamy sand, 0 to 2 percent slopes, rarely flooded
LfA	Lenoir silt loam, 0 to 2 percent slopes, rarely flooded
LgA	Louin silty clay, 0 to 2 percent slopes
LhA	Lucedale fine sandy loam, 0 to 2 percent slopes
LnB	Luverne sandy loam, 1 to 5 percent slopes
MnB	McLaurin fine sandy loam, 2 to 5 percent slopes
OtB	Oktibbeha clay, 1 to 5 percent slopes
RvA	Riverview loam, 0 to 2 percent slopes, occasionally flooded
SaA	Savannah silt loam, 0 to 2 percent slopes
SaB	Savannah silt loam, 2 to 5 percent slopes
SmB	Smithdale sandy loam, 2 to 5 percent slopes
WcB	Wilcox silty clay, 1 to 5 percent slopes

Use and Management of the Soils

This soil survey is an inventory and evaluation of the soils in the survey area. It can be used to adjust land uses to the limitations and potentials of natural resources and the environment. Also, it can help to prevent soil-related failures in land uses.

In preparing a soil survey, soil scientists, conservationists, engineers, and others collect extensive field data about the nature and behavioral characteristics of the soils. They collect data on erosion, droughtiness, flooding, and other factors that affect various soil uses and management. Field experience and collected data on soil properties and performance are used as a basis in predicting soil behavior.

Information in this section can be used to plan the use and management of soils for crops and pasture; as rangeland and woodland; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreational facilities; and for wildlife habitat. It can be used to identify the potentials and limitations of each soil for specific land uses and to help prevent construction failures caused by unfavorable soil properties.

Planners and others using soil survey information can evaluate the effect of specific land uses on productivity and on the environment in all or part of the survey area. The survey can help planners to maintain or create a land use pattern in harmony with the natural soil.

Contractors can use this survey to locate sources of sand and gravel, roadfill, and topsoil. They can use it to identify areas where bedrock, wetness, or very firm soil layers can cause difficulty in excavation.

Health officials, highway officials, engineers, and others may also find this survey useful. The survey can help them plan the safe disposal of wastes and locate sites for pavements, sidewalks, campgrounds, playgrounds, lawns, and trees and shrubs.

Crops and Pasture

Kenneth M. Rogers, conservation agronomist, and Ben L. Moore, resource conservationist, Natural Resources Conservation Service, helped to prepare this section.

General management needed for crops and pasture is suggested in this section. The estimated yields of the main crops and pasture plants are listed for each soil, the system of land capability classification used by the Natural Resources Conservation Service is explained, and the crops or pasture plants best suited to the soils, including some not commonly grown in the county, are identified.

Planners of management systems for individual fields or farms should consider the detailed information given in the description of each soil under the heading "Detailed Soil Map Units." Specific information can be obtained from the local office of the Natural Resources Conservation Service or the Cooperative Extension System.

Choctaw County is predominantly woodland with small, scattered farms. The acreage of cultivated crops and pasture has been decreasing for many years. The trend is towards forestation of the remaining cropland and pastureland. In 1996, less than 3,000 acres was used as cropland in the county. Cotton, corn, watermelons, and small grains were the main crops. About 19,000 tons of hay was harvested from 7,600 acres in 1996 (Alabama Department of Agriculture and Industries, 1997).

The production of food and fiber could be increased in the county. The rolling and hilly terrain and the small size of the areas that are economically suited to row cropping are the main limitations. About 210,000 acres of potentially good cropland is being used as pasture and woodland. Yields could be increased by applying the most current technology on the land that is currently being cultivated. This soil survey can help land users make sound land management decisions and facilitate the application of crop production technology.

The field crops that are suited to the soils and climate of Choctaw County include many that are not commonly grown because of economic considerations. Cotton, corn, and soybeans are the main row crops. Grain sorghum, wheat, sunflowers, vegetable crops, and other similar crops can be grown. The specialty crops that can be grown in the county include sweet corn, okra, peas, sweet potatoes, melons, blueberries, and pecans. McLaurin, Smithdale, Lucedale, and Savannah soils are well suited to specialty crops. Additional information regarding specialty crops can be obtained from the local office of the Cooperative

Extension System or the Natural Resources Conservation Service.

Erosion is a major concern on about one-half of the cropland in Choctaw County. In areas where the slope is more than 2 percent, erosion is a hazard. The sloping soils that are currently being cultivated and that are subject to accelerated erosion include Luverne, McLaurin, Savannah, and Smithdale soils.

Erosion can reduce productivity and can result in the pollution of streams. Productivity is reduced as the surface layer erodes and more of the subsoil is incorporated into the plow layer. Erosion of the surface layer can result in the loss of soil fertility by the direct removal of plant nutrients and organic matter. Loss of the surface layer is especially damaging on soils that have a clayey subsoil, including Luverne and Williamsville soils, and on soils that have a fragipan that restricts rooting depth, including Savannah soils. Sediment from erosion also causes off-site damage. Controlling erosion on farmland minimizes the pollution of streams and improves the quality of water for municipal uses, for recreational uses, and for fish and wildlife.

Erosion-control practices provide a protective plant cover, increase the rate of water infiltration, and help to control runoff. A cropping system that keeps plant cover and crop residue on the surface for extended periods can hold soil losses to amounts that do not reduce the productive capacity of the soils. Including grasses and legume into the cropping system helps to control erosion in sloping areas and improves tilth for the crops that follow in the rotation. The legumes also increase nitrogen levels in the soils.

Applying a system of conservation tillage and leaving crop residue on the surface increase the rate of water infiltration and help to control runoff and erosion. Using a no-till method of planting reduces the hazard of erosion in sloping areas and is suitable on most of the soils in the county.

Terraces and diversions help to control runoff and reduce the hazard of erosion. They are most practical on very deep, well drained soils that have a uniform slope. Luverne, McLaurin, and Smithdale soils are examples. Sandy soils, such as Boykin and Wadley soils, are not suited to terracing because gullies form easily when water is concentrated on the surface. Grassed waterways or underground tile outlets are essential in areas where terraces and diversions are installed. Diversions can be used to intercept surface runoff from hilly uplands and to divert the water around the fields to vegetated disposal areas. Terraces and diversions are less practical in areas of the soils on the Blackland Prairie because of the high rate of runoff on these soils. Maytag and Sumter soils are examples.

Contour farming is a very effective erosion-control method in cultivated areas if used in conjunction with a water-disposal system. It is best suited to soils that have smooth, uniform slopes. Luverne, McLaurin, and Smithdale soils are examples.

Soil blowing can be a hazard in early spring on some soils in the uplands, especially if the soils are dry and are not protected by a plant cover. However, woodland areas acting as shelters generally dampen the effects of soil blowing on all but the largest cultivated tracts. The hazard of erosion is generally highest after the seedbed has been prepared, after planting, and when the plants are small. Tillage methods that leave crop residue on the surface reduce the hazard of soil blowing. Conventional planting practices should include an implement that scratches the surface and leaves a rough, irregular pattern. Also, strips of close-growing crops are effective as windbreaks. If possible, seedbed preparation should be delayed until after the month of March, which is generally windy. Additional information regarding the design of erosion-control practices is available at the local office of the Natural Resources Conservation Service.

Choctaw County has an adequate amount of rainfall for the commonly grown crops. Prolonged periods of drought are rare, but the distribution of rainfall during spring and summer results in droughty periods during the growing season in most years. Irrigation may be needed during these periods to reduce plant stress. Most of the soils in the county that are commonly cultivated are suitable for irrigation; however, the amount of water applied should be regulated to prevent excessive runoff. Some soils, such as Annemaine and Luverne soils, have a slow rate of water infiltration, which limits their potential for irrigation.

Most of the soils that are used for crops in the county have a surface layer of sandy loam that is light in color and low in content of organic matter. Regular additions of crop residue, manure, and other organic material can improve soil structure and minimize crust formation, thereby improving the rate of water infiltration.

The use of heavy tillage equipment can result in compaction of subsurface layers in most of the soils on the Coastal Plain. The compacted layers, which are called plow pans or traffic pans, are generally 2 to 12 inches below the surface. They restrict the rate of water infiltration and limit the growth of plant roots. The soils that are likely to develop traffic pans include Cahaba, Izagora, Lucedale, Luverne, Savannah, Smithdale, and Williamsville soils.

Tilth is an important factor affecting plant growth because it influences the rate of water infiltration into the soil. Soils that have good tilth have sufficient organic matter and a granular, porous surface layer. Tilth is affected by the type of crop planted, past farming practices, and the degree of erosion that has occurred. Practices that maintain or increase the content of organic matter are needed for all of the soils that are used as cropland in the county.

Natural fertility is low in most of the soils in Choctaw County. Soils on stream terraces, including Cahaba and Izagora soils, and soils on flood plains, including Riverview soils, have a slightly higher natural fertility than the soils on uplands. Applications of agricultural limestone are needed to neutralize acidity in most of the soils. The alkaline soils on the Blackland Prairie are exceptions. Leeper, Maytag, and Sumter soils are examples. The crops grown in the county respond well to applications of lime and fertilizer. The levels of available phosphorus and potash are generally low in most of the soils. Soils in some fields, however, have a buildup of phosphorus or potassium because of past applications of large quantities of commercial fertilizer. Applications of lime and fertilizer should be based on the results of soil tests. Leaching is a concern in areas of sandy soils, such as Bigbee, Boykin, and Wadley soils. Higher levels of nitrogen, applied in split applications, should be used on these soils. The Cooperative Extension System can help in determining the kinds and amounts of fertilizer and lime to apply.

Wetness is a management concern in areas of Lenoir, Louin, Mayhew, and Urbo soils. If crops are to be grown in areas of these soils, a drainage system is needed to reduce the wetness.

Bahiagrass and improved bermudagrass are the main perennial grasses grown for pasture and hay in Choctaw County. Rye, ryegrass, and wheat are grown as annual cool-season grass forage. Millets, sorghums, and hybrid forage sorghums provide most of the annual warm-season grass forage. These annuals are generally grown in areas otherwise used as cropland. They are grown for temporary grazing and for hay. Most of the soils in the county are suited to arrowleaf clover, white clover, crimson clover, ball clover, and other cool-season forage legumes, especially if agricultural limestone is applied in proper amounts. The well drained soils, such as Lucedale, Luverne, McLaurin, Smithdale, and Williamsville soils, are well suited to alfalfa, which is a warm-season legume.

A combination of management practices is needed on all of the soils that are used as pasture or hayland. These practices include proper grazing management, control of weeds, proper application of fertilizer, rotation grazing, and the scattering of animal droppings. Overgrazing, low rates of application of fertilizer, and acid soils are the main concerns for pasture management in the county. They can result in weak plants and poor stands that are quickly infested with weeds. Maintaining a good, dense cover of the desired pasture species helps to prevent the establishment of weeds.

Yields per Acre

The average yields per acre that can be expected of the principal crops under a high level of management are shown in tables 6 and 7. In any given year, yields may be higher or lower than those indicated in the table because of variations in rainfall and other climatic factors. The land capability classification of each map unit also is shown in table 6.

The yields are based mainly on the experience and records of farmers, conservationists, and extension agents. Available yield data from nearby counties and results of field trials and demonstrations are also considered.

The management needed to obtain the indicated yields of the various crops depends on the kind of soil and the crop. Management can include drainage, erosion control, and protection from flooding; the proper planting and seeding rates; suitable high-yielding crop varieties; appropriate and timely tillage; control of weeds, plant diseases, and harmful insects; favorable soil reaction and optimum levels of nitrogen, phosphorus, potassium, and trace elements for each crop; effective use of crop residue, barnyard manure, and green manure crops; and harvesting that ensures the smallest possible loss.

The estimated yields reflect the productive capacity of each soil for each of the principal crops. Yields are likely to increase as new production technology is developed. The productivity of a given soil compared with that of other soils, however, is not likely to change.

Crops other than those shown in the tables are grown in the survey area, but estimated yields are not listed because the acreage of such crops is small. The local office of the Natural Resources Conservation Service or of the Cooperative Extension System can provide information about the management and productivity of the soils for those crops.

Land Capability Classification

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for rangeland, for woodland, and for engineering purposes.

In the capability system, soils are generally grouped at three levels—capability class, subclass, and unit. Only class and subclass are used in this survey.

Capability classes, the broadest groups, are designated by numerals I through VIII. The numerals indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class I soils have few limitations that restrict their use.

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

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

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

Class V soils are not likely to erode but have other limitations, impractical to remove, that limit their use.

Class VI soils have severe limitations that make them generally unsuitable for cultivation.

Class VII soils have very severe limitations that make them unsuitable for cultivation.

Class VIII soils and miscellaneous areas have limitations that nearly preclude their use for commercial crop production.

Capability subclasses are soil groups within one class. They are designated by adding a small letter, *e, w, s,* or *c,* to the class numeral, for example, IIe. The letter *e* shows that the main hazard is the risk of erosion unless close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); *s* shows that the soil is limited mainly because it is shallow, droughty, or stony; and *c,* used in only some parts of the United States, shows that the chief limitation is climate that is very cold or very dry.

In class I there are no subclasses because the soils of this class have few limitations. Class V contains only the subclasses indicated by *w, s,* or *c* because the soils in class V are subject to little or no erosion. They have other limitations that restrict their use to pasture, woodland, wildlife habitat, or recreation.

The capability classification of each map unit is given in the section “Detailed Soil Map Units” and in the yields table.

Landscaping and Gardening

Kenneth M. Rogers, conservation agronomist, Natural Resources Conservation Service, helped prepare this section.

The soils in residential areas are used primarily as sites for homes, driveways, and streets. Remaining areas of each lot are commonly used for lawns, which enhance the appearance of the homes; as gardens for vegetables or flowers and shrubs; as orchards for fruits and nuts; for recreational uses; as habitat for animals and birds; for trees, which provide shade and promote energy conservation; for vegetation and structures designed to abate noise, enhance privacy, and provide protection from the wind; and for septic tank absorption fields. Because the outdoor areas are used for several purposes, careful planning and a good understanding of the soils are important.

This section contains general soil-related information for landscaping and gardening. Other information may be obtained from the local office of the Cooperative Extension System or the Natural Resources Conservation Service or from private businesses that provide landscaping and related services. The amount of soil information needed for use in some areas is beyond the scope of this survey and is more detailed than that provided at the map scale used. Onsite investigation is needed in these areas.

Most of the soils in the residential areas in Choctaw County have been disturbed to some degree during construction of houses, streets, driveways, and utility service. This construction involved cutting and filling, grading, and excavating. As a result, soil properties are more variable and less predictable than they are in undisturbed areas. Onsite examination is needed for the planning of land uses in disturbed areas.

Some of the poorest soils for plant growth in the county are Conecuh, Halso, Luverne, Wilcox, and Williamsville soils that have had the surface layer removed during grading. The exposed dense, firm subsoil restricts root penetration, absorbs little rainfall, and results in excessive runoff. These conditions are common where these and similar soils are mapped as complexes with urban land. Incorporating organic matter into the soil improves tilth, increases the rate of water infiltration, and provides a more desirable rooting medium. Areas that are subject to intensive foot traffic should be covered with gravel or a mulch, such as pine bark or wood chips.

Some soils, such as Deerford, Lenoir, and McCrory soils, are wet. The wetness limits the selection of plants to those that are tolerant of a high moisture content in the soil. Several methods can be used to minimize the effects of the wetness. Installing underground tile drains can lower the water table in permeable soils. Bedding the surface layer of slowly permeable soils, such as Lenoir soils, helps to provide a satisfactory root zone for some plants.

Some soils, such as Bigbee, Iuka, Kinston, Mooreville, Ochlockonee, Riverview, Una, and Urbo soils, are on flood plains. Most plants used for gardening and landscaping can be grown on these soils, but consideration should be given to the effects of floodwater. Surface drainage is a management concern because urban uses commonly result in increased rates of surface runoff, which increase the frequency and severity of flooding. Advice and assistance regarding drainage problems can be obtained from the Natural Resources Conservation Service, municipal and county engineering departments, and private engineering companies.

Sandy soils, such as Bigbee, Boykin, and Wadley soils, are droughty, have low fertility, and have a low content of organic matter. Droughtiness limits the selection of plants that can be grown unless irrigation is provided. Additions of organic matter increase the available water capacity and help to retain nutrients in the root zone. Supplemental watering and split applications of plant nutrients are recommended. Applying a mulch, such as pine bark, wood chips, or pine straw, or incorporating peat moss or well-decomposed manure into the soil provides a more desirable medium for plant growth.

Natural fertility is low in most of the soils in Choctaw County. Most of the soils, with the exception of Maytag, Leeper, and Sumter soils, are strongly acid or very strongly acid. Additions of ground limestone are needed to neutralize the acidity of most of the soils. The original surface layer contains the most plant nutrients and has the most favorable pH for most plants. In many areas, the fertility of the surface layer has been improved by applications of lime and fertilizer. If the surface layer is removed during construction, the remaining soil is very acid and low in available plant nutrients. Also, some nutrients are unavailable for plant growth in acid soil conditions. Disturbed soils generally need larger amounts of lime and fertilizer, which should be applied according to the results of soil tests and the type of plants grown. Information on sampling for soil testing can be obtained from the Cooperative Extension System, the Natural Resources Conservation Service, and local nurseries.

In the following paragraphs, some of the plants that are used in landscaping and gardening and some management relationships between the plants and the soils are described. Information in this section should be supplemented by consultations with specialists at the Cooperative Extension System, the Natural Resources Conservation Service, or private landscaping and gardening businesses.

The grasses used for landscaping in Choctaw County are mainly vegetatively propagated species, such as zoysiagrass, hybrid bermudagrass, St. Augustine grass, and centipede grass, and seeded species, such as common bermudagrass and centipede grass. The grasses commonly used for short-term cover include ryegrass, rye, wheat, sudangrass, and millet.

The vegetatively propagated plants are usually planted as sprigs, plugs, or sod. Additions of topsoil may be needed before planting in some areas. Also, lime and fertilizer should be applied and incorporated into the soil. The plants should be placed in close contact with the soil, and the plantings should be watered to ensure the establishment of the root system. Centipede grass, St. Augustine grass, and certain strains of zoysiagrass are moderately shade tolerant. St. Augustine grass and zoysiagrass generally require more maintenance than centipede grass. The strains of hybrid bermudagrass are fast growing, but they are not as tolerant of shade as St. Augustine grass, centipede grass, or zoysiagrass.

Common perennial grasses that are established by seeding include common bermudagrass and centipede grass. Lime and fertilizer should be applied and incorporated into the soil before seeding. Proper planting depth is important when grasses are established from seed.

Short-term vegetative cover is used to protect the soil at construction sites or to provide cover between the planting seasons of the desired grass species. The most commonly used grasses for short-term cover are ryegrass for cool seasons and sudangrass or millet for warm seasons. These species are annuals and die after the growing season. Periodical applications of lime and fertilizer are needed on all types of grasses. The kinds and amounts of lime and fertilizer to apply should be based on the results of soil tests.

Vines can provide vegetative cover in moderately shaded areas and in steep areas that cannot be mowed. English ivy and periwinkle can be used for ground cover or on walls and fences. All of these plants are propagated vegetatively, usually from potted plants or sprigs.

Mulches can be used for ground cover in areas where traffic is too heavy for grass cover, in areas where shrubs and flowers are desired with additional ground cover, and in densely shaded areas. Mulches provide effective ground cover. They also provide immediate cover to help control erosion in areas where live vegetation is not desired. Effective mulches include pine straw, small-grain straw, hay, composted grass clippings, wood chips, pine bark, gravel, and several manufactured materials. The type of mulch to use depends to some extent on the hazard of erosion. Mulches also can be used to conserve soil moisture and to control weeds around trees, shrubs, and flowers.

Shrubs are used primarily to enhance the appearance of homesites. They also can be used to control traffic. They can be effective in dissipating the energy from raindrops and from runoff from roofs. Most native and adapted species add variety to residential settings. Reaction to acidity and fertility levels vary greatly among shrub types.

Vegetable and flower gardens are important to many individuals and businesses. However, the soils in areas where homes and businesses are established may not be suited to vegetables and flowers. Soils that have been disturbed by construction may not be productive unless topsoil is applied. Soils that have a slope of more than 8 percent have poor potential for vegetable gardening because of the hazard of erosion if the soils are tilled. Generally, steeper soils have a thinner surface layer. Flower gardening is possible in the steeper areas, however, if mulches are used to help control erosion. Incorporating composted tree leaves and grass clippings into the soil improves fertility, tilth, and moisture content. Additional information regarding vegetable crops is included under the heading “Crops and Pasture.”

Most garden plants grow best in soils that have a pH level between 5.5 and 6.5 and that have a high fertility level. Applying too much fertilizer or using fertilizers that have the wrong combination of plant nutrients can be avoided by soil testing, which is the only effective method of determining the amount and kind of fertilizer that should be applied. Information regarding soil testing can be obtained from the local office of the Cooperative Extension System or the Natural Resources Conservation Service or from a retail fertilizer business.

Trees are important in homesite landscaping. Information regarding relationships between soils and trees is available in the section “Woodland Management and Productivity.” Special assistance regarding urban forestry can be obtained from the Alabama Forestry Commission.

Woodland Management and Productivity

Jerry L. Johnson, forester, Natural Resources Conservation Service, helped to prepare this section.

Woodland makes up 508,700 acres, or about 87 percent of the total land area, in Choctaw County. The acreage decreased by about 22,000 acres from 1982 to 1990, primarily because of urban and rural development. Private individuals own 58 percent of the woodland in the county. The forest industry and private corporations own the other 42 percent (USDA, 1985; USDA, 1991a).

The forest types in Choctaw County include 225,400 acres of loblolly-shortleaf pine, 98,300 acres of oak-pine, 109,800 acres of oak-hickory, and 75,100 acres of oak-gum-cypress. The county has about 219,700 acres of sawtimber, 127,200 acres of poletimber, and 161,800 acres of seedlings and saplings (Alabama Department of Agriculture and Industries, 1997).

Most of the soils on the Coastal Plain and the acid soils on the Blackland Prairie have a site index of 80 or more for loblolly pine. The alkaline soils on the Blackland Prairie, including Leeper, Maytag, and Sumter soils, are not suited to pines. Because of long periods of ponding, the Una soils and Fluvaquents are also unsuited to pine trees. In Choctaw County, most of the soils suitable for growing hardwoods, such as cherrybark oak, water oak, and Nuttall oak, have a site index of 85 or more for water oak.

Table 8 can be used by woodland owners or forest managers in planning the use of soils for wood crops. Only those soils suitable for wood crops are listed. The table lists the ordination symbol for each soil. Soils assigned the same ordination symbol require the same general management and have about the same potential productivity.

The first part of the *ordination symbol*, a number, indicates the potential productivity of the soils for an indicator tree species. The number indicates the volume, in cubic meters per hectare per year, which the indicator species can produce in a pure stand under natural conditions. The number 1 indicates low potential productivity; 2 or 3, moderate; 4 or 5, moderately high; 6 to 8, high; 9 to 11, very high; and 12 to 39, extremely high. The second part of the symbol, a letter, indicates the major kind of soil limitation. The letter *R* indicates steep slopes; *X*, stoniness or rockiness; *W*, excess water in or on the soil; *D*, restricted rooting depth; *C*, clay in the upper part of the soil; *S*, sandy texture; and *F*, a high content of rock fragments in the soil. The letter *A* indicates that limitations or restrictions are insignificant. If a soil has more than one limitation, the priority is as follows: R, X, W, D, C, S, and F.

In the table, *slight, moderate,* and *severe* indicate the degree of the major soil limitations to be considered in management.

Erosion hazard is the probability that damage will occur as a result of site preparation and cutting where the soil is exposed along roads, skid trails, and fire lanes and in log-handling areas. Forests that have been burned or overgrazed are also subject to erosion. Ratings of the erosion hazard are based on the percent of the slope. A rating of *slight* indicates that no particular prevention measures are needed under ordinary conditions. A rating of *moderate* indicates that erosion-control measures are needed in certain silvicultural activities. A rating of *severe* indicates that special precautions are needed to control erosion in most silvicultural activities.

Equipment limitation reflects the characteristics and conditions of the soil that restrict use of the equipment generally needed in woodland management or harvesting. The chief characteristics and conditions considered in the ratings are slope, stones on the surface, rock outcrops, soil wetness, and texture of the surface layer. A rating of *slight* indicates that under normal conditions the kind of equipment and season of use are not significantly restricted by soil factors. Soil wetness can restrict equipment use, but the wet period does not exceed 1 month. A rating of *moderate* indicates that equipment use is moderately restricted because of one or more soil factors. If the soil is wet, the wetness restricts equipment use for a period of 1 to 3 months. A rating of *severe* indicates that equipment use is severely restricted either as to the kind of equipment that can be used or the season of use. If the soil is wet, the wetness restricts equipment use for more than 3 months.

Seedling mortality refers to the death of naturally occurring or planted tree seedlings, as influenced by the kinds of soil, soil wetness, or topographic conditions. The factors used in rating the soils for seedling mortality are texture of the surface layer, depth to a seasonal high water table and the length of the period when the water table is high, rock fragments in the surface layer, effective rooting depth, and slope aspect. A rating of *slight* indicates that seedling mortality is not likely to be a problem under normal conditions. Expected mortality is less than 25 percent. A rating of *moderate* indicates that some problems from seedling mortality can be expected. Extra precautions are advisable. Expected mortality is 25 to 50 percent. A rating of *severe* indicates that seedling mortality is a serious problem. Extra precautions are important. Replanting may be necessary. Expected mortality is more than 50 percent.

Plant competition ratings indicate the degree to which undesirable species are expected to invade and grow when openings are made in the tree canopy. The main factors that affect plant competition are depth to the water table and the available water capacity. A rating of *slight* indicates that competition from undesirable plants is not likely to prevent natural regeneration or suppress the more desirable species. Planted seedlings can become established without undue competition. A rating of *moderate* indicates that competition may delay the establishment of desirable species. Competition may hamper stand development, but it will not prevent the eventual development of fully stocked stands. A rating of *severe* indicates that competition can be expected to prevent regeneration unless precautionary measures are applied.

The *potential productivity* of *common trees* on a soil is expressed as a *site index* and as a *volume* number. The site index is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. Commonly grown trees are those that woodland managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability. The estimates of the productivity of the soils are based on data acquired in the county and on published data (Broadfoot and Krinard, 1959; Broadfoot, 1963; Coile and Schumacher, 1953; USDA, 1976).

The *volume* is the yield likely to be produced by the most important trees. This number, expressed as cords per acre per year, indicates the amount of fiber produced in a fully stocked, even-aged, unmanaged stand.

The first species listed under *common trees* for a soil is the indicator species for that soil. It generally is the most common species on the soil and is the one that determines the ordination class.

Trees to plant are those that are suitable for commercial wood production.

Recreation

The soils of the survey area are rated in table 9 according to limitations that affect their suitability for recreation. The ratings are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewer lines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation are also important. Soils subject to flooding are limited for recreational uses by the duration and intensity of flooding and the season when flooding occurs. In planning recreational facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

In the table, the degree of soil limitation is expressed as slight, moderate, or severe. *Slight* means that soil properties are generally favorable and that limitations are minor and easily overcome. *Moderate* means that limitations can be overcome or alleviated by planning, design, or special maintenance. *Severe* means that soil properties are unfavorable and that limitations can be offset only by costly soil reclamation, special design, intensive maintenance, limited use, or a combination of these measures.

The information in the table can be supplemented by other information in this survey, for example, interpretations for septic tank absorption fields in table 12 and interpretations for dwellings without basements and for local roads and streets in table 11.

Camp areas require site preparation, such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The best soils have mild slopes and are not wet or subject to flooding during the period of use. The surface has few or no stones or boulders, absorbs rainfall readily but remains firm, and is not dusty when dry. Strong slopes and stones or boulders can greatly increase the cost of constructing campsites.

Picnic areas are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The best soils for picnic areas are firm when wet, are not dusty when dry, are not subject to flooding during the period of use, and do not have slopes or stones or boulders that increase the cost of shaping sites or of building access roads and parking areas.

Playgrounds require soils that can withstand intensive foot traffic. The best soils are almost level and are not wet or subject to flooding during the season of use. The surface is free of stones and boulders, is firm after rains, and is not dusty when dry. If grading is needed, the depth of the soil over bedrock or a hardpan should be considered.

Paths and trails for hiking and horseback riding should require little or no cutting and filling. The best soils are not wet, are firm after rains, are not dusty when dry, and are not subject to flooding more than once a year during the period of use. They have moderate slopes and few or no stones or boulders on the surface.

Golf fairways are subject to heavy foot traffic and some light vehicular traffic. Cutting or filling may be required. The best soils for use as golf fairways are firm when wet, are not dusty when dry, and are not subject to prolonged flooding during the period of use. They have moderate slopes and no stones or boulders on the surface. The suitability of the soil for tees or greens is not considered in rating the soils.

Wildlife Habitat

Tommy Counts, wildlife biologist, Natural Resources Conservation Service, helped to prepare this section.

Choctaw County is dominantly a rural area and has suitable habitat for many kinds of wildlife. It is about 87 percent woodland and is interspersed with areas of cultivated crops, pasture, and hay (USDA, 1991a). The Choctaw National Wildlife Refuge is in the county. It borders about 7 miles of the Tombigbee River in the southeastern part of the county (USDI, 1996).

Choctaw County supports a variety of mammals, reptiles, and birds. The common species of wild game in the county are eastern wild turkey, bobwhite quail, white-tailed deer, eastern cottontail rabbit, swamp rabbit, feral hog, mourning dove, Canada geese, and various species of ducks. The nongame wildlife species include armadillos and various snakes. Common furbearers include beaver, bobcat, coyote, fox, opossum, mink, muskrat, nutria, otter, raccoon, and skunk.

Marsh and wading birds include cattle egrets, great egrets, great blue herons, green-backed herons, yellow-crowned night herons, purple gallinules, common moorhens, anhinga, and white ibis. Raptors and allied species include turkey and black vultures; red-tailed, broad-winged, and red-shouldered hawks; barred and screech owls; and American kestrel. Migratory birds are also found throughout the county. They include bobolinks, song sparrow, pine siskin, American goldfinch, indigo bunting, northern cardinal, Carolina wren, bluebirds, and various warblers, including the yellow, pine, hooded, and prothonotary. Robins, thrushes, crows, blackbirds, bluejays, meadowlarks, mockingbirds, and various woodpeckers also inhabit the county.

The wildlife species in Choctaw County that the Federal Government has listed as threatened or endangered include the bald eagle, wood stork, gopher tortoise, and American alligator.

In upland areas, the woodland generally consists of loblolly pine, slash pine, longleaf pine, or mixed pines and hardwoods. On the flood plains along streams and rivers, the woodland consists of bottom land hardwoods. The forest types and their associated plant communities are of major importance to wildlife. Many of these woodland areas are managed primarily to provide habitat for various species of wildlife, such as bobwhite quail, white-tailed deer, and turkey. Management practices that benefit wildlife, including prescribed burning, creating or maintaining openings in the forest, and thinning stands, are common throughout the county.

Areas of cultivated crops, hay, and pasture are commonly interspersed with the woodland. The open areas are very important to many species of wildlife. The areas of cropland are primarily used for agricultural commodities, such as cotton and corn. The pasture and hayland generally are used for perennial grasses, such as bahiagrass and bermudagrass.

Wetlands are used by many kinds of wildlife. Many of the furbearers and wading birds depend almost exclusively upon these areas. Natural depressions and areas of saturated soils along creeks and rivers, bodies of open water, and beaver ponds make up most of the wetland areas in the county. They occur mostly along Bogueloosa, Kinterbish, Okatuppa, Puss Cuss, Souwilpa, Surveyor, Tallawampa, Tuckabum, Turkey, Wahalak, and Yantley Creeks and in areas adjacent to the Tombigbee River. The Choctaw National Wildlife Refuge consists of 4,218 acres of bottom land hardwood habitat along the Tombigbee River.

Soils affect the kind and amount of vegetation that is available to wildlife as food and cover. They also affect the construction of water impoundments. The kind and abundance of wildlife depend largely on the amount and distribution of food, cover, and water. Wildlife habitat can be created or improved by planting appropriate vegetation, by maintaining the existing plant cover, or by promoting the natural establishment of desirable plants.

In table 10, the soils in the survey area are rated according to their potential for providing habitat for various kinds of wildlife. This information can be used in planning parks, wildlife refuges, nature study areas, and other developments for wildlife; in selecting soils that are suitable for establishing, improving, or maintaining specific elements of wildlife habitat; and in determining the intensity of management needed for each element of the habitat.

The potential of the soil is rated good, fair, poor, or very poor. A rating of *good* indicates that the element or kind of habitat is easily established, improved, or maintained. Few or no limitations affect management, and satisfactory results can be expected. A rating of *fair* indicates that the element or kind of habitat can be established, improved, or maintained in most places. Moderately intensive management is required for satisfactory results. A rating of *poor* indicates that limitations are severe for the designated element or kind of habitat. Habitat can be created, improved, or maintained in most places, but management is difficult and must be intensive. A rating of *very poor* indicates that restrictions for the element or kind of habitat are very severe and that unsatisfactory results can be expected. Creating, improving, or maintaining habitat is impractical or impossible.

The elements of wildlife habitat are described in the following paragraphs.

Grain and seed crops are domestic grains and seed-producing herbaceous plants. Soil properties and features that affect the growth of grain and seed crops are depth of the root zone, texture of the surface layer, available water capacity, wetness, slope, surface stoniness, and flooding. Soil temperature and soil moisture are also considerations. Examples of grain and seed crops are corn, wheat, oats, grain sorghum, soybeans, rye, and millet.

Grasses and legumes are domestic perennial grasses and herbaceous legumes. Soil properties and features that affect the growth of grasses and legumes are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, flooding, and slope. Soil temperature and soil moisture are also considerations. Examples of grasses and legumes are bahiagrass, Johnsongrass, clover, lespedeza, chufa, and bermudagrass.

Wild herbaceous plants are native or naturally established grasses and forbs, including weeds. Soil properties and features that affect the growth of these plants are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, and flooding. Soil temperature and soil moisture are also considerations. Examples of wild herbaceous plants are dewberry, blackberry, goldenrod, crotons, beggarweed, pokeweed, paspalums, ragweed, and partridge pea.

Hardwood trees and woody understory produce nuts or other fruit, buds, catkins, twigs, bark, and foliage. Soil properties and features that affect the growth of hardwood trees and shrubs are depth of the root zone, available water capacity, and wetness. Examples of these plants are oak, yellow-poplar, blackcherry, sweetgum, hawthorn, dogwood, persimmon, sassafras, sumac, holly, hickory, and blueberry. Examples of fruit-producing shrubs that are suitable for planting on soils rated *good* are pyracantha, autumn olive, and crabapple.

Coniferous plants furnish browse and seeds. Soil properties and features that affect the growth of coniferous trees, shrubs, and ground cover are depth of the root zone, available water capacity, and wetness. Examples of coniferous plants are pine, redcedar, and baldcypress.

Wetland plants are annual and perennial wild herbaceous plants that grow on moist or wet sites. Submerged or floating aquatic plants are excluded. Soil properties and features affecting wetland plants are texture of the surface layer, wetness, reaction, slope, and surface stoniness. Examples of wetland plants are smartweed, wild millet, rushes, sedges, reeds, barnyard grass, pondweed, cattails, and water shield.

Shallow water areas have an average depth of less than 5 feet. Some are naturally wet areas. Others are created by dams, levees, or other water-control structures. Soil properties and features affecting shallow water areas are depth to bedrock, wetness, surface stoniness, slope, and permeability. Examples of shallow water areas are marshes, waterfowl feeding areas, beaver ponds, and other ponds.

The habitat for various kinds of wildlife is described in the following paragraphs.

Habitat for openland wildlife consists of cropland, pasture, meadows, and areas that are overgrown with grasses, herbs, shrubs, and vines. These areas produce grain and seed crops, grasses and legumes, and wild herbaceous plants. Wildlife attracted to these areas include bobwhite quail, meadowlark, field sparrow, cottontail, red fox, coyote, armadillo, dove, killdeer, and hawks.

Habitat for woodland wildlife consists of areas of deciduous plants or coniferous plants or both and associated grasses, legumes, and wild herbaceous plants. Wildlife attracted to these areas include wild turkey, woodcock, thrushes, woodpeckers, squirrels, gray fox, raccoon, deer, bear, bobcat, opossum, and skunk.

Habitat for wetland wildlife consists of open, marshy or swampy shallow water areas. Some of the wildlife attracted to such areas are ducks, geese, herons, shore birds, muskrat, mink, otter, beaver, turtles, rails, and kingfishers.

Engineering

This section provides information for planning land uses related to urban development and to water management. Soils are rated for various uses, and the most limiting features are identified. Ratings are given for building site development, sanitary facilities, construction materials, and water management. The ratings are based on observed performance of the soils and on the estimated data and test data in the "Soil Properties" section.

Information in this section is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil within a depth of 5 or 6 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section. Local ordinances and regulations should be considered in planning, in site selection, and in design.

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about grain-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 or 6 feet of the surface, soil wetness, depth to a seasonal high water table, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kinds of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, earthfill, and topsoil; plan drainage systems, irrigation systems, ponds, terraces, and other structures for soil and water conservation; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the Glossary.

Building Site Development

Table 11 shows the degree and kind of soil limitations that affect shallow excavations, dwellings with and without basements, small commercial buildings, local roads and streets, and lawns and landscaping. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required. Special feasibility studies may be required where the soil limitations are severe.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for basements, graves, utility lines, open ditches, and other purposes. The ratings are based on soil properties, site features, and observed performance of the soils. The ease of digging, filling, and compacting is affected by the depth to bedrock or a very firm dense layer; stone content; soil texture; and slope. The time of the year that excavations can be made is affected by the depth to a seasonal high water table and the susceptibility of the soil to flooding. The resistance of the excavation walls or banks to sloughing or caving is affected by soil texture and depth to the water table.

Dwellings and *small commercial buildings* are structures built on shallow foundations on undisturbed soil. The load limit is the same as that for single-family dwellings no higher than three stories. Ratings are made for small commercial buildings without basements, for dwellings with basements, and for dwellings without basements. The ratings are based on soil properties, site features, and observed performance of the soils. A high water table, flooding, shrinking and swelling, and organic layers can cause the movement of footings. A high water table, depth to bedrock, large stones, slope, and flooding affect the ease of excavation and construction. Landscaping and grading that require cuts and fills of more than 5 or 6 feet are not considered.

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or stabilized soil material; and a flexible or rigid surface. Cuts and fills are generally limited to less than 6 feet. The ratings are based on soil properties, site features, and observed performance of the soils. Depth to bedrock, a high water table, flooding, large stones, and slope affect the ease of excavating and grading. Soil strength (as inferred from the engineering classification of the soil), shrink-swell potential, and depth to a high water table affect the traffic-supporting capacity.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. The ratings are based on soil properties, site features, and observed performance of the soils. Soil reaction, a high water table, depth to bedrock, the available water capacity in the upper 40 inches, and the content of salts, sodium, and sulfidic materials affect plant growth. Flooding, wetness, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer affect trafficability after vegetation is established.

Sanitary Facilities

Table 12 shows the degree and kind of soil limitations that affect septic tank absorption fields, sewage lagoons, and sanitary landfills. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required.

The table also shows the suitability of the soils for use as daily cover for landfill. A rating of *good* indicates that soil properties and site features are favorable for the use and good performance and low maintenance can be expected; *fair* indicates that soil properties and site features are moderately favorable for the use and one or more soil properties or site features make the soil less desirable than the soils rated good; and *poor* indicates that one or more soil properties or site features are unfavorable for the use and overcoming the unfavorable properties requires special design, extra maintenance, or costly alteration.

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 72 inches is evaluated. The ratings are based on soil properties, site features, and observed performance of the soils. Permeability, a high water table, depth to bedrock, and flooding affect absorption of the effluent. Large stones and bedrock interfere with installation.

Unsatisfactory performance of septic tank absorption fields, including excessively slow absorption of effluent, surfacing of effluent, and hillside seepage, can affect public health. Ground water can be polluted if highly permeable sand and gravel or fractured bedrock is less than 4 feet below the base of the absorption field, if slope is excessive, or if the water table is near the surface. There must be unsaturated soil material beneath the absorption field to filter the effluent effectively. Many local ordinances require that this material be of a certain thickness.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Lagoons generally are designed to hold the sewage within a depth of 2 to 5 feet. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water.

The table gives ratings for the natural soil that makes up the lagoon floor. The surface layer and, generally, 1 or 2 feet of soil material below the surface layer are excavated to provide material for the embankments. The ratings are based on soil properties, site features, and observed performance of the soils. Considered in the ratings are slope, permeability, a high water table, depth to bedrock, flooding, large stones, and content of organic matter.

Excessive seepage resulting from rapid permeability in the soil or a water table that is high enough to raise the level of sewage in the lagoon causes a lagoon to function unsatisfactorily. Pollution results if seepage is excessive or if floodwater overtops the lagoon. A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope and bedrock can cause construction problems, and large stones can hinder compaction of the lagoon floor.

Sanitary landfills are areas where solid waste is disposed of by burying it in soil. There are two types of landfill—trench and area. In a trench landfill, the waste is placed in a trench. It is spread, compacted, and covered daily with a thin layer of soil excavated at the site. In an area landfill, the waste is placed in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil from a source away from the site.

Both types of landfill must be able to bear heavy vehicular traffic. Both types involve a risk of ground-water pollution. Ease of excavation and revegetation should be considered.

The ratings in the table are based on soil properties, site features, and observed performance of the soils. Permeability, depth to bedrock, a high water table, slope, and flooding affect both types of landfill. Texture, stones and boulders, highly organic layers, soil reaction, and content of salts and sodium affect trench landfills. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, a limitation rated slight or moderate may not be valid. Onsite investigation is needed.

Daily cover for landfill is the soil material that is used to cover compacted solid waste in an area sanitary landfill. The soil material is obtained offsite, transported to the landfill, and spread over the waste.

Soil texture, wetness, coarse fragments, and slope affect the ease of removing and spreading the material during wet and dry periods. Loamy or silty soils that are free of large stones or excess gravel are the best cover for a landfill. Clayey soils are sticky or cloddy and are difficult to spread; sandy soils are subject to wind erosion.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over bedrock or the water table to permit revegetation. The soil material used as the final cover for a landfill should be suitable for plants. The surface layer generally has the best workability, more organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

Construction Materials

Table 13 gives information about the soils as a source of roadfill, sand, gravel, and topsoil. The soils are rated *good, fair,* or *poor* as a source of roadfill and topsoil. They are rated as a *probable* or *improbable* source of sand and gravel. The ratings are based on soil properties and site features that affect the removal of the soil and its use as construction material. Normal compaction, minor processing, and other standard construction practices are assumed. Each soil is evaluated to a depth of 5 or 6 feet.

Roadfill is soil material that is excavated in one place and used in road embankments in another place. In this table, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments.

The ratings are for the soil material below the surface layer to a depth of 5 or 6 feet. It is assumed that soil layers will be mixed during excavating and spreading. Many soils have layers of contrasting suitability within their profile. The table showing engineering index properties provides detailed information about each soil layer. This information can help to determine the suitability of each layer for use as roadfill. The performance of soil after it is stabilized with lime or cement is not considered in the ratings.

The ratings are based on soil properties, site features, and observed performance of the soils. The thickness of suitable material is a major consideration. The ease of excavation is affected by large stones, a high water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the engineering classification of the soil) and shrink-swell potential.

Soils rated *good* contain significant amounts of sand or gravel or both. They have at least 5 feet of suitable material, a low shrink-swell potential, few cobbles and stones, and slopes of 15 percent or less. Depth to the water table is more than 3 feet. Soils rated *fair* are more than 35 percent silt- and clay-sized particles and have a plasticity index of less than 10. They have a moderate shrink-swell potential, slopes of 15 to 25 percent, or many stones. Depth to the water table is 1 to 3 feet. Soils rated *poor* have a plasticity index of more than 10, a high shrink-swell potential, many stones, or slopes of more than 25 percent. They are wet and have a water table at a depth of less than 1 foot. They may have layers of suitable material, but the material is less than 3 feet thick.

Sand and *gravel* are natural aggregates suitable for commercial use with a minimum of processing. They are used in many kinds of construction. Specifications for each use vary widely. In the table, only the probability of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material.

The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the engineering classification of the soil), the thickness of suitable material, and the content of rock fragments. Kinds of rock, acidity, and stratification are given in the soil series descriptions. Gradation of grain sizes is given in the table on engineering index properties.

A soil rated as a probable source has a layer of clean sand or gravel or a layer of sand or gravel that is up to 12 percent silty fines. This material must be at least 3 feet thick and less than 50 percent, by weight, large stones. All other soils are rated as an improbable source. Coarse fragments of soft bedrock, such as shale, chalk, and siltstone, are not considered to be sand and gravel.

Topsoil is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area.

Plant growth is affected by toxic material and by such properties as soil reaction, available water capacity, and fertility. The ease of excavating, loading, and spreading is affected by rock fragments, slope, a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, a water table, rock fragments, bedrock, and toxic material.

Soils rated *good* have friable, loamy material to a depth of at least 40 inches. They are free of stones and cobbles, have little or no gravel, and have slopes of less than 8 percent. They are low in content of soluble salts, are naturally fertile or respond well to fertilizer, and are not so wet that excavation is difficult.

Soils rated *fair* are sandy soils, loamy soils that have a relatively high content of clay, soils that have only 20 to 40 inches of suitable material, soils that have an appreciable amount of gravel, stones, or soluble salts, or soils that have slopes of 8 to 15 percent. The soils are not so wet that excavation is difficult.

Soils rated *poor* are very sandy or clayey, have less than 20 inches of suitable material, have a large amount of gravel, stones, or soluble salts, have slopes of more than 15 percent, or have a seasonal high water table at or near the surface.

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

Water Management

Table 14 gives information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas and for embankments, dikes, and levees. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and are easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increase in construction costs, and possibly increased maintenance are required.

This table also gives for each soil the restrictive features that affect drainage, irrigation, terraces and diversions, and grassed waterways.

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the permeability of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

Embankments, dikes, and levees are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. In this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth even greater than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, organic matter, or salts or sodium. A high water table affects the amount of usable material. It also affects trafficability.

Drainage is the removal of excess surface and subsurface water from the soil. How easily and effectively the soil is drained depends on the depth to bedrock or to other layers that affect the rate of water movement; permeability; depth to a high water table or depth of standing water if the soil is subject to ponding; slope; susceptibility to flooding; subsidence of organic layers; and the potential for frost action. Excavating and grading and the stability of ditchbanks are affected by depth to bedrock, large stones, slope, and the hazard of cutbanks caving. The productivity of the soil after drainage is adversely affected by extreme acidity or by toxic substances in the root zone, such as salts, sodium, and sulfur. Availability of drainage outlets is not considered in the ratings.

Irrigation is the controlled application of water to supplement rainfall and support plant growth. The design and management of an irrigation system are affected by depth to the water table, the need for drainage, flooding, available water capacity, intake rate, permeability, erosion hazard, and slope. The construction of a system is affected by large stones and depth to bedrock or to a cemented pan. The performance of a system is affected by the depth of the root zone, the amount of salts or sodium, and soil reaction.

Terraces and diversions are embankments or a combination of channels and ridges constructed across a slope to control erosion and conserve moisture by intercepting runoff. Slope, wetness, large stones, and depth to bedrock affect the construction of terraces and diversions. A restricted rooting depth, a severe hazard of wind erosion or water erosion, an excessively coarse texture, and restricted permeability adversely affect maintenance.

Grassed waterways are natural or constructed channels, generally broad and shallow, that conduct surface water to outlets at a nonerosive velocity. Large stones, wetness, slope, and depth to bedrock affect the construction of grassed waterways. A hazard of wind erosion, low available water capacity, restricted rooting depth, toxic substances such as salts and sodium, and restricted permeability adversely affect the growth and maintenance of the grass after construction.

Soil Properties

Data relating to soil properties are collected during the course of the soil survey. The data and the estimates of soil and water features, listed in tables, are explained on the following pages.

Soil properties are determined by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine grain-size distribution, plasticity, and compaction characteristics. These results are reported in table 20.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on laboratory tests of samples of similar soils in nearby areas. Tests verify field observations, verify properties that cannot be estimated accurately by field observation, and help to characterize key soils.

The estimates of soil properties shown in the tables include the range of grain-size distribution and Atterberg limits, the engineering classification, and the physical and chemical properties of the major layers of each soil. Pertinent soil and water features also are given.

Engineering Index Properties

Table 15 gives estimates of the engineering classification and of the range of index properties for the major layers of each soil in the survey area. Most soils have layers of contrasting properties within the upper 5 or 6 feet.

Depth to the upper and lower boundaries of each layer is indicated. The range in depth and information on other properties of each layer are given for each soil series under the heading “Soil Series and Their Morphology.”

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. “Loam,” for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is as much as about 15 percent, an appropriate modifier is added, for example, “gravelly.” Textural terms are defined in the Glossary.

Classification of the soils is determined according to the Unified soil classification system (ASTM, 1993) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 1986).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to grain-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of grain-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest. The AASHTO classification for soils tested is given in table 20.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an ovendry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074

millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

The estimates of grain-size distribution, liquid limit, and plasticity index are generally rounded to the nearest 5 percent. Thus, if the ranges of gradation and Atterberg limits extend a marginal amount (1 or 2 percentage points) across classification boundaries, the classification in the marginal zone is omitted in the table.

Physical and Chemical Properties

Table 16 shows estimates of some characteristics and features that affect soil behavior. These estimates are given for the major layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In this table, the estimated clay content of each major soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The amount and kind of clay greatly affect the fertility and physical condition of the soil. They determine the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, permeability, plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at $^1/_3$-bar moisture tension. Weight is determined after drying the soil at 105 degrees C. In this table, the estimated moist bulk density of each major soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. A bulk density of more than 1.6 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Permeability refers to the ability of a soil to transmit water or air. The estimates indicate the rate of downward movement of water when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each major soil layer. The capacity varies, depending on soil properties that affect the retention of water and the depth of the root zone. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Soil reaction is a measure of acidity or alkalinity and is expressed as a range in pH values. The range in pH of each major horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Shrink-swell potential is the potential for volume change in a soil with a loss or gain in moisture. Volume change occurs mainly because of the interaction of clay minerals with water and varies with the amount and type of clay minerals in the soil. The size of the load on the soil and the magnitude of the change in soil moisture content influence the amount of swelling of soils in place. Laboratory measurements of swelling of undisturbed clods were made for many soils. For others, swelling was estimated on the basis of the kind and amount of clay minerals in the soil and on measurements of similar soils.

If the shrink-swell potential is rated moderate to very high, shrinking and swelling can cause damage to buildings, roads, and other structures. Special design is often needed.

Shrink-swell potential classes are based on the change in length of an unconfined clod as moisture content is increased from air-dry to field capacity. The classes are *low*, a change of less than 3 percent; *moderate*, 3 to 6 percent; *high*, more than 6 percent; and *very high*, greater than 9 percent.

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation

(USLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter (up to 4 percent) and on soil structure and permeability. Values of K range from 0.02 to 0.64. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In the table, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter in a soil can be maintained or increased by returning crop residue to the soil. Organic matter affects the available water capacity, infiltration rate, and tilth. It is a source of nitrogen and other nutrients for crops.

Soil and Water Features

Table 17 gives estimates of various soil and water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

Flooding, the temporary inundation of an area, is caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

The table gives the frequency and duration of flooding and the time of year when flooding is most likely.

Frequency, duration, and probable dates of occurrence are estimated. Frequency is expressed as none, rare, occasional, and frequent. *None* means that flooding is not probable; *rare* that it is unlikely but possible under unusual weather conditions (the chance of flooding is nearly 0 percent to 5 percent in any year); *occasional* that it occurs, on the average, once or less in 2 years (the chance of flooding is 5 to 50 percent in any year); and *frequent* that it occurs, on the average, more than once in 2 years (the chance of flooding is more than 50 percent in any year). Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, *long* if 7 days to 1 month, and *very long* if more than 1 month. Probable dates are expressed in months. About two-thirds to three-fourths of all flooding occurs during the stated period.

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

High water table (seasonal) is the highest level of a saturated zone in the soil in most years. The estimates are based mainly on observations of the water table at selected sites and on the evidence of a saturated zone, namely grayish colors or mottles (redoximorphic features) in the soil. Indicated in the table are the depth to the seasonal high water table; the kind of water table—that is, perched or apparent; and the months of the year that the water table commonly is high. A water table that is seasonally high for less than 1 month is not indicated in the table.

An *apparent* water table is a thick zone of free water in the soil. It is indicated by the level at which water stands in an uncased borehole after adequate time is allowed for adjustment in the surrounding soil. A *perched* water table is water standing above an unsaturated zone.

Two numbers in the column showing depth to the water table indicate the normal range in depth to a saturated zone. Depth is given to the nearest half foot. The first numeral in the range indicates the highest water level. A plus sign preceding the range in depth indicates that the water table is above the surface of the soil. “More than 6.0” indicates that the water table is below a depth of 6 feet or that it is within a depth of 6 feet for less than a month.

Depth to bedrock is given if bedrock is within a depth of 5 feet. The depth is based on many soil borings and on observations during soil mapping. The rock is either soft or hard. If the rock is soft or fractured, excavations can be made with trenching machines, backhoes, or small rippers. If the rock is hard or massive, blasting or special equipment generally is needed for excavation.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that dissolves or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than steel in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low, moderate,* or *high,* is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion is also expressed as *low, moderate,* or *high*. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

Physical and Chemical Analyses of Selected Soils

The results of physical analyses of several typical pedons in the survey area are given in table 18 and the results of chemical analyses in table 19. The data are for soils sampled at carefully selected sites. Unless otherwise indicated, the pedons are typical of the series. They are described in the section “Soil Series and Their Morphology.” Soil samples were analyzed by the Agronomy and Soils Clay Mineralogy Laboratory, Auburn University, Auburn, Alabama, or by the National Soil Survey Laboratory, Natural Resources Conservation Service, Lincoln, Nebraska.

Most determinations, except those for grain-size analysis and bulk density, were made on soil material smaller than 2 millimeters in diameter. Measurements reported as percent or quantity of unit weight were calculated on an ovendry basis. The methods used in obtaining the data are indicated in the list that follows. The codes in parentheses refer to published methods (Hajek, Adams, and Cope, 1972; USDA, 1991b).

Sand—(0.05-2.0 mm fraction) weight percentages of material less than 2 mm (3A1).

Silt—(0.002-0.05 mm fraction) pipette extraction, weight percentages of all material less than 2 mm (3A1).

Clay—(fraction less than 0.002 mm) pipette extraction, weight percentages of material less than 2 mm (3A1).

Extractable bases—method of Hajek, Adams, and Cope.

Extractable acidity—method of Hajek, Adams, and Cope.

Cation-exchange capacity—sum of cations (5A3a).

Base saturation—method of Hajek, Adams, and Cope.

Reaction (pH)—1:1 water dilution (8C1f).

Engineering Index Test Data

Table 20 shows laboratory test data for several pedons sampled at carefully selected sites in the survey area. The pedons are representative of the series described in the section “Soil Series and Their Morphology.” The soil samples were tested by the Alabama Highway Department, Bureau of Materials and Testing, Montgomery, Alabama.

The testing methods generally are those of the American Association of State Highway and Transportation Officials (AASHTO) or the American Society for Testing and Materials (ASTM).

The tests and methods are AASHTO classification—M 145 (AASHTO), D 3282 (ASTM); Unified classification—D 2487 (ASTM); Mechanical analysis—T 88 (AASHTO), D 422 (ASTM), D 2217 (ASTM); Liquid limit—T 89 (AASHTO), D 4318 (ASTM); Plasticity index—T 90 (AASHTO), D 4318 (ASTM); and Moisture density—T 99 (AASHTO), D 698 (ASTM).

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories (USDA, 1975; USDA, 1996). Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or from laboratory measurements. Table 21 shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

ORDER. Twelve soil orders are recognized. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in *sol*. An example is Ultisol.

SUBORDER. Each order is divided into suborders primarily on the basis of properties that influence soil genesis and are important to plant growth or properties that reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Udult (*Ud*, meaning humid, plus *ult*, from Ultisol).

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; type of saturation; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Hapludults (*Hapl*, meaning minimal horizonation, plus *udult*, the suborder of the Ultisols that has a udic moisture regime).

SUBGROUP. Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic subgroup is the central concept of the great group; it is not necessarily the most extensive. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but do not indicate transitions to any other taxonomic class. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective *Typic* identifies the subgroup that typifies the great group. An example is Typic Hapludults.

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Generally, the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle size, mineral content, soil temperature regime, soil depth, and reaction. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is fine-loamy, siliceous, semiactive, thermic Typic Hapludults.

SERIES. The series consists of soils within a family that have horizons similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile. An example is the Cahaba series, which is a member of the fine-loamy, siliceous, semiactive, thermic Typic Hapludults

Soil Series and Their Morphology

In this section, each soil series recognized in the survey area is described. Characteristics of the soil and the material in which it formed are identified for each series. A pedon, a small three-dimensional area of soil, that is typical of the series in the survey area is described. The detailed description of each soil horizon follows standards in the “Soil Survey Manual” (USDA, 1993). Many of the technical terms used in the descriptions are defined in “Soil Taxonomy” (USDA, 1975) and in “Keys to Soil Taxonomy” (USDA, 1996). Unless otherwise indicated, colors in the descriptions are for moist soil. Following the pedon description is the range of important characteristics of the soils in the series.

The map units of each soil series are described in the section “Detailed Soil Map Units.”

Annemaine Series

The Annemaine series consists of very deep, moderately well drained soils that formed in stratified clayey and loamy sediments. These soils are on low stream terraces along the Tombigbee River and other large streams. Slopes range from 0 to 2 percent. These soils are fine, mixed, semiactive, thermic Aquic Hapludults.

Annemaine soils are geographically associated with Cahaba, Izagora, Lenoir, and Urbo soils. Cahaba and Izagora soils are in the slightly higher landscape positions and are fine-loamy. The somewhat poorly drained Lenoir soils are in the slightly lower, less convex positions. The somewhat poorly drained Urbo soils are on flood plains adjacent to areas of the Annemaine soils.

Typical pedon of Annemaine silt loam, 0 to 2 percent slopes, rarely flooded; about 1.5 miles east of Pennington; 1,900 feet south and 270 feet west of the northeast corner of sec. 12, T. 14 N., R. 1 E.

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

Bt1—4 to 8 inches; strong brown (7.5YR 5/6) clay; moderate medium subangular blocky structure; friable; common fine and medium roots; few faint clay films on faces of peds; strongly acid; clear wavy boundary.

Bt2—8 to 19 inches; yellowish red (5YR 5/6) clay; strong medium subangular blocky structure; firm; few fine roots; common faint clay films on faces of peds; common medium distinct yellowish brown (10YR 5/6) and red (2.5YR 4/6) masses of iron accumulation; very strongly acid; gradual wavy boundary.

Bt3—19 to 35 inches; yellowish red (5YR 5/6) clay; strong medium subangular blocky structure; firm; few fine roots; common faint clay films on faces of peds; many fine and medium distinct strong brown (7.5YR 4/6) and red (2.5YR 4/6) masses of iron accumulation; common fine and medium distinct light brownish gray (10YR 6/2) iron depletions; very strongly acid; gradual wavy boundary.

Bt4—35 to 51 inches; red (2.5YR 4/8) clay loam; strong medium subangular blocky structure; firm; few fine roots; few faint clay films on faces of peds; many fine and medium distinct brownish yellow (10YR 6/6) and strong brown (7.5YR 4/6) masses of iron accumulation; common fine and medium distinct light brownish gray (10YR 6/2) iron depletions; very strongly acid; gradual wavy boundary.

Bt5—51 to 62 inches; red (2.5YR 4/6) clay loam; strong medium subangular blocky structure; firm; few faint clay films on faces of peds; many fine and medium light gray (10YR 6/1) iron depletions; common medium reddish yellow (7.5YR 6/6) masses of iron accumulation; extremely acid; gradual wavy boundary.

Bt6—62 to 65 inches; red (2.5YR 4/6) clay loam; weak coarse subangular blocky structure; friable; few faint clay films on faces of peds; many fine and medium distinct gray (10YR 5/1) iron depletions; common fine and medium distinct reddish yellow (7.5YR 6/6) masses of iron accumulation; very strongly acid.

The solum is more than 40 inches thick. Reaction ranges from extremely acid to strongly acid throughout the profile, except where the surface layer has been limed.

The Ap horizon has hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 3 or 4. Some pedons have an A horizon that has hue of 10YR, value of 3 or 4, and chroma of 2 or 3.

The Bt horizon commonly has hue of 2.5YR or 5YR, value of 4 to 6, and chroma of 6 to 8. In some pedons the upper part of the horizon has a thin subhorizon that has hue of 7.5YR, value of 5 or 6, and chroma of 6 to 8. The quantity of redoximorphic accumulations in shades of red and brown and redoximorphic depletions in shades of gray ranges from none to common in the upper part and is common or many in the lower part. The texture is clay, silty clay, clay loam, or silty clay loam.

The C horizon, if it occurs, has hue of 2.5YR to 10YR, value of 5 or 6, and chroma of 3 to 8; or it has no dominant matrix color and is multicolored in shades of gray, brown, and red. It is sandy clay loam, sandy loam, or loamy sand and is commonly stratified.

Arundel Series

The Arundel series consists of moderately deep, well drained soils that formed in acid, clayey sediments and the underlying, level-bedded claystone or siltstone bedrock. These soils are in the uplands on narrow ridgetops and on side slopes. Slopes range from 2 to 60 percent. These soils are fine, smectitic, thermic Typic Hapludults.

Arundel soils are geographically associated with Cantuche, Lauderdale, Luverne, Rayburn, Smithdale, and Williamsville soils. Cantuche and Lauderdale soils are in landscape positions similar to those of the Arundel soils and are shallow over bedrock. Luverne, Smithdale, and Williamsville soils are in landscape positions similar to those of the Arundel soils but are at higher elevations and do not have bedrock within a depth of 80 inches. Also, Smithdale soils are fine-loamy. Rayburn soils are in lower positions than the Arundel soils and are deep over soft bedrock.

Typical pedon of Arundel loam, in an area of Arundel-Cantuche complex, 25 to 60 percent slopes, stony; 0.5 mile northwest of Ararat; 700 feet south and

2,100 feet east of the northwest corner of sec. 35, T. 12 N., R. 2 W.

A—0 to 4 inches; dark brown (10YR 4/3) loam; weak medium granular structure; friable; many fine, medium, and coarse roots; 10 percent pararock fragments of claystone; very strongly acid; clear wavy boundary.

Bt1—4 to 13 inches; yellowish red (5YR 4/6) clay; moderate medium subangular blocky structure; firm; common fine and medium roots; common distinct reddish brown (5YR 4/4) clay films on faces of peds; very strongly acid; clear wavy boundary.

Bt2—13 to 21 inches; yellowish red (5YR 5/6) clay; strong medium subangular blocky structure; firm; common fine roots; common distinct reddish brown (5YR 4/4) clay films on faces of peds; very strongly acid; clear wavy boundary.

Bt3—21 to 32 inches; yellowish red (5YR 5/6) clay; strong medium subangular blocky structure; firm; few fine roots; common distinct reddish brown (5YR 4/4) clay films on faces of peds; common fine fragments of charcoal; 5 percent pararock fragments of claystone; common medium distinct light yellowish brown (10YR 6/4) masses of iron accumulation that are relic redoximorphic features; very strongly acid; abrupt irregular boundary.

Cr—32 to 80 inches; light gray (10YR 7/1) and pale brown (10YR 6/3), weathered, level-bedded claystone; massive; very firm; few fine roots matted in fractures.

The thickness of the solum and the depth to bedrock range from 20 to 40 inches. Reaction is extremely acid or very strongly acid throughout the profile, except where the surface layer has been limed. The content of pararock fragments ranges from 0 to 15 percent throughout the profile. The fragments consist mainly of claystone or siltstone, ranging from $^{1}/_{4}$ inch to 10 inches in diameter.

The A or Ap horizon has hue of 10YR, value of 3 to 5, and chroma of 1 to 3. It is loam, fine sandy loam, or sandy loam.

The Bt horizon has hue of 2.5YR to 10YR, value of 4 or 5, and chroma of 3 to 6. The quantity of redoximorphic accumulations in shades of red and brown ranges from none to common in the upper part and from few to many in the lower part. The quantity of redoximorphic depletions in shades of gray ranges from none to common. The redoximorphic accumulations and depletions are believed to be relic features. The texture is clay or silty clay.

Some pedons have a BC or C horizon having hue of 7.5YR to 5Y, value of 5 or 6, and chroma of 3 to 6. The horizon has few to many redoximorphic accumulations in shades of red, brown, and yellow and redoximorphic depletions in shades of gray. It is clay loam, silty clay loam, clay, or silty clay.

The Cr horizon is weathered siltstone or claystone, locally known as buhrstone. It is massive or has thick platy rock structure. It can be cut with hand tools with difficulty and is rippable by light equipment.

Bibb Series

The Bibb series consists of very deep, poorly drained soils that formed in stratified loamy and sandy alluvium. These soils are in concave positions on low parts of narrow flood plains. They are subject to flooding for brief periods several times each year. Slopes are 0 to 1 percent. These soils are coarse-loamy, siliceous, active, acid, thermic Typic Fluvaquents.

Bibb soils are geographically associated with Iuka, Kinston, and Ochlockonee soils. The moderately well drained Iuka soils and the well drained Ochlockonee soils are in the slightly higher, more convex positions. Kinston soils are in positions similar to those of the Bibb soils and are fine-loamy.

Typical pedon of Bibb fine sandy loam, in an area of Bibb-Iuka complex, 0 to 1 percent slopes, frequently flooded; about 0.25 mile southeast of West Butler; 1,800 feet north and 50 feet west of the southeast corner of sec. 25, T. 13 N., R. 4 W.

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

Cg1—3 to 9 inches; gray (10YR 5/1) sandy loam; massive; very friable; common medium roots; common fine distinct dark yellowish brown (10YR 4/4) and yellowish brown (10YR 5/6) masses of iron accumulation; very strongly acid; gradual wavy boundary.

Cg2—9 to 15 inches; gray (10YR 6/1) sandy loam; massive; very friable; common medium roots; common thin strata of loamy sand; many fine distinct strong brown (7.5YR 5/6) and many medium distinct yellowish brown (10YR 5/4) masses of iron accumulation; few fine prominent reddish brown (5YR 5/4) masses of iron accumulation lining root channels; very strongly acid; gradual wavy boundary.

Cg3—15 to 45 inches; light brownish gray (2.5Y 6/2) sandy loam; massive; very friable; common medium roots; common thin strata of loamy sand; common coarse prominent brownish yellow (10YR 6/6) irregularly shaped masses of iron accumulation; very strongly acid; gradual wavy boundary.

Cg4—45 to 60 inches; light brownish gray (2.5Y 6/2) loamy sand; massive; very friable; few medium roots; common thin strata of sandy loam; very strongly acid.

Reaction ranges from extremely acid to strongly acid throughout.

The A horizon has hue of 10YR, value of 3 or 4, and chroma of 2 or 3.

The Cg horizon has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 1 or 2. It has few or common redoximorphic accumulations in shades of red and brown. It is dominantly sandy loam, fine sandy loam, silt loam, or loam throughout but can be sand, loamy sand, and loamy fine sand in the lower part. Thin strata of coarser and finer textured material are throughout the profile.

Bigbee Series

The Bigbee series consists of very deep, excessively drained soils that formed in sandy alluvium. These soils are on low terraces and on high parts of the natural levees along the Tombigbee River and other large streams. They are subject to rare flooding for brief periods during occurrences of unusually high rainfall. Slopes range from 0 to 5 percent. These soils are thermic, coated Typic Quartzipsamments.

Bigbee soils are geographically associated with Cahaba, Latonia, Mooreville, Riverview, and Urbo soils. Cahaba and Latonia soils are in positions similar to those of the Bigbee soils on stream terraces and have a loamy argillic horizon. Mooreville and Riverview soils are in the slightly lower positions on flood plains and are fine-loamy. The somewhat poorly drained Urbo soils are in the lower, more concave positions on flood plains and have a clayey subsoil.

Typical pedon of Bigbee loamy sand, 0 to 5 percent slopes, rarely flooded; about 1.5 miles south of Lavaca; 700 feet south and 200 feet west of the northeast corner of sec. 9, T. 13 N., R. 1 W.

Ap—0 to 6 inches; dark brown (10YR 3/3) loamy sand; weak fine granular structure; very friable; common fine roots; strongly acid; abrupt smooth boundary.

C1—6 to 23 inches; brown (7.5YR 4/4) loamy sand; single grained; loose; common fine roots; very strongly acid; gradual wavy boundary.

C2—23 to 45 inches; light yellowish brown (10YR 6/4) fine sand; single grained; loose; few fine roots; very strongly acid; gradual wavy boundary.

C3—45 to 59 inches; brownish yellow (10YR 6/6) sand; single grained; loose; very strongly acid; gradual wavy boundary.

C4—59 to 70 inches; very pale brown (10YR 7/4) sand; single grained; loose; very strongly acid.

Reaction is very strongly acid or strongly acid throughout the profile, except in areas where lime has been applied.

The Ap horizon has hue of 10YR, value of 3 or 4, and chroma of 2 to 4.

The upper part of the C horizon has hue of 10YR or 7.5YR, value of 4 to 6, and chroma of 4 or 5. It is fine sand or loamy sand. The lower part has hue of 10YR, value of 6 or 7, and chroma of 3 to 6. It is sand or fine sand.

Boswell Series

The Boswell series consists of very deep, moderately well drained soils that formed in acid, clayey marine sediments. These soils are on side slopes in the uplands in the southern part of the county. Slopes range from 5 to 12 percent. These soils are fine, mixed, active, thermic Vertic Paleudalfs.

Boswell soils are geographically associated with Brantley, Maytag, Okeelala, Oktibbeha, and Sumter soils. Brantley and Okeelala soils are in higher landscape positions than those of the Boswell soils. Brantley soils do not have vertic properties. Okeelala soils are fine-loamy. Maytag, Oktibbeha, and Sumter soils are in lower landscape positions than those of the Boswell soils. Maytag soils are alkaline throughout. Oktibbeha soils have smectitic mineralogy and are alkaline in the lower part of the solum. Sumter soils are moderately deep over soft limestone (chalk) bedrock.

Typical pedon of Boswell fine sandy loam, 5 to 12 percent slopes, eroded; about 2 miles southeast of Isney; 1,200 feet north and 2,000 feet west of the southeast corner of sec. 12, T. 9 N., R. 5 W.

Ap—0 to 4 inches; brown (7.5YR 4/3) fine sandy loam; weak medium subangular blocky structure; friable; many very fine and fine and few medium roots; very strongly acid; abrupt wavy boundary.

Bt1—4 to 16 inches; red (2.5YR 4/6) clay; moderate medium subangular blocky structure parting to moderate fine subangular blocky; firm; common very fine and few fine and medium roots; many pressure faces; few faint clay films on faces of peds; strongly acid; clear wavy boundary.

Bt2—16 to 22 inches; 40 percent reddish brown (5YR 5/4), 35 percent light brownish gray (2.5Y 6/2), and 25 percent dark red (2.5YR 3/6) silty clay; strong medium subangular blocky structure; firm; few fine and medium roots; many pressure faces; few faint clay films on faces of peds; the dark red areas are masses of iron accumulation, and the light brownish gray areas are iron depletions; very strongly acid; clear wavy boundary.

Btssg1—22 to 38 inches; light brownish gray (10YR 6/2) silty clay; moderate coarse subangular blocky structure parting to strong medium angular blocky; firm; few fine and medium roots; common large intersecting slickensides that have faintly grooved surfaces; few faint clay films on faces of peds; many medium prominent dark red (2.5YR 3/6) and common medium prominent strong brown (7.5YR 5/6) masses of iron accumulation; extremely acid; gradual wavy boundary.

Btssg2—38 to 58 inches; light brownish gray (2.5Y 6/2) silty clay; moderate coarse subangular blocky structure parting to strong medium angular blocky; firm; few fine and medium roots; common large slickensides that have prominent grooved surfaces; few faint clay films on faces of peds; few fine fragments of ironstone; many coarse prominent dark red (10R 3/6) and few medium prominent strong brown (7.5YR 5/6) and dark yellowish brown (10YR 4/6) masses of iron accumulation; extremely acid; gradual wavy boundary.

Btssg3—58 to 80 inches; light brownish gray (2.5Y 6/2) clay; moderate medium angular blocky structure; firm; common large slickensides that have prominent grooved surfaces; few faint clay films on faces of peds; few fine fragments of ironstone; many coarse prominent dark red (10R 3/6) and few medium prominent strong brown (7.5YR 5/8) masses of iron accumulation; extremely acid.

The solum is more than 60 inches thick. Reaction is very strongly acid or strongly acid in the surface layer and is extremely acid or very strongly acid in the subsoil.

The A or Ap horizon has hue of 7.5YR or 10YR, value of 3 to 5, and chroma of 2 or 3.

The upper part of the Bt horizon has hue of 2.5YR or 5YR, value of 4 or 5, and chroma of 6 to 8. The lower part has the same range in colors as the upper part, or it has no dominant matrix color and is multicolored in shades of red, brown, and gray. The quantity of redoximorphic accumulations in shades of red or brown ranges from none to common. The texture is clay loam, silty clay, or clay.

The Btssg horizon, if it occurs, has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 1 or 2. It has common or many redoximorphic accumulations in shades of red, yellow, and brown. It is clay or silty clay.

The Btss horizon, if it occurs, has hue of 2.5YR, value of 3 or 4, and chroma of 6 to 8; or it has no dominant matrix color and is multicolored in shades of gray, brown, and red. It has common or many redoximorphic accumulations in shades of red, brown, and yellow and redoximorphic depletions in shades of gray. It is clay or silty clay.

Boykin Series

The Boykin series consists of very deep, well drained soils that formed in sandy and loamy sediments. These soils are on ridgetops and side slopes in the uplands. Slopes range from 1 to 35 percent. These soils are loamy, siliceous, active, thermic Arenic Paleudults.

Boykin soils are geographically associated with Luverne, Smithdale, and Wadley soils. Luverne and Smithdale soils are commonly in slightly lower positions than those of the Boykin soils and do not have a thick, sandy epipedon. Wadley soils are in landscape positions similar to those of the Boykin soils and have a sandy epipedon that is more than 40 inches thick.

Typical pedon of Boykin loamy fine sand, in an area of Boykin-Luverne-Smithdale complex, 15 to 35 percent slopes, eroded; about 3 miles west-northwest of Silas; 900 feet north and 1,600 feet east of the southwest corner of sec. 34, T. 10 N., R. 4 W.

A—0 to 3 inches; dark grayish brown (10YR 4/2) loamy fine sand; weak fine granular structure; very friable; many fine, common medium, and few coarse roots; moderately acid; abrupt wavy boundary.

E1—3 to 23 inches; light yellowish brown (10YR 6/4) loamy fine sand; single grained; loose; common fine and few medium and coarse roots; moderately acid; clear smooth boundary.

E2—23 to 33 inches; light yellowish brown (10YR 6/4) loamy fine sand; single grained; loose; common very fine and few fine and medium roots; few medium distinct strong brown (7.5YR 4/6) masses of iron accumulation; strongly acid; abrupt smooth boundary.

Bt1—33 to 48 inches; yellowish red (5YR 5/8) sandy clay loam; moderate medium subangular blocky structure; friable; few fine and medium roots; common faint clay films on faces of peds; strongly acid; clear smooth boundary.

Bt2—48 to 60 inches; strong brown (7.5YR 5/8) fine sandy loam; weak coarse subangular blocky structure; very friable; few very fine roots; sand grains coated and bridged with clay; common coarse faint yellowish red (5YR 5/8) masses of iron accumulation that are relic redoximorphic features; very strongly acid; clear smooth boundary.

Bt3—60 to 80 inches; strong brown (7.5YR 5/8) sandy clay loam; weak coarse subangular blocky structure; firm; common faint clay films on faces of peds; few fine prominent light gray (10YR 7/2) iron depletions; common medium faint yellowish red (5YR 5/8) masses of iron accumulation; the iron depletions and masses of iron accumulation are relic redoximorphic features; very strongly acid.

The solum is more than 60 inches thick. Reaction ranges from very strongly acid to moderately acid throughout the profile, except in areas where lime has been applied.

The Ap or A horizon has hue of 10YR, value of 4 or 5, and chroma of 2 to 4.

The E horizon has hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 3 or 4. It is loamy sand or loamy fine sand.

The Bt horizon has hue of 2.5YR to 7.5YR, value of 4 or 5, and chroma of 6 to 8. The quantity of redoximorphic accumulations in shades of red, yellow, and brown ranges from none to common. The accumulations are assumed to be relic features. The texture is fine sandy loam or sandy clay loam.

Brantley Series

The Brantley series consists of very deep, well drained soils that formed in clayey and loamy sediments. These soils are on narrow ridgetops, benches, and dissected side slopes in the uplands in the southern part of the county. Slopes range from 3 to 60 percent. These soils are fine, mixed, active, thermic Ultic Hapludalfs.

Brantley soils are geographically associated with Boswell, Hannon, Maytag, Okeelala, Sumter, and Toxey soils. Boswell and Hannon soils are in landscape positions similar to those of the Brantley series but are at slightly lower elevations and have vertic properties. Maytag and Sumter soils are commonly in higher positions than those of the Brantley soils and are calcareous throughout. Okeelala soils are in landscape positions similar to those of the Brantley soils and are fine-loamy. Toxey soils are in landscape positions similar to those of the Brantley soils but are at slightly higher elevations, are alkaline within a depth of 10 to 35 inches, and have vertic properties.

Typical pedon of Brantley loam, in an area of Brantley-Okeelala complex, 15 to 35 percent slopes, eroded; about 4.3 miles south of Melvin; 500 feet south and 400 feet east of the northwest corner of sec. 2, T. 10 N., R. 5 W.

A—0 to 2 inches; dark grayish brown (10YR 3/2) loam; moderate fine granular structure; friable; common fine and medium roots; very strongly acid; abrupt smooth boundary.

BA—2 to 4 inches; reddish brown (5YR 4/4) clay loam; moderate fine and medium subangular blocky structure; firm; common fine and medium roots; common medium distinct dark brown (10YR 3/3) organic stains on faces of peds; very strongly acid; clear smooth boundary.

Bt1—4 to 15 inches; red (2.5YR 4/6) clay; weak coarse prismatic structure parting to strong fine and medium subangular blocky; firm; common fine and few medium roots; few faint clay films on faces of peds; very strongly acid; clear wavy boundary.

Bt2—15 to 23 inches; yellowish red (5YR 4/6) clay loam; moderate medium subangular blocky structure; firm; few fine and medium roots; common faint clay films on faces of peds; very strongly acid; gradual wavy boundary.

Bt3—23 to 34 inches; yellowish red (5YR 4/6) clay loam; moderate medium subangular blocky structure; friable; few fine and medium roots; common distinct red (2.5YR 4/6) clay films on faces of peds; very strongly acid; gradual wavy boundary.

Bt4—34 to 54 inches; strong brown (7.5YR 4/6) sandy clay loam; weak coarse subangular blocky structure; friable; few medium roots; common distinct red (2.5YR 4/6) clay films on faces of peds; few medium distinct light yellowish brown (10YR 6/4) masses of iron accumulation; very strongly acid; clear wavy boundary.

C—54 to 65 inches; strong brown (7.5YR 5/6) sandy loam; massive; friable; few medium distinct yellowish red (5YR 4/6) masses of iron accumulation; very strongly acid.

The thickness of the solum ranges from 40 to 60 inches. Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 7.5YR or 10YR, value of 3 or 4, and chroma of 2 to 4. It is fine sandy loam or loam.

The BA horizon, if it occurs, has hue of 5YR to 10YR, value of 4 or 5, and chroma of 3 or 4. It is sandy clay loam or clay loam.

The upper part of the Bt horizon has hue of 2.5YR to 7.5YR, value of 4 or 5, and chroma of 4 to 8. It is clay loam or clay. The lower part has hue of 5YR or 7.5YR, value of 4 or 5, and chroma of 6 to 8. It is sandy clay loam or clay loam. In the Bt horizon, the quantity of redoximorphic accumulations in shades of brown, red, or yellow ranges from none to common.

The BC horizon, if it occurs, has hue of 5YR to 10YR, value of 4 or 5, and chroma of 6 to 8. The quantity of redoximorphic accumulations in shades of brown or red ranges from none to common. The texture is sandy clay loam or clay loam.

The C horizon has hue of 5YR to 10YR, value of 4 to 6, and chroma of 4 to 8; or it has no dominant matrix color and is multicolored in shades of brown, red, and yellow. It is sandy loam or sandy clay loam.

Cahaba Series

The Cahaba series consists of very deep, well drained soils that formed in loamy and sandy alluvium. These soils are on low stream terraces. They are subject to rare flooding during periods of unusually heavy or prolonged rainfall. Slopes range from 0 to 2 percent. These soils are fine-loamy, siliceous, semiactive, thermic Typic Hapludults.

Cahaba soils are geographically associated with Annemaine, Bigbee, Izagora, Latonia, Lenoir, and Urbo soils. The moderately well drained Annemaine and Izagora soils are in the slightly lower, less convex positions. Annemaine soils have a clayey argillic horizon. Izagora soils have a brownish subsoil. Bigbee soils are in the slightly higher positions on natural levees and are sandy throughout. Latonia soils are in positions similar to those of the Cahaba soils and are coarse-loamy. The somewhat poorly drained Lenoir soils are in the lower positions and have a clayey argillic horizon. The somewhat poorly drained Urbo soils are on flood plains.

Typical pedon of Cahaba sandy loam, 0 to 2 percent slopes, rarely flooded; about 2.5 miles southeast of Lavaca; 600 feet north and 300 feet east of the southwest corner of sec. 10, T. 13 N., R. 1 W.

Ap—0 to 9 inches; dark yellowish brown (10YR 4/4) sandy loam; weak fine granular structure; very friable; few fine and medium roots; moderately acid; abrupt smooth boundary.

E—9 to 13 inches; strong brown (7.5YR 5/6) sandy loam; weak medium granular structure; friable; few fine and medium roots; slightly acid; clear wavy boundary.

Bt1—13 to 22 inches; yellowish red (5YR 5/6) sandy clay loam; weak medium subangular blocky structure; friable; few medium roots; common faint clay films on faces of peds; strongly acid; gradual wavy boundary.

Bt2—22 to 29 inches; yellowish red (5YR 5/8) sandy clay loam; weak medium subangular blocky structure; friable; few medium roots; common faint clay films on faces of peds; strongly acid; gradual wavy boundary.

Bt3—29 to 38 inches; red (2.5YR 4/6) sandy clay loam; moderate medium subangular blocky structure; friable; few medium roots; common faint clay films on faces of peds; common medium faint yellowish red (5YR 5/8) and few medium distinct reddish yellow (7.5YR 6/6) masses of iron accumulation that are relic redoximorphic features; strongly acid; gradual wavy boundary.

BC—38 to 50 inches; yellowish red (5YR 5/8) sandy loam; weak medium subangular blocky structure; friable; common fine flakes of mica; strongly acid; gradual wavy boundary.

C—50 to 62 inches; strong brown (7.5YR 5/8) fine sandy loam; massive; very friable; common fine flakes of mica; strongly acid.

The thickness of the solum ranges from 36 to 60 inches. Reaction ranges from very strongly acid to moderately acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 10YR, value of 3 to 5, and chroma of 2 to 4.

The E horizon, if it occurs, has hue of 7.5YR, value of 5, and chroma of 6 to 8; or it has hue of 10YR, value of 5 or 6, and chroma of 2 to 4. It is fine sandy loam or sandy loam.

The Bt horizon has hue of 2.5YR or 5YR, value of 4 or 5, and chroma of 6 to 8. It is loam, sandy clay loam, or clay loam.

The BC horizon, if it occurs, has hue of 2.5YR to 7.5YR, value of 4 or 5, and chroma of 6 to 8. It is fine sandy loam or sandy loam. In some pedons it has few or common redoximorphic accumulations in shades of yellow and brown. The accumulations are assumed to be relic features.

The C horizon has hue of 2.5YR to 10YR, value of 4 to 6, and chroma of 4 to 8. It is commonly stratified with sandy and loamy material or has texture of fine sandy loam, sandy loam, or loamy sand. In some pedons it has few or common redoximorphic accumulations in shades of yellow and brown. The accumulations are assumed to be relic features.

Cantuche Series

The Cantuche series consists of shallow, well drained soils that formed in material weathered from claystone or siltstone. These soils are on steep or very steep side slopes in highly dissected uplands. Slopes range from 25 to 60 percent. These soils are loamy-skeletal, mixed, active, acid, thermic, shallow Typic Udorthents.

Cantuche soils are commonly associated with Arundel, Lauderdale, Luverne, Rayburn, and Smithdale soils. Arundel soils are in landscape positions similar to those of the Cantuche soils, are moderately deep over bedrock, and have a clayey argillic horizon.

Lauderdale soils are on ridgetops and have an argillic horizon. Luverne and Smithdale soils are in positions similar to those of the Cantuche soils but are at higher or lower elevations and are very deep. Rayburn soils are in the lower positions and are deep over bedrock.

Typical pedon of Cantuche very channery sandy loam, in an area of Arundel-Cantuche complex, 25 to 60 percent slopes, stony; about 0.5 mile northwest of Ararat; 600 feet south and 2,200 feet east of the northwest corner of sec. 35, T. 12 N., R. 2 W.

A1—0 to 6 inches; dark grayish brown (10YR 4/2) very channery sandy loam; weak fine granular structure; very friable; many fine and medium roots; 35 percent pararock fragments of siltstone; very strongly acid; clear wavy boundary.

A2—6 to 11 inches; dark grayish brown (2.5Y 4/2) very channery loam; friable; common fine and medium roots; 40 percent pararock fragments of siltstone; very strongly acid; irregular wavy boundary.

Cr—11 to 80 inches; pale olive (5Y 6/3) and light brownish gray (10YR 6/2) level-bedded siltstone; massive; very firm; common fine roots in fractures, which are 6 to 10 inches apart.

The depth to bedrock ranges from 10 to 20 inches. Reaction is very strongly acid or strongly acid throughout the profile.

The A or A1 horizon has hue of 10YR, value of 3 or 4, and chroma of 1 to 3. The A2 horizon, if it occurs, has hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 2 or 3. The texture is very channery sandy loam, extremely channery sandy loam, very channery loam, or extremely channery loam.

The Cr is weathered siltstone or claystone, locally known as buhrstone. It is massive or has thick platy rock structure. It can be cut with hand tools with difficulty and is rippable by light equipment.

Conecuh Series

The Conecuh series consists of very deep, moderately well drained soils that formed in clayey marine sediments. These soils are on side slopes in the uplands in the northern part of the county. Slopes range from 3 to 8 percent. These soils are fine, smectitic, thermic Vertic Hapludults.

Conecuh soils are geographically associated with Halso, Luverne, and Smithdale soils. The Halso and Smithdale soils are in the higher positions on ridgetops adjacent to areas of the Conecuh soils. Halso soils have shale bedrock within a depth of 40 to 60 inches. Smithdale soils are fine-loamy. Luverne soils are in landscape positions similar to those of the Conecuh soils, are well drained, and have mixed clay mineralogy.

Typical pedon of Conecuh loam, 3 to 8 percent slopes, eroded; about 3 miles northeast of Butler; 2,000 feet south and 1,000 feet west of the northeast corner of sec. 2, T. 13 N., R. 2 W.

Ap—0 to 5 inches; dark yellowish brown (10YR 4/4) loam; weak fine subangular blocky structure; friable; many fine and few medium roots; very strongly acid; abrupt smooth boundary.

Bt1—5 to 13 inches; red (2.5YR 4/6) clay; strong fine and medium subangular blocky structure; firm; few fine and coarse roots; many distinct reddish brown (5YR 5/4) clay films on faces of peds; very strongly acid; clear wavy boundary.

Bt2—13 to 20 inches; red (2.5YR 4/6) clay; moderate fine and medium angular blocky structure; firm; few fine roots; few pressure faces; common distinct reddish brown (5YR 5/4) clay films on faces of peds; common fine and medium distinct light olive brown (2.5Y 5/3) iron depletions; very strongly acid; clear wavy boundary.

Bt3—20 to 27 inches; 40 percent light brownish gray (2.5Y 6/2), 30 percent reddish brown (5YR 5/4), 20 percent red (2.5YR 4/6), and 10 percent strong brown (7.5YR 5/6) clay; moderate coarse subangular blocky structure; firm; few pressure faces; few faint clay films on faces of peds; the light brownish gray areas are iron depletions and the reddish and brownish areas are masses of iron accumulation; very strongly acid; clear wavy boundary.

Btssg1—27 to 41 inches; light brownish gray (2.5Y 6/2) clay; moderate coarse subangular blocky structure; firm; few large intersecting slickensides that have faintly grooved surfaces; few faint clay films on faces of peds; common fine and medium distinct red (2.5YR 4/6), reddish brown (5YR 5/4), and strong brown (7.5YR 5/8) masses of iron accumulation; very strongly acid; clear wavy boundary.

Btssg2—41 to 48 inches; light brownish gray (2.5Y 6/2) clay; weak coarse subangular blocky structure; firm; common large intersecting slickensides that have distinctly grooved surfaces; few faint clay films on faces of peds; few fine prominent red (2.5YR 4/6) and common medium distinct strong brown (7.5YR 5/8) and yellowish brown (10YR 5/4) masses of iron accumulation; very strongly acid; clear wavy boundary.

Cg1—48 to 58 inches; light olive gray (5Y 6/2) clay; massive; firm; few fine soft black (10YR 2/1) masses (iron and manganese oxides); common medium prominent strong brown (7.5YR 5/8) masses of iron accumulation; very strongly acid; clear wavy boundary.

Cg2—58 to 76 inches; light olive gray (5Y 6/2) clay loam; massive; firm; few medium distinct dark yellowish brown (10YR 4/6), strong brown (7.5YR 5/8), and light yellowish brown (2.5Y 6/3) masses of iron accumulation; very strongly acid; abrupt wavy boundary.

Cr—76 to 80 inches; light olive gray (5Y 6/2) clayey shale; moderate medium platy rock structure; very firm; very strongly acid.

The thickness of the solum ranges from 40 to 60 inches. The depth to soft shale bedrock is more than 60 inches. Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 10YR, value of 3 to 5, and chroma of 3 or 4.

The upper part of the Bt horizon has hue of 2.5YR or 5YR, value of 4 or 5, and chroma of 4 to 8. The quantity of redoximorphic accumulations in shades of red and brown ranges from none to common. The lower part of the Bt horizon has the same range in color as the upper part, or it has no dominant matrix color and is multicolored in shades of gray, brown, and red. The quantity of redoximorphic accumulations in shades of red and brown and redoximorphic depletions in shades of gray is common or many. The texture is clay or silty clay. In some pedons the upper part of the Bt horizon has a thin layer of clay loam.

The Btssg horizon has hue of 2.5Y or 5Y, value of 5 or 6, and chroma of 1 or 2. It has few to many redoximorphic accumulations in shades of red, brown, and yellow. It is clay or silty clay.

The Cg horizon has the same range in color as the Btssg horizon. It has few or common redoximorphic accumulations in shades of brown and yellow. It is clay loam, silty clay, or clay. The content of shale fragments ranges from 0 to 15 percent.

The Cr horizon, if it occurs, is clayey shale. It has platy rock structure. It can be cut with hand tools and is rippable by light machinery.

Deerford Series

The Deerford series consists of very deep, somewhat poorly drained soils that formed in loamy sediments that contain appreciable amounts of exchangeable sodium. These soils are on low terraces and are subject to occasional flooding for brief periods. Slopes range from 0 to 2 percent. These soils are fine-silty, mixed, active, thermic Albic Glossic Natraqualfs.

The Deerford soils in this survey area are taxadjuncts to the Deerford series because the exchangeable sodium percentage in the upper part of the argillic horizon and the content of sand that is coarser than very fine sand in the particle-size control section are higher than is defined as the range of the series. These differences, however, do not significantly affect the use, management, or interpretations of the soils. The Deerford soils in this survey area are fine-loamy, mixed, active, thermic Albic Glossic Natraqualfs.

Deerford soils are geographically associated with Izagora, Kinston, and McCrory soils. Izagora soils are on stream terraces at higher elevations than the Deerford soils and do not have a natric horizon. The poorly drained Kinston soils are on flood plains. The poorly drained McCrory soils are in slightly lower, more concave positions than those of the Deerford soils.

Typical pedon of Deerford loam, in an area of McCrory-Deerford complex, 0 to 2 percent slopes, occasionally flooded; about 3.25 miles southwest of Jachin; 2,600 feet south and 100 feet west of the northeast corner of sec. 17, T. 14 N., R. 2 W.

A—0 to 3 inches; very dark grayish brown (10YR 3/2) loam; weak fine granular structure; friable; many fine and medium roots; extremely acid; clear smooth boundary.

E—3 to 7 inches; grayish brown (10YR 5/2) very fine sandy loam; weak coarse subangular blocky structure; very friable; common fine and medium roots; common fine and medium faint pale brown (10YR 6/3) masses of iron accumulation; strongly acid; clear wavy boundary.

E/B—7 to 10 inches; 60 percent light brownish gray (10YR 6/2) very fine sandy loam (E); weak coarse subangular blocky structure; very friable; 40 percent pale brown (10YR 6/3) very fine sandy loam (B); weak medium subangular blocky structure; very friable; common fine roots; common fine faint light yellowish brown (10YR 6/4) masses of iron accumulation; strongly acid; abrupt wavy boundary.

Btn1—10 to 20 inches; light olive brown (2.5Y 5/6) sandy clay loam; strong coarse columnar structure; firm; common fine and very fine roots; continuous faint clay films on vertical faces of peds; thin seams of light yellowish brown (10YR 6/4) very fine sandy loam (E material) between columns; few fine soft black masses (iron and manganese oxides); many coarse distinct light gray (10YR 6/1) iron depletions; common medium distinct yellowish brown (10YR 5/8) masses of iron accumulation; slightly acid; clear wavy boundary.

Btn2—20 to 27 inches; light olive brown (2.5Y 5/3) sandy clay loam; moderate coarse prismatic structure parting to moderate medium subangular blocky; firm; few fine roots; continuous faint clay films on vertical faces of peds; thin seams of light gray (10YR 7/2) very fine sandy loam between prisms; few fine soft black masses (iron and manganese oxides); many fine and medium distinct light brownish gray (2.5Y 6/2) iron depletions; common fine distinct olive yellow (2.5Y 6/6) masses of iron accumulation; slightly alkaline; clear wavy boundary.

Btn3—27 to 35 inches; light olive brown (2.5Y 5/3) clay loam; moderate coarse prismatic structure parting to moderate medium subangular blocky; firm; continuous faint clay films on vertical faces of peds; thin seams of light gray (10YR 7/2) very fine sandy loam between prisms; few fine soft black masses (iron and manganese oxides); many medium and coarse faint light brownish gray (2.5Y 6/2) iron depletions; common medium prominent yellowish red (5YR 5/6) and strong brown (7.5YR 5/6) masses of iron accumulation; moderately alkaline; clear wavy boundary.

Btng—35 to 49 inches; light brownish gray (2.5Y 6/2) loam; weak coarse prismatic structure parting to moderate medium subangular blocky; firm; continuous faint clay films on vertical faces of peds; many medium distinct light olive brown (2.5Y 5/4) and olive yellow (2.5Y 6/6) masses of iron accumulation; moderately alkaline; clear wavy boundary.

BC—49 to 61 inches; light brownish gray (2.5Y 6/2) very fine sandy loam; weak coarse subangular blocky structure; friable; common fine faint light yellowish brown (2.5Y 6/3) and common medium distinct light olive brown (2.5Y 5/6) masses of iron accumulation; moderately alkaline; clear wavy boundary.

C—61 to 80 inches; light gray (2.5Y 7/1) very fine sandy loam; massive; very friable; common fine and medium distinct light yellowish brown (2.5Y 6/4) and dark yellowish brown (10YR 4/6) masses of iron accumulation; moderately alkaline.

The solum is more than 40 inches thick.

The A horizon has hue of 10YR, value of 3 or 4, and chroma of 2 or 3. It is extremely acid to strongly acid.

The E horizon has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 2 to 4. The quantity of redoximorphic accumulations in shades of brown and red ranges from none to common. The texture is very fine sandy loam or fine sandy loam. Reaction is very strongly acid or strongly acid.

The E part of the E/B horizon, if it occurs, has hue of 10YR, value of 5 or 6, and chroma of 2 to 4. It is very fine sandy loam or fine sandy loam. The B part has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 3 to 6. The E/B horizon has few or common redoximorphic accumulations in shades of brown and red and redoximorphic depletions in shades of gray. The texture is very fine sandy loam, fine sandy loam, or sandy clay loam. Reaction is very strongly acid or strongly acid.

The Btn horizon has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 3 to 6. It has common or many redoximorphic accumulations in shades of brown, yellow, and red and redoximorphic depletions in shades of gray. It is sandy clay loam or clay loam. Reaction ranges from strongly acid to slightly acid in the upper part and from neutral to moderately alkaline in the lower part.

The Btng horizon has hue of 10YR to 5Y, value of 5 to 7, and chroma of 1 or 2. It has common or many redoximorphic accumulations in shades of brown, yellow, and red. It is loam, sandy clay loam, or clay loam. Reaction ranges from slightly acid to moderately alkaline.

The BC and C horizons have colors similar to those of the Btng horizon. They have common or many redoximorphic accumulations in shades of brown, yellow, and red. The texture is very fine sandy loam, loam, or sandy clay loam. Reaction ranges from neutral to moderately alkaline.

Freest Series

The Freest series consists of very deep, moderately well drained soils that formed in loamy and clayey sediments. These soils are on stream terraces in the southern part of the county. Slopes range from 0 to 2 percent. These soils are fine-loamy, siliceous, active, thermic Aquic Paleudalfs.

Freest soils are geographically associated with Boswell, Brantley, Leeper, and Okeelala soils. Boswell, Brantley, and Okeelala soils are on side slopes at the higher elevations. Boswell and Brantley soils have a clayey argillic horizon. Okeelala soils are fine-loamy. The somewhat poorly drained Leeper soils are on flood plains adjacent to areas of the Freest soils.

Typical pedon of Freest fine sandy loam, 0 to 2 percent slopes; about 2.5 miles west of Toxey; 1,200 feet north and 2,400 feet east of the southwest corner of sec. 23, T. 11 N., R. 4 W.

A—0 to 3 inches; dark grayish brown (10YR 4/2) fine sandy loam; weak fine granular structure; very friable; many fine and medium roots; strongly acid; abrupt smooth boundary.

E—3 to 6 inches; brown (10YR 5/3) fine sandy loam; weak coarse subangular blocky structure; very friable; many fine, medium, and coarse roots; strongly acid; clear smooth boundary.

BE—6 to 12 inches; yellowish brown (10YR 5/4) fine sandy loam; weak coarse subangular blocky structure; very friable; common fine and few medium and coarse roots; strongly acid; clear wavy boundary.

Bt1—12 to 18 inches; yellowish brown (10YR 5/6) loam; moderate medium subangular blocky structure; friable; common fine and few medium roots; common faint clay films on faces of peds; very strongly acid; clear wavy boundary.

Bt2—18 to 29 inches; dark yellowish brown (10YR 4/4) clay loam; moderate medium subangular blocky structure; firm; few fine and medium roots; common faint clay films on faces of peds; few fine distinct light brownish gray (10YR 6/2) iron depletions; common medium prominent red (2.5YR 4/6) masses of iron accumulation; very strongly acid; clear wavy boundary.

Bt3—29 to 46 inches; yellowish red (5YR 5/6) clay loam; weak coarse subangular blocky structure; firm; few fine roots; common faint clay films on faces of peds; many medium and coarse distinct gray (10YR 6/1) iron depletions; few fine and medium distinct red (2.5YR 4/6) masses of iron accumulation; very strongly acid; clear wavy boundary.

Bt4—46 to 61 inches; 40 percent strong brown (7.5YR 5/6), 35 percent gray (10YR 6/1), and 25 percent dark red (2.5YR 3/6) clay; weak coarse subangular blocky structure; firm; common faint clay films on faces of peds; few distinct light gray (10YR 7/1) clay depletions on faces of peds; the areas of strong brown and dark red are masses of iron accumulation; the areas of gray are iron depletions; very strongly acid; clear wavy boundary.

Bt5—61 to 80 inches; 40 percent light gray (5Y 7/2), 40 percent strong brown (7.5YR 5/6), and 20 percent reddish brown (2.5YR 5/4) clay; weak coarse subangular blocky structure; firm; few faint clay films on faces of peds; the areas of light gray are iron depletions; the areas of strong brown and reddish brown are masses of iron accumulation; very strongly acid.

The solum is more than 60 inches thick.

The A or Ap horizon has hue of 10YR, value of 3 to 5, and chroma of 2 or 3. It is very strongly acid or strongly acid, except in areas where lime has been applied.

The E horizon has hue of 10YR, value of 5 or 6, and chroma of 3 or 4. It is sandy loam or fine sandy loam. It is very strongly acid or strongly acid.

The BE horizon, if it occurs, has hue of 10YR, value of 5 or 6, and chroma of 4 to 6. It is sandy loam, fine sandy loam, or loam. It very strongly acid or strongly acid.

The upper part of the Bt horizon has hue of 10YR, value of 5 or 6, and chroma of 4 to 6. The quantity of redoximorphic accumulations in shades of brown and red and redoximorphic depletions in shades of gray ranges from none to common. The texture is clay loam, sandy clay loam, or loam. Reaction ranges from very strongly acid to moderately acid.

The lower part of the Bt horizon commonly has no distinct matrix color and is multicolored in shades of gray, brown, and red. The texture is clay loam or clay. Reaction ranges from very strongly acid to moderately acid.

Halso Series

The Halso series consists of deep, moderately well drained soils that formed in clayey sediments and the underlying clayey shale. These soils are on ridgetops in uplands in the northern part of the county. Slopes range from 1 to 3 percent. These soils are fine, smectitic, thermic Vertic Hapludults.

Halso soils are geographically associated with Conecuh, Luverne, and Smithdale soils. Conecuh soils are on side slopes adjacent to areas of the Halso soils and are very deep over bedrock. Luverne soils are in landscape positions similar to those of the Halso soils, have mixed mineralogy, and are very deep. Smithdale soils are in higher positions than those of the Halso soils and are fine-loamy.

Typical pedon of Halso silt loam, 1 to 3 percent slopes; about 3 miles northeast of Butler; 2,650 feet south and 1,000 feet east of the northwest corner of sec. 2, T. 13 N., R. 2 W.

Ap1—0 to 2 inches; dark grayish brown (10YR 4/2) silt loam; moderate fine granular structure; friable; many very fine and fine and few medium roots; strongly acid; abrupt smooth boundary.

Ap2—2 to 6 inches; reddish brown (5YR 4/4) silty clay loam; moderate coarse subangular blocky structure; firm; common fine and few medium roots; strongly acid; clear smooth boundary.

Bt1—6 to 12 inches; red (2.5YR 4/6) clay; strong fine subangular blocky structure; firm; common fine and few medium roots; few faint clay films on faces of peds; very strongly acid; clear smooth boundary.

Bt2—12 to 22 inches; red (2.5YR 4/8) clay; moderate fine and medium subangular blocky structure; firm; few fine roots; few faint clay films on faces of peds; common medium and coarse prominent brownish yellow (10YR 6/8) and many medium distinct yellowish red (5YR 4/6) masses of iron accumulation; few fine and medium prominent light brownish gray (2.5Y 6/2) iron depletions; very strongly acid; clear smooth boundary.

Bt3—22 to 30 inches; yellowish red (5YR 4/6) clay; weak coarse subangular blocky structure; firm; few fine roots; many medium and coarse prominent light brownish gray (2.5Y 6/2) iron depletions; many medium distinct red (2.5YR 4/8) and few medium prominent brownish yellow (10YR 6/6) masses of iron accumulation; extremely acid; clear smooth boundary.

Cg—30 to 45 inches; light brownish gray (2.5Y 6/2) clay loam; massive; firm; common fine fragments of shale; many medium faint light yellowish brown (2.5Y 6/3) and few medium distinct yellowish brown (10YR 5/6) masses of iron accumulation; extremely acid; abrupt irregular boundary.

Cr—45 to 80 inches; light brownish gray (2.5Y 6/2) clayey shale; strong medium platy rock structure; common fine fractures in the upper part; very firm; common coarse prominent dark yellowish brown (10YR 4/6) and yellowish brown (10YR 5/8) masses of iron accumulation on faces of peds; extremely acid.

The thickness of the solum ranges from 25 to 50 inches. The depth to soft shale bedrock ranges from 40 to 60 inches. Reaction ranges from extremely acid to strongly acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 5YR to 10YR, value of 3 to 5, and chroma of 2 to 4. It is silt loam or silty clay loam.

The Bt horizon has hue of 2.5YR or 5YR, value of 4 or 5, and chroma of 4 to 8. The quantity of redoximorphic accumulations in shades of red, brown, and yellow and redoximorphic depletions in shades of gray ranges from none to common in the upper part of the Bt horizon and is common or many in the lower part. The texture is dominantly clay or silty clay. In some pedons, however, the upper part of the horizon has a thin layer of clay loam.

The Cg horizon, if it occurs, has hue of 10YR to 5Y, value of 5 to 7, and chroma of 1 or 2. It has common or many redoximorphic accumulations in shades of red, brown, and yellow. It is clay, clay loam, or silty clay loam. Some pedons have a thin BC or CB horizon that is similar in color and texture to the Cg horizon.

The Cr horizon is clayey shale. It is massive or has platy rock structure. It can be cut with hand tools and is rippable by light machinery.

Hannon Series

The Hannon series consists of very deep, moderately well drained soils that formed in marine sediments consisting of thin strata of acid clay overlying strata of alkaline loamy and clayey sediments and chalk and marl. These soils are on narrow ridgetops and on benches in the uplands in the southwestern part of the county. Slopes range from 3 to 8 percent. These soils are fine, smectitic, thermic Chromic Hapluderts.

Hannon soils are geographically associated with Brantley, Okeelala, and Toxey soils. Brantley soils are acid throughout. They are in the slightly higher positions on ridgetops or in the lower positions on side slopes. Okeelala soils are in the lower side slope positions and are fine-loamy. Toxey soils are in positions similar to those of the Hannon soils and do not have an argillic horizon.

Typical pedon of Hannon clay, in an area of Toxey-Brantley-Hannon complex, 3 to 8 percent slopes, eroded; about 4.2 miles south of Melvin; 300 feet south and 1,600 feet east of the northwest corner of sec. 2, T. 10 N., R. 5 W.

A—0 to 3 inches; dark brown (7.5YR 3/2) clay; moderate fine subangular blocky structure; firm; common fine and medium roots; very strongly acid; abrupt wavy boundary.

Btss1—3 to 13 inches; red (2.5YR 4/6) clay; weak coarse prismatic structure parting to strong fine and medium angular blocky; firm; common fine and few medium roots; few large intersecting slickensides that have faintly grooved surfaces; strongly acid; abrupt wavy boundary.

Btss2—13 to 24 inches; red (2.5YR 4/6) clay; weak coarse angular blocky structure; firm; few fine and medium roots; common large intersecting slickensides that have distinctly grooved surfaces; common medium distinct light brownish gray (2.5Y 6/2) iron depletions on faces of peds; common medium and coarse prominent light yellowish brown (2.5Y 6/4) masses of iron accumulation on faces of peds; strongly acid; clear wavy boundary.

Bkss—24 to 29 inches; light olive brown (2.5Y 5/4) clay; weak coarse angular blocky structure parting to moderate fine and medium angular blocky; firm; few fine and medium roots; common large intersecting slickensides that have distinct grooved surfaces; few fine and medium soft masses of calcium carbonate; common coarse distinct yellowish brown (10YR 5/6) masses of iron accumulation; many coarse prominent very dark gray (5Y 3/1) stains (iron and manganese oxides) on faces of peds; slightly alkaline; abrupt smooth boundary.

C1—29 to 36 inches; olive yellow (2.5Y 6/6) clay loam; massive; common fine and medium soft masses of calcium carbonate; common medium distinct light yellowish brown (2.5Y 6/4) masses of iron accumulation; strongly effervescent; moderately alkaline; clear smooth boundary.

C2—36 to 80 inches; stratified olive yellow (2.5Y 6/6) clay loam and light gray (2.5Y 7/2) silty clay loam; weak thick platy rock structure; common fine and medium soft masses of calcium carbonate; common medium and coarse dark yellowish brown (10YR 4/6) masses of iron accumulation; violently effervescent; moderately alkaline.

The depth to an alkaline horizon ranges from 15 to 30 inches.

The A horizon has hue of 7.5YR or 10YR, value of 3 or 4, and chroma of 2 or 3. It is very strongly acid or strongly acid.

The Btss horizon, or Bt horizon, if it occurs, has hue of 2.5YR to 7.5YR, value of 4 or 5, and chroma of 4 to 8. The quantity of redoximorphic depletions in shades of gray and redoximorphic accumulations in shades of brown and red ranges from none to common. The texture is clay or silty clay. Reaction ranges from strongly acid to slightly acid.

The Bkss horizon has hue of 2.5Y or 5Y, value of 5 or 6, and chroma of 4 to 6. It has few or common soft masses of calcium carbonate. The quantity of redoximorphic depletions in shades of gray and redoximorphic accumulations in shades of brown and red ranges from none to common. The texture is clay or silty clay. Reaction is slightly alkaline or moderately alkaline.

The C horizon is commonly stratified. It has hue of 2.5Y or 5Y, value of 5 to 7, and chroma of 2 to 6. The texture ranges from sandy loam to clay. The horizon is massive or has platy rock structure. It has common or many soft masses of calcium carbonate. The quantity of redoximorphic depletions in shades of gray and redoximorphic accumulations in shades of brown and red ranges from none to common. Reaction is slightly alkaline or moderately alkaline. In some pedons, the C horizon has thin strata of chalk, marl, or shell.

Iuka Series

The Iuka series consists of very deep, moderately well drained soils that formed in stratified loamy and sandy alluvium. These soils are on flood plains. They are subject to frequent flooding for brief periods several times each year. Slopes are 0 to 1 percent. These soils are coarse-loamy, siliceous, active, acid, thermic Aquic Udifluvents.

Iuka soils are geographically associated with Bibb, Cahaba, Izagora, Kinston, and Ochlockonee soils. The poorly drained Bibb and Kinston soils are in the slightly lower, more concave positions on flood plains. Cahaba and Izagora soils are on stream terraces adjacent to areas of the Iuka soils and are fine-loamy. The well drained Ochlockonee soils are in the slightly higher positions on flood plains.

Typical pedon of Iuka fine sandy loam, in an area of Ochlockonee, Kinston, and Iuka soils, 0 to 1 percent slopes, frequently flooded; about 3.75 miles southwest of Jachin; 1,000 feet north and 2,100 feet west of the southeast corner of sec. 17, T. 14 N., R. 2 W.

A—0 to 6 inches; brown (10YR 4/3) fine sandy loam; weak medium granular structure; very friable; many fine, medium, and coarse roots; very strongly acid; abrupt smooth boundary.

C1—6 to 15 inches; dark yellowish brown (10YR 4/4) fine sandy loam; weak coarse subangular blocky structure; very friable; many fine, medium, and coarse roots; many coarse distinct light yellowish brown (2.5Y 6/3) iron depletions; few medium distinct yellowish brown (10YR 5/6) masses of iron accumulation; very strongly acid; clear smooth boundary.

C2—15 to 22 inches; yellowish brown (10YR 5/4) fine sandy loam; massive; very friable; common fine and medium roots; few fine brown and black concretions (iron and manganese oxides); common medium distinct light brownish gray (10YR 6/2) iron depletions; common medium faint yellowish brown (10YR 5/6) masses of iron accumulation; very strongly acid; clear wavy boundary.

C3—22 to 32 inches; yellowish brown (10YR 5/4) loam; massive; friable; common fine roots; few fine brown and black concretions (iron and manganese oxides); common medium distinct light brownish gray (10YR 6/2) and common medium faint brown (10YR 5/3) iron depletions; very strongly acid; clear wavy boundary.

Cg—32 to 60 inches; light brownish gray (10YR 6/2) loam; massive; friable; few fine roots; many medium distinct yellowish brown (10YR 5/4) masses of iron accumulation; very strongly acid.

Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed.

The Ap or A horizon has hue of 10YR, value of 3 or 4, and chroma of 2 or 3.

The C horizon has hue of 10YR and value and chroma of 4 to 6. It has few to many redoximorphic accumulations in shades of yellow, brown, and red and redoximorphic depletions in shades of gray. It is loam, fine sandy loam, or sandy loam.

The Cg horizon has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 1 or 2. It has common or many redoximorphic accumulations in shades of brown, red, and yellow. It is sandy loam, fine sandy loam, loam, or silt loam.

Izagora Series

The Izagora series consists of very deep, moderately well drained soils that formed in loamy alluvial sediments. These soils are on low stream terraces along the Tombigbee River and other major streams. They are subject to rare flooding during periods of unusually heavy or prolonged rainfall. Slopes range from 0 to 2 percent. These soils are fine-loamy, siliceous, semiactive, thermic Aquic Paleudults.

Izagora soils are geographically associated with Annemaine, Cahaba, Kinston, Lenoir, and McCrory soils. Annemaine soils are in the slightly lower positions and have a clayey argillic horizon. The poorly drained Kinston soils are on flood plains. Cahaba soils are in the slightly higher positions and have a reddish argillic horizon. The somewhat poorly drained Lenoir soils are in the slightly lower positions and have a clayey argillic horizon. The poorly drained McCrory soils are in the lower positions and have a natric horizon.

Typical pedon of Izagora fine sandy loam, 0 to 2 percent slopes, rarely flooded; about 2.2 miles south-southeast of Jachin; 2,500 feet north and 100 feet east of the southwest corner of sec. 11, T. 14 N., R. 2 W.

Ap—0 to 7 inches; brown (10YR 5/3) fine sandy loam; weak coarse subangular blocky structure; very friable; many fine and very fine and few medium roots; few charcoal fragments; very strongly acid; abrupt wavy boundary.

E—7 to 13 inches; light yellowish brown (10YR 6/4) loam; weak coarse subangular blocky structure; very friable; common fine and medium roots; common charcoal fragments; common medium faint pale brown (10YR 6/3) iron depletions; few fine distinct brownish yellow (10YR 6/6) masses of iron accumulation; strongly acid; abrupt wavy boundary.

Bt1—13 to 22 inches; brownish yellow (10YR 6/8) loam; moderate medium subangular blocky structure; friable; few fine roots; few faint clay films on faces of peds; strongly acid; clear wavy boundary.

Bt2—22 to 27 inches; yellowish brown (10YR 5/6) loam; weak coarse prismatic structure parting to moderate medium subangular blocky; friable; common fine roots; common faint clay films on faces of peds; few fine black concretions (iron and manganese oxides); common light gray (10YR 7/2) clay depletions on vertical faces of peds; common medium distinct brown (10YR 5/3) and common fine distinct light brownish gray (10YR 6/2) iron depletions; few fine distinct strong brown (7.5YR 5/6) masses of iron accumulation; strongly acid; gradual wavy boundary.

Bt3—27 to 36 inches; yellowish brown (10YR 5/6) loam; moderate coarse prismatic structure parting to moderate medium subangular blocky; friable; common fine roots; common faint clay films on faces of peds; common light gray (10YR 7/2) clay depletions on vertical faces of peds; common medium distinct dark yellowish brown (10YR 4/4) and red (2.5YR 4/6) masses of iron accumulation; common medium distinct light brownish gray (10YR 6/2) iron depletions; strongly acid; gradual wavy boundary.

Bt4—36 to 47 inches; light yellowish brown (10YR 6/4) clay loam; moderate coarse prismatic structure parting to moderate coarse subangular blocky; firm; slightly brittle; common faint clay films on faces of peds; common light gray (10YR 7/2) clay depletions on faces of peds; common light brownish gray (10YR 6/2) iron depletions; many medium distinct strong brown (7.5YR 5/6) and red (2.5YR 4/6) masses of iron accumulation; very strongly acid; gradual wavy boundary.

Bt5—47 to 55 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; common faint clay films on faces of peds; common light gray (10YR 7/2) clay depletions on faces of peds; common medium distinct light brownish gray (10YR 6/2) iron depletions; common medium prominent red (2.5YR 4/8) and common medium distinct yellowish brown (10YR 5/8) masses of iron accumulation; very strongly acid; gradual wavy boundary.

Bt6—55 to 65 inches; yellowish brown (10YR 5/4) silty clay loam; weak coarse prismatic structure parting to moderate medium subangular blocky; friable; common faint clay films on faces of peds; common medium distinct gray (10YR 6/1) iron depletions; common medium distinct strong brown (7.5YR 5/6) and prominent red (2.5YR 4/6) masses of iron accumulation; very strongly acid.

The solum is more than 60 inches thick. Reaction ranges from extremely acid to moderately acid throughout the profile, except where the surface layer has been limed.

The Ap or A horizon has hue of 10YR, value of 3 to 5, and chroma of 2 to 4.

The E horizon, if it occurs, has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 3 or 4. The texture is sandy loam, fine sandy loam, or loam.

The upper part of the Bt horizon has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 4 to 8. It has few or common redoximorphic accumulations in shades of brown and red and redoximorphic depletions in shades of gray. It is loam, silty clay loam, or clay loam.

The lower part of the Bt horizon has colors similar to those in the upper part, or it has no dominant matrix color and is multicolored in shades of brown, gray, red, and yellow. The extent of the gray increases with depth. The lower part of the Bt horizon is clay loam, silty clay loam, or clay.

Kinston Series

The Kinston series consists of very deep, poorly drained soils that formed in stratified alluvium. These soils are in flat or concave positions on flood plains along large streams. They are subject to frequent flooding for brief periods several times each year. Slopes are 0 to 1 percent. These soils are fine-loamy, siliceous, semiactive, acid, thermic Fluvaquentic Endoaquepts.

Kinston soils are geographically associated with Bigbee, Iuka, Izagora, McCrory, and Ochlockonee soils. Bigbee soils are in the higher positions and are sandy throughout. The moderately well drained Iuka soils and the well drained Ochlockonee soils are in the higher positions on flood plains and are coarse-loamy. Izagora and McCrory soils are on stream terraces adjacent to areas of the Kinston soil. Izagora soils are moderately well drained. McCrory soils have a natric horizon.

Typical pedon of Kinston fine sandy loam, in an area of Ochlockonee, Kinston, and Iuka soils, 0 to 1 percent slopes, frequently flooded; about 0.25 mile northwest of Okatuppa; 1,000 feet north and 900 feet west of the southeast corner of sec. 5, T. 11 N., R. 4 W.

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

A2—2 to 4 inches; dark grayish brown (10YR 4/2) fine sandy loam; weak medium subangular blocky structure; very friable; common medium roots; common medium distinct strong brown (7.5YR 5/6) and very pale brown (10YR 7/4) masses of iron accumulation; very strongly acid; gradual wavy boundary.

Bg1—4 to 12 inches; light brownish gray (10YR 6/2) loam; massive; very friable; common medium roots; common medium prominent strong brown (7.5YR 4/6) and yellowish red (5YR 5/6) masses of iron accumulation; very strongly acid; gradual wavy boundary.

Bg2—12 to 15 inches; greenish gray (5G 6/1) sandy clay loam; massive; friable; common fine, medium, and coarse roots; common fine, medium, and coarse prominent yellowish red (5YR 5/8) and dark red (2.5YR 3/6) masses of iron accumulation; very strongly acid; gradual wavy boundary.

Bg3—15 to 29 inches; greenish gray (5G 5/1) sandy clay loam; massive; friable; few medium and coarse roots; many medium prominent yellowish brown (10YR 5/6) and red (2.5YR 4/8) masses of iron accumulation; very strongly acid; gradual wavy boundary.

Bg4—29 to 33 inches; greenish gray (5BG 5/1) clay loam; weak medium subangular blocky structure; firm; few medium and coarse distinct yellowish brown (10YR 5/6) and strong brown (7.5YR 5/8) masses of iron accumulation; very strongly acid; gradual wavy boundary.

Cg—33 to 60 inches; dark bluish gray (5B 4/1) clay loam; massive; firm; common fine and medium prominent red (2.5YR 4/6) masses of iron accumulation; very strongly acid.

Reaction is very strongly acid or strongly acid throughout.

The A horizon has hue of 10YR, value of 3 or 4, and chroma of 1 or 2.

The Bg horizon has hue of 10YR to 5G, value of 5 or 6, and chroma of 1 or 2. It has few to many redoximorphic accumulations in shades of yellow, brown, and red. It is sandy loam, loam, sandy clay loam, or clay loam.

The Cg horizon has hue of 10YR to 5B, value of 4 to 6, and chroma of 1 or 2. It has few or common redoximorphic accumulations in shades of yellow, brown, and red. It is sandy loam, loam, sandy clay loam, or clay loam. Some pedons have strata of sand, loamy sand, or silt loam below a depth of 40 inches.

Latonia Series

The Latonia series consists of very deep, well drained soils that formed in loamy and sandy alluvium. These soils are on low terraces along the Tombigbee River and other large streams. Latonia soils are subject to rare flooding during periods of unusually heavy or prolonged rainfall. Slopes range from 0 to 2 percent. These soils are coarse-loamy, siliceous, semiactive, thermic Typic Hapludults.

Latonia soils are geographically associated with Bigbee, Cahaba, Izagora, Lenoir, and Urbo soils. Bigbee and Cahaba soils are in positions similar to those of the Latonia soils. Bigbee soils are sandy throughout. Cahaba soils are fine-loamy. The moderately well drained Izagora soils are in the slightly lower positions and are fine-loamy. The somewhat poorly drained Lenior soils are in the lower positions and have a clayey argillic horizon. The somewhat poorly drained Urbo soils are on flood plains.

Typical pedon of Latonia loamy sand, 0 to 2 percent slopes, rarely flooded; about 1 mile southeast of Lavaca; 2,000 feet south and 2,200 feet west of the northeast corner of sec. 3, T. 13 N., R. 1 W.

Ap—0 to 6 inches; very dark grayish brown (10YR 3/2) loamy sand; weak fine granular structure; very friable; few fine and medium roots; strongly acid; clear smooth boundary.

BA—6 to 15 inches; yellowish brown (10YR 5/6) sandy loam; weak fine subangular blocky structure; very friable; few fine roots; strongly acid; gradual wavy boundary.

Bt1—15 to 36 inches; yellowish brown (10YR 5/6) sandy loam; weak medium subangular blocky structure; very friable; few faint clay films on faces of peds; strongly acid; gradual wavy boundary.

Bt2—36 to 43 inches; yellowish brown (10YR 5/8) sandy loam; weak medium subangular blocky structure; very friable; few faint clay films on faces of peds; sand grains coated and bridged with clay; strongly acid; gradual smooth boundary.

C1—43 to 53 inches; brownish yellow (10YR 6/6) loamy sand; massive; very friable; common fine streaks of very pale brown (10YR 7/3) sand grains; very strongly acid; gradual smooth boundary.

C2—53 to 68 inches; brownish yellow (10YR 6/8) sand; single grained; loose; very strongly acid.

The thickness of the solum ranges from 28 to 65 inches. Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 10YR, value of 3 to 5, and chroma of 2 to 4.

The BA or BE horizon, which occurs in most pedons, has hue of 10YR, value of 4 or 5, and chroma of 4 to 6. The texture is sandy loam or fine sandy loam.

The Bt horizon has hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 4 to 8. It is sandy loam, fine sandy loam, or loam.

The C horizon has hue of 10YR, value of 5 or 6, and chroma of 4 to 8. It is loamy sand or sand.

Lauderdale Series

The Lauderdale series consists of shallow, well drained soils that formed in residuum derived from claystone or siltstone. These soils are in the uplands in the central and southern parts of the county. They are on narrow ridges and on shoulder slopes. Slopes range from 2 to 10 percent. These soils are loamy, mixed, active, thermic, shallow Typic Hapludults.

Lauderdale soils are geographically associated with Arundel, Cantuche, Luverne, Smithdale, and Williamsville soils. Arundel soils are in the lower positions on steep side slopes and in positions on ridges similar to those of the Lauderdale soils. Arundel soils are moderately deep over bedrock and have a clayey subsoil. Cantuche soils are in the lower positions on steep side slopes. They do not have an argillic horizon. Luverne, Smithdale, and Williamsville soils are very deep over bedrock and are in positions similar to those of the Lauderdale soils but at higher elevations.

Typical pedon of Lauderdale silt loam, in an area of Lauderdale-Arundel complex, 2 to 10 percent slopes, stony, eroded; about 3.25 miles north of Bladon Springs; 800 feet south and 800 feet east of the northwest corner of sec. 7, T. 9 N., R. 2 W.

A—0 to 3 inches; dark grayish brown (10YR 4/2) silt loam; weak fine granular structure; friable; many fine and medium and few coarse roots; about 5 percent pararock fragments of siltstone; very strongly acid; clear smooth boundary.

Bt1—3 to 7 inches; yellowish brown (10YR 5/4) clay loam; moderate medium subangular blocky structure; friable; common fine, medium, and coarse roots; common faint clay films on faces of peds; about 10 percent pararock fragments of siltstone; very strongly acid; clear wavy boundary.

Bt2—7 to 16 inches; yellowish brown (10YR 5/4) clay loam; moderate medium subangular blocky structure; friable; common faint clay films on faces of peds; about 10 percent pararock fragments of siltstone; extremely acid; abrupt wavy boundary.

Cr—16 to 80 inches; weathered grayish brown (10YR 5/2) and yellowish brown (10YR 6/4) siltstone; massive; level-bedded; very firm; common fine, medium, and coarse roots in fractures.

The thickness of the solum and the depth to bedrock range from 10 to 20 inches. Reaction is extremely acid or very strongly acid throughout the profile.

The A horizon has hue of 10YR, value of 3 or 4, and chroma of 2 or 3. The content of pararock fragments ranges from 5 to 15 percent.

The Bt horizon has hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 4 to 6. It is silty clay loam, clay loam, or sandy clay loam. The content of pararock fragments ranges from 5 to 15 percent.

The Cr horizon is weathered siltstone or claystone, locally known as buhrstone. It is massive or has thick platy rock structure. It can be excavated with difficulty with hand tools and is rippable by light machinery.

Leeper Series

The Leeper series consists of very deep, somewhat poorly drained soils that formed in clayey alluvium. These soils are on flood plains and are subject to flooding for brief periods several times each year, mainly during winter and spring. Slopes are 0 to 1 percent. These soils are fine, smectitic, nonacid, thermic Vertic Epiaquepts.

Leeper soils are geographically associated with Brantley, Freest, Maytag, Okeelala, and Sumter soils. Brantley, Maytag, Okeelala, and Sumter soils are on uplands adjacent to areas of the Leeper soils and are not subject to flooding. The moderately well drained Freest soils are on stream terraces adjacent to areas of the Leeper soils and are fine-loamy.

Typical pedon of Leeper silty clay loam, 0 to 1 percent slopes, frequently flooded; about 5 miles southeast of Melvin; 300 feet north and 400 feet east of the southwest corner of sec. 5, T. 10 N., R. 4 W.

Ap—0 to 4 inches; very dark grayish brown (10YR 3/2) silty clay loam; moderate medium subangular blocky structure; friable; common fine and medium roots; slightly alkaline; abrupt smooth boundary.

Bw—4 to 12 inches; dark brown (10YR 4/3) clay loam; weak coarse prismatic structure parting to moderate medium subangular blocky; firm; common fine and few medium roots; few medium distinct dark yellowish brown (10YR 4/4) masses of iron accumulation; few medium faint dark gray (10YR 4/1) iron depletions; slightly alkaline; clear wavy boundary.

Bg1—12 to 21 inches; dark grayish brown (2.5Y 4/2) clay; moderate medium subangular blocky structure; firm; few fine roots; few pressure faces; few faint very dark grayish brown (10YR 3/2) organic stains in root channels and on vertical faces of peds; few medium distinct very dark brown (10YR 2/2) stains (iron and manganese oxides) on faces of peds; few fine distinct dark yellowish brown (10YR 3/4) masses of iron accumulation; slightly alkaline; clear wavy boundary.

Bg2—21 to 30 inches; dark gray (2.5Y 4/1) silty clay; moderate medium subangular blocky structure; firm; few pressure faces; common medium distinct very dark brown (10YR 2/2) stains (iron and manganese oxides) on faces of peds; common coarse prominent dark yellowish brown (10YR 3/4) and few medium prominent yellowish brown (10YR 5/4) masses of iron accumulation; slightly alkaline; clear wavy boundary.

Bssg—30 to 45 inches; gray (10YR 5/1) clay; weak coarse angular blocky structure; firm; few pressure faces; few large intersecting slickensides that have faintly grooved surfaces; common medium distinct very dark brown (10YR 2/2) stains (iron and manganese oxides) on faces of peds; many coarse distinct dark yellowish brown (10YR 4/4) and common coarse prominent strong brown (7.5YR 5/8) masses of iron accumulation; slightly alkaline; gradual wavy boundary.

C—45 to 60 inches; light olive brown (2.5Y 5/4) clay; massive; firm; few pressure faces; common large intersecting slickensides that have distinctly grooved surfaces; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation; common medium distinct grayish brown (2.5Y 5/2) iron depletions; slightly alkaline.

The thickness of the solum ranges from 20 to more than 60 inches. Reaction ranges from slightly acid to moderately alkaline throughout the profile.

The A or Ap horizon has hue of 10YR or 2.5Y, value of 3 or 4, and chroma of 2 or 3. Some pedons near stream channels have an overwash of coarser materials. The layer of overwash is less than 10 inches thick.

The Bw horizon, if it occurs, has hue of 10YR or 2.5Y, value of 4 or 5, and chroma 3; or it has no dominant matrix color and is multicolored in shades of brown and gray. It has few to many redoximorphic accumulations in shades of brown and redoximorphic depletions in shades of gray. It is clay loam, silty clay, or clay.

The Bg horizon has hue of 10YR to 5Y, value of 4 to 6, and chroma of 1 or 2. It has few to many redoximorphic accumulations in shades of brown. It is silty clay or clay.

The Bssg horizon, if it occurs, has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 1 or 2. It has common or many redoximorphic accumulations in shades of brown or red. It is silty clay or clay.

The C horizon has hue of 2.5Y or 5Y, value of 4 to 6, and chroma of 3 or 4. It has common or many redoximorphic accumulations in shades of brown and redoximorphic depletions in shades of gray. It is clay loam, silty clay loam, silty clay, or clay.

Lenoir Series

The Lenoir series consists of very deep, somewhat poorly drained soils that formed in clayey sediments. These soils are on low terraces along the Tombigbee River and other major streams. Lenoir soils are subject to rare flooding during periods of unusually heavy or prolonged rainfall. Slopes range from 0 to 2 percent. These soils are fine, mixed, semiactive, thermic Aeric Paleaquults.

Lenoir soils are geographically associated with Annemaine, Cahaba, Izagora, and Urbo soils. The moderately well drained Annemaine soils are in the slightly higher, more convex positions and have a reddish subsoil. The well drained Cahaba soils and the moderately well drained Izagora soils are in the slightly higher positions and are fine-loamy. Urbo soils are in the lower positions on flood plains adjacent to areas of the Lenoir soils and are subject to frequent flooding.

Typical pedon of Lenoir silt loam, 0 to 2 percent slopes, rarely flooded; about 1 mile southeast of Pennington; 600 feet south and 1,100 feet west of the northeast corner of sec. 23, T. 14 N., R. 1 W.

Ap—0 to 4 inches; dark grayish brown (10YR 4/2) silt loam; moderate fine granular structure; very friable; many fine and medium roots; very strongly acid; abrupt smooth boundary.

BA—4 to 8 inches; yellowish brown (10YR 5/4) silt loam; weak medium subangular blocky structure; friable; common fine and medium roots; few medium black weakly cemented nodules (iron and manganese oxides); common medium and coarse distinct light brownish gray (10YR 6/2) iron depletions; few medium distinct strong brown (7.5YR 5/6) masses of iron accumulation; very strongly acid; clear smooth boundary.

Btg1—8 to 19 inches; grayish brown (2.5Y 5/2) clay loam; moderate medium subangular blocky structure; firm; few fine and medium roots; common faint clay films on faces of peds; few medium black weakly cemented nodules (iron and manganese oxides); many medium distinct yellowish brown (10YR 5/6) and few fine prominent yellowish red (5YR 4/6) masses of iron accumulation; very strongly acid; gradual wavy boundary.

Btg2—19 to 38 inches; grayish brown (2.5Y 5/2) clay; moderate coarse subangular blocky structure; firm; few fine and medium roots; common faint clay films on faces of peds; many medium prominent strong brown (7.5YR 4/6) and common medium prominent red (2.5YR 4/6) masses of iron accumulation; very strongly acid; gradual wavy boundary.

Btg3—38 to 68 inches; light brownish gray (2.5Y 6/2) clay; moderate coarse subangular blocky structure; firm; few fine and medium roots; common faint clay films on faces of peds; many fine and medium prominent red (2.5YR 4/6) and few medium prominent strong brown (7.5YR 5/6) masses of iron accumulation; very strongly acid; gradual wavy boundary.

Btg4—68 to 80 inches; light brownish gray (2.5Y 6/2) clay; moderate coarse subangular blocky structure; firm; few fine roots; common faint clay films on faces of peds; common medium prominent strong brown (7.5YR 5/6) and few medium prominent red (2.5YR 4/6) masses of iron accumulation; very strongly acid.

The solum is more than 72 inches thick. Reaction ranges from extremely acid to strongly acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 10YR, value of 3 or 4, and chroma of 1 or 2.

The BA horizon, if it occurs, has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 3 to 6. It is loam, silt loam, or fine sandy loam.

The Btg horizon has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 1 or 2; or it has no dominant matrix color and is multicolored in shades of gray, brown, and red. It is clay loam, silty clay, or clay. Some pedons have a thin Bt horizon above the Btg horizon. This Bt horizon has hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 3 to 6. It has common or many redoximorphic depletions in shades of gray and redoximorphic accumulations in shades of brown, yellow, or red.

Louin Series

The Louin series consists of very deep, somewhat poorly drained soils that formed in acid, clayey sediments overlying alkaline clays and soft limestone (chalk). These soils are on uplands in the southwestern part of the county. Slopes range from 0 to 2 percent. These soils are fine, smectitic, thermic Aquic Dystruderts.

Louin soils are geographically associated with Boswell, Maytag, Oktibbeha, and Sumter soils. Boswell soils are in higher positions than those of the Louin soils, have mixed mineralogy, and are reddish in the upper part of the solum. Maytag and Sumter soils are commonly in higher positions than those of the Louin soils and are alkaline throughout. Oktibbeha soils are in the slightly higher, more convex positions and are reddish in the upper part of the subsoil.

Typical pedon of Louin silty clay, 0 to 2 percent slopes; about 0.8 mile southwest of Isney; 1,400 feet north and 800 feet west of the southeast corner of sec. 3, T. 9 N., R. 5 W.

Ap1—0 to 2 inches; very dark gray (10YR 3/1) silty clay; strong fine subangular blocky structure; firm;

many fine and medium roots; very strongly acid; abrupt smooth boundary.

Ap2—2 to 8 inches; dark gray (10YR 4/1) clay; strong fine and medium subangular blocky structure; firm; common fine and medium roots; few very dark gray organic stains on faces of peds; very strongly acid; abrupt smooth boundary.

Bt—8 to 14 inches; dark yellowish brown (10YR 4/4) clay; weak coarse prismatic structure parting to strong fine and medium subangular blocky; firm; common fine and few medium roots; few faint clay films on faces of peds; few fine black stains (iron and manganese oxides) on faces of peds; many medium distinct grayish brown (10YR 5/2) iron depletions; very strongly acid; clear smooth boundary.

Btss1—14 to 30 inches; 40 percent light brownish gray (10YR 6/2), 30 percent yellowish red (5YR 5/6), and 30 percent red (2.5YR 4/6) clay; moderate medium subangular blocky structure; firm; few fine and medium roots; common large intersecting slickensides that have faintly grooved surfaces; very strongly acid; gradual wavy boundary.

Btss2—30 to 38 inches; clay, brownish yellow (10YR 6/6) interior and gray (2.5Y 6/1) exterior; weak coarse angular blocky structure parting to moderate medium angular blocky; very firm; few fine and medium roots; common large intersecting slickensides that have distinct polished and grooved surfaces; common coarse distinct brownish yellow (10YR 6/8) masses of iron accumulation; slightly acid; gradual wavy boundary.

Bkss—38 to 54 inches; clay, brownish yellow (10YR 6/6) interior and gray (2.5Y 6/1) exterior; weak coarse angular blocky structure parting to moderate fine and medium angular blocky; firm; few fine roots; common large intersecting slickensides that have prominent grooved and polished surfaces; few fine and medium soft masses and nodules of calcium carbonate; violently effervescent; moderately alkaline; clear irregular boundary.

C—54 to 76 inches; light gray (2.5Y 7/2) clay; massive; firm; many fine and medium soft masses and nodules of calcium carbonate; common medium prominent brownish yellow (10YR 6/6) masses of iron accumulation; violently effervescent; moderately alkaline; clear smooth boundary.

2Cr—76 to 80 inches; light gray (2.5Y 7/2) soft limestone (chalk); moderate thick platy rock structure; very firm; violently effervescent; moderately alkaline.

The depth to a horizon that has secondary carbonates is more than 36 inches.

The A or Ap horizon has hue of 10YR, value of 3 or 4, and chroma of 1 to 3. The texture is silty clay or clay. Reaction is very strongly acid or strongly acid, except where lime has been applied.

The Bt horizon, if it occurs, has hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 4 to 6. It has common or many redoximorphic accumulations in shades of red and brown and redoximorphic depletions in shades of gray. It is clay or silty clay. It is very strongly acid or strongly acid.

The Btss or Bss horizon commonly has hue of 10YR or 2.5Y and value of 5 or 6 and has chroma of 4 to 8 in ped interiors and 1 or 2 on ped exteriors; or it has no dominant matrix color and is multicolored in shades of red, brown, yellow, and gray. The quantity of redoximorphic depletions in shades of gray and redoximorphic accumulations in shades of brown and red ranges from few to many and generally increases with depth. The texture is clay or silty clay. Reaction ranges from very strongly acid to slightly acid.

The Bkss horizon, which occurs in most pedons, dominantly has hue of 10YR or 2.5Y and value of 4 to 6 and has chroma of 4 to 6 in ped interiors and 1 or 2 on ped exteriors. In some pedons, however, it has no dominant matrix color and is multicolored in shades of brown, gray, and red. It has common or many redoximorphic depletions in shades of gray and redoximorphic accumulations in shades of brown and red. It has few to many soft masses or nodules or both of calcium carbonate. It is clay or silty clay. Reaction ranges from neutral to moderately alkaline.

The C or 2C horizon, if it occurs, has hue of 10YR to 5Y, value of 5 to 7, and chroma of 2 to 6; or it has no dominant matrix color and is multicolored in shades of gray, brown, olive, and red. It has few or common redoximorphic depletions in shades of gray and redoximorphic accumulations in shades of brown, olive, and red. It is silty clay loam, silty clay, or clay. It is slightly alkaline or moderately alkaline.

The 2Cr horizon, if it occurs, is soft limestone (chalk). It is massive or has platy rock structure. It can be cut with hand tools and is rippable by light machinery.

Lucedale Series

The Lucedale series consists of very deep, well drained soils that formed in loamy sediments. These soils are on ridgetops in uplands in the southwestern part of the county. Slopes range from 0 to 2 percent. These soils are fine-loamy, siliceous, subactive, thermic Rhodic Paleudults.

Lucedale soils are geographically associated with Savannah and Smithdale soils. Savannah soils are in landscape positions similar to those of the Lucedale soils but are at lower elevations, are brownish, and have a fragipan. Smithdale soils are on side slopes adjacent to areas of the Lucedale soils and are not dark red in the upper part of the argillic horizon.

Typical pedon of Lucedale fine sandy loam, 0 to 2 percent slopes; in Isney; 1,600 feet south and 2,300 feet west of the northeast corner of sec. 2, T. 9 N., R. 5 W.

Ap1—0 to 3 inches; dark brown (7.5YR 3/3) fine sandy loam; weak fine granular structure; friable; many fine roots; strongly acid; abrupt smooth boundary.

Ap2—3 to 5 inches; dark brown (7.5YR 3/4) fine sandy loam; weak fine subangular blocky structure; friable; common fine roots; strongly acid; abrupt smooth boundary.

Bt1—5 to 8 inches; dark red (2.5YR 3/6) sandy clay loam; moderate fine subangular blocky structure; friable; common fine roots; common faint clay films on faces of peds; very strongly acid; clear smooth boundary.

Bt2—8 to 17 inches; dark red (2.5YR 3/6) clay loam; weak coarse prismatic structure parting to moderate medium subangular blocky; firm; common fine roots; common faint clay films on faces of peds; very strongly acid; clear wavy boundary.

Bt3—17 to 34 inches; dark red (2.5YR 3/6) sandy clay loam; moderate medium subangular blocky structure; friable; few fine roots; common faint clay films on faces of peds; very strongly acid; gradual wavy boundary.

Bt4—34 to 80 inches; dark red (2.5YR 3/6) sandy clay loam; weak coarse subangular blocky structure; friable; few fine roots; few faint clay films on faces of peds; very strongly acid.

The solum is more than 60 inches thick.

The A or Ap horizon has hue of 5YR or 7.5YR, value of 3, and chroma of 2 to 4. Reaction is strongly acid or moderately acid, except in areas where lime has been applied.

The Bt horizon has hue of 10R or 2.5YR, value of 3, and chroma of 4 to 6. It is loam, sandy clay loam, or clay loam. It is very strongly acid or strongly acid.

Luverne Series

The Luverne series consists of very deep, well drained soils that formed in stratified clayey and loamy marine sediments. These soils are on ridgetops and side slopes in the uplands. Slopes range from 1 to 35 percent. These soils are fine, mixed, semiactive, thermic Typic Hapludults.

Luverne soils are geographically associated with Arundel, Boykin, Halso, Smithdale, and Wadley soils. Arundel and Halso soils are in landscape positions similar to those of the Luverne soils but are commonly at slightly lower elevations. Arundel soils have bedrock within a depth of 20 to 40 inches. Halso soils have shale bedrock within a depth of 40 to 60 inches. Boykin and Smithdale soils are in landscape positions similar to those of the Luverne soils. Boykin soils have a thick, sandy epipedon. Smithdale soils are fine-loamy. Wadley soils are in slightly higher positions than Luverne soils and have a thick, sandy epipedon.

Typical pedon of Luverne fine sandy loam, in an area of Boykin-Luverne-Smithdale complex, 15 to 35 percent slopes, eroded; about 2 miles northeast of Pennington; 100 feet north and 800 feet west of the southeast corner of sec. 26, T. 15 N., R. 1 W.

A—0 to 3 inches; dark brown (10YR 3/3) fine sandy loam; weak fine granular structure; very friable; many fine and common medium and coarse roots; strongly acid; abrupt smooth boundary.

E—3 to 7 inches; brown (10YR 5/3) fine sandy loam; weak coarse subangular blocky structure; very friable; common fine and medium and few coarse roots; strongly acid; clear smooth boundary.

Bt1—7 to 19 inches; red (2.5YR 4/6) clay loam; weak medium prismatic structure parting to moderate fine and medium subangular blocky; firm; few faint clay films on faces of peds; few medium distinct brownish yellow (10YR 6/6) masses of iron accumulation; very strongly acid; clear wavy boundary.

Bt2—19 to 36 inches; red (2.5YR 4/6) clay loam; moderate medium subangular blocky structure; firm; few fine and medium roots; many distinct strong brown (7.5YR 4/6) clay films on faces of peds; very strongly acid; clear wavy boundary.

BC—36 to 49 inches; red (2.5YR 4/8) clay loam; weak coarse subangular blocky structure; firm; few fine roots; few fine light brownish gray (10YR 6/2) fragments of weathered shale; common medium and coarse prominent yellowish brown (10YR 5/6) masses of iron accumulation; very strongly acid; gradual wavy boundary.

C—49 to 80 inches; red (2.5YR 4/8) sandy clay loam; massive; firm; common thin discontinuous strata of sandy loam; common fine and medium fragments of light brownish gray (10YR 6/2) shale; many medium and coarse prominent brownish yellow (10YR 6/6) masses of iron accumulation; very strongly acid.

The thickness of the solum ranges from 20 to 50 inches. Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 10YR, value of 3 to 5, and chroma of 2 to 4. The texture is sandy loam or fine sandy loam.

The E horizon, if it occurs, has hue of 10YR, value of 5 or 6, and chroma of 3 or 4. It is sandy loam or fine sandy loam.

The upper part of the Bt horizon has hue of 2.5YR or 5YR, value of 4 or 5, and chroma of 4 to 8. The quantity of redoximorphic accumulations in shades of red, brown, and yellow ranges from none to common. The texture is clay loam, sandy clay, or clay.

The lower part of the Bt horizon has the same range in color as the upper part, or it has no dominant matrix color and is multicolored in shades of red, brown, and yellow. The quantity of redoximorphic accumulations in shades of red, brown, and yellow ranges from none to many. The texture is sandy clay loam, clay loam, or clay.

The BC horizon, if it occurs, has hue of 2.5YR or 5YR, value of 4 or 5, and chroma of 6 to 8; or it has no dominant matrix color and is multicolored in shades of red, brown, and yellow. It has few to many redoximorphic accumulations in shades of brown, red, and yellow and redoximorphic depletions in shades of gray. It is sandy clay loam or clay loam.

The C horizon is commonly stratified. It has hue of 2.5YR to 7.5YR, value of 4 or 5, and chroma of 4 to 8. It has few to many redoximorphic accumulations in shades of red, brown, and yellow. The quantity of redoximorphic depletions in shades of gray ranges from none to common. The quantity of fragments of soft shale also ranges from none to common. The texture is dominantly sandy loam, sandy clay loam, or clay loam. In some pedons, however, the horizon has thin strata of finer or coarser material.

Mayhew Series

The Mayhew series consists of very deep, poorly drained soils that formed in acid, clayey sediments and the underlying clayey shale. These soils are on broad, nearly level ridgetops in the northeastern part of the county. Slopes range from 0 to 2 percent. These soils are fine, smectitic, thermic Chromic Dystraquerts.

Mayhew soils are geographically associated with Luverne, Savannah, and Wilcox soils. The well drained Luverne soils are in higher positions than the Mayhew soils and have a reddish argillic horizon. Wilcox soils are on the slightly higher, more convex slopes on broad ridgetops and on side slopes. They are reddish in the upper part of the subsoil. Savannah soils are on stream terraces at lower elevations than the Mayhew soils, have a fragipan, and are fine-loamy.

Typical pedon of Mayhew silty clay loam, 0 to 2 percent slopes; about 2.5 miles northeast of Edna; 2,600 feet south and 2,000 feet east of the northwest corner of sec. 1, T. 15 N., R. 1 W.

A1—0 to 2 inches; dark brown (10YR 4/3) silty clay loam; weak medium subangular blocky structure; firm; many fine and medium and few coarse roots; very strongly acid; clear wavy boundary.

A2—2 to 6 inches; dark brown (10YR 4/3) silty clay; strong medium subangular blocky structure; firm; common fine and medium and few coarse roots; common medium distinct brownish yellow (10YR 6/6) masses of iron accumulation; few fine soft black masses (iron and manganese oxides); very strongly acid; abrupt wavy boundary.

Btg1—6 to 13 inches; light brownish gray (10YR 6/2) silty clay; moderate medium subangular blocky structure; firm; common fine and medium roots; many pressure faces; common faint clay films on faces of peds; common medium distinct dark yellowish brown (10YR 5/4) and brownish yellow (10YR 6/6) masses of iron accumulation; few fine soft black masses (iron and manganese oxides); very strongly acid; clear wavy boundary.

Btg2—13 to 22 inches; light brownish gray (10YR 6/2) silty clay; weak coarse prismatic structure parting to moderate medium subangular blocky; firm; common fine and few medium roots; many pressure faces; common faint clay films on faces of peds; common medium distinct brownish yellow (10YR 6/6) and strong brown (7.5YR 5/6) masses of iron accumulation; few fine soft black masses (iron and manganese oxides); extremely acid; clear wavy boundary.

Bssg1—22 to 42 inches; grayish brown (10YR 5/2) silty clay; weak very coarse subangular blocky structure parting to strong medium angular blocky; firm; few fine roots; common large intersecting slickensides that have distinct polished and grooved surfaces; planes of slickensides are 2 to 3 inches apart; common medium distinct strong brown (7.5YR 5/8) and common fine prominent yellowish red (5YR 5/8) masses of iron accumulation; few fine soft black masses (iron and manganese oxides); extremely acid; clear wavy boundary.

Bssg2—42 to 60 inches; light brownish gray (10YR 6/2) clay; weak very coarse subangular blocky structure parting to strong medium angular blocky; firm; few fine roots; common large intersecting slickensides that have distinct polished and grooved surfaces; planes of slickensides are 1 or 2 inches apart; common fine fragments of shale; common medium and coarse distinct strong brown

(7.5YR 5/6) and yellowish brown (10YR 5/6) and few medium prominent red (2.5YR 4/6) masses of iron accumulation; few fine soft black masses (iron and manganese oxides); extremely acid; clear irregular boundary.

Cr—60 to 80 inches; clayey shale; strong thick platy rock structure; firm; very strongly acid.

The thickness of the solum ranges from 40 to more than 60 inches. Depth to clayey shale is 60 inches or more. The quantity of soft, dark masses of iron and manganese oxides ranges from none to common throughout the profile.

The A or Ap horizon has hue of 10YR, value of 3 or 4, and chroma of 2 or 3. The texture is silty clay loam or silty clay. Reaction is very strongly acid or strongly acid, except where lime has been applied.

The Btg horizon has hue of 10YR or 2.5Y, value of 4 to 6, and chroma 1 or 2. It has few to many redoximorphic accumulations in shades of yellow, brown, and red. It is dominantly silty clay or clay. In some pedons, however, the upper part of the horizon has a thin subhorizon of silty clay loam. Reaction ranges from extremely acid to strongly acid.

The Bssg horizon has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 1 or 2; or it has no dominant matrix color and is multicolored in shades of gray, yellow, brown, and red. It is clay or silty clay. Reaction ranges from extremely acid to strongly acid.

The Cr horizon is clayey shale. It has platy or conchoidal rock structure and is restrictive to root growth. It can be excavated with difficulty with hand tools and is rippable by light machinery.

Maytag Series

The Maytag series consists of very deep, moderately well drained soils that formed in alkaline, clayey sediments underlain by chalk. These soils are on ridgetops and side slopes in the uplands in the southwestern part of the county. Slopes range from 3 to 15 percent. These soils are fine, smectitic, thermic Oxyaquic Hapluderts.

Maytag soils are geographically associated with Boswell, Brantley, Leeper, Oktibbeha, and Sumter soils. Boswell soils are in higher landscape positions than those of the Maytag soils and are acid throughout. Brantley and Oktibbeha soils are commonly in lower landscape positions than those of the Maytag soils. Brantley soils are acid throughout. Oktibbeha soils are acid in the upper part of the subsoil. The somewhat poorly drained Leeper soils are on flood plains. Sumter soils are in landscape positions similar to those of the Maytag soils but are moderately deep over chalk.

Typical pedon of Maytag silty clay loam in an area of Sumter-Maytag complex, 3 to 8 percent slopes, eroded; about 1.3 miles south of Melvin; 1,600 feet south and 200 feet west of the northeast corner of sec. 22, T. 11 N., R. 5 W.

Ap—0 to 5 inches; dark grayish brown (2.5Y 4/2) silty clay loam; moderate medium granular structure; friable; common fine and medium roots; many fine soft masses of calcium carbonate; strongly effervescent; moderately alkaline; clear wavy boundary.

Bk—5 to 11 inches; light yellowish brown (2.5Y 6/4) silty clay; moderate medium subangular blocky structure; firm; common fine and few medium roots; common soft masses and hard nodules of calcium carbonate; many fine prominent brownish yellow (10YR 6/8) masses of iron accumulation; violently effervescent; moderately alkaline; clear wavy boundary.

Bkss1—11 to 18 inches; silty clay, light yellowish brown (2.5Y 6/4) interior and light gray (2.5Y 7/2) exterior; moderate coarse prismatic structure parting to strong coarse angular blocky; firm; few fine and medium roots; few large intersecting slickensides that have faint, slightly grooved surfaces; common soft masses and hard nodules of calcium carbonate; light gray colors on faces of peds and slickensides are iron depletions; many medium prominent brownish yellow (10YR 6/8) masses of iron accumulation; violently effervescent; moderately alkaline; gradual wavy boundary.

Bkss2—18 to 30 inches; silty clay, light yellowish brown (2.5Y 6/4) interior and light gray (2.5Y 7/2) exterior; moderate coarse subangular blocky structure; firm; few fine and medium roots; common large intersecting slickensides that have prominent polished and grooved surfaces; common soft masses and hard nodules of calcium carbonate; light gray colors on faces of peds and slickensides are iron depletions; common medium prominent brownish yellow (10YR 6/8) masses of iron accumulation; violently effervescent; moderately alkaline; gradual wavy boundary.

Bkss3—30 to 42 inches; silty clay, light yellowish brown (2.5Y 6/4) interior and light gray (2.5Y 7/2) exterior; weak coarse subangular blocky structure; firm; few large intersecting slickensides that have faint, slightly grooved surfaces; common soft masses and hard nodules of calcium carbonate; light gray colors on faces of peds and slickensides are iron depletions; many coarse distinct light yellowish brown (10YR 6/4) masses of iron accumulation; violently effervescent; moderately alkaline; gradual wavy boundary.

BC—42 to 52 inches; silty clay loam, light yellowish brown (2.5Y 6/4) interior and light gray (2.5Y 7/2) exterior; weak coarse angular blocky structure; firm; common pressure faces; common soft masses and hard nodules of calcium carbonate; many coarse distinct olive yellow (2.5Y 6/6) masses of iron accumulation; violently effervescent; moderately alkaline; gradual wavy boundary.

C1—52 to 70 inches; light gray (2.5Y 7/2) silty clay; massive; firm; common soft masses and hard nodules of calcium carbonate; common medium distinct light yellowish brown (2.5Y 6/4) masses of iron accumulation; violently effervescent; moderately alkaline; gradual wavy boundary.

C2—70 to 80 inches; light yellowish brown (2.5Y 6/3) silty clay; massive; firm; common soft masses and hard nodules of calcium carbonate; common fine distinct olive yellow (2.5Y 6/6) masses of iron accumulation; violently effervescent; moderately alkaline.

The thickness of the solum ranges from 45 to more than 60 inches. Depth to soft chalk is more than 60 inches. The quantity of soft masses and hard nodules of calcium carbonate is few or common throughout the profile. Reaction is slightly alkaline or moderately alkaline throughout the profile.

The A or Ap horizon has hue of 10YR or 2.5Y, value of 3 to 5, and chroma of 2 to 4. The texture is silty clay loam or silty clay.

The Bk horizon, if it occurs, has hue of 2.5Y or 5Y, value of 4 to 7, and chroma of 3 or 4. The quantity of redoximorphic depletions in shades of gray and redoximorphic accumulations in shades of yellow and brown ranges from none to many. The texture is silty clay loam, silty clay, or clay.

The Bkss horizon has hue of 2.5Y or 5Y, value of 4 to 7, and chroma of 2 to 5. It has common or many redoximorphic depletions in shades of gray and redoximorphic accumulations in shades of yellow and brown. It is silty clay or clay.

The BC horizon, if it occurs, has hue of 2.5Y, value of 6 or 7, and chroma of 2 to 8. It has common or many redoximorphic depletions in shades of gray and redoximorphic accumulations in shades of yellow and brown. It is silty clay loam, silty clay, or clay.

The C horizon, which occurs in most pedons, has hue of 2.5Y or 5Y, value of 6 or 7, and chroma of 2 to 4. It has few or common redoximorphic depletions in shades of gray and redoximorphic accumulations in shades of yellow and brown. It is silty clay loam, silty clay, or clay.

McCrory Series

The McCrory series consists of very deep, poorly drained soils that formed in loamy sediments that contain appreciable amounts of exchangeable sodium. These soils are on low terraces and are subject to occasional flooding for brief periods. Slopes are 0 to 1 percent. These soils are fine-loamy, mixed, active, thermic Albic Glossic Natraqualfs.

McCrory soils are geographically associated with Deerford, Izagora, and Kinston soils. The somewhat poorly drained Deerford soils are in positions similar to those of McCrory soils but are on slightly convex slopes. Izagora soils are on stream terraces at the slightly higher elevations and do not have a natric horizon. The poorly drained Kinston soils are on flood plains.

Typical pedon of McCrory loam, in an area of McCrory-Deerford complex, 0 to 2 percent slopes, occasionally flooded; about 4.3 miles southwest of Jachin; 2,600 feet south and 1,400 feet east of the northwest corner of sec. 20, T. 14 N., R. 2 W.

Ap—0 to 4 inches; dark grayish brown (10YR 4/2) loam; weak fine subangular blocky structure; very friable; many fine, medium, and coarse roots; extremely acid; abrupt wavy boundary.

B/E—4 to 10 inches; 80 percent grayish brown (10YR 5/2) loam (B); moderate medium subangular blocky structure; friable; common fine, medium, and coarse roots; about 20 percent light brownish gray (10YR 6/2) loam (E) in streaks and surrounding peds; common coarse distinct strong brown (7.5YR 5/6) and yellowish brown (10YR 5/4) masses of iron accumulation; very strongly acid; clear smooth boundary.

Btg—10 to 22 inches; gray (10YR 5/1) clay loam; weak coarse prismatic structure parting to moderate medium subangular blocky; firm; few fine and medium roots between peds; common faint clay films on faces of peds; thin seams of light gray (10YR 7/2) loam between prisms; few fine black masses (iron and manganese oxides); common medium and coarse prominent strong brown (7.5YR 5/6) and yellowish brown (10YR 5/6) masses of iron accumulation; very strongly acid; clear wavy boundary.

Btng1—22 to 36 inches; light brownish gray (10YR 6/2) clay loam; weak coarse prismatic structure parting to moderate medium subangular blocky; firm; few fine and very fine roots between peds; common faint clay films on faces of peds; thin seams of light gray (10YR 7/2) loam between prisms; few fine black masses (iron and manganese oxides); common medium distinct strong brown (7.5YR 5/6) and yellowish brown (10YR 5/6) masses of iron accumulation; extremely acid; clear wavy boundary.

Btng2—36 to 43 inches; light brownish gray (10YR 6/2) clay loam; weak coarse prismatic structure parting to moderate medium subangular blocky; firm; common faint clay films on faces of peds; few fine black masses (iron and manganese oxides); common medium prominent strong brown (7.5YR 5/8) and red (2.5YR 5/8) masses of iron accumulation; extremely acid; gradual wavy boundary.

Btng3—43 to 50 inches; light brownish gray (10YR 6/2) clay loam; moderate coarse subangular blocky structure; firm; common faint clay films on faces of peds; few fine black masses (iron and manganese oxides); common medium prominent strong brown (7.5YR 5/8) and red (2.5YR 5/8) masses of iron accumulation; very strongly acid; clear wavy boundary.

Btng4—50 to 63 inches; light brownish gray (2.5Y 6/2) sandy clay loam; weak coarse subangular blocky structure; firm; common faint clay films on faces of peds; few fine white crystals; few fine black masses (iron and manganese oxides); common medium prominent strong brown (7.5YR 5/8) and brownish yellow (10YR 6/6) masses of iron accumulation; neutral; clear wavy boundary.

C—63 to 80 inches; light brownish gray (2.5Y 6/2) very fine sandy loam; massive; friable; few fine black masses (iron and manganese oxides); light yellowish brown (2.5Y 6/4) and dark yellowish brown (10YR 4/6) masses of iron accumulation; slightly alkaline.

The thickness of the solum ranges from 40 to more than 60 inches.

The A or Ap horizon has hue of 10YR, value of 3 or 4, and chroma of 2 or 3. Reaction ranges from extremely acid to strongly acid.

The B/E horizon, if it occurs, has hue of 10YR, value of 5 or 6, and chroma of 1 or 2. The quantity of redoximorphic accumulations in shades of brown and red ranges from none to many. The texture is sandy loam, fine sandy loam, or loam. Reaction ranges from extremely acid to strongly acid.

The Btg horizon, if it occurs, has hue of 10YR, value of 5 or 6, and chroma of 1 or 2. It has few to many redoximorphic accumulations in shades of brown and red. It is loam, sandy clay loam, or clay loam. Reaction ranges from extremely acid to strongly acid.

The Btng horizon has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 1 or 2. It has common or many redoximorphic accumulations in shades of brown, yellow, and red. It is sandy clay loam or clay loam. Reaction ranges from extremely acid to neutral in the upper part and from strongly acid to moderately alkaline in the lower part.

The C horizon, if it occurs, has colors similar to those of the Btng horizon. The texture is fine sandy loam or very fine sandy loam. Reaction ranges from neutral to moderately alkaline.

McLaurin Series

The McLaurin series consists of very deep, well drained soils that formed in loamy sediments. These soils are on broad ridgetops in the uplands in the southwestern part of the county. Slopes range from 2 to 5 percent. These soils are coarse-loamy, siliceous, subactive, thermic Typic Paleudults.

McLaurin soils are geographically associated with Boykin, Luverne, Smithdale, and Wadley soils. Boykin and Wadley soils are in positions similar to those of the McLaurin soils but at slightly higher elevations or on the lower side slopes. They have a thick, sandy epipedon. Luverne and Smithdale soils are commonly in the lower positions on side slopes. Luverne soils have a clayey argillic horizon. Smithdale soils are fine-loamy and do not have a bisequual profile.

Typical pedon of McLaurin fine sandy loam, 2 to 5 percent slopes; about 1.5 miles east of Aquilla; 1,200 feet south and 2,400 feet west of the northeast corner of sec. 33, T. 9 N., R. 4 W.

Ap1—0 to 2 inches; dark grayish brown (10YR 4/2) fine sandy loam; weak fine granular structure; very friable; common fine, medium, and coarse roots; very strongly acid; clear smooth boundary.

Ap2—2 to 6 inches; dark brown (10YR 4/3) fine sandy loam; weak medium subangular blocky structure; very friable; common fine and medium roots; very strongly acid; clear smooth boundary.

Ap3—6 to 9 inches; dark yellowish brown (10YR 4/4) fine sandy loam; weak coarse subangular blocky structure; very friable; common fine and medium roots; common spots of strong brown (7.5YR 5/6) fine sandy loam; very strongly acid; clear wavy boundary.

Bt1—9 to 14 inches; yellowish red (5YR 4/6) fine sandy loam; weak coarse subangular blocky structure; very friable; common fine and few medium roots; sand grains coated and bridged with clay; few faint clay films in pores and root channels; very strongly acid; clear wavy boundary.

Bt2—14 to 22 inches; red (2.5YR 4/6) loam; moderate coarse subangular blocky structure; friable; common fine and few medium roots; few faint clay films on faces of peds and lining root channels and pores; very strongly acid; clear wavy boundary.

Bt3—22 to 36 inches; yellowish red (5YR 4/6) fine sandy loam; weak medium subangular blocky structure; friable; few fine and medium roots; few faint clay films on faces of peds; sand grains coated and bridged with clay; very strongly acid; clear wavy boundary.

B/E—36 to 48 inches; 85 percent yellowish red (5YR 5/6) fine sandy loam (B); weak coarse subangular blocky structure; very friable; 15 percent light brown (7.5YR 6/4) loamy fine sand (E); massive; very friable; very strongly acid; clear wavy boundary.

B´t—48 to 80 inches; yellowish red (5YR 5/8) sandy loam; weak coarse subangular blocky structure; very friable; sand grains coated and bridged with clay; very strongly acid.

The solum is more than 60 inches thick. Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed.

The Ap or A horizon has hue of 7.5YR or 10YR, value of 3 to 5, and chroma of 2 to 4.

The E horizon, if it occurs, has hue of 10YR, value of 4 to 6, and chroma of 3 to 6. The texture is commonly sandy loam or fine sandy loam. Less commonly, it is loamy fine sand.

The Bt horizon has hue of 2.5YR or 5YR, value of 4 or 5, and chroma of 4 to 8. It is sandy loam, fine sandy loam, or loam.

The B part of the B/E horizon has the same range in color as the Bt horizon. It is fine sandy loam or sandy loam. The E part has hue of 7.5YR or 10YR, value of 6 to 8, and chroma of 3 to 6. It is loamy sand or loamy fine sand.

The B´t horizon has hue of 10R to 5YR, value of 4 or 5, and chroma of 6 to 8. In some pedons it has relic redoximorphic accumulations in shades of red, brown, and yellow. The texture is sandy loam or sandy clay loam.

Mooreville Series

The Mooreville series consists of very deep, moderately well drained soils that formed in loamy alluvium. These soils are on the higher parts of the flood plains along the Tombigbee River and other large streams. In most years they are subject to flooding for brief periods in late winter or in spring. Slopes range from 0 to 2 percent. These soils are fine-loamy, siliceous, active, thermic Fluvaquentic Dystrudepts.

Mooreville soils are geographically associated with Bigbee, Riverview, Una, and Urbo soils. Bigbee and Riverview soils are in slightly higher positions than those of the Mooreville soils. Bigbee soils are sandy throughout. Riverview soils do not have low-chroma iron depletions in the upper part of the solum. The poorly drained Una soils and the somewhat poorly drained Urbo soils are in the slightly lower positions on the flood plain.

Typical pedon of Mooreville loam, in an area of Urbo-Mooreville-Una complex, gently undulating, frequently flooded; about 1.5 miles southeast of Lavaca; 2,300 feet south and 100 feet east of the northwest corner of sec. 2, T. 13 N., R. 1 W.

A—0 to 3 inches; very dark grayish brown (10YR 3/2) loam; moderate fine granular structure; very friable; many fine and common medium and coarse roots; strongly acid; abrupt smooth boundary.

Bw1—3 to 8 inches; dark brown (10YR 4/3) loam; weak medium subangular blocky structure; very friable; many fine and few medium and coarse roots; strongly acid; abrupt smooth boundary.

Bw2—8 to 18 inches; dark yellowish brown (10YR 4/4) clay loam; weak medium subangular blocky structure; firm; common fine and few medium roots; very strongly acid; clear smooth boundary.

Bw3—18 to 27 inches; yellowish brown (10YR 5/4) clay loam; weak medium subangular blocky structure; firm; common fine roots; common fine and medium distinct light brownish gray (10YR 6/2) iron depletions; few medium distinct strong brown (7.5YR 5/6) masses of iron accumulation; very strongly acid; clear wavy boundary.

Bw4—27 to 41 inches; yellowish brown (10YR 5/4) clay loam; weak medium subangular blocky structure; firm; few fine roots; few black stains (iron and manganese oxides) on faces of peds; many medium distinct light brownish gray (10YR 6/2) iron depletions; common medium distinct strong brown (7.5YR 5/6) masses of iron accumulation; very strongly acid; clear smooth boundary.

Bw5—41 to 51 inches; yellowish brown (10YR 5/6) loam; weak coarse subangular blocky structure; very friable; few black stains (iron and manganese oxides) on faces of peds; many medium and coarse distinct light brownish gray (10YR 6/2) iron depletions; many medium and coarse distinct strong brown (7.5YR 5/6) masses of iron accumulation; very strongly acid; clear smooth boundary.

C1—51 to 72 inches; 45 percent yellowish brown (10YR 5/6), 35 percent light brownish gray (10YR 6/2), and 20 percent strong brown (7.5YR 4/6) sandy clay loam; massive; friable; areas of yellowish brown and strong brown are masses of iron accumulation; areas of light brownish gray are iron depletions; very strongly acid; gradual smooth boundary.

C2—72 to 80 inches; 45 percent light brownish gray

(2.5Y 6/2), 40 percent yellowish brown (10YR 5/4), and 15 percent strong brown (7.5YR 5/6) sandy loam; massive; very friable; areas of light brownish gray are iron depletions; areas of yellowish brown and strong brown are masses of iron accumulation; very strongly acid.

The solum is more than 40 inches thick. Reaction is very strongly acid or strongly acid throughout the profile. The quantity of black stains and concretions of iron and manganese oxides ranges from none to common throughout the profile.

The A horizon has hue of 10YR, value of 3 or 4, and chroma of 2 or 3.

The upper part of the Bw horizon has hue of 10YR, value of 4 or 5, and chroma of 3 to 6. The quantity of redoximorphic accumulations in shades of brown and yellow and redoximorphic depletions in shades of gray ranges from none to common. The lower part has hue of 10YR, value of 4 to 6, and chroma of 3 to 6; or it has no dominant matrix color and is multicolored in shades of gray and brown. It has few to many redoximorphic accumulations in shades of brown and redoximorphic depletions in shades of gray. The texture of the Bw horizon is loam, sandy clay loam, silty clay loam, or clay loam.

The C horizon commonly has no dominant matrix color and is multicolored in shades of brown and gray, or it has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 3 to 6. It has few to many redoximorphic accumulations in shades of brown and redoximorphic depletions in shades of gray. The texture is commonly sandy loam, loam, sandy clay loam, or clay loam. In many pedons, however, the horizon has thin strata of finer- and coarser-textured materials.

Ochlockonee Series

The Ochlockonee series consists of very deep, well drained soils that formed in loamy and sandy alluvium. These soils are on the higher parts of flood plains along large streams. They are subject to flooding for very brief periods several times in most years, mostly in winter and spring. Slopes are 0 to 1 percent. These soils are coarse-loamy, siliceous, active, acid, thermic Typic Udifluvents.

Ochlockonee soils are geographically associated with Bibb, Bigbee, Iuka, and Kinston soils. The poorly drained Bibb soils are in the lower positions. Bigbee soils are in the slightly higher positions and are sandy throughout. The moderately well drained Iuka soils are in the slightly lower positions. The poorly drained Kinston soils are in the lower positions and are fine-loamy.

Typical pedon of Ochlockonee sandy loam, in an area of Ochlockonee, Kinston, and Iuka soils, 0 to 1 percent slopes, frequently flooded; about 4 miles southwest of Jachin; 1,200 feet north and 2,300 feet east of the southwest corner of sec. 17, T. 14 N., R. 2 W.

A1—0 to 3 inches; dark brown (10YR 3/3) sandy loam; weak medium granular structure; very friable; common fine, medium, and coarse roots; very strongly acid; clear wavy boundary.

A2—3 to 10 inches; dark yellowish brown (10YR 4/4) sandy loam; weak coarse granular structure; very friable; common fine and medium roots; very strongly acid; clear wavy boundary.

C1—10 to 14 inches; very pale brown (10YR 7/4) loamy fine sand; massive; very friable; common fine and medium roots; very strongly acid; gradual wavy boundary.

C2—14 to 30 inches; yellowish brown (10YR 5/4) fine sandy loam; massive; very friable; few fine roots; common thin strata of light yellowish brown (10YR 6/4) and dark yellowish brown (10YR 4/4) sandy loam; very strongly acid; gradual wavy boundary.

C3—30 to 60 inches; light yellowish brown (10YR 6/4) loamy fine sand; single grained; loose; very strongly acid.

Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 10YR, value of 3 to 5, and chroma of 2 to 4. Some pedons have a buried A horizon below a depth of 25 inches. The buried A horizon has the same range in color and texture as the A horizon.

The C horizon has hue of 10YR or 2.5Y, value of 4 to 7, and chroma of 3 to 6. It is loamy fine sand, loamy sand, sandy loam, or fine sandy loam.

Okeelala Series

The Okeelala series consists of very deep, well drained soils that formed in loamy marine sediments. These soils are on side slopes in the uplands in the southern part of the county. Slopes range from 15 to 60 percent. These soils are fine-loamy, siliceous, semiactive, thermic Ultic Hapludalfs.

Okeelala soils are geographically associated with Boswell, Brantley, Hannon, and Toxey soils. Boswell soils are in lower positions than those of the Okeelala soils and have a clayey argillic horizon. Brantley soils are in landscape positions similar to those of the Okeelala soils and have a clayey argillic horizon. Hannon and Toxey soils are in higher positions than those of the Okeelala soils and have clayey subsoil layers.

Typical pedon of Okeelala loamy sand, in an area of

Brantley-Okeelala complex, 15 to 35 percent slopes, eroded; about 4.2 miles south of Melvin; 100 feet south and 900 feet east of the northwest corner of sec. 2, T. 10 N., R. 5 W.

A—0 to 2 inches; very dark grayish brown (10YR 3/2) loamy sand; single grained; loose; many fine and few medium and coarse roots; strongly acid; abrupt smooth boundary.

E—2 to 12 inches; yellowish brown (10YR 5/4) loamy sand; single grained; loose; common fine and medium roots; strongly acid; abrupt wavy boundary.

Bt1—12 to 16 inches; yellowish red (5YR 5/8) sandy loam; weak fine subangular blocky structure; very friable; common fine and few medium roots; few faint clay films on faces of peds; strongly acid; clear smooth boundary.

Bt2—16 to 30 inches; yellowish red (5YR 5/6) sandy clay loam; weak coarse prismatic structure parting to moderate medium subangular blocky; friable; few fine and medium roots; common faint clay films on faces of peds; very strongly acid; gradual wavy boundary.

Bt3—30 to 52 inches; yellowish red (5YR 5/8) sandy loam; weak medium subangular blocky structure; very friable; few fine roots; few faint clay films on faces of peds; sand grains coated and bridged with clay; very strongly acid; gradual wavy boundary.

C—52 to 80 inches; yellowish red (5YR 5/8) sandy loam; massive; very friable; very strongly acid.

The thickness of the solum ranges from 40 to 60 inches. Reaction is very strongly acid or strongly acid throughout the profile.

The A horizon has hue of 10YR, value of 3 or 4, and chroma of 2 to 4. It is loamy sand or fine sandy loam.

The E horizon, if it occurs, has hue of 10YR, value of 5 or 6, and chroma of 3 or 4. It is loamy sand, sandy loam, or fine sandy loam.

The Bt horizon has hue of 2.5YR or 5YR, value of 4 or 5, and chroma of 4 to 8. It is sandy loam, loam, sandy clay loam, or clay loam.

The C horizon has hue of 5YR to 10YR, value of 4 to 6, and chroma of 4 to 8. The texture is commonly sandy loam. Less commonly, it is loamy sand or stratified loamy sand and sandy loam.

Oktibbeha Series

The Oktibbeha series consists of very deep, moderately well drained soils that formed in acid, clayey sediments overlying alkaline clays and soft limestone (chalk). These soils are on ridgetops in the uplands in the southwestern part of the county. Slopes range from 1 to 5 percent. These soils are very-fine, smectitic, thermic Chromic Dystruderts.

Oktibbeha soils are geographically associated with Boswell, Louin, Maytag, and Sumter soils. Boswell soils are in higher landscape positions than those of the Oktibbeha soils, have mixed mineralogy, and are acid throughout. Louin soils are in the slightly lower, less convex positions, are somewhat poorly drained, and have a brownish subsoil. Maytag and Sumter soils are in slightly higher positions than those of the Oktibbeha soils and are alkaline throughout.

Typical pedon of Oktibbeha clay, 1 to 5 percent slopes; about 0.8 mile southwest of Isney; 1,300 feet north and 100 feet west of the southeast corner of sec. 3, T. 9 N., R. 5 W.

Ap—0 to 2 inches; brown (10YR 4/3) clay; moderate medium subangular blocky structure; firm; many fine and medium roots; very strongly acid; abrupt smooth boundary.

Bt—2 to 8 inches; yellowish red (5YR 5/6) clay; moderate medium subangular blocky structure; firm; common fine and medium roots; few faint clay films on faces of peds; few fine distinct red (2.5YR 4/6) masses of iron accumulation; few medium distinct pale brown (10YR 6/3) iron depletions; very strongly acid; abrupt smooth boundary.

Btss1—8 to 17 inches; yellowish red (5YR 5/6) clay; strong medium angular blocky structure; firm; common fine, medium, and coarse roots; few large intersecting slickensides that have faintly grooved surfaces; few faint clay films on faces of peds; many medium distinct pale brown (10YR 6/3) iron depletions; few fine distinct red (2.5YR 4/6) masses of iron accumulation; very strongly acid; clear wavy boundary.

Btss2—17 to 24 inches; brown (7.5YR 5/4) clay; strong coarse angular blocky structure; firm; common fine and medium roots; common large intersecting slickensides that have distinct polished and grooved surfaces; many medium prominent light brownish gray (10YR 6/2) and pale brown (10YR 6/3) iron depletions; common medium distinct yellowish red (5YR 5/6) masses of iron accumulation; very strongly acid; clear wavy boundary.

Btss3—24 to 36 inches; yellowish brown (10YR 5/6) clay; strong medium and coarse angular blocky structure; firm; common fine and medium roots; common large intersecting slickensides that have prominent polished and grooved surfaces; few black stains (iron and manganese oxides) on surfaces of slickensides; common medium distinct light brownish gray (10YR 6/2) iron depletions; strongly acid; clear wavy boundary.

Bkss—36 to 61 inches; clay, brownish yellow (10YR 6/8) interior and pale brown (10YR 6/3) exterior; weak coarse angular blocky structure; firm; common fine and medium roots; common large intersecting slickensides that have prominent polished and grooved surfaces; common fine and medium soft masses and nodules of calcium carbonate; many medium distinct light gray (10YR 7/2) iron depletions; common fine and medium distinct brownish yellow (10YR 6/8) masses of iron accumulation; violently effervescent; moderately alkaline; clear wavy boundary.

2C—61 to 80 inches; light yellowish brown (2.5Y 6/3) soft limestone (chalk); weak thick platy rock structure; few fine fractures in the upper part; firm; few fine roots; many fine and medium soft masses and hard nodules of calcium carbonate; common medium prominent brownish yellow (10YR 6/8) masses of iron accumulation; violently effervescent; moderately alkaline.

The depth to an alkaline horizon ranges from 30 to 50 inches.

The A or Ap horizon has hue of 7.5YR or 10YR, value of 3 or 4, and chroma of 2 or 3. Reaction is very strongly acid or strongly acid, except in areas where lime has been applied.

The Bt horizon has hue of 2.5YR or 5YR, value of 4 or 5, and chroma of 6 to 8. The quantity of redoximorphic accumulations in shades of red and brown and redoximorphic depletions in shades of gray ranges from none to common. Reaction ranges from extremely acid to strongly acid.

The upper part of the Btss horizon has hue of 2.5YR to 10YR, value of 4 to 6, and chroma of 4 to 8; or it has no dominant matrix color and is multicolored in shades of red, brown, and gray. The lower part has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 4 to 6; or it has no dominant matrix color and is multicolored in shades of brown, gray, and red. The Btss horizon has few to many redoximorphic depletions in shades of gray and redoximorphic accumulations in shades of brown and red. The quantity of redoximorphic features generally increases with depth. Reaction ranges from very strongly acid to moderately acid.

The Bkss horizon dominantly has hue of 10YR to 5Y and value of 4 to 6 and chroma of 4 to 8 in ped interiors and 2 to 4 on ped exteriors and on faces of slickensides. In some pedons, however, the horizon does not have a dominant matrix color and is multicolored in shades of brown, gray, and red. The Bkss horizon has common or many redoximorphic depletions in shades of gray and redoximorphic accumulations in shades of brown and red. It has few to many soft masses and nodules of calcium carbonate. It is clay or silty clay. Reaction ranges from neutral to moderately alkaline.

The 2C horizon, if it occurs, is soft limestone (chalk) or calcareous clay. It is massive or has platy rock structure. It is slightly alkaline or moderately alkaline. Some pedons have a 2Cr horizon below a depth of 60 inches. It can be excavated with difficulty with hand tools and is rippable by light machinery.

Rayburn Series

The Rayburn series consists of deep, moderately well drained soils that formed in acid, clayey marine sediments and the underlying siltstone. These soils are on footslopes, toeslopes, and benches in the uplands in the southeastern part of the county. Slopes range from 5 to 15 percent. These soils are fine, smectitic, thermic Vertic Hapludalfs.

Rayburn soils are geographically associated with Arundel, Cantuche, Luverne, and Williamsville soils. Arundel and Cantuche soils are in higher positions than those of the Rayburn soils. Arundel soils are moderately deep over bedrock. Cantuche soils are shallow over bedrock. Luverne and Williamsville soils are in higher positions than those of the Rayburn soils, have mixed mineralogy, and are very deep over bedrock.

Typical pedon of Rayburn silt loam, 5 to 15 percent slopes, eroded; about 2 miles southeast of Bladon Springs; 2,500 feet south and 1,500 feet east of the northwest corner of sec. 33, T. 9 N., R. 2 W.

A—0 to 2 inches; dark brown (10YR 4/3) silt loam; weak medium granular structure; very friable; many fine and medium roots; extremely acid; abrupt smooth boundary.

E—2 to 5 inches; light yellowish brown (10YR 6/4) silt loam; weak coarse subangular blocky structure; very friable; many fine and medium roots; few medium distinct strong brown (7.5YR 5/6) masses of iron accumulation; extremely acid; abrupt smooth boundary.

Bt—5 to 12 inches; red (2.5YR 5/6) clay; moderate medium subangular blocky structure; firm; common fine, medium, and coarse roots; few faint clay films on faces of peds; extremely acid; clear wavy boundary.

Btss1—12 to 19 inches; yellowish red (5YR 5/6) clay; moderate medium subangular blocky structure; firm; common fine roots; common large intersecting slickensides that have polished and slightly grooved surfaces; few faint clay films on faces of peds; 5 percent pararock fragments of siltstone; many medium distinct light brownish gray

(2.5Y 6/2) iron depletions; common medium distinct red (2.5YR 4/6) masses of iron accumulation; extremely acid; clear wavy boundary.

Btss2—19 to 34 inches; light olive gray (5Y 6/2) silty clay; moderate medium subangular blocky structure; firm; common fine roots; common large intersecting slickensides that have polished and grooved surfaces; few faint clay films on faces of peds; 5 percent pararock fragments of siltstone; extremely acid; gradual wavy boundary.

Btss3—34 to 43 inches; light olive gray (5Y 6/2) silty clay; moderate medium subangular blocky structure; firm; few fine roots; common large intersecting slickensides that have polished and grooved surfaces; few faint clay films on faces of peds; about 10 percent pararock fragments of siltstone; common medium prominent yellowish brown (10YR 5/8) masses of iron accumulation; extremely acid; gradual smooth boundary.

BC—43 to 55 inches; light olive gray (5Y 6/2) silty clay; weak coarse subangular blocky structure; firm; about 10 percent pararock fragments of siltstone; many coarse prominent brownish yellow (10YR 6/8) masses of iron accumulation; extremely acid; gradual wavy boundary.

Cr—55 to 65 inches; light olive gray (5Y 6/2) siltstone; massive; very firm; common coarse prominent yellowish brown (10YR 5/6) masses of iron accumulation on surfaces; extremely acid.

The thickness of the solum and the depth to bedrock range from 40 to 60 inches. The content of pararock fragments of siltstone ranges from 0 to 15 percent throughout the profile. Reaction is extremely acid or very strongly acid throughout the profile.

The A or Ap horizon has hue of 10YR, value of 3 to 5, and chroma of 2 or 3.

The E horizon, if it occurs, has hue of 10YR, value of 5 or 6, and chroma of 2 to 4. It is fine sandy loam, sandy loam, or silt loam.

The Bt horizon has hue of 2.5YR or 5YR, value of 4 or 5, and chroma of 4 to 8. The quantity of redoximorphic accumulations in shades of brown and red ranges from none to common. The texture is silty clay or clay.

The Btss horizon has hue of 5YR to 5Y, value of 5 or 6, and chroma of 2 to 6; or it has no dominant matrix color and is multicolored in shades of red, brown, yellow, and gray. It has common or many redoximorphic accumulations in shades of red, brown, and yellow and few to many redoximorphic depletions in shades of gray. It is silty clay or clay.

The BC horizon, if it occurs, has hue of 10YR to 5Y, value of 5 or 6, and chroma of 2 or 3; or it has no dominant matrix color and is multicolored in shades of red, brown, yellow, and gray. It has common or many redoximorphic accumulations in shades of red, brown, and yellow and redoximorphic depletions in shades of gray. It is silty clay loam, clay loam, silty clay, or clay.

The Cr horizon is weathered siltstone or claystone. It is massive or has thick platy rock structure. It can be cut with hand tools with difficulty and is rippable by light equipment.

Riverview Series

The Riverview series consists of very deep, well drained soils that formed in loamy alluvium. These soils are on natural levees on the flood plain along the Tombigbee River. These soils are subject to occasional flooding for brief periods. Slopes range from 0 to 2 percent. These soils are fine-loamy, mixed, active, thermic Fluventic Dystrudepts.

Riverview soils are geographically associated with Bigbee, Mooreville, Una, and Urbo soils. Bigbee soils are in slightly higher positions on the natural levees than the Riverview soils and are sandy throughout. The moderately well drained Mooreville soils and the somewhat poorly drained Urbo soils are in the slightly lower positions on the flood plains. The poorly drained Una soils are in the lower, more concave positions on the flood plains.

Typical pedon of Riverview loam, 0 to 2 percent slopes, occasionally flooded; about 1.8 miles southeast of Womack Hill in the Choctaw National Wildlife Refuge; 1,900 feet south and 1,000 feet west of the northeast corner of sec. 21, T. 10 N., R. 2 W.

A—0 to 5 inches; dark brown (10YR 3/3) loam; moderate fine granular structure; very friable; many fine and common medium and coarse roots; very strongly acid; abrupt smooth boundary.

Bw1—5 to 9 inches; dark brown (10YR 4/3) loam; weak medium subangular blocky structure; very friable; common fine, medium, and coarse roots; very strongly acid; clear smooth boundary.

Bw2—9 to 12 inches; dark yellowish brown (10YR 4/4) clay loam; weak medium subangular blocky structure; friable; common fine and medium roots; very strongly acid; clear smooth boundary.

Bw3—12 to 33 inches; dark yellowish brown (10YR 4/4) loam; weak coarse subangular blocky structure; very friable; common fine and few medium roots; very strongly acid; gradual smooth boundary.

Bw4—33 to 51 inches; dark yellowish brown (10YR 4/4) fine sandy loam; weak coarse subangular blocky structure; very friable; few fine roots; very strongly acid; gradual smooth boundary.

C1—51 to 61 inches; brown (7.5YR 4/4) fine sandy loam; massive; very friable; very strongly acid; clear smooth boundary.

C2—61 to 80 inches; dark yellowish brown (10YR 4/4) loam; massive; very friable; very strongly acid.

The thickness of the solum ranges from 24 to 60 inches. Reaction ranges from very strongly acid to moderately acid throughout the profile, except where the surface layer has been limed. Some pedons have a buried A horizon or a buried B horizon or both below a depth of 25 inches. These horizons have the same range in color and texture as the A and B horizons.

The A or Ap horizon has hue of 10YR, value of 3 or 4, and chroma of 2 to 4.

The Bw horizon has hue of 7.5YR or 10YR, value of 4 to 6, and chroma of 3 to 6. The quantity of redoximorphic accumulations in shades of brown and red ranges from none to common. The texture is fine sandy loam, loam, sandy clay loam, or clay loam.

The C horizon has hue of 7.5YR or 10YR, value of 4 to 6, and chroma of 4 to 8. The quantity of redoximorphic accumulations in shades of brown, red, and yellow and redoximorphic depletions in shades of gray ranges from none to common. The texture is dominantly loamy sand, loamy fine sand, sandy loam, fine sandy loam, or loam. In some pedons, however, the horizon has thin strata of finer- and coarser-textured materials.

Savannah Series

The Savannah series consists of very deep, moderately well drained soils that have a fragipan. These soils formed in loamy sediments on high stream terraces. Slopes range from 0 to 5 percent. These soils are fine-loamy, siliceous, semiactive, thermic Typic Fragiudults.

Savannah soils are geographically associated with Izagora, Luverne, and Smithdale soils. Izagora soils are in positions similar to those of the Savannah soils but are at lower elevations and do not have a fragipan. The well drained Luverne and Smithdale soils are on ridgetops at the higher elevations and on side slopes at the higher or lower elevations. Luverne soils have a clayey argillic horizon. Smithdale soils are reddish and do not have a fragipan.

Typical pedon of Savannah silt loam, 2 to 5 percent slopes; about 1.6 miles northeast of Pushmataha; 2,000 feet south and 2,400 feet east of the northwest corner of sec. 1, T. 14 N., R. 4 W.

Ap1—0 to 3 inches; dark grayish brown (10YR 4/2) silt loam; weak fine granular structure; very friable; common fine and medium and few coarse roots; very strongly acid; clear smooth boundary.

Ap2—3 to 7 inches; brown (10YR 5/3) silt loam; weak fine granular structure; very friable; common fine, medium, and coarse roots; strongly acid; clear smooth boundary.

E—7 to 11 inches; light olive brown (2.5Y 5/4) silt loam; weak coarse subangular blocky structure; very friable; common fine, medium, and coarse roots; strongly acid; clear smooth boundary.

Bt1—11 to 24 inches; dark yellowish brown (10YR 4/6) loam; weak medium subangular blocky structure; friable; common fine and medium and few coarse roots; few faint clay films on faces of peds; few fine rounded weakly cemented slightly brittle masses that have black centers (iron and manganese oxides); very strongly acid; clear wavy boundary.

Bt2—24 to 30 inches; yellowish brown (10YR 5/6) loam; weak coarse prismatic structure parting to moderate medium subangular blocky; very friable; few faint clay films on faces of peds; common fine rounded weakly cemented slightly brittle masses that have black centers (iron and manganese oxides); few fine distinct light brownish gray (10YR 6/2) iron depletions; few medium prominent red (2.5YR 4/6) and few fine distinct strong brown (7.5YR 5/6) masses of iron accumulation; very strongly acid; clear wavy boundary.

Btx1—30 to 46 inches; yellowish brown (10YR 5/6) loam; weak very coarse prismatic structure; firm; dense and brittle in about 65 percent of the matrix; common faint clay films on faces of peds; common fine distinct light brownish gray (10YR 6/2) iron depletions; common medium distinct strong brown (7.5YR 5/6) and common coarse prominent yellowish red (5YR 5/6) masses of iron accumulation; very strongly acid; clear wavy boundary.

Btx2—46 to 65 inches; yellowish brown (10YR 5/6) loam; moderate very coarse prismatic structure; firm; dense and brittle in about 60 percent of the matrix; common faint clay films on faces of peds; continuous thin gray (10YR 5/1) clay depletions on faces of peds; common medium distinct light brownish gray (10YR 6/2) iron depletions; common medium prominent yellowish red (5YR 5/6) masses of iron accumulation; very strongly acid; clear wavy boundary.

B´t—65 to 80 inches; yellowish brown (10YR 5/6) clay loam; weak coarse subangular blocky structure; firm; common faint clay films on faces of peds; common medium distinct light brownish gray (10YR 6/2) and pale brown (10YR 6/3) iron depletions; common medium prominent yellowish red (5YR 5/6) masses of iron accumulation; very strongly acid.

The solum is more than 60 inches thick. Depth to the fragipan ranges from 20 to 34 inches. Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 10YR, value of 3 to 5, and chroma of 2 to 4.

The E horizon, if it occurs, has hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 3 or 4. It is sandy loam, fine sandy loam, loam, or silt loam.

The Bt horizon has hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 4 to 8. The quantity of redoximorphic accumulations in shades of red, yellow, and brown ranges from none to common, and the quantity of redoximorphic depletions in shades of gray is none or few. The texture is loam, sandy clay loam, or clay loam.

The Btx horizon has hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 4 to 8. It has common or many redoximorphic accumulations in shades of red, yellow, and brown and redoximorphic depletions in shades of gray. It is loam, sandy clay loam, or clay loam.

The B´t horizon, if it occurs, has hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 3 to 6. It has common or many redoximorphic accumulations in shades of red, yellow, and brown and redoximorphic depletions in shades of gray. It is loam, sandy clay loam, or clay loam.

Smithdale Series

The Smithdale series consists of very deep, well drained soils that formed in loamy sediments. These soils are on narrow ridgetops and side slopes in the uplands throughout the county. Slopes range from 1 to 35 percent. These soils are fine-loamy, siliceous, subactive, thermic Typic Hapludults.

Smithdale soils are geographically associated with Arundel, Boykin, Luverne, McLaurin, Savannah, and Wadley soils. Arundel soils are in landscape positions similar to those of the Smithdale soils but at slightly lower elevations, have a clayey argillic horizon, and are moderately deep over bedrock. Boykin and Luverne soils are in positions similar to those of the Smithdale soils. Boykin soils have a thick, sandy epipedon. Luverne soils have a clayey argillic horizon. McLaurin soils are on broad ridgetops and are coarse-loamy. Savannah soils are on high stream terraces, are brownish, and have a fragipan. Wadley soils are in the slightly higher positions on ridgetops and have a thick, sandy epipedon.

Typical pedon of Smithdale loamy fine sand, 5 to 15 percent slopes; about 2.8 miles northeast of Aquilla; 1,100 feet north and 900 feet west of the southeast corner of sec. 16, T. 9 N., R. 4 W.

Ap—0 to 5 inches; dark brown (10YR 4/3) loamy fine sand; weak fine granular structure; very friable; many fine and medium roots; strongly acid; clear wavy boundary.

E—5 to 13 inches; light yellowish brown (10YR 6/4) fine sandy loam; weak coarse subangular blocky structure; very friable; common fine and medium roots; strongly acid; clear smooth boundary.

Bt1—13 to 49 inches; red (2.5YR 4/6) sandy clay loam; weak medium subangular blocky structure; friable; common fine and few medium roots; few faint clay films on faces of peds; strongly acid; gradual wavy boundary.

Bt2—49 to 65 inches; yellowish red (5YR 4/6) sandy loam; weak medium subangular blocky structure; very friable; few fine and medium roots; few faint clay films on faces of peds; sand grains are bridged and coated with clay; very strongly acid.

The thickness of the solum ranges from 60 to more than 80 inches. Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 10YR, value of 3 or 4, and chroma of 2 or 3. The texture is loamy sand, loamy fine sand, or sandy loam.

The E horizon, if it occurs, has hue of 10YR, value of 5 or 6, and chroma of 2 to 4. It is loamy sand, loamy fine sand, sandy loam, or fine sandy loam.

The BE horizon, if it occurs, has hue of 5YR to 10YR, value of 4 or 5, and chroma of 4 to 8. It is sandy loam or loam.

The Bt horizon has hue of 2.5YR or 5YR, value of 4 or 5, and chroma of 6 to 8. It is loam, sandy clay loam, or clay loam in the upper part and sandy loam or loam in the lower part.

Sumter Series

The Sumter series consists of moderately deep, well drained soils that formed in alkaline, loamy and clayey materials weathered from soft limestone (chalk). These soils are on ridgetops and side slopes in the uplands in the southwestern part of the county. Slopes range from 3 to 15 percent. These soils are fine-silty, carbonatic, thermic Rendollic Eutrudepts.

Sumter soils are geographically associated with Boswell, Brantley, Leeper, Maytag, and Oktibbeha soils. Boswell soils are in higher landscape positions than those of the Sumter soils, are acid throughout the profile, and do not have bedrock within a depth of 40 inches. Brantley and Oktibbeha soils are commonly in lower positions than those of the Sumter soils. Brantley soils are acid throughout. Oktibbeha soils have vertic properties and are acid in the upper part of the subsoil. Maytag soils are in landscape positions similar to those of the Sumter soils but do not have bedrock within a depth of 40 inches. The somewhat poorly drained Leeper soils are on flood plains.

Typical pedon of Sumter silty clay loam, in an area of Sumter-Maytag complex, 3 to 8 percent slopes, eroded; about 2 miles southeast of Isney; 1,500 feet south and 500 feet east of the northwest corner of sec. 7, T. 9 N., R. 4 W.

Ap—0 to 5 inches; dark grayish brown (10YR 4/2) silty clay loam; strong fine granular structure; firm; common fine and medium roots; strongly effervescent; moderately alkaline; abrupt smooth boundary.

Bk1—5 to 10 inches; light yellowish brown (2.5Y 6/3) silty clay; weak coarse prismatic structure parting to moderate medium subangular blocky; firm; common fine roots; common fine and medium soft masses and few fine nodules of calcium carbonate; strongly effervescent; moderately alkaline; clear wavy boundary.

Bk2—10 to 17 inches; pale yellow (2.5Y 7/3) silty clay; moderate coarse subangular blocky structure; firm; few fine roots; common fine and medium soft masses and few medium nodules of calcium carbonate; common fine and medium distinct brownish yellow (10YR 6/6) and light yellowish brown (2.5Y 6/4) masses of iron accumulation; strongly effervescent; moderately alkaline; clear wavy boundary.

Bk3—17 to 27 inches; light gray (2.5Y 7/2) clay; weak coarse subangular blocky structure; firm; common fine and medium soft masses and many medium nodules of calcium carbonate; common medium and coarse distinct light yellowish brown (2.5Y 6/4) and few medium prominent brownish yellow (10YR 6/8) masses of iron accumulation; violently effervescent; moderately alkaline; gradual wavy boundary.

Cr—27 to 80 inches; light brownish gray (2.5Y 6/2) chalk; moderate thick platy rock structure; very firm; violently effervescent; moderately alkaline.

The thickness of the solum and the depth to soft bedrock range from 20 to 40 inches. Reaction is slightly alkaline or moderately alkaline throughout the profile.

The Ap horizon has hue of 10YR or 2.5Y, value of 3 to 5, and chroma of 1 or 2.

The upper part of the Bk horizon has hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 3 to 6. The lower part has hue of 10YR to 5Y, value of 5 to 7, and chroma of 2 to 6. The texture is clay, silty clay, or silty clay loam. The quantity of masses of iron accumulation in shades of yellow, brown, and olive ranges from none to common in the upper part and from few to many in the lower part. The horizon has few to many soft masses and nodules of calcium carbonate.

The Cr horizon is chalk or weathered limestone. It is massive or has platy rock structure. It can be cut with hand tools with difficulty and is rippable by light equipment.

Toxey Series

The Toxey series consists of very deep, moderately well drained soils that formed in marine sediments consisting of thin strata of acid clay underlain by stratified alkaline, loamy and clayey sediments and chalk or marl. These soils are in the uplands in the southwestern part of the county. They are on narrow ridgetops and on benches. Slopes range from 3 to 8 percent. These soils are fine, smectitic, thermic Vertic Eutrudepts.

Toxey soils are geographically associated with Brantley, Hannon, and Okeelala soils. Brantley soils are in the slightly higher positions on ridgetops or in the lower positions on side slopes. They have a clayey argillic horizon and are acid throughout. Hannon soils are in positions similar to those of the Toxey soils and have hue of 7.5YR or redder in the upper part of the solum. Okeelala soils are in lower positions than those of the Toxey soils and are fine-loamy.

Typical pedon of Toxey clay, in an area of Toxey-Brantley-Hannon complex, 3 to 8 percent slopes, eroded; 4.25 miles south of Melvin; 1,900 feet south and 2,000 feet east of the northwest corner of sec. 2, T. 10 N., R. 5 W.

Ap—0 to 3 inches; very dark gray (10YR 3/1) clay; weak coarse subangular blocky structure; firm; common very fine and few fine roots; common spots of olive brown (2.5Y 4/4) clay; common fine fragments of charcoal; very strongly acid; abrupt wavy boundary.

Bw1—3 to 7 inches; olive brown (2.5Y 4/4) clay; strong medium subangular blocky structure; firm; common fine, medium, and coarse roots; common fine fragments of charcoal; common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation on faces of peds; strongly acid; clear wavy boundary.

Bw2—7 to 15 inches; pale olive (5Y 6/3) clay; weak coarse prismatic structure parting to strong fine and medium subangular blocky; firm; common coarse, medium, and fine roots; many pressure faces; common medium distinct yellowish brown (10YR 5/6) and few fine distinct dark yellowish brown (10YR 4/6) masses of iron accumulation on faces of peds; strongly acid; clear wavy boundary.

BC—15 to 24 inches; pale olive (5Y 6/3) and light yellowish brown (2.5Y 6/3) silty clay; strong conchoidal rock structure; firm; few fine and very fine roots; common fine soft black masses and stains (iron and manganese oxides); common soft masses of calcium carbonate; many coarse distinct dark yellowish brown (10YR 4/4) and few fine and medium distinct yellowish brown (10YR 5/6) masses of iron accumulation on fracture planes; slightly acid; clear irregular boundary.

2C1—24 to 44 inches; pale yellow (5Y 7/3) silty clay; weak thick platy rock structure parting to strong coarse and medium angular blocky; vertical and horizontal fracture planes are 1 to 2 inches apart; very firm; few thin strata of brownish yellow (10YR 6/6) silty clay; common fine soft black masses and stains (iron and manganese oxides); common fine white fragments of shell; common soft masses of calcium carbonate; common medium distinct dark yellowish brown (10YR 4/6), strong brown (7.5YR 4/6), and dark brown (7.5YR 3/4) masses of iron accumulation on fracture planes; strongly effervescent; slightly alkaline; clear irregular boundary.

2C2—44 to 53 inches; brownish yellow (10YR 6/6) silty clay loam; massive; many dark sand grains; few fine and medium nodules of calcium carbonate; few fine soft masses of calcium carbonate; violently effervescent; slightly alkaline; clear irregular boundary.

2C3—53 to 63 inches; pale olive (5Y 6/3) clay loam; massive; many dark sand grains; common fine nodules of calcium carbonate; violently effervescent; slightly alkaline; clear wavy boundary.

2C4—63 to 80 inches; strong brown (7.5YR 4/6) clay loam; massive; many dark sand grains; few fine nodules of calcium carbonate; strongly effervescent; slightly alkaline.

The depth to an alkaline horizon ranges from 10 to 35 inches. The thickness of the solum ranges from 10 to 50 inches.

The A or Ap horizon has hue of 10YR or 2.5Y, value of 3 or 4, and chroma of 1 to 3. It is very strongly acid or strongly acid.

The upper part of the Bw horizon has hue of 7.5YR to 2.5Y, value of 4 to 6, and chroma of 3 to 6. The quantity of redoximorphic depletions in shades of gray and redoximorphic accumulations in shades of brown, yellow, and red ranges from none to common. The lower part has hue of 10YR to 5Y, value of 5 to 7, and chroma of 3 to 6. It has few to many redoximorphic depletions in shades of gray and redoximorphic accumulations in shades of brown, yellow, and red. The texture of the Bw horizon is silty clay or clay. Reaction ranges from very strongly acid to moderately acid.

The BC horizon, which occurs in most pedons, has the same range in color as the lower part of the Bw horizon. It is silty clay loam, clay loam, silty clay, or clay. Reaction ranges from slightly acid to moderately alkaline. The quantity of soft masses and nodules of calcium carbonate ranges from none to common.

The 2C horizon is commonly stratified. It commonly has hue of 10YR to 5Y or less commonly 7.5YR, value of 4 to 7, and chroma of 3 to 6; or it has no dominant matrix color and is multicolored in shades of olive, brown, and gray. It is massive or has platy or blocky rock structure. It is sandy clay loam, silty clay loam, clay loam, silty clay, or clay. It commonly contains few to many angular, soft shale-like fragments. It is slightly alkaline or moderately alkaline. It has few to many soft masses or nodules or both of calcium carbonate. The quantity of soft black masses or stains of iron and manganese oxides ranges from none to common. Some pedons have strata of chalk or marl below a depth of 60 inches.

Una Series

The Una series consists of very deep, poorly drained soils that formed in clayey alluvium. These soils are in swales, sloughs, and oxbows on flood plains along the Tombigbee River and other large streams. They are subject to frequent flooding, and most areas are ponded for long periods, especially during winter and spring. Slopes are 0 to 1 percent. These soils are fine, mixed, active, acid, thermic Typic Epiaquepts.

Una soils are geographically associated with Bigbee, Mooreville, Riverview, and Urbo soils. Bigbee soils are in higher positions than those of the Una soils and are sandy throughout. The moderately well drained Mooreville soils are in the higher, more convex positions. The well drained Riverview soils are on high parts of natural levees and are fine-loamy. The somewhat poorly drained Urbo soils are in the slightly higher, more convex positions.

Typical pedon of Una clay, ponded; about 2.5 miles southeast of Lavaca; 3,000 feet south and 600 feet west of the northeast corner of sec. 2, T. 13 N., R. 1 W.

A—0 to 4 inches; dark gray (10YR 4/1) clay; moderate medium subangular blocky structure; firm; common fine and medium roots; common medium distinct reddish brown (5YR 4/4) masses of iron accumulation on faces of peds; very strongly acid; abrupt wavy boundary.

Bg1—4 to 15 inches; gray (10YR 5/1) clay; moderate medium subangular blocky structure; firm; few fine and medium roots; few medium prominent strong brown (7.5YR 5/6) and common medium prominent yellowish red (5YR 4/6) masses of iron accumulation on faces of peds; few medium faint light brownish gray (10YR 6/2) iron depletions; very strongly acid; gradual wavy boundary.

Bg2—15 to 62 inches; gray (10YR 6/1) clay; weak coarse subangular blocky structure; firm; common medium prominent strong brown (7.5YR 5/6), yellowish brown (10YR 5/8), and brownish yellow (10YR 6/6) masses of iron accumulation; very strongly acid.

The solum is more than 60 inches thick. Reaction is very strongly acid or strongly acid throughout the profile.

The A or Ap horizon has hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 1 or 2. The texture is clay or silty clay loam.

The Bg horizon has hue of 10YR to 5Y, value of 4 to 7, and chroma of 1 or 2. It has few to many redoximorphic accumulations in shades of red, brown, or yellow. It is silty clay loam, silty clay, or clay.

Urbo Series

The Urbo series consists of very deep, somewhat poorly drained soils that formed in clayey alluvium. These soils are on low parts of the flood plains along the Tombigbee River and other large streams. In most years they are subject to flooding for brief periods in late winter and in spring. Slopes range from 0 to 2 percent. These soils are fine, mixed, active, acid, thermic Vertic Epiaquepts.

The Urbo soils in this survey area are taxadjuncts to the Urbo series because they are in the smectitic clay mineralogy class rather than the mixed. This difference, however, does not significantly affect the use, management, or interpretations of the soils. The Urbo soils in this survey area are fine, smectitic, acid, thermic Vertic Epiaquepts.

Urbo soils are geographically associated with Bigbee, Mooreville, Riverview, and Una soils. Bigbee soils are in the higher positions and are sandy throughout. The moderately well drained Mooreville soils and the well drained Riverview soils are in the slightly higher, more convex positions and are fine-loamy. The poorly drained Una soils are in the slightly lower, more concave positions on the flood plains.

Typical pedon of Urbo silty clay, in an area of Urbo-Mooreville-Una complex, gently undulating, frequently flooded; about 3.2 miles south-southeast of Lavaca; 1,600 feet north and 1,300 feet west of the southeast corner of sec. 15, T. 13 N., R. 1 W.

A—0 to 9 inches; dark grayish brown (10YR 4/2) silty clay; moderate medium subangular blocky structure; friable; many fine and medium roots; strongly acid; abrupt smooth boundary.

Bw—9 to 14 inches; dark yellowish brown (10YR 4/4) clay loam; moderate medium subangular blocky structure; firm; common fine and medium roots; few fine soft black masses and stains (iron and manganese oxides); many fine and medium distinct grayish brown (10YR 5/2) iron depletions on faces of peds; common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation; very strongly acid; clear wavy boundary.

Bg1—14 to 26 inches; light brownish gray (10YR 6/2) clay loam; moderate medium subangular blocky structure; firm; common fine roots; few pressure faces; few fine soft black masses and stains (iron and manganese oxides); many fine and medium distinct strong brown (7.5YR 5/6) masses of iron accumulation; very strongly acid; gradual wavy boundary.

Bg2—26 to 43 inches; gray (10YR 5/1) clay loam; weak medium subangular blocky structure; firm; few fine roots; few pressure faces; common fine and medium soft black masses and stains (iron and manganese oxides); many fine and medium distinct strong brown (7.5YR 5/6) and few fine faint yellowish brown (10YR 5/4) masses of iron accumulation; very strongly acid; gradual wavy boundary.

Bssg1—43 to 51 inches; light brownish gray (2.5Y 6/2) clay loam; weak coarse subangular blocky structure; firm; few fine roots; common large intersecting slickensides; common fine and medium soft black masses and stains (iron and manganese oxides); many medium prominent strong brown (7.5YR 5/8) and common medium prominent yellowish red (5YR 5/8) masses of iron accumulation; very strongly acid; gradual wavy boundary.

Bssg2—51 to 67 inches; light brownish gray (2.5Y 6/2) clay loam; weak coarse subangular blocky structure; firm; common large intersecting slickensides; few pressure faces; common fine and medium soft black masses and stains (iron and manganese oxides); many medium and coarse prominent strong brown (7.5YR 5/8) and few medium prominent red (2.5YR 4/6) masses of iron accumulation; very strongly acid; clear wavy boundary.

Bssg3—67 to 80 inches; light brownish gray (2.5Y 6/2) clay; weak coarse subangular blocky structure; firm; common large intersecting slickensides; few pressure faces; many medium and coarse prominent red (2.5YR 4/6) and many medium prominent strong brown (7.5YR 5/8) masses of iron accumulation; very strongly acid.

The solum is more than 60 inches thick. Reaction is very strongly acid or strongly acid throughout the profile. Few or common soft, brown and black masses of iron and manganese oxides are throughout the profile.

The Ap or A horizon has hue of 10YR, value of 3 to 5, and chroma of 2 or 3.

The Bw horizon has hue of 10YR, value of 4 or 5, and chroma of 3 or 4, or it has no dominant matrix color and is multicolored in shades of brown and gray. It is clay loam, silty clay loam, silty clay, or clay.

The Bg and Bssg horizons have hue of 10YR or 2.5Y, value of 4 to 7, and chroma of 1 or 2. In most pedons they have common or many redoximorphic accumulations in shades of brown, yellow, or red. The texture is clay loam, silty clay loam, silty clay, or clay.

Wadley Series

The Wadley series consists of very deep, somewhat excessively drained soils that formed in sandy and loamy sediments. These soils are on ridgetops in the uplands. Slopes range from 1 to 5 percent. These soils are loamy, siliceous, subactive, thermic Grossarenic Paleudults.

Wadley soils are geographically associated with Boykin, Luverne, and Smithdale soils. Luverne and Smithdale soils are commonly in slightly lower landscape positions than those of the Wadley soils and do not have a thick, sandy epipedon. Boykin soils are in landscape positions similar to those of the Wadley soils and have a sandy epipedon that is 20 to 40 inches thick.

Typical pedon of Wadley loamy fine sand, 1 to 5 percent slopes; about 1.5 miles northwest of Wimberly; 2,200 feet south and 1,500 feet west of the northeast corner of sec. 15, T. 11 N., R. 3 W.

Ap—0 to 7 inches; dark grayish brown (10YR 4/2) loamy fine sand; weak fine granular structure; very friable; many fine and medium roots; strongly acid; abrupt wavy boundary.

E1—7 to 21 inches; light yellowish brown (10YR 6/4) loamy sand; single grained; loose; common fine and medium roots; few medium nodules of ironstone; strongly acid; gradual wavy boundary.

E2—21 to 37 inches; pale brown (10YR 6/3) loamy sand; single grained; loose; common fine and medium roots; common streaks of uncoated sand; strongly acid; gradual wavy boundary.

E3—37 to 55 inches; reddish yellow (7.5YR 6/6) loamy sand; single grained; loose; few fine and medium roots; few thin discontinuous yellowish red (5YR 5/6) lamellae; common streaks of uncoated sand; strongly acid; abrupt wavy boundary.

Bt1—55 to 73 inches; yellowish red (5YR 5/6) sandy loam; weak medium subangular blocky structure; very friable; few fine roots; few faint clay films on faces of peds; sand grains coated and bridged with clay; common thin streaks of uncoated sand on vertical faces of peds; very strongly acid; gradual wavy boundary.

Bt2—73 to 80 inches; red (2.5YR 4/8) sandy clay loam; weak medium subangular blocky structure; friable; few fine and medium roots; few faint clay films on faces of peds; common faint red (2.5YR 4/6) clay films in pores; common coarse prominent brownish yellow (10YR 6/8) masses of iron accumulation; very strongly acid.

The solum is more than 80 inches thick. Reaction ranges from very strongly acid to moderately acid throughout the profile, except in areas where lime has been applied.

The A or Ap horizon has hue of 10YR, value of 3 to 5, and chroma of 2 to 4.

The E horizon has hue of 7.5YR or 10YR, value of 5 to 7, and chroma of 3 to 6. It is loamy sand or loamy fine sand.

The Bt horizon has hue of 2.5YR or 5YR, value of 4 to 6, and chroma of 4 to 8. It is sandy loam or sandy clay loam.

Wilcox Series

The Wilcox series consists of deep, somewhat poorly drained soils that formed in acid, clayey sediments and the underlying clayey shale. These soils are on ridgetops and side slopes in the uplands in the northeastern part of the county. Slopes range from 1 to 15 percent. These soils are very-fine, smectitic, thermic Chromic Dystruderts.

Wilcox soils are geographically associated with Luverne and Mayhew soils. The well drained Luverne soils are in landscape positions similar to those of the Wilcox soils but are at higher elevations and do not have vertic properties. The poorly drained Mayhew soils are on broad, nearly level ridgetops.

Typical pedon of Wilcox silty clay, 1 to 5 percent slopes; about 1.5 miles northeast of Edna; 2,000 feet south and 700 feet east of the northwest corner of sec. 2, T. 15 N., R. 1 W.

Ap—0 to 3 inches; very dark grayish brown (10YR 3/2) silty clay; moderate coarse subangular blocky structure; firm; common medium and few fine roots; strongly acid; clear smooth boundary.

Bt1—3 to 9 inches; red (2.5YR 4/6) clay; strong medium subangular blocky structure; firm; common fine, medium, and coarse roots; common pressure faces; few faint clay films on faces of peds; very strongly acid; clear wavy boundary.

Bt2—9 to 13 inches; red (2.5YR 4/6) clay; strong medium subangular blocky structure; firm; common fine, medium, and coarse roots; common pressure faces; few faint clay films on faces of peds; common medium distinct light brownish gray (10YR 6/2) iron depletions; few fine faint red (2.5YR 4/8) masses of iron accumulation; extremely acid; clear wavy boundary.

Btss—13 to 20 inches; red (2.5YR 4/6) clay; moderate coarse subangular blocky structure parting to strong fine angular blocky; firm; common fine and medium roots; few large intersecting slickensides that have slightly grooved surfaces; many medium and coarse prominent gray (10YR 5/1) iron depletions; few fine distinct strong brown (7.5YR 5/6) masses of iron accumulation; extremely acid; clear wavy boundary.

Bssg1—20 to 30 inches; light brownish gray (2.5Y 6/2) clay; moderate coarse subangular blocky structure parting to strong fine angular blocky; firm; few fine and medium roots; common large intersecting slickensides that have distinct polished and grooved surfaces; common fine and medium prominent red (2.5YR 4/6) and few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation; very strongly acid; clear wavy boundary.

Bssg2—30 to 35 inches; light brownish gray (2.5Y 6/2) clay; weak coarse subangular blocky structure parting to strong fine angular blocky; firm; few fine and very fine roots; common large intersecting slickensides that have distinct polished and grooved surfaces; few fine shale fragments; common fine and medium nodules of ironstone; common medium prominent red (2.5YR 4/6) and many fine distinct yellowish brown (10YR 5/6) and strong brown (7.5YR 5/6) masses of iron accumulation; very strongly acid; clear irregular boundary.

C/B—35 to 60 inches; 60 percent grayish brown (2.5Y 5/2) rounded and angular fragments of shale (C); strong medium platy rock structure; 40 percent grayish brown (2.5Y 5/2) clay (B); massive; few fine roots; common medium and coarse distinct light olive brown (2.5Y 5/4) and brownish yellow (10YR 6/6) masses of iron accumulation; extremely acid; abrupt irregular boundary.

Cr—60 to 80 inches; grayish brown (2.5Y 5/2) shale; strong thick platy rock structure; fractured in upper part; very firm; very strongly acid.

The thickness of the solum and the depth to bedrock range from 40 to 60 inches. The surface layer is very strongly acid or strongly acid, except where lime has been applied. The B and C horizons range from extremely acid to strongly acid.

The Ap horizon has hue of 10YR, value of 3 or 4, and chroma of 1 to 3.

The Bt and Btss horizons have hue of 2.5YR to 7.5YR, value of 4 or 5, and chroma 4 to 6. They have few to many redoximorphic depletions in shades of gray and redoximorphic accumulations in shades of brown, yellow, and red.

The Bssg horizon commonly has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 1 or 2. It has few to many redoximorphic accumulations in shades of red, brown, and yellow.

A transition horizon, such as a BC, CB, B/C, or C/B horizon, occurs in many pedons. These horizons have a range in properties similar to that of the horizons from which they are derived.

The Cg horizon, if it occurs, has a gray matrix and few to many redoximorphic accumulations in shades of brown, yellow, and red. It is clay or silty clay.

The Cr horizon is clayey shale. It has platy or conchoidal rock structure and is restrictive to root growth. It can be excavated with difficulty with hand tools and is rippable by light machinery.

Williamsville Series

The Williamsville series consists of very deep, well drained soils that formed in clayey marine sediments that contain appreciable amounts of weathered glauconite. These soils are on ridgetops and side slopes in the uplands in the southern part of the county. Slopes range from 2 to 35 percent. These soils are fine, mixed, active, thermic Typic Hapludults.

Williamsville soils are geographically associated with Arundel, Cantuche, Lauderdale, Rayburn, and Smithdale soils. Arundel, Cantuche, Lauderdale, and Rayburn soils are in slightly lower positions than those of the Williamsville soils. Arundel soils are moderately deep over bedrock. Cantuche and Lauderdale soils are shallow over bedrock. Rayburn soils are deep over bedrock. Smithdale soils are in slightly higher positions than those of the Williamsville soils and are fine-loamy.

Typical pedon of Williamsville fine sandy loam, 2 to 8 percent slopes; about 2 miles north-northeast of Cullomburg; 300 feet north and 2,300 feet east of the southwest corner of sec. 16, T. 9 N., R. 3 W.

A—0 to 5 inches; dark grayish brown (10YR 4/2) fine sandy loam; weak fine granular structure; very friable; many very fine and fine and common medium and coarse roots; moderately acid; abrupt smooth boundary.

E—5 to 14 inches; brown (10YR 5/3) fine sandy loam; weak coarse subangular blocky structure; very friable; many very fine and common fine, medium, and coarse roots; strongly acid; clear smooth boundary.

BE—14 to 17 inches; yellowish red (5YR 4/6) fine sandy loam; moderate medium subangular blocky structure; very friable; many very fine and few fine and medium roots; common fine streaks of yellowish brown (10YR 5/4) fine sandy loam; very strongly acid; clear wavy boundary.

Bt1—17 to 27 inches; dark red (2.5YR 3/6) clay; weak coarse prismatic structure parting to moderate medium subangular blocky; firm; common very fine and few fine and medium roots; common faint clay films on faces of peds and in pores; very strongly acid; clear wavy boundary.

Bt2—27 to 43 inches; red (2.5YR 4/6) clay; common medium prominent olive (5Y 4/4) mottles; weak medium subangular blocky structure; firm; common very fine and few fine roots; common faint clay films on faces of peds; common medium distinct strong brown (7.5YR 5/8) masses of iron accumulation that are relic redoximorphic features; very strongly acid; clear wavy boundary.

Bt3—43 to 59 inches; red (2.5YR 4/6) sandy clay loam; weak coarse subangular blocky structure; friable; few fine roots; common faint clay films on faces of peds; common coarse distinct olive brown (2.5Y 4/3) iron depletions; common coarse distinct light olive brown (2.5Y 5/4) masses of iron accumulation; the iron depletions and masses of iron accumulation are relic redoximorphic features; very strongly acid; gradual wavy boundary.

C—59 to 80 inches; red (2.5YR 4/6) sandy clay loam; massive; friable; common thin strata of sandy loam; many coarse distinct olive brown (2.5Y 4/3) iron depletions that are relic redoximorphic features; very strongly acid.

The thickness of the solum ranges from 50 to more than 60 inches. Reaction ranges from very strongly acid to moderately acid in the surface layer and is very strongly acid or strongly acid in the subsoil.

The A horizon has hue of 7.5YR or 10YR, value of 3 or 4, and chroma of 1 to 3.

The E horizon, if it occurs, has hue of 10YR, value of 5 or 6, and chroma of 2 to 4. The texture is fine sandy loam, sandy loam, or loamy sand.

The BE horizon, if it occurs, has hue of 5YR or 7.5YR, value of 4 or 5, and chroma of 4 to 6. It is sandy loam, fine sandy loam, or sandy clay loam.

The upper part of the Bt horizon has hue of 10R to 5YR, value of 3 or 4, and chroma of 4 to 6. It is clay loam, sandy clay, or clay. The lower part has hue of 10R to 5YR, value of 4, and chroma of 4 to 6. It is clay loam or sandy clay loam.

The C horizon has hue of 2.5YR to 5Y, value of 4 to 6, and chroma of 3 to 6; or it has no dominant matrix color and is multicolored in shades of olive, brown, and red. It is loam, sandy clay loam, or sandy loam and commonly has thin strata of finer- and coarser-textured material.

Formation of the Soils

In this section, the factors of soil formation are related to the soils in Choctaw County, the processes of horizon differentiation are explained, and the geologic processes in the county are described.

Factors of Soil Formation

Soil is a natural, three-dimensional body on the earth's surface that supports plants. It forms through weathering and other processes that act on deposited or accumulated geologic material. The kind of soil that forms depends on the type of parent material; the climate under which soil material has existed since accumulation; the relief, or lay of the land; the plant and animal life in and on the soil; and the length of time that the forces of soil formation have acted on the soil material. The relative importance of each of these factors differs from place to place; in some areas, one factor is more important, and in other areas another may dominate. A modification or variation in any of the factors results in a different kind of soil.

Climate and living organisms are the active factors of soil formation. They act on parent material and change it into a natural body that has definite characteristics. The effects of climate and living organisms are conditioned by relief, which influences surface drainage; the amount of water that percolates through the soil; the rate of erosion; and the kind of vegetation that grows on the soil. The nature of the parent material also affects the kind of soil profile that is formed. Time is needed for the parent material to change into a soil. The development of a distinct soil horizon normally requires a long period of time.

Parent Material

Parent material is the initial physical body that is changed by the other soil-forming factors over time. Generally, the younger the soil, the greater the influence of the parent material on soil properties. The nature of the parent material can be expressed in many ways in the soil profile, including color, texture, and mineralogy. These properties can be related to physical and chemical properties, such as susceptibility to erosion, shrink-swell potential, and cation-exchange capacity.

The soils in Choctaw County formed mainly in three kinds of parent material—loamy and clayey marine sediments that have undergone considerable weathering in place, water-deposited material on stream terraces and flood plains, and materials weathered from soft limestone (chalk), claystone, siltstone, or shale. Boswell, Boykin, Brantley, Luverne, McLaurin, Okeelala, Smithdale, Wadley, and Williamsville soils formed in stratified, sandy, loamy, or clayey marine sediments on uplands. Annemaine, Bigbee, Cahaba, Deerford, Freest, Izagora, Latonia, Lenoir, Lucedale, McCrory, and Savannah soils formed in the water-deposited material on stream terraces. Bibb, Iuka, Kinston, Leeper, Mooreville, Ochlockonee, Riverview, Una, and Urbo soils formed in the water-deposited material on flood plains. Hannon, Louin, Maytag, Oktibbeha, and Sumter soils formed in the materials weathered from soft limestone (chalk) and alkaline clays on uplands. Arundel, Cantuche, Lauderdale, and Rayburn soils are upland soils that formed in materials weathered from claystone or siltstone. Conecuh, Halso, Mayhew, and Wilcox soils are upland soils that formed in materials weathered from shale.

Climate

The climate of Choctaw County is warm and humid. Summers are long and hot. Winters are short and mild, and the ground rarely freezes to a depth of more than a few inches. The climate is fairly even throughout the county and accounts for few differences between the soils. Rainfall averages about 58 inches a year. Detailed information about the climate in the county is given in the section "General Nature of the County" and in tables 1, 2, and 3.

The mild, humid climate favors rapid decomposition of organic matter and increases the rate of chemical reactions in the soil. The plentiful rainfall leaches large amounts of soluble bases and carries the less soluble fine particles downward, resulting in acid soils that have a sandy surface layer and that are low in natural fertility. The large amount of moisture and the warm temperature favor the growth of bacteria and fungi and speed the decomposition of organic matter, resulting in soils that have a low content of organic matter.

Relief

Relief varies significantly in Choctaw County and generally can be related to the physiographic regions and geologic units in the county. It ranges from very low on the flood plains and stream terraces to very high in the dissected hills.

Relief influences the formation of soil through its effect on drainage, runoff, and erosion. Soil properties that are influenced by relief include the thickness of the solum, the thickness of the A horizon, the color of the profile, the degree of horizon differentiation, and the relative wetness of the profile. The thickness of the solum is one of the properties most obviously related to relief. Soils on nearly level summits tend to have a thicker solum than that of soils on steep side slopes.

Relief also affects moisture relationships in soil. It affects the depth to ground water and the amount of water that is available for plant growth. Generally, the water table is closer to the surface in depressions than on the high parts of the landscape.

Plants and Animals

Living organisms greatly influence the processes of soil formation and the characteristics of the soils. Trees, grasses, insects, earthworms, rodents, fungi, bacteria, and other forms of plant and animal life are affected by the other soil-forming factors. Animal activity is largely confined to the surface layer of the soil. The soil is continually mixed by this activity, which improves water infiltration. Plant roots create channels through which air and water move more rapidly, thereby improving soil structure and increasing the rate of chemical reactions in the soil.

Microorganisms help to decompose organic matter, which releases plant nutrients and chemicals into the soil. These nutrients are either used by the plants or are leached from the soil. Human activities that influence plant and animal populations in the soil affect the rate of soil formation.

The native vegetation in Choctaw County consisted dominantly of loblolly-shortleaf pine and oak-pine forest types in the uplands and oak-hickory and oak-gum-cypress forest types in the bottom lands. The understory species consisted of numerous species, including holly, panicums, bluestems, American beautyberry, Indiangrass, longleaf uniola, and flowering dogwood. These species represent only a very limited number of the wide variety of plants native to the county but can be used as a guide to plants presently in the county.

The plant communities in the county are also reflected in the species distribution of fauna. Animals, in turn, have an impact on the soil properties of a particular area. For example, ants, worms, moles, armadillo, and gophers can improve aeration in a compacted soil. Microbes that thrive in a particular plant community react to various soil conditions and consequently influence the soil profile by providing decayed organic matter and nitrogen to the soil matrix.

Time

If all other factors of soil formation are equal, the degree of soil formation is in direct proportion to time. If soil-forming factors have been active for a long time, horizon development is stronger than if these same factors have been active for a relatively short time. Some parent materials are more easily weathered than others. The rate of weathering is dependent on the mineral composition and degree of consolidation of the parent material. “Time zero” for soil formation is considered to be that point in time when fresh parent material is first exposed to the other soil forming-factors. Commonly, this is a catastrophic occurrence, such as a flood, a change in topography resulting from a geologic event, a severe episode of erosion, or the influence of humans on the landscape.

Geologically, the soils in Choctaw County are relatively young. The youngest soils are the alluvial soils on active flood plains along streams and rivers. These soils receive deposits of sediment and are undergoing a cumulative soil-forming process. In most cases, these young soils have weakly defined horizons, mainly because the soil-forming processes have been active for only a short time. Bibb, Iuka, Kinston, Leeper, Mooreville, Riverview, Una, and Urbo soils are examples of young soils.

Soils on terraces along the Tombigbee River and other major streams are older than soils on flood plains but are still relatively young. Although they formed in material deposited by the river, these soils are no longer reached by frequent overflows because the river channel is now deeper. Many of these soils have relatively strong horizon development. Annemaine, Cahaba, Deerford, Freest, Izagora, Latonia, Lenoir, Lucedale, McCrory, and Savannah soils are examples of soils on stream terraces having varying age and elevation.

Soils on uplands are generally older than soils on terraces or flood plains and range in age from young to very old. The degree of soil development depends on landscape position and composition of the parent material. Arundel, Boswell, Boykin, Brantley, Cantuche, Luverne, and Smithdale soils are examples of soils on uplands.

Processes of Horizon Differentiation

The main processes involved in the formation of soil horizons are accumulation of organic matter, leaching of calcium carbonate and other bases, reduction and transfer of iron, and formation and translocation of silicate clay minerals. These processes can occur in combination or individually, depending on the integration of the factors of soil formation.

Most soils have four main horizons. The A horizon is the surface layer. It is the horizon of maximum accumulation of organic matter. It commonly is darker than horizons below it because of the influence of the organic matter. Organic matter has accumulated to form an A horizon in all of the soils in the county. The content of organic matter varies between soils because of differences in relief, wetness, and natural fertility.

The E horizon, usually called the subsurface layer, occurs in many of the soils in the county, especially those soils on uplands. It is the horizon of maximum loss of soluble or suspended material. It commonly is lighter in color and coarser in texture than the overlying and underlying horizons. Boykin and Smithdale soils have both an A horizon and an E horizon. Other soils have an A horizon but do not have an E horizon. Examples are Bibb, Kinston, and Urbo soils.

The B horizon, usually called the subsoil, is immediately below the A or E horizon. It is the horizon of maximum accumulation of dissolved or suspended material, such as iron or clay. Soils on old, stable landforms generally have a thick, well structured B horizon. Examples are Lucedale, McLaurin, and Savannah soils. Soils on flood plains either do not have a B horizon or have a weakly developed B horizon. Examples are Bibb, Iuka, and Kinston soils.

The C horizon is the substratum. It has been affected very little by the soil forming processes but is typically somewhat modified by weathering.

The chemical reduction and transfer of iron, called gleying, is evident in the wet soils in the county. Gleying results in gray colors in the subsoil and gray mottles in other horizons. The gray colors indicate the reduction and loss of iron and manganese. The horizons of some soils, such as Annemaine and Izagora soils, have reddish and brownish redoximorphic features, which indicate a segregation of iron.

Leaching of carbonates and bases has occurred in most of the soils in the county. This process contributes to the development of distinct horizons and to the naturally low fertility and acid reaction of most soils on the Coastal Plain. Some of the soils in the Blackland Prairie area formed in materials weathered from soft limestone (chalk). These soils are high in natural fertility and are alkaline throughout. Examples are Maytag and Sumter soils.

In uniform materials, natural drainage generally is closely associated with slope or relief. It generally affects the color of the soil. Soils that formed under good drainage conditions have a subsoil that is uniformly bright in color. Boykin, Lucedale, and Smithdale soils are examples. Soils that formed under poor drainage conditions have grayish colors. Kinston, Una, and Urbo soils are examples. Soils that formed where drainage is intermediate have a subsoil that is mottled in shades of gray, red, and brown. Annemaine, Boswell, Iuka, Lenoir, Louin, and Mayhew soils are examples. The grayish colors persist even if artificial drainage is provided. The dark grayish brown colors in the upper part of the Leeper soils and the olive mottles in the Williamsville soils are assumed to be inherited from the parent material.

In steep areas, the surface soil erodes. In low areas and in depressions, soil materials commonly accumulate and add to the thickness of the surface layer. In some areas, the rate of formation of soil materials and the rate of removal of soil materials are in equilibrium.

Geologic Processes

The soils of Choctaw County formed in reworked clastic (transported weathered rock) material that originated to the north and was deposited under both marine and continental environments. Sedimentation occurs when earthy material is transported by such agents as wind, water, and ice and is then deposited at another location. The environment of deposition is that of the location in which the deposition occurs (Plummer and McGeary, 1993). Continental, or land-based, depositional environments include alluvial fans, flood plains, river channels, lakes, and dunes. Marine environments include submerged deltas, beaches, lagoons, reefs, relatively shallow marine shelves, and the deep ocean floor. Sediments deposited in marine environments are influenced by precipitation of salts in seawater, organic environments on the sea floor, and the accumulation of overlapping sediments in concave ocean basins. The transition zone between the marine and continental environments is an estuarine environment where freshwater mixes with salt water and tidal influences are strong.

The depositional environments that were present when the materials were emplaced and the erosional processes that worked on the materials over time vary across the county. The resulting stratigraphy that comprises the surficial geology of the county is differentiated based upon the time frame of deposition, the depositional environment, and the nature of the source material. Most of the clastic material comprising the uplands in the county was originally deposited during the Tertiary Period in a marine or nearshore environment (Copeland, 1968; Toulmin, LaMoreaux, and Lanphere, 1951). Arundel, Boykin, Brantley, Luverne, and Smithdale soils are examples of soils that formed in this clastic material. The current landscape of uplands, terraces, and flood plains has been reworked and sculpted during the subsequent Quaternary Period.

On the Coastal Plain in Alabama, the geologic history during the Tertiary Period (from about 65 million to 2 million years before present) is characterized by the deposition of materials derived from much older rocks. The ancient sedimentary rocks were exposed to weathering during the Appalachian uplift and Piedmont region development that began over 180 million years ago. These rocks were buckled into folds and locally metamorphosed by the intrusion of granitic plutons (large masses of rock consolidated from molten material beneath the surface of the earth). The Coastal Plain resulted from this uplift and subsequent erosion. Thickening sediments of clastic material were deposited on the outer margins of the continent. During this time of sediment loading, much of the part of Alabama that was not being uplifted was covered by a shallow sea. It is believed that the weight of those water-laden transported sediments upon a relatively thin portion of the earth’s crust contributed to a southward downwarping of the Coastal Plain (Toulmin, LaMoreaux, and Lanphere, 1951). This subsidence, accompanied by the Appalachian uplift, simultaneous erosion, and the slowly retreating shoreline of the shallow sea, is responsible for the banded effect of Coastal Plain geologic surfaces evident in Choctaw County. As the Tertiary Period progressed through the Eocene and Oligocene Epochs, the thickening Coastal Plain began a hesitant emergence from its marine environment. The end of the Tertiary Period is characterized in southwestern Alabama by the deposition of estuarine and deltaic sediments of Miocene age.

The variety of the sedimentary beds of the Tertiary Period reflects the different marine and nearshore environments (Plummer and McGeary, 1993). In general, fine-grained shales and siliceous marine rocks and massive marine clays are offshore, deepwater deposits. On broad, shallow marine shelves adjacent to shorelines, sediment grain size decreases offshore. Deposits of claystone, siltstone, and shale are typical of this environment. Coarser grained material tends to be nearshore and is influenced by wave action and ocean fauna to varying degrees. Limestone is associated with relatively shallow-water environments, such as reefs, lagoons, and barrier islands, where the sediments are solidified by carbonates from the decomposition of marine life. Deltaic sequences tend to be chaotic as river sediment is deposited into standing water and tidal zones. These deposits can be a variety of interbedded siltstone, mudstone, and shale, with coarse channels and with layers of organic lignites and shell beds.

The Tertiary Period gave way to the Pleistocene Epoch of the Quaternary Period. The Pleistocene Epoch, from about 2 million to 10 thousand years ago, was an era of repeated worldwide glaciation. Although continental glaciers never covered the southeastern part of the United States, they produced global impacts on climate, weather, vegetation, and sea level. During periods of maximum glaciation, mean sea level was significantly lower because much of the global moisture was bound up in the massive ice sheets. During the warmer interglacial stages, much of the ice was calved off into the sea in the form of icebergs or melted to form huge continental rivers, thus raising sea level. In addition, great amounts of moisture were released into the atmosphere, resulting in periods of intense rainfall, erosion, and sediment deposition. This also contributed to raising the mean sea level. Most of the present geomorphic landforms have been established since that time. Many geologists agree that the coastline of Alabama was more than 300 feet above the present mean sea level during pre-Pleistocene and early- to mid-Pleistocene times. During the late-Pleistocene Epoch, a drop in the sea level resulted in the coastline receding to about 60 miles offshore from its present location (Smith, 1988).

The changes in sea level were accompanied by the fluctuation of the base level of major streams (Smith, 1988). The base level of streams with respect to the high points on the landscape affects stream gradient. A steeper gradient results in greater erosive power and higher sediment carrying capacity. During earlier periods of elevated sea level, a predominantly depositional environment existed. The base levels of major streams were situated at higher points on the less-dissected landscape than at present. Fluvial deposits were spread across the terrain as the immature, sediment-laden streams meandered across broad areas that lacked relief. As the sea level fell, the gradient became steeper and the streams became more deeply incised into the landscape. The energized streams, seeking the Gulf of Mexico with their increased erosive power, carved northerly facing "cuestas" or steep escarpments as the banded, bedded sediments resisted the entrenching process. Arundel and Cantuche soils are examples of soils that formed on steep escarpments of resistant beds of siltstone and claystone. Layers of sediment on the surface of the landscape underwent erosion processes. Some of these sediments were transported downslope to become deposits on footslopes and toeslopes or to become valley fill. Stream action reworked the valley fill deposits and redistributed this material on flood plains. On uplands, the underlying older sediments were commonly exposed, especially on side slopes. In some cases strata of geologic formations were eroded off to expose younger formations. Boykin-Luverne-Smithdale complex, 15 to 35 percent slopes, eroded, occurs on side slopes that expose several strata of sediments. The clayey Luverne soils, the fine-loamy Smithdale soils, and the sandy Boykin soils are examples of soils that formed over different strata. Sediments of Quaternary or Pleistocene age sometimes cap ridgetops or form terraces adjacent to major streams. They are remnant deposits on summits of stable landform surfaces on which the erosion processes have been less effective. McLaurin soils on ridgetops and Savannah soils on terraces are examples of soils that formed on these geomorphic surfaces.

The Quaternary age alluvial flood plains and low terrace deposits of the Holocene Epoch were created during the period of 10 thousand years to the present. During this period, the geomorphic restructuring has continued, although at a slower rate than when sea level and the stream base-level were lower than at present. Bibb, Kinston, Una, and Urbo soils are examples of soils on the lower parts of flood plains. Iuka, Mooreville, Ocklockonee, and Riverview soils are examples of soils on the intermediate to higher parts of natural levees adjacent to stream channels. Soils that formed on high, intermediate, and low terraces adjacent to flood plains are typified by the Savannah, Izagora, and McCrory series, respectively.

Geologic Surfaces

Twelve major outcrops of geologic units, ranging in age from Paleocene to Recent, are defined in Choctaw County on the geologic map (Copeland, 1968; Raymond et al., 1988; Tew, 1992; Toulmin, LaMoreaux, and Lanphere, 1951; Toulmin, 1977; Turner and Newton, 1971). They are of sedimentary origin and consist of sand, silt, clay, gravel, claystone, siltstone, sandstone, marl, and limestone. From oldest to youngest, they are the Porters Creek and Naheola Formations (Midway Group) of the Paleocene Series; the Nanafalia Formation, Tuscahoma Sand, and Hatchetigbee Formation (Wilcox Group), the Tallahatta Formation and Lisbon Formation/Gosport Sand (Claiborne Group), and the Moodys Branch Formation and Yazoo Clay (Jackson Group) of the Eocene Series; the Red Bluff and Marianna Formations of the Oligocene Series; the Miocene and Pleistocene Series; high terrace deposits of the Pleistocene Series; and alluvium of the Holocene Series. The Jackson Group and the Oligocene Series are not separated on the geologic map because of their similar lithologies, indistinct contact, and weathered exposure. Similarly, the Miocene and high terrace deposits of the Pleistocene Series are not separated in the southwestern part of the county. In the northeastern part of the county, however, the Pleistocene aged high terrace deposits that are associated with the Tombigbee River are separated (Turner and Newton, 1971).

The Porters Creek Formation crops out in the northeastern corner of the county. It consists primarily of gray and black, tough, massive marine clay that has a distinct conchoidal fracture. Only about the upper 100 feet of this formation is exposed in the county. Wilcox and Mayhew soils formed in this material.

The Naheola Formation conformably overlies the Porters Creek Formation and occurs in the northeastern part of the county in the uplands adjacent to Kinterbish Creek. The formation is generally about 180 feet thick. It consists of gray, laminated, thin-bedded, carbonaceous clay, silt, and very fine grained sand on the bottom (Oak Hill Member) and of gray, laminated, thin-bedded, micaceous, carbonaceous clay and gray and yellow fine- to medium-grained sand containing glauconite (Coal Bluff Marl Member). It is separated by a thin bed of lignite in some areas. The soils that formed in this material are represented by the Luverne and Smithdale series.

The Nanafalia Formation disconformably overlies the Naheola Formation in the northeastern part of the county. It ranges from 100 to 130 feet in thickness and trends in a northwest to southeast direction in the uplands drained by the eastern portions of Tuckabum, Yantley, and Clear Creeks. It is comprised of three components—the Gravel Creek Sand Member at the bottom, an unnamed middle member, and the Grampian Hills Member at the top. The lower member is chiefly white and yellow, cross-bedded, medium- to coarse-grained sands. The unnamed middle member is gray, calcareous, glauconitic silty clay, sand, marl, and sandstone that is fossiliferous throughout. It is known as the "*Ostrea thirsae* beds" because in some areas it contains an abundance of this ancient oyster species.

The upper member consists of medium- to dark-gray, massive clay. Luverne, Smithdale, and Boykin soils formed on upland landforms of this unit.

The Tuscahoma Sand overlies the Nanafalia Formation and crops out in a wide belt trending from the northwestern part of the county to the east-central part. It is about 350 feet thick in the outcrop and consists mainly of fine- to medium-grained, cross-bedded sand; fossiliferous greensand marl; and gray, laminated and thin-bedded clay, very fine- or fine-grained sand, and silt. The latter laminated material comprises most of the unit in the outcrop. The primary soils that formed in this unit are Luverne, Smithdale, Boykin, Halso, and Conecuh soils.

The Hatchetigbee Formation is about 250 feet thick and overlies the Tuscahoma Sand. Where the Hatchetigbee Formation outcrops in the central part of the county, it parallels the Tuscahoma Sand. The Hatchetigbee Formation also crops out in the southeastern part of the county. It is the oldest formation on the crest of the Hatchetigbee Anticline (Pashin et al., 1998). The Hatchetigbee Formation is separated from the underlying similar beds of the Tuscahoma Sand by about 20 to 30 feet of the Bashi Marl Member, which is characterized by greenish-gray, calcareous, glauconitic, fossiliferous sand with large calcareous sandstone concretions. Large stone- and boulder-sized concretions have been exposed by excavations on some hillslopes in the vicinity of Butler. The upper unnamed member of the Hatchetigbee Formation is similar in stratigraphy to the Tuscahoma Sand in having thin-bedded, laminated, carbonaceous clay, silt, and very fine grained sand and fine grained glauconitic sand. In some exposures, the Hatchetigbee Formation is capped with a light colored, medium to coarse sand that is hard to separate from the intermittent Meridian Sand Member of the overlying Tallahatta Formation. Luverne and Smithdale soils are dominant on the Hatchetigbee Formation. Also, Boykin soils occur near the contact with the Tallahatta Formation.

The Tallahatta Formation ranges in thickness from 80 to about 130 feet. It crops out in the central part of the county and is also exposed south of its normal outcrop around the flanks of the Hatchetigbee Anticline in the southeastern part of the county. Locally known as “buhrstone,” the formation is primarily composed of light gray, thin-bedded to massive, sparsely fossiliferous to unfossiliferous, siliceous, indurated clay, claystone, mudstone, and siltstone with an abundance of fine-grained, indurated, biosiliceous (diatomaceous) sediment (Ivany, 1998). It also contains thin layers of sandy clay, glauconitic sand, and sandstone. The indurated clay becomes brittle when exposed to air and breaks up into angular blocks that have a pronounced conchoidal fracture. In places, the claystone has been cemented with silica to form light gray and gray quartzite, which was the main source material for the construction of stone tools in this region of the gulf Coastal Plain.

The Tallahatta Formation is the most dramatic outcropping of rock on the Coastal Plain in Alabama. It has a rugged, north-facing escarpment (cuesta) characterized by steep hills, many outliers, and relief that is commonly 300 to 400 feet above streams. The resistant claystone protects the softer underlying Hatchetigbee material, which commonly forms up to 100 feet of the lower strata of the cuesta. Arundel, Cantuche, Lauderdale, and Rayburn soils formed in material that weathered from this formation.

Sand of the overlying Lisbon Formation caps much of the top and the southward facing backslope of the cuesta rim. The Lisbon Formation disconformably overlies the Tallahatta Formation and is overlain by the Gosport Sand. The Lisbon Formation and Gosport Sand are not differentiated on the geologic map because they have similar lithologies. They have a combined thickness that ranges from about 125 feet to 250 feet. They crop out in an irregular band along a large section of the south-central part of the county and also crop out along the flanks of the Hatchetigbee Anticline in the southeastern part. Generally, the unit consists of beds of very fine grained to coarse grained glauconitic greensand with indurated calcareous layers, beds of light tan and brown sandy clay, and medium-fine to coarse sand, sandstone, marl, and clay. The base of the Lisbon Formation is distinctive light blue-green, clayey, glauconitic sand. Williamsville soils formed in this material. Much of the unit is highly weathered. Boykin, Luverne, Smithdale, and Wadley soils formed in this highly weathered material. Brantley and Okeelala soils formed in areas where the underlying calcareous material has not completely weathered and leached away.

The Jackson Group disconformably overlies the Gosport Sand. It crops out in a narrow, northwest to southeast trending belt in the southwestern part of the county. It also crops out in an irregular pattern in the south-central part of the county, where it is associated with the Gilbertown and West Bend fault zone. It occurs sporadically, mostly on the downthrown side of fault lines, from Melvin in the western part of the county to Womack Hill in the eastern part. At its base, the Jackson Group is comprised of the Moodys Branch Formation. The Jackson Group is overlain conformably by the Yazoo Clay. It is not differentiated on the geologic map because of the thinness of the components and the indistinct nature of the Moodys

Branch in weathered outcrops. It has a combined thickness of about 110 to 160 feet.

The Yazoo Clay is comprised of four members. In ascending order, they are the North Twistwood Creek, Cocoa Sand, Pachuta Marl, and Shubuta Members. The North Twistwood Creek Member consists chiefly of light-gray and greenish-gray, plastic, calcareous, massive clay that is sparsely fossiliferous. The Cocoa Sand Member is a light-gray, fine- to medium-grained calcareous sand containing fossils, clay partings, and white nodules of calcium carbonate. The Pachuta Marl Member is primarily a light-gray and white, indurated, chalky, fossiliferous marl and limestone that is sandy and glauconitic in some exposures. The Pachuta Marl Member commonly contains large fossils, including remains of the State fossil of Alabama: *Basilosaurus cetoides* (Owen), an ancient whale. The uppermost Shubuta Member consists of a light greenish-gray and white, highly calcareous clay that has abundant nodules of calcium carbonate. The Moodys Branch Formation is mostly a greenish-gray and yellowish-gray, glauconitic, marly sand that has abundant fossils. In some areas, it contains concentrations of the sand dollar *Periarchus lyelli* (Conrad) and is known as the "Scutella bed." Sumter and Maytag soils formed in limestone, marl, chalk, and the calcareous clays. Brantley, Boswell, Hannon, Louin, Okeelala, Oktibbeha, and Toxey soils mostly formed in areas that have been modified by reworked materials or by the dissolution of calcareous material in the upper part.

The Oligocene Series overlies the Shubuta Member of the Yazoo Clay. Two members of the Oligocene Series are exposed in Choctaw County: the Marianna Limestone and the Red Bluff Clay. Most of the components of the Oligocene Series have a combined thickness of only about 70 feet or less and have become indistinct because of removal, dissolution of calcareous materials, and overlapping by the Miocene Series and younger sediments. The Marianna Limestone is a white and cream colored, soft, chalky, porous, fossiliferous limestone. The Red Bluff Clay consists of yellow, sandy, glauconitic, fossiliferous limestone; light-gray and greenish-gray, massive, calcareous, glauconitic clay; and gray silty clay that has thin beds of sand. In some areas, the massive clay bed in the middle contains gypsum crystals (selenite) and nodules of calcium carbonate. Exposures of the Oligocene Series dominantly occur in a thin belt in the southwestern part of the county. In addition, minor outcroppings are related to fault action in the vicinity of Melvin and Womack Hill. Brantley, Okeelala, Toxey, Hannon, Oktibbeha, and Boswell soils are associated with this unit.

The Oligocene Series is overlapped unconformably by the Miocene Series and an overtopping admixture of possibly early-Pleistocene sediments. The Miocene/Pleistocene unit is less than 150 feet thick. It consists of varicolored, fine- to coarse-grained sand, gravelly sand, and gray clay that weathers to shades of gray, pink, and yellow. These sediments are of fluvial and deltaic origin and occur on ridges and upper side slopes in the southwestern part of the county near Aquilla. McLaurin and Smithdale soils occur on broad ridgetops. Smithdale, Luverne, and Boykin soils are on side slopes.

Quaternary terrace deposits and alluvium unconformably overlie older sediments throughout the county adjacent to the Tombigbee River and its major tributaries. On the surface, these deposits consist of unconsolidated sand, silt, and clay and contain minor amounts of gravel. High terrace deposits of Pleistocene age occur in the northeastern part of the county in the vicinity of Oakchia and Lavaca. Alluvium and intermediate terrace deposits of late Pleistocene and Holocene age fill the valleys of all major streams. These terrace deposits are remnants of former flood plains that are no longer subject to flooding because the streams have incised to a lower level. Savannah and Freest soils occur on these landforms. Urbo, Una, and Mooreville soils occur on flood plains along the Tombigbee River. Riverview soils occur on the natural levees adjacent to the river channel. Ochlockonee, Kinston, Iuka, and Bibb soils occur on the flood plains of the tributaries to the Tombigbee River, including Kinterbish, Yantley, Tuckabum, and Okatuppa Creeks. Annemaine, Bigbee, Cahaba, and Izagora soils are on low terraces adjacent to the major streams.

Geologic Structure

Typically, geologic formations in Choctaw County strike northwest to southeast and dip southwestward at about 35 feet per mile (Turner and Newton, 1971). However, a deeply buried, evaporative seabed (similar to the Great Salt Lake) that formed in arid climates during the Jurassic period (about 150 to 200 million years ago) is responsible for some interesting structural expressions in the southwestern part of Alabama (Copeland, 1968; Pashin et al., 1998; Turner and Newton, 1971). The weight of thickening seawater-laden sediments and the differing densities of the salt beds (Louann Salt) compared to other sediment and rock layers have caused an upward welling of the salt deposits over geologic time. These "salt domes" caused a deformation of the overlying sediments. The southwestern part of Choctaw County is over the margins of the buried Mississippi Salt Basin. The Gilbertown fault zone and the Hatchetigbee Anticline are features associated with the movement of buried salt in Choctaw County. The fault zone is in the south-central part of the county. It trends southeastward from about Melvin through Toxey to the north and through Gilbertown to the south. It continues on through Womack Hill and across the Tombigbee River. In the western part of the county, two of the larger faults form a graben, which is a downthrown elongated block of geologic material between two faults. In this case, the graben may be a result of subsidence following migration of the salt. The Hatchetigbee Anticline is the largest crustal fold exposed on the Alabama Coastal Plain (Turner and Newton, 1971). It is an asymmetrical ridge about 30 miles long and has a southeastward trending axis that passes through Silas and Bladon Springs and continues on into the northwestern parts of Washington County and the southwestern parts of Clarke County.

The anomalies of the Coastal Plain—the salt-domes, the Gilbertown fault zone, the Hatchetigbee Anticline, and the grabens—result in several unique features of the natural resources, physiography, landscape, and associated soils of Choctaw County. The stresses of the combined forces of downwarping of the continental shelf and upwelling of the salt basin caused fracturing in the earth's crust. The fractures provide subsurface repositories for the pooling of oil and natural gas. The first oil well drilled in Alabama was in Choctaw County at Gilbertown (Copeland, 1968; Toulmin, LaMoreaux, and Lanphere, 1951). The oil field at Gilbertown is located geologically along the northwestern flank of the Hatchetigbee Anticline and is associated with the two parallel, east to west trending main faults of the Gilbertown fault zone.

The physiography of the southwestern part of Choctaw County has also been affected by the geologic structure. The orderly progression from oldest to youngest outcroppings of geologic formations, which normally proceeds in belted fashion in a southwestward direction towards the Gulf of Mexico, has been disrupted. Several geologic formations that would normally be buried by overlying layers have been exposed at the surface. This has produced some rugged topography associated with resistant beds of limestone and buhrstone. The Hatchetigbee, Tallahatta, and Lisbon Formations are exposed south of their normal outcrops. They outcrop on the crest, shoulders, and flanks of the anticline in the southeastern part of the county. Arundel, Cantuche, Lauderdale, and Rayburn soils are associated with the Tallahatta Formation. Williamsville soils are associated with greenish, heavily glauconitic sands at the base of the Lisbon Formation. Luverne, Smithdale, and Boykin soils occur in areas defined by the Hatchetigbee Formation and the upper parts of the Gosport/Lisbon Formation. Also, less weathered calcareous beds that are associated with the Eocene and Oligocene deposits are found north of their normal outcrops. They are on or near the surface in the vicinity of the flanks of the anticline and along the margins of the fault zone. Calcareous soils, such as Sumter and Maytag soils, occur south and east of Melvin. Soils associated with the Blackland Prairie dominate the landscape of some areas in the southwestern part of the county and in the vicinity of Womack Hill. Brantley, Toxey, and Hannon soils occur on ridges, Freest soils occur on terraces, and Brantley and Okeelala soils occur on steep and very steep, highly dissected side slopes.

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Glossary

ABC soil. A soil having an A, a B, and a C horizon.

AC soil. A soil having only an A and a C horizon. Commonly, such soil formed in recent alluvium or on steep, rocky slopes.

Aeration, soil. The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

Aggregate, soil. Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

Alkali (sodic) soil. A soil having so high a degree of alkalinity (pH 8.5 or higher) or so high a percentage of exchangeable sodium (15 percent or more of the total exchangeable bases), or both, that plant growth is restricted.

Alluvial cone. The material washed down the sides of mountains and hills by ephemeral streams and deposited at the mouth of gorges in the form of a moderately steep, conical mass descending equally in all directions from the point of issue.

Alluvial fan. The fanlike deposit of a stream where it issues from a gorge upon a plain or of a tributary stream near or at its junction with its main stream.

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

Alpha,alpha-dipyridyl. A dye that when dissolved in 1N ammonium acetate is used to detect the presence of reduced iron (Fe II) in the soil. A positive reaction indicates a type of redoximorphic feature.

Animal unit month (AUM). The amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

Aquic conditions. Current soil wetness characterized by saturation, reduction, and redoximorphic features.

Argillic horizon. A subsoil horizon characterized by an accumulation of illuvial clay.

Aspect. The direction in which a slope faces.

Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:

Very low	0 to 3
Low	3 to 6
Moderate	6 to 9
High	9 to 12
Very high	more than 12

Backslope. The geomorphic component that forms the steepest inclined surface and principal element of many hillsides. Backslopes in profile are commonly steep, are linear, and may or may not include cliff segments.

Basal area. The area of a cross section of a tree, generally referring to the section at breast height and measured outside the bark. It is a measure of stand density, commonly expressed in square feet.

Base saturation. The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, and K), expressed as a percentage of the total cation-exchange capacity.

Bedding planes. Fine strata, less than 5 millimeters thick, in unconsolidated alluvial, eolian, lacustrine, or marine sediment.

Bedding system. A drainage system made by plowing, grading, or otherwise shaping the surface of a flat field. It consists of a series of low ridges separated by shallow, parallel dead furrows.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Bedrock-controlled topography. A landscape where the configuration and relief of the landforms are determined or strongly influenced by the underlying bedrock.

Bisequum. Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.

Blowout. A shallow depression from which all or most of the soil material has been removed by the wind. A blowout has a flat or irregular floor formed by a resistant layer or by an accumulation of pebbles or cobbles. In some blowouts the water table is exposed.

Boulders. Rock fragments larger than 2 feet (60 centimeters) in diameter.

Breast height. An average height of 4.5 feet above the ground surface; the point on a tree where diameter measurements are ordinarily taken.

Cable yarding. A method of moving felled trees to a nearby central area for transport to a processing facility. Most cable yarding systems involve use of a drum, a pole, and wire cables in an arrangement similar to that of a rod and reel used for fishing. To reduce friction and soil disturbance, felled trees generally are reeled in while one end is lifted or the entire log is suspended.

Calcareous soil. A soil containing enough calcium carbonate (commonly combined with magnesium carbonate) to effervesce visibly when treated with cold, dilute hydrochloric acid.

Canopy. The leafy crown of trees or shrubs. (See Crown.)

Capillary water. Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.

Catena. A sequence, or "chain," of soils on a landscape that formed in similar kinds of parent material but have different characteristics as a result of differences in relief and drainage.

Cation. An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.

Cation-exchange capacity. The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.

Cement rock. Shaly limestone used in the manufacture of cement.

Channery soil material. Soil material that is, by volume, 15 to 35 percent thin, flat fragments of sandstone, shale, slate, limestone, or schist as much as 6 inches (15 centimeters) along the longest axis. A single piece is called a channer.

Chemical treatment. Control of unwanted vegetation through the use of chemicals.

Chiseling. Tillage with an implement having one or more soil-penetrating points that shatter or loosen hard, compacted layers to a depth below normal plow depth.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay depletions. Low-chroma zones having a low content of iron, manganese, and clay because of the chemical reduction of iron and manganese and the removal of iron, manganese, and clay. A type of redoximorphic depletion.

Clay film. A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.

Coarse textured soil. Sand or loamy sand.

Cobble (or cobblestone). A rounded or partly rounded fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter.

Cobbly soil material. Material that is 15 to 35 percent, by volume, rounded or partially rounded rock fragments 3 to 10 inches (7.6 to 25 centimeters) in diameter. Very cobbly soil material has 35 to 60 percent of these rock fragments, and extremely cobbly soil material has more than 60 percent.

Colluvium. Soil material or rock fragments, or both, moved by creep, slide, or local wash and deposited at the base of steep slopes.

Complex slope. Irregular or variable slope. Planning or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.

Complex, soil. A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.

Concretions. Cemented bodies with crude internal symmetry organized around a point, a line, or a plane. They typically take the form of concentric layers visible to the naked eye. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up concretions. If formed in place, concretions of iron oxide or manganese oxide are generally considered a type of redoximorphic concentration.

Conservation cropping system. Growing crops in combination with needed cultural and management practices. In a good conservation cropping system, the soil-improving crops and practices more than offset the effects of the soil-depleting crops and practices. Cropping systems are needed on all tilled soils. Soil-improving practices in a conservation cropping system include the use of rotations that contain grasses and legumes and the return of crop residue to the soil. Other practices include the use of green manure crops of grasses and legumes, proper tillage, adequate fertilization, and weed and pest control.

Conservation tillage. A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

Consistence, soil. Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the “Soil Survey Manual.”

Contour stripcropping. Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

Control section. The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

Corrosion. Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.

Cover crop. A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

Cropping system. Growing crops according to a planned system of rotation and management practices.

Crop residue management. Returning crop residue to the soil, which helps to maintain soil structure, organic matter content, and fertility and helps to control erosion.

Cross-slope farming. Deliberately conducting farming operations on sloping farmland in such a way that tillage is across the general slope.

Crown. The upper part of a tree or shrub, including the living branches and their foliage.

Cuesta. A hill or ridge that has a gentle slope on one side and a steep slope on the other; specifically, an asymmetric, homoclinal ridge capped by resistant rock layers of slight or moderate dip.

Cutbanks cave (in tables). The walls of excavations tend to cave in or slough.

Deferred grazing. Postponing grazing or resting grazing land for a prescribed period.

Depth, soil. Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep soils, 40 to 60 inches; moderately deep, 20 to 40 inches; and shallow, 10 to 20 inches.

Depth to rock (in tables). Bedrock is too near the surface for the specified use.

Diversion (or diversion terrace). A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

Drainage class (natural). Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized—*excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained,* and *very poorly drained*. These classes are defined in the “Soil Survey Manual.”

Drainage, surface. Runoff, or surface flow of water, from an area.

Duff. A generally firm organic layer on the surface of mineral soils. It consists of fallen plant material that is in the process of decomposition and includes everything from the litter on the surface to underlying pure humus.

Eluviation. The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.

Endosaturation. A type of saturation of the soil in which all horizons between the upper boundary of saturation and a depth of 2 meters are saturated.

Ephemeral stream. A stream, or reach of a stream, that flows only in direct response to precipitation. It receives no long-continued supply from melting snow or other source, and its channel is above the water table at all times.

Episaturation. A type of saturation indicating a perched water table in a soil in which saturated layers are underlain by one or more unsaturated layers within 2 meters of the surface.

Erosion. The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.
Erosion (geologic). Erosion caused by geologic

processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.

Escarpment. A relatively continuous and steep slope or cliff breaking the general continuity of more gently sloping land surfaces and resulting from erosion or faulting. Synonym: scarp.

Excess fines (in tables). Excess silt and clay in the soil. The soil does not provide a source of gravel or sand for construction purposes.

Excess sodium (in tables). Excess exchangeable sodium in the soil. The resulting poor physical properties restrict the growth of plants.

Fallow. Cropland left idle in order to restore productivity through accumulation of moisture. Summer fallow is common in regions of limited rainfall where cereal grain is grown. The soil is tilled for at least one growing season for weed control and decomposition of plant residue.

Fast intake (in tables). The rapid movement of water into the soil.

Fertility, soil. The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

Field moisture capacity. The moisture content of a soil, expressed as a percentage of the ovendry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity, normal moisture capacity,* or *capillary capacity*.

Fine textured soil. Sandy clay, silty clay, or clay.

Firebreak. Area cleared of flammable material to stop or help control creeping or running fires. It also serves as a line from which to work and to facilitate the movement of firefighters and equipment. Designated roads also serve as firebreaks.

First bottom. The normal flood plain of a stream, subject to frequent or occasional flooding.

Flood plain. A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

Fluvial. Of or pertaining to rivers; produced by river action, as a fluvial plain.

Footslope. The inclined surface at the base of a hill.

Forb. Any herbaceous plant not a grass or a sedge.

Forest cover. All trees and other woody plants (underbrush) covering the ground in a forest.

Forest type. A stand of trees similar in composition and development because of given physical and biological factors by which it may be differentiated from other stands.

Fragipan. A loamy, brittle subsurface horizon low in porosity and content of organic matter and low or moderate in clay but high in silt or very fine sand. A fragipan appears cemented and restricts roots. When dry, it is hard or very hard and has a higher bulk density than the horizon or horizons above. When moist, it tends to rupture suddenly under pressure rather than to deform slowly.

Genesis, soil. The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

Gilgai. Commonly, a succession of microbasins and microknolls in nearly level areas or of microvalleys and microridges parallel with the slope. Typically, the microrelief of clayey soils that shrink and swell considerably with changes in moisture content.

Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.

Graded stripcropping. Growing crops in strips that grade toward a protected waterway.

Grassed waterway. A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.

Gravel. Rounded or angular fragments of rock as much as 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.

Gravelly soil material. Material that is 15 to 35 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter.

Green manure crop (agronomy). A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.

Ground water. Water filling all the unblocked pores of the material below the water table.

Gully. A miniature valley with steep sides cut by running water and through which water ordinarily runs only after rainfall. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.

High-residue crops. Such crops as small grain and corn used for grain. If properly managed, residue from these crops can be used to control erosion until the next crop in the rotation is established. These crops return large amounts of organic matter to the soil.

Hill. A natural elevation of the land surface, rising as much as 1,000 feet above surrounding lowlands, commonly of limited summit area and having a well defined outline; hillsides generally have slopes of more than 15 percent. The distinction between a hill and a mountain is arbitrary and is dependent on local usage.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the “Soil Survey Manual.” The major horizons of mineral soil are as follows:

O horizon.—An organic layer of fresh and decaying plant residue.

A horizon.—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

E horizon.—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

B horizon.—The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

C horizon.—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

Cr horizon.—Soft, consolidated bedrock beneath the soil.

Humus. The well decomposed, more or less stable part of the organic matter in mineral soils.

Hydrologic soil groups. Refers to soils grouped according to their runoff potential. The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties are depth to a seasonal high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

Illuviation. The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Impervious soil. A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

Infiltration. The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Intermittent stream. A stream, or reach of a stream, that flows for prolonged periods only when it receives ground-water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

Iron depletions. Low-chroma zones having a low content of iron and manganese oxide because of chemical reduction and removal, but having a clay content similar to that of the adjacent matrix. A type of redoximorphic depletion.

Irrigation. Application of water to soils to assist in production of crops. Methods of irrigation are:

Basin.—Water is applied rapidly to nearly level plains surrounded by levees or dikes.

Border.—Water is applied at the upper end of a strip in which the lateral flow of water is controlled by small earth ridges called border dikes, or borders.

Controlled flooding.—Water is released at intervals from closely spaced field ditches and distributed uniformly over the field.

Corrugation.—Water is applied to small, closely spaced furrows or ditches in fields of close-growing crops or in orchards so that it flows in only one direction.

Drip (or trickle).—Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.

Furrow.—Water is applied in small ditches made by cultivation implements. Furrows are used for tree and row crops.

Sprinkler.—Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

Subirrigation.—Water is applied in open ditches or tile lines until the water table is raised enough to wet the soil.

Wild flooding.—Water, released at high points, is allowed to flow onto an area without controlled distribution.

Knoll. A small, low, rounded hill rising above adjacent landforms.

Lacustrine deposit. Material deposited in lake water and exposed when the water level is lowered or the elevation of the land is raised.

Landslide. The rapid downhill movement of a mass of soil and loose rock, generally when wet or saturated. The speed and distance of movement, as well as the amount of soil and rock material, vary greatly.

Large stones (in tables). Rock fragments 3 inches (7.6 centimeters) or more across. Large stones adversely affect the specified use of the soil.

Leaching. The removal of soluble material from soil or other material by percolating water.

Liquid limit. The moisture content at which the soil passes from a plastic to a liquid state.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Low-residue crops. Such crops as corn used for silage, peas, beans, and potatoes. Residue from these crops is not adequate to control erosion until the next crop in the rotation is established. These crops return little organic matter to the soil.

Low strength. The soil is not strong enough to support loads.

Marl. An earthy, unconsolidated deposit consisting chiefly of calcium carbonate mixed with clay in approximately equal amounts.

Masses. Concentrations of substances in the soil matrix that do not have a clearly defined boundary with the surrounding soil material and cannot be removed as a discrete unit. Common compounds making up masses are calcium carbonate, gypsum or other soluble salts, iron oxide, and manganese oxide. Masses consisting of iron oxide or manganese oxide generally are considered a type of redoximorphic concentration.

Mechanical treatment. Use of mechanical equipment for seeding, brush management, and other management practices.

Medium textured soil. Very fine sandy loam, loam, silt loam, or silt.

Mineral soil. Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

Minimum tillage. Only the tillage essential to crop production and prevention of soil damage.

Miscellaneous area. An area that has little or no natural soil and supports little or no vegetation.

Moderately coarse textured soil. Coarse sandy loam, sandy loam, or fine sandy loam.

Moderately fine textured soil. Clay loam, sandy clay loam, or silty clay loam.

Morphology, soil. The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mottling, soil. Irregular spots of different colors that vary in number and size. Descriptive terms are as follows: abundance—*few, common,* and *many;* size—*fine, medium,* and *coarse;* and contrast—*faint, distinct,* and *prominent.* The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium,* from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse,* more than 15 millimeters (about 0.6 inch).

Mudstone (claystone, siltstone). Sedimentary rock formed by induration of silt and clay in approximately equal amounts.

Munsell notation. A designation of color by degrees of three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.

Natric horizon. A special kind of argillic horizon that contains enough exchangeable sodium to have an adverse effect on the physical condition of the subsoil.

Neutral soil. A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)

Nodules. Cemented bodies lacking visible internal structure. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up nodules. If formed in place, nodules of iron oxide or manganese oxide are considered types of redoximorphic concentrations.

Nutrient, plant. Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

Organic matter. Plant and animal residue in the soil in various stages of decomposition. The content of organic matter in the surface layer is described as follows:

Low	0.5 to 2.0 percent
Medium	2.0 to 4.0 percent
High	4.0 to 8.0 percent

Pan. A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan, fragipan, claypan, plowpan,* and *traffic pan*.

Parent material. The unconsolidated organic and mineral material in which soil forms.

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Pedon. The smallest volume that can be called "a soil." A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

Percolation. The downward movement of water through the soil.

Percs slowly (in tables). The slow movement of water through the soil adversely affects the specified use.

Permeability. The quality of the soil that enables water or air to move downward through the profile. The rate at which a saturated soil transmits water is accepted as a measure of this quality. In soil physics, the rate is referred to as "saturated hydraulic conductivity," which is defined in the "Soil Survey Manual." In line with conventional usage in the engineering profession and with traditional usage in published soil surveys, this rate of flow continues to be expressed as "permeability." Terms describing permeability, measured in inches per hour, are as follows:

Extremely slow	0.0 to 0.01 inch
Very slow	0.01 to 0.06 inch
Slow	0.06 to 0.2 inch
Moderately slow	0.2 to 0.6 inch
Moderate	0.6 inch to 2.0 inches
Moderately rapid	2.0 to 6.0 inches
Rapid	6.0 to 20 inches
Very rapid	more than 20 inches

Phase, soil. A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Piping (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Plateau. An extensive upland mass with relatively flat summit area that is considerably elevated (more than 100 meters) above adjacent lowlands and separated from them on one or more sides by escarpments.

Plinthite. The sesquioxide-rich, humus-poor, highly weathered mixture of clay with quartz and other diluents. It commonly appears as red mottles, usually in platy, polygonal, or reticulate patterns. Plinthite changes irreversibly to an ironstone hardpan or to irregular aggregates on repeated wetting and drying, especially if it is exposed also to heat from the sun. In a moist soil, plinthite can be cut with a spade. It is a form of laterite.

Plowpan. A compacted layer formed in the soil directly below the plowed layer.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poor filter (in tables). Because of rapid or very rapid permeability, the soil may not adequately filter effluent from a waste disposal system.

Poorly graded. Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

Potential rooting depth (effective rooting depth). Depth to which roots could penetrate if the content of moisture in the soil were adequate. The soil has no properties restricting the penetration of roots to this depth.

Prescribed burning. Deliberately burning an area for specific management purposes, under the appropriate conditions of weather and soil moisture and at the proper time of day.

Productivity, soil. The capability of a soil for producing a specified plant or sequence of plants under specific management.

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

Proper grazing use. Grazing at an intensity that maintains enough cover to protect the soil and maintain or improve the quantity and quality of the desirable vegetation. This practice increases the vigor and reproduction capacity of the key plants and promotes the accumulation of litter and mulch necessary to conserve soil and water.

Reaction, soil. A measure of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Ultra acid	less than 3.5
Extremely acid	3.5 to 4.4
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Moderately acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Slightly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

Redoximorphic concentrations. Nodules, concretions, soft masses, pore linings, and other features resulting from the accumulation of iron or manganese oxide. An indication of chemical reduction and oxidation resulting from saturation.

Redoximorphic depletions. Low-chroma zones from which iron and manganese oxide or a combination of iron and manganese oxide and clay has been removed. These zones are indications of the chemical reduction of iron resulting from saturation.

Redoximorphic features. Redoximorphic concentrations, redoximorphic depletions, reduced matrices, a positive reaction to alpha,alpha-dipyridyl, and other features indicating the chemical reduction and oxidation of iron and manganese compounds resulting from saturation.

Reduced matrix. A soil matrix that has low chroma in situ because of chemically reduced iron (Fe II). The chemical reduction results from nearly continuous wetness. The matrix undergoes a change in hue or chroma within 30 minutes after exposure to air as the iron is oxidized (Fe III). A type of redoximorphic feature.

Regolith. The unconsolidated mantle of weathered rock and soil material on the earth's surface; the loose earth material above the solid rock.

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

Residuum (residual soil material). Unconsolidated, weathered or partly weathered mineral material that accumulated as consolidated rock disintegrated in place.

Rill. A steep-sided channel resulting from accelerated erosion. A rill generally is a few inches deep and not wide enough to be an obstacle to farm machinery.

Road cut. A sloping surface produced by mechanical means during road construction. It is commonly on the uphill side of the road.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

Rooting depth (in tables). Shallow root zone. The soil is shallow over a layer that greatly restricts roots.

Root zone. The part of the soil that can be penetrated by plant roots.

Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Sand. As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Sandstone. Sedimentary rock containing dominantly sand-sized particles.

Saturation. Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.

Second bottom. The first terrace above the normal flood plain (or first bottom) of a river.

Sedimentary rock. Rock made up of particles deposited from suspension in water. The chief kinds of sedimentary rock are conglomerate, formed from gravel; sandstone, formed from sand; shale, formed from clay; and limestone, formed from soft masses of calcium carbonate. There are many intermediate types. Some wind-deposited sand is consolidated into sandstone.

Seepage (in tables). The movement of water through the soil. Seepage adversely affects the specified use.

Sequum. A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)

Series, soil. A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Shale. Sedimentary rock formed by the hardening of a clay deposit.

Sheet erosion. The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

Shrink-swell (in tables). The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Silica. A combination of silicon and oxygen. The mineral form is called quartz.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Siltstone. Sedimentary rock made up of dominantly silt-sized particles.

Similar soils. Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.

Slickensides. Polished and grooved surfaces produced by one mass sliding past another. In soils, slickensides may occur at the bases of slip surfaces on the steeper slopes; on faces of blocks, prisms, and columns; and in swelling clayey soils, where there is marked change in moisture content.

Slippage (in tables). Soil mass susceptible to movement downslope when loaded, excavated, or wet.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance. In this survey, classes for simple slopes are as follows:

Level	0 to 1 percent
Nearly level	0 to 2 percent
Very gently sloping	1 to 3 percent
Gently sloping	2 to 5 percent
Moderately sloping	5 to 8 percent
Strongly sloping	5 to 15 percent
Moderately steep	15 to 25 percent
Steep	25 to 35 percent
Very steep	35 percent and higher

Classes for complex slopes are as follows:

Nearly level	0 to 2 percent
Gently undulating	0 to 3 percent
Undulating	3 to 8 percent
Rolling	5 to 15 percent
Hilly	15 to 25 percent
Steep	15 to 35 percent
Very steep	35 percent and higher

Slope (in tables). Slope is great enough that special practices are required to ensure satisfactory performance of the soil for a specific use.

Slow intake (in tables). The slow movement of water into the soil.

Small stones (in tables). Rock fragments less than 3 inches (7.6 centimeters) in diameter. Small stones adversely affect the specified use of the soil.

Sodic (alkali) soil. A soil having so high a degree of alkalinity (pH 8.5 or higher) or so high a percentage of exchangeable sodium (15 percent or more of the total exchangeable bases), or both, that plant growth is restricted.

Sodicity. The degree to which a soil is affected by exchangeable sodium. Sodicity is expressed as a sodium adsorption ratio (SAR) of a saturation extract, or the ratio of Na^+ to $Ca^{++} + Mg^{++}$. The degrees of sodicity and their respective ratios are:

Slight	less than 13:1
Moderate	13-30:1
Strong	more than 30:1

Soft bedrock. Bedrock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.

Soil. A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief over periods of time.

Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand	2.0 to 1.0
Coarse sand	1.0 to 0.5
Medium sand	0.5 to 0.25
Fine sand	0.25 to 0.10
Very fine sand	0.10 to 0.05
Silt	0.05 to 0.002
Clay	less than 0.002

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.

Stones. Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.

Stony. Refers to a soil containing stones in numbers that interfere with or prevent tillage.

Stripcropping. Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to wind erosion and water erosion.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. 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 without any regular cleavage, as in many hardpans).

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Subsoiling. Tilling a soil below normal plow depth, ordinarily to shatter a hardpan or claypan.

Substratum. The part of the soil below the solum.

Subsurface layer. Any surface soil horizon (A, E, AB, or EB) below the surface layer.

Surface layer. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the “plow layer,” or the “Ap horizon.”

Surface soil. The A, E, AB, and EB horizons, considered collectively. It includes all subdivisions of these horizons.

Taxadjuncts. Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior. Soils are recognized as taxadjuncts only when one or more of their characteristics are slightly outside the range defined for the family of the series for which the soils are named.

Terrace. An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field generally is built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.

Terrace (geologic). An old alluvial plain, ordinarily flat or undulating, bordering a river, a lake, or the sea.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying “coarse,” “fine,” or “very fine.”

Thin layer (in tables). Otherwise suitable soil material that is too thin for the specified use.

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Toeslope. The outermost inclined surface at the base of a hill; part of a footslope.

Topsoil. The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Trace elements. Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.

Unstable fill (in tables). Risk of caving or sloughing on banks of fill material.

Upland. Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

Variegation. Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.

Water bars. Smooth, shallow ditches or depressional areas that are excavated at an angle across a sloping road. They are used to reduce the downward velocity of water and divert it off and away from the road surface. Water bars can easily be driven over if constructed properly.

Weathering. All physical and chemical changes produced in rocks or other deposits at or near the earth’s surface by atmospheric agents. These changes result in disintegration and decomposition of the material.

Well graded. Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

Wilting point (or permanent wilting point). The moisture content of soil, on an ovendry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

Tables

Table 1.--Temperature and Precipitation

(Recorded in the period 1961-90 at Thomasville, Alabama)

Month	Temperature						Precipitation				
	Average daily maximum	Average daily minimum	Average daily	2 years in 10 will have-- Maximum temperature higher than--	2 years in 10 will have-- Minimum temperature lower than--	Average number of growing degree days*	Average	2 years in 10 will have-- Less than--	2 years in 10 will have-- More than--	Average number of days with 0.10 inch or more	Average snowfall
	°F	°F	°F	°F	°F	Units	In	In	In		In
January	56.3	33.1	44.7	77	8	67	5.43	3.45	7.22	8	0.3
February	61.0	36.0	48.5	81	16	97	5.53	3.13	7.65	6	.1
March	69.6	43.8	56.7	86	23	250	6.88	3.70	9.68	7	.0
April	77.5	51.7	64.6	89	33	442	4.56	2.02	6.72	5	.0
May	83.3	59.5	71.4	93	44	663	4.69	1.65	7.21	6	.0
June	89.4	66.6	78.0	99	53	839	4.28	1.77	6.41	6	.0
July	91.1	69.5	80.3	100	61	940	6.01	3.49	8.26	8	.0
August	90.7	68.9	79.8	98	60	915	4.20	2.13	6.01	7	.0
September	86.9	63.8	75.4	98	46	760	3.70	1.32	5.67	5	.0
October	78.0	51.8	64.9	92	34	447	2.82	0.70	4.66	3	.0
November	68.3	43.3	55.8	85	24	221	4.47	2.42	6.27	5	.0
December	59.8	36.2	48.0	79	13	105	5.94	3.31	8.26	7	.0
Yearly:											
Average	76.0	52.0	64.0	---	---	---	---	---	---	---	
Extreme	104	-1	---	101	6	---	---	---	---	---	
Total	---	---	---	---	---	5,745	58.51	49.66	66.98	73	.4

* A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (50 degrees F).

Table 2.--Freeze Dates in Spring and Fall

(Recorded in the period 1961-90 at Thomasville, Alabama)

Probability	Temperature		
	24°F or lower	28°F or lower	32°F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	Mar. 13	Mar. 24	Apr. 3
2 years in 10 later than--	Mar. 5	Mar. 16	Mar. 29
5 years in 10 later than--	Feb. 19	Mar. 3	Mar. 20
First freezing temperature in fall:			
1 year in 10 earlier than--	Nov. 21	Nov. 8	Oct. 27
2 years in 10 earlier than--	Nov. 28	Nov. 14	Nov. 1
5 years in 10 earlier than--	Dec. 13	Nov. 25	Nov. 11

Table 3.--Growing Season

(Recorded in the period 1961-90 at Thomasville, Alabama)

Probability	Daily minimum temperature during growing season		
	Higher than 24°F	Higher than 28°F	Higher than 32°F
	Days	Days	Days
9 years in 10	246	232	214
8 years in 10	256	241	221
5 years in 10	275	258	234
2 years in 10	295	276	248
1 year in 10	305	285	255

Table 4.--Suitability and Limitations of General Soil Map Units for Specified Uses

Map unit	Extent of area	Cultivated crops	Pasture and hayland	Forestland	Urban uses
	Pct				
1. Urbo-Mooreville-Una	6	Poorly suited: flooding, wetness.	Poorly suited: flooding, wetness.	Suited: restricted use of equipment, seedling survival, plant competition.	Not suited: flooding, wetness.
2. Lenoir-Izagora-Annemaine	2	Suited: wetness.	Suited: wetness.	Well suited	Poorly suited: flooding, wetness, restricted permeability.
3. Izagora-Ochlockonee-Kinston	10	Poorly suited: flooding, wetness.	Suited: flooding, wetness.	Suited: restricted use of equipment, seedling survival, plant competition.	Not suited: flooding, wetness.
4. Savannah-Izagora-Luverne	9	Suited: hazard of erosion, wetness, low fertility.	Well suited	Well suited	Suited: wetness, restricted permeability, shrink-swell.
5. Luverne-Smithdale	17	Poorly suited: hazard of erosion, low fertility.	Suited: hazard of erosion, low fertility, restricted use of equipment.	Well suited	Suited: slope, restricted permeability, shrink-swell.
6. Luverne-Smithdale-Boykin	12	Not suited: hazard of erosion, restricted use of equipment, low fertility, droughtiness.	Poorly suited: restricted use of equipment, low fertility, droughtiness, hazard of erosion.	Suited: restricted use of equipment, hazard of erosion, seedling survival.	Poorly suited: slope, restricted permeability, shrink-swell, droughtiness.
7. Smithdale-Boykin-Luverne	17	Not suited: hazard of erosion, restricted use of equipment, low fertility, droughtiness.	Poorly suited: restricted use of equipment, low fertility, droughtiness, hazard of erosion.	Suited: restricted use of equipment, seedling survival, hazard of erosion.	Poorly suited: slope, restricted permeability, droughtiness.
8. Brantley-Okeelala-Smithdale	10	Not suited: hazard of erosion, restricted use of equipment.	Poorly suited: restricted use of equipment, hazard of erosion.	Suited: restricted use of equipment, hazard of erosion.	Poorly suited: slope, restricted permeability, shrink-swell.

Table 4.--Suitability and Limitations of General Soil Map Units for Specified Uses--Continued

Map unit	Extent of area	Cultivated crops	Pasture and hayland	Forestland	Urban uses
	Pct				
9. Brantley-Sumter-Maytag----	1.5	Poorly suited: hazard of erosion, poor tilth, restricted use of equipment.	Suited: hazard of erosion, restricted use of equipment.	Poorly suited: restricted use of equipment, seedling survival.	Poorly suited: slope, depth to rock, shrink-swell, restricted permeability.
10. Wilcox-Mayhew------------	0.5	Poorly suited: hazard of erosion, poor tilth, wetness.	Suited: restricted use of equipment, wetness.	Suited: restricted use of equipment, seedling survival.	Poorly suited: shrink-swell, restricted permeability, wetness, low strength.
11. Arundel-Cantuche-Smithdale---------------	15	Not suited: restricted use of equipment, hazard of erosion, stoniness, depth to rock.	Poorly suited: restricted use of equipment, hazard of erosion.	Poorly suited: restricted use of equipment, seedling survival, hazard of erosion.	Poorly suited: slope, depth to rock, shrink-swell, restricted permeability.

Table 5.--Acreage and Proportionate Extent of the Soils

Map symbol	Soil name	Acres	Percent
AnA	Annemaine silt loam, 0 to 2 percent slopes, rarely flooded	3,420	0.6
ArF	Arundel-Cantuche complex, 25 to 60 percent slopes, stony	54,800	9.3
AwE	Arundel-Williamsville complex, 15 to 35 percent slopes	6,280	1.1
BbA	Bibb-Iuka complex, 0 to 1 percent slopes, frequently flooded	37,400	6.3
BeB	Bigbee loamy sand, 0 to 5 percent slopes, rarely flooded	540	0.1
BgD2	Boswell fine sandy loam, 5 to 12 percent slopes, eroded	1,600	0.3
BkB	Boykin loamy fine sand, 1 to 5 percent slopes	1,040	0.2
BnE2	Boykin-Luverne-Smithdale complex, 15 to 35 percent slopes, eroded	82,700	14.0
BrE2	Brantley-Okeelala complex, 15 to 35 percent slopes, eroded	26,400	4.5
BrF	Brantley-Okeelala complex, 35 to 60 percent slopes	10,120	1.7
CaA	Cahaba sandy loam, 0 to 2 percent slopes, rarely flooded	2,090	0.3
CoC2	Conecuh loam, 3 to 8 percent slopes, eroded	680	0.1
FaA	Fluvaquents, ponded	1,040	0.2
FrA	Freest fine sandy loam, 0 to 2 percent slopes	3,740	0.6
HaB	Halso silt loam, 1 to 3 percent slopes	440	0.1
IzA	Izagora fine sandy loam, 0 to 2 percent slopes, rarely flooded	33,400	5.7
LaA	Latonia loamy sand, 0 to 2 percent slopes, rarely flooded	560	0.1
LdC2	Lauderdale-Arundel complex, 2 to 10 percent slopes, stony, eroded	3,500	0.6
LeA	Leeper silty clay loam, 0 to 1 percent slopes, frequently flooded	4,620	0.8
LfA	Lenoir silt loam, 0 to 2 percent slopes, rarely flooded	6,850	1.2
LgA	Louin silty clay, 0 to 2 percent slopes	170	*
LhA	Lucedale fine sandy loam, 0 to 2 percent slopes	150	*
LnB	Luverne sandy loam, 1 to 5 percent slopes	32,100	5.4
LnD2	Luverne sandy loam, 5 to 15 percent slopes, eroded	49,650	8.4
LnE2	Luverne sandy loam, 15 to 35 percent slopes, eroded	21,700	3.7
MaA	Mayhew silty clay loam, 0 to 2 percent slopes	250	*
MdA	McCrory-Deerford complex, 0 to 2 percent slopes, occasionally flooded	9,880	1.7
MnB	McLaurin fine sandy loam, 2 to 5 percent slopes	180	*
OKA	Ochlockonee, Kinston, and Iuka soils, 0 to 1 percent slopes, frequently flooded	26,540	4.5
OtB	Oktibbeha clay, 1 to 5 percent slopes	180	*
Pt	Pits	120	*
RbD2	Rayburn silt loam, 5 to 15 percent slopes, eroded	3,540	0.6
RvA	Riverview loam, 0 to 2 percent slopes, occasionally flooded	2,660	0.4
SaA	Savannah silt loam, 0 to 2 percent slopes	11,030	1.9
SaB	Savannah silt loam, 2 to 5 percent slopes	14,720	2.5
SmB	Smithdale sandy loam, 2 to 5 percent slopes	44,480	7.6
SmD	Smithdale loamy fine sand, 5 to 15 percent slopes	27,580	4.7
StD2	Sumter-Maytag complex, 3 to 8 percent slopes, eroded	1,740	0.3
StE2	Sumter-Maytag complex, 8 to 15 percent slopes, eroded	2,330	0.4
ToC2	Toxey-Brantley-Hannon complex, 3 to 8 percent slopes, eroded	4,590	0.8
UnA	Una clay, ponded	4,680	0.8
UrB	Urbo-Mooreville-Una complex, gently undulating, frequently flooded	30,250	5.1
WaB	Wadley loamy fine sand, 1 to 5 percent slopes	2,100	0.4
WcB	Wilcox silty clay, 1 to 5 percent slopes	900	0.1
WcD2	Wilcox silty clay, 5 to 15 percent slopes, eroded	1,890	0.3
WmC	Williamsville fine sandy loam, 2 to 8 percent slopes	4,070	0.7
	Areas of water less than 40 acres in size	3,300	0.6
	Areas of water more than 40 acres in size	7,470	1.3
	Total	589,470	100.0

* Less than 0.1 percent.

Table 6.--Land Capability Classes and Yields per Acre of Crops

(Yields are those that can be expected under a high level of management. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil.)

Soil name and map symbol	Land capability	Cotton lint	Corn	Soybeans	Watermelon	Wheat
		Lbs	Bu	Bu	Cwt	Bu
AnA----------------------- Annemaine	IIw	800	100	40	---	40
ArF----------------------- Arundel-Cantuche	VIIe	---	---	---	---	---
AwE----------------------- Arundel-Williamsville	VIIe	---	---	---	---	---
BbA----------------------- Bibb-Iuka	Vw	---	---	---	---	---
BeB----------------------- Bigbee	IIIs	---	50	---	140	---
BgD2---------------------- Boswell	VIe	---	---	---	---	---
BkB----------------------- Boykin	IIs	600	70	25	140	30
BnE2---------------------- Boykin-Luverne-Smithdale	VIIe	---	---	---	---	---
BrE2, BrF----------------- Brantley-Okeelala	VIIe	---	---	---	---	---
CaA----------------------- Cahaba	I	800	100	35	200	50
CoC2---------------------- Conecuh	IVe	---	---	25	---	---
FaA----------------------- Fluvaquents	VIIw	---	---	---	---	---
FrA----------------------- Freest	IIw	650	90	35	---	50
HaB----------------------- Halso	IIIe	---	---	---	---	---
IzA----------------------- Izagora	IIw	650	100	35	200	50
LaA----------------------- Latonia	IIs	650	70	25	170	35
LdC2---------------------- Lauderdale-Arundel	IVs	---	---	---	---	---
LeA----------------------- Leeper	IVw	---	---	30	---	---
LfA----------------------- Lenoir	IIIw	525	100	40	---	35

Table 6.--Land Capability Classes and Yields per Acre of Crops--Continued

Soil name and map symbol	Land capability	Cotton lint	Corn	Soybeans	Watermelon	Wheat
		Lbs	Bu	Bu	Cwt	Bu
LgA: Louin	IIIw	500	45	30	---	30
LhA: Lucedale	I	800	110	40	200	50
LnB: Luverne	IIIe	550	75	30	170	40
LnD2: Luverne	VIe	---	---	---	---	---
LnE2: Luverne	VIIe	---	---	---	---	---
MaA: Mayhew	IIIw	---	---	30	---	30
MdA: McCrory-Deerford	IVw	---	---	---	---	---
MnB: McLaurin	IIe	600	75	25	170	35
OKA: Ochlockonee, Kinston, and Iuka	Vw	---	---	---	---	---
OtB: Oktibbeha	IIIe	500	75	35	---	40
Pt: Pits	VIIIs	---	---	---	---	---
RbD2: Rayburn	VIe	---	---	---	---	---
RvA: Riverview	IIw	800	120	40	200	50
SaA: Savannah	IIw	700	90	35	180	40
SaB: Savannah	IIe	650	85	30	170	35
SmB: Smithdale	IIe	650	70	30	170	30
SmD: Smithdale	IVe	400	55	25	140	---
StD2: Sumter-Maytag	IVe	---	---	25	---	35
StE2: Sumter-Maytag	VIe	---	---	---	---	---
ToC2: Toxey-Brantley-Hannon	IVe	---	50	---	---	30

Table 6.--Land Capability Classes and Yields per Acre of Crops--Continued

Soil name and map symbol	Land capability	Cotton lint	Corn	Soybeans	Watermelon	Wheat
		Lbs	Bu	Bu	Cwt	Bu
UnA: Una	VIIw	---	---	---	---	---
UrB: Urbo-Mooreville-Una	Vw	---	---	---	---	---
WaB: Wadley	IIIs	---	---	---	140	---
WcB: Wilcox	IIIe	---	---	25	---	---
WcD2: Wilcox	VIe	---	---	---	---	---
WmC: Williamsville	IVe	600	70	25	170	30

Table 7.--Yields per Acre of Pasture and Hay

(Yields are those that can be expected under a high level of management. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil.)

Soil name and map symbol	Improved bermuda-grass	Bahiagrass	Tall fescue	Improved bermuda-grass hay	Cool season annuals	Johnson-grass hay	Dallisgrass-clover
	AUM*	AUM*	AUM*	Tons	AUM*	Tons	AUM*
AnA------------- Annemaine	8.5	9.0	---	5.0	5.0	---	8.0
ArF------------- Arundel-Cantuche	---	---	---	---	---	---	---
AwE------------- Arundel-Williamsville	7.0	6.0	---	---	---	---	---
BbA------------- Bibb-Iuka	---	---	---	---	---	---	---
BeB------------- Bigbee	7.0	7.0	---	4.0	4.5	---	---
BgD2------------ Boswell	6.0	5.5	---	3.5	3.0	---	---
BkB------------- Boykin	7.0	7.0	---	3.5	---	---	---
BnE2------------ Boykin-Luverne-Smithdale	---	---	---	---	---	---	---
BrE2, BrF------- Brantley-Okeelala	---	---	---	---	---	---	---
CaA------------- Cahaba	10.0	8.5	---	6.0	5.0	---	---
CoC2------------ Conecuh	6.0	5.5	---	3.5	4.0	---	---
FaA------------- Fluvaquents	---	---	---	---	---	---	---
FrA------------- Freest	9.0	9.0	7.0	4.5	4.5	---	8.0
HaB------------- Halso	7.0	6.0	---	4.0	4.5	---	---
IzA------------- Izagora	8.0	8.0	7.0	4.5	4.5	---	8.0
LaA------------- Latonia	9.5	8.5	---	5.5	4.5	---	---
LdC2------------ Lauderdale-Arundel	---	5.5	---	---	---	---	---

See footnote at end of table.

Table 7.--Yields per Acre of Pasture and Hay--Continued

Soil name and map symbol	Improved bermuda-grass	Bahiagrass	Tall fescue	Improved bermuda-grass hay	Cool season annuals	Johnson-grass hay	Dallisgrass-clover
	AUM*	AUM*	AUM*	Tons	AUM*	Tons	AUM*
LeA------------- Leeper	---	6.0	8.5	---	---	4.5	8.0
LfA------------- Lenoir	8.0	7.5	---	4.5	---	---	7.5
LgA------------- Louin	---	8.5	---	---	---	5.0	7.0
LhA------------- Lucedale	10.0	8.5	---	6.0	5.0	---	---
LnB------------- Luverne	9.5	8.5	---	4.5	4.5	---	---
LnD2------------ Luverne	8.0	7.0	---	4.0	4.0	---	---
LnE2------------ Luverne	---	---	---	---	---	---	---
MaA------------- Mayhew	---	8.0	6.0	---	---	---	5.5
MdA------------- McCrory-Deerford	---	5.0	---	---	---	---	---
MnB------------- McLaurin	9.0	8.0	---	5.0	5.0	---	---
OKA------------- Ochlockonee, Kinston, and Iuka	---	6.0	---	---	---	---	6.0
OtB------------- Oktibbeha	---	---	8.0	---	---	5.0	7.5
Pt. Pits							
RbD2------------ Rayburn	6.0	5.5	---	3.5	3.0	---	---
RvA------------- Riverview	10.0	9.0	---	7.0	5.0	5.0	7.0
SaA------------- Savannah	8.5	8.0	---	4.5	4.5	---	---
SaB------------- Savannah	8.5	8.0	---	4.5	4.5	---	---
SmB------------- Smithdale	9.0	8.0	---	4.5	4.5	---	---
SmD------------- Smithdale	8.5	7.5	---	4.5	4.5	---	---

See footnote at end of table.

Table 7.--Yields per Acre of Pasture and Hay--Continued

Soil name and map symbol	Improved bermudagrass	Bahiagrass	Tall fescue	Improved bermudagrass hay	Cool season annuals	Johnsongrass hay	Dallisgrass-clover
	AUM*	AUM*	AUM*	Tons	AUM*	Tons	AUM*
StD2------------ Sumter-Maytag	---	---	3.0	---	---	---	---
StE2------------ Sumter-Maytag	---	---	3.0	---	---	---	---
ToC2------------ Toxey-Brantley-Hannon	---	---	8.0	---	---	5.0	6.5
UnA------------- Una	---	---	---	---	---	---	---
UrB------------- Urbo-Mooreville-Una	---	---	5.5	---	---	---	5.0
WaB------------- Wadley	7.0	7.0	---	3.5	---	---	---
WcB------------- Wilcox	---	7.0	8.5	---	---	5.0	7.0
WcD2------------ Wilcox	---	6.0	6.0	---	---	---	---
WmC------------- Williamsville	9.0	8.0	---	4.5	4.5	---	---

* Animal-unit-month: The amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for 30 days.

Table 8.--Woodland Management and Productivity

(Only the soils suitable for production of commercial trees are listed. Absence of an entry indicates that information was not available.)

Soil name and map symbol	Ordination symbol	Management concerns: Erosion hazard	Management concerns: Equipment limitation	Management concerns: Seedling mortality	Management concerns: Plant competition	Potential productivity: Common trees	Potential productivity: Site index	Potential productivity: Volume*	Trees to plant
AnA------------- Annemaine	9W	Slight	Moderate	Slight	Moderate	Loblolly pine-------	90	2.2	Yellow-poplar,
						Shortleaf pine------	80	---	loblolly pine,
						Slash pine----------	90	---	slash pine,
						Yellow-poplar-------	85	---	sweetgum,
						Sweetgum------------	95	---	American
						American sycamore---	90	---	sycamore.
						Water oak-----------	90	---	
ArF:									
Arundel--------	9R	Severe	Severe	Moderate	Moderate	Loblolly pine-------	90	2.2	Loblolly pine,
						Shortleaf pine------	80	---	slash pine.
Cantuche-------	7R	Severe	Severe	Severe	Slight	Loblolly pine-------	75	1.8	Loblolly pine,
						Shortleaf pine------	65	---	longleaf pine.
						Longleaf pine-------	65	---	
AwE:									
Arundel--------	9R	Moderate	Moderate	Moderate	Moderate	Loblolly pine-------	90	2.2	Loblolly pine,
						Shortleaf pine------	80	---	slash pine.
Williamsville--	10R	Moderate	Moderate	Slight	Moderate	Loblolly pine-------	95	2.5	Loblolly pine,
						Slash pine----------	95	---	slash pine.
						Longleaf pine-------	85	---	
BbA:									
Bibb-----------	9W	Slight	Severe	Severe	Severe	Loblolly pine-------	90	2.2	Loblolly pine,
						Sweetgum------------	90	---	sweetgum,
						Water oak-----------	90	---	green ash,
						Blackgum------------	---	---	willow oak,
						Green ash-----------	80	---	slash pine.
Iuka-----------	11W	Slight	Moderate	Moderate	Severe	Loblolly pine-------	100	2.7	Loblolly pine,
						Sweetgum------------	100	---	sweetgum,
						Cherrybark oak------	110	---	Shumard's oak,
						Water oak-----------	100	---	yellow-poplar,
						Green ash-----------	90	---	slash pine.
BeB------------- Bigbee	7S	Slight	Moderate	Severe	Slight	Loblolly pine-------	75	1.6	Loblolly pine,
						Longleaf pine-------	65	---	longleaf pine.
BgD2------------ Boswell	8C	Slight	Moderate	Moderate	Moderate	Loblolly pine-------	85	2.1	Loblolly pine,
						Shortleaf pine------	75	---	slash pine.
BkB------------- Boykin	8S	Slight	Moderate	Severe	Moderate	Loblolly pine-------	85	2.1	Loblolly pine,
						Shortleaf pine------	75	---	longleaf pine.
						Longleaf pine-------	75	---	
						Slash pine----------	85	---	
BnE2:									
Boykin---------	8R	Moderate	Moderate	Severe	Moderate	Loblolly pine-------	85	2.1	Loblolly pine,
						Shortleaf pine------	75	---	longleaf pine.
						Longleaf pine-------	75	---	
						Slash pine----------	85	---	

See footnotes at end of table.

Table 8.--Woodland Management and Productivity--Continued

Soil name and map symbol	Ordination symbol	Management concerns: Erosion hazard	Equipment limitation	Seedling mortality	Plant competition	Potential productivity: Common trees	Site index	Volume*	Trees to plant
BnE2:									
Luverne	9R	Moderate	Moderate	Moderate	Moderate	Loblolly pine	90	2.2	Loblolly pine, slash pine.
						Slash pine	90	---	
						Shortleaf pine	80	---	
Smithdale	9R	Moderate	Moderate	Slight	Slight	Loblolly pine	90	2.2	Loblolly pine, longleaf pine, slash pine.
						Longleaf pine	70	---	
						Slash pine	90	---	
BrE2:									
Brantley	9R	Moderate	Moderate	Moderate	Moderate	Loblolly pine	90	2.1	Loblolly pine, slash pine.
						Shortleaf pine	75	---	
						Slash pine	85	---	
Okeelala	9R	Moderate	Moderate	Slight	Slight	Loblolly pine	90	2.2	Loblolly pine, longleaf pine, shortleaf pine.
						Longleaf pine	80	---	
BrF:									
Brantley	8R	Severe	Severe	Slight	Moderate	Loblolly pine	85	2.1	Loblolly pine, slash pine.
						Shortleaf pine	75	---	
Okeelala	8R	Severe	Severe	Slight	Slight	Loblolly pine	85	2.1	Loblolly pine, longleaf pine.
						Longleaf pine	75	---	
CaA: Cahaba	10A	Slight	Slight	Slight	Moderate	Loblolly pine	95	2.5	Loblolly pine, slash pine, sweetgum, water oak, longleaf pine, cherrybark oak.
						Slash pine	95	---	
						Shortleaf pine	80	---	
						Yellow-poplar	105	---	
						Sweetgum	95	---	
						Water oak	95	---	
CoC2: Conecuh	9C	Slight	Moderate	Moderate	Severe	Loblolly pine	90	2.2	Loblolly pine, slash pine, water oak, sweetgum.
						Slash pine	90	---	
						Water oak	90	---	
						Sweetgum	90	---	
						Shortleaf pine	80	---	
FaA: Fluvaquents	---	Slight	Severe	Severe	Slight	Baldcypress	80	---	Baldcypress, green ash.
						Blackgum	---	---	
						Red maple	---	---	
						Swamp tupelo	---	---	
FrA: Freest	10W	Slight	Moderate	Slight	Moderate	Loblolly pine	95	2.5	Loblolly pine, slash pine, sweetgum, cherrybark oak.
						Shortleaf pine	90	---	
						Slash pine	95	---	
						Sweetgum	100	---	
HaB: Halso	9C	Slight	Moderate	Moderate	Severe	Loblolly pine	90	2.2	Loblolly pine, slash pine, water oak, sweetgum.
						Slash pine	90	---	
						Shortleaf pine	80	---	
						Water oak	90	---	
						Sweetgum	90	---	
IzA: Izagora	10W	Slight	Moderate	Slight	Moderate	Loblolly pine	95	2.5	Loblolly pine, slash pine, sweetgum, yellow-poplar, water oak.
						Slash pine	95	---	
						Sweetgum	100	---	
						Yellow-poplar	95	---	
						Water oak	95	---	

See footnotes at end of table.

Table 8.--Woodland Management and Productivity--Continued

Soil name and map symbol	Ordination symbol	Management concerns: Erosion hazard	Equipment limitation	Seedling mortality	Plant competition	Potential productivity: Common trees	Site index	Volume*	Trees to plant
LaA------------ Latonia	9A	Slight	Slight	Slight	Moderate	Loblolly pine-------	90	2.2	Loblolly pine, slash pine, longleaf pine.
						Longleaf pine-------	70	---	
						Slash pine----------	90	---	
LdC2:									
Lauderdale-----	6D	Slight	Slight	Moderate	Slight	Loblolly pine-------	70	1.4	Loblolly pine, shortleaf pine.
						Shortleaf pine------	70	---	
Arundel--------	9C	Slight	Moderate	Moderate	Moderate	Loblolly pine-------	90	2.2	Loblolly pine, slash pine, shortleaf pine.
						Shortleaf pine------	80	---	
LeA------------ Leeper	6W	Slight	Moderate	Moderate	Moderate	Water oak-----------	95	1.1	Sweetgum, water oak, Nuttall oak, green ash, cherrybark oak.
						Sweetgum------------	105	---	
						Green ash-----------	90	---	
LfA------------ Lenoir	9W	Slight	Severe	Slight	Severe	Loblolly pine-------	90	2.2	Loblolly pine, sweetgum, slash pine, cherrybark oak, water oak.
						Water oak-----------	75	---	
						Sweetgum------------	80	---	
						Swamp chestnut oak--	70	--	
						Red maple-----------	---	--	
						Blackgum------------	---	--	
LgA------------ Louin	8C	Slight	Moderate	Severe	Severe	Loblolly pine-------	80	1.8	Loblolly pine, slash pine.
						Shortleaf pine------	65	---	
						Eastern redcedar----	45	---	
						Southern red oak----	70	---	
						Post oak------------	---	---	
LhA------------ Lucedale	9A	Slight	Slight	Slight	Slight	Loblolly pine-------	90	2.2	Loblolly pine, slash pine, longleaf pine.
						Longleaf pine-------	75	---	
						Slash pine----------	90	---	
LnB, LnD2------- Luverne	9C	Slight	Moderate	Slight	Moderate	Loblolly pine-------	90	2.2	Loblolly pine, slash pine, longleaf pine.
						Slash pine----------	90	---	
						Longleaf pine-------	80	---	
LnE2----------- Luverne	9R	Moderate	Moderate	Slight	Moderate	Loblolly pine-------	90	2.2	Loblolly pine, slash pine, longleaf pine.
						Slash pine----------	90	---	
						Longleaf pine-------	80	---	
MaA------------ Mayhew	9W	Slight	Moderate	Moderate	Severe	Loblolly pine-------	90	2.2	Loblolly pine, slash pine, sweetgum, Shumard's oak.
						Water oak-----------	80	---	
						Post oak------------	---	---	
						Sweetgum------------	90	---	
MdA:									
McCrory--------	6W	Slight	Severe	Moderate	Severe	Water oak-----------	95	1.1	Sweetgum, water oak, willow oak, loblolly pine, slash pine.
						Sweetgum------------	95	---	
						Willow oak----------	95	---	
						Loblolly pine-------	80	---	

See footnotes at end of table.

Table 8.--Woodland Management and Productivity--Continued

Soil name and map symbol	Ordination symbol	Management concerns: Erosion hazard	Management concerns: Equipment limitation	Management concerns: Seedling mortality	Management concerns: Plant competition	Potential productivity: Common trees	Potential productivity: Site index	Potential productivity: Volume*	Trees to plant
MdA:									
Deerford	9W	Slight	Severe	Moderate	Severe	Loblolly pine	90	2.2	Loblolly pine, slash pine, water oak, Shumard's oak, cherrybark oak.
						Sweetgum	90	---	
						Slash pine	90	---	
						Water oak	90	---	
						Willow oak	90	---	
MnB: McLaurin	8A	Slight	Slight	Slight	Slight	Loblolly pine	85	2.1	Loblolly pine, slash pine, longleaf pine.
						Longleaf pine	70	---	
						Slash pine	85	---	
OKA:									
Ochlockonee	11W	Slight	Slight	Moderate	Moderate	Loblolly pine	100	2.7	Loblolly pine, slash pine, sweetgum, water oak, yellow-poplar, green ash, American sycamore.
						Yellow-poplar	110	---	
						Sweetgum	110	---	
						Water oak	100	---	
						American sycamore	110	---	
						Green ash	85	---	
Kinston	9W	Slight	Severe	Severe	Severe	Loblolly pine	90	2.2	Loblolly pine, water oak, willow oak, slash pine, cherrybark oak, green oak, sweetgum.
						Sweetgum	90	---	
						Green ash	80	---	
						Water oak	100	---	
						Cherrybark oak	90	---	
Iuka	11W	Slight	Moderate	Moderate	Severe	Loblolly pine	100	2.7	Loblolly pine, eastern cottonwood, yellow-poplar, cherrybark oak, slash pine.
						Sweetgum	100	---	
						Eastern cottonwood	105	---	
						Water oak	100	---	
						Cherrybark oak	110	---	
OtB: Oktibbeha	9C	Slight	Moderate	Severe	Moderate	Loblolly pine	90	2.2	Loblolly pine.
						Shortleaf pine	80	---	
						Eastern redcedar	---	---	
						Southern red oak	---	---	
RbD2: Rayburn	9C	Moderate	Moderate	Moderate	Moderate	Loblolly pine	90	2.2	Loblolly pine, slash pine.
						Shortleaf pine	80	---	
RvA: Riverview	11A	Slight	Slight	Slight	Severe	Loblolly pine	100	2.7	Loblolly pine, yellow-poplar, sweetgum, slash pine, eastern cottonwood, American sycamore.
						Yellow-poplar	110	---	
						Sweetgum	105	---	
						Green ash	85	---	
						Water oak	100	---	
						Swamp chestnut oak	90	---	

See footnotes at end of table.

Table 8.--Woodland Management and Productivity--Continued

Soil name and map symbol	Ordination symbol	Management concerns: Erosion hazard	Equipment limitation	Seedling mortality	Plant competition	Potential productivity: Common trees	Site index	Volume*	Trees to plant
SaA, SaB Savannah	9W	Slight	Moderate	Slight	Moderate	Loblolly pine Longleaf pine Slash pine Sweetgum	90 80 90 85	2.2 --- --- ---	Loblolly pine, slash pine, sweetgum, longleaf pine, yellow-poplar.
SmB, SmD Smithdale	9A	Slight	Slight	Slight	Slight	Loblolly pine Longleaf pine Slash pine	85 70 85	2.1 --- ---	Loblolly pine, longleaf pine, slash pine.
StD2, StE2:									
Sumter	3C	Moderate	Moderate	Severe	Slight	Eastern redcedar	40	**	Eastern redcedar.
Maytag	3C	Moderate	Moderate	Severe	Slight	Eastern redcedar Sugarberry	40 ---	** --	Eastern redcedar.
ToC2:									
Toxey	7C	Slight	Moderate	Severe	Moderate	Loblolly pine Eastern redcedar	75 40	1.6 ---	Loblolly pine, slash pine.
Brantley	8A	Slight	Moderate	Slight	Moderate	Loblolly pine Shortleaf pine	85 75	2.1 ---	Loblolly pine, slash pine.
Hannon	8C	Slight	Moderate	Severe	Moderate	Loblolly pine Longleaf pine Shortleaf pine Eastern redcedar	80 70 70 --	1.8 --- --- ---	Loblolly pine, slash pine.
UnA Una	6W	Slight	Severe	Severe	Severe	Water tupelo Baldcypress Swamp tupelo Overcup oak Black willow	65 80 --- --- ---	0.5 --- --- --- ---	Baldcypress, swamp tupelo, green ash, water oak.
UrB:									
Urbo	10W	Slight	Severe	Severe	Moderate	Loblolly pine Cherrybark oak Green ash Sweetgum Water oak Willow oak	95 95 85 95 90 90	2.5 --- --- --- --- ---	Sweetgum, cherrybark oak, slash pine, loblolly pine, swamp chestnut oak, Nuttall oak.
Mooreville	11W	Slight	Moderate	Slight	Severe	Loblolly pine Eastern cottonwood Green ash Cherrybark oak Sweetgum Yellow-poplar Water oak	100 105 85 100 105 100 100	2.7 --- --- --- --- --- ---	Cherrybark oak, slash pine, water oak, green ash, loblolly pine, sweetgum, yellow-poplar.
Una	6W	Slight	Severe	Severe	Severe	Water tupelo Baldcypress Swamp tupelo Overcup oak Black willow	65 80 --- --- ---	0.5 --- --- --- ---	Baldcypress, swamp tupelo, green ash, water oak.

See footnotes at end of table.

Table 8.--Woodland Management and Productivity--Continued

Soil name and map symbol	Ordination symbol	Management concerns: Erosion hazard	Equipment limitation	Seedling mortality	Plant competition	Potential productivity: Common trees	Site index	Volume*	Trees to plant
WaB------------- Wadley	8S	Slight	Moderate	Severe	Moderate	Loblolly pine-------	80	1.8	Slash pine, longleaf pine, loblolly pine.
						Longleaf pine-------	70	---	
						Slash pine----------	80	---	
WcB, WcD2------- Wilcox	9C	Moderate	Moderate	Moderate	Moderate	Loblolly pine-------	90	2.2	Loblolly pine.
						Shortleaf pine------	80	---	
						Slash pine----------	90	---	
						Sweetgum------------	---	---	
						Post oak------------	---	---	
WmC------------- Williamsville	10C	Slight	Moderate	Slight	Moderate	Loblolly pine-------	95	2.5	Loblolly pine, slash pine, longleaf pine.
						Slash pine----------	95	---	
						Longleaf pine-------	80	---	

* Volume is expressed as the average yearly growth in cords per acre per year calculated at the age of 25 years for fully stocked, unmanaged stands of loblolly pine and at the age of 30 years for fully stocked, unmanaged stands of oak and gum.

** Volume for eastern redcedar is 140 board feet per acre per year calculated at the age of 40 years for fully stocked, natural stands.

Table 9.--Recreational Development

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not rated.)

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
AnA: Annemaine	Severe: flooding.	Moderate: wetness, percs slowly.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.
ArF:					
Arundel	Severe: slope, percs slowly.	Severe: slope, percs slowly.	Severe: slope, percs slowly.	Severe: slope, large stones.	Severe: slope, large stones.
Cantuche	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope, large stones.	Severe: large stones, slope, droughty.
AwE:					
Arundel	Severe: slope, percs slowly.	Severe: slope, percs slowly.	Severe: slope, percs slowly.	Severe: slope.	Severe: slope.
Williamsville	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
BbA:					
Bibb	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.	Severe: wetness, flooding.
Iuka	Severe: flooding, wetness.	Moderate: flooding, wetness.	Severe: wetness, flooding.	Moderate: wetness, flooding.	Severe: flooding.
BeB: Bigbee	Severe: flooding.	Moderate: too sandy.	Moderate: too sandy.	Moderate: too sandy.	Moderate: droughty.
BgD2: Boswell	Severe: percs slowly.	Severe: percs slowly.	Severe: slope, percs slowly.	Severe: erodes easily.	Moderate: slope.
BkB: Boykin	Moderate: too sandy.	Moderate: too sandy.	Moderate: slope, too sandy.	Moderate: too sandy.	Moderate: droughty.
BnE2:					
Boykin	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: too sandy, slope.	Severe: slope.
Luverne	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Smithdale	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
BrE2, BrF:					
Brantley	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.

Table 9.--Recreational Development--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
BrE2, BrF:					
Okeelala	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
CaA Cahaba	Severe: flooding.	Slight	Slight	Slight	Slight.
CoC2 Conecuh	Severe: percs slowly.	Severe: percs slowly.	Severe: percs slowly.	Severe: erodes easily.	Moderate: slope.
FaA Fluvaquents	Severe: flooding, ponding.	Severe: ponding.	Severe: ponding, flooding.	Severe: ponding.	Severe: ponding, flooding.
FrA Freest	Moderate: wetness, percs slowly.	Moderate: wetness.	Moderate: wetness.	Slight	Slight.
HaB Halso	Severe: percs slowly.	Severe: percs slowly.	Severe: percs slowly.	Slight	Slight.
IzA Izagora	Severe: flooding.	Moderate: wetness.	Moderate: wetness.	Slight	Slight.
LaA Latonia	Severe: flooding.	Slight	Moderate: small stones.	Slight	Moderate: droughty.
LdC2:					
Lauderdale	Severe: depth to rock.	Severe: depth to rock.	Severe: slope, depth to rock.	Severe: erodes easily, large stones.	Severe: depth to rock, large stones.
Arundel	Severe: percs slowly.	Severe: percs slowly.	Severe: slope, percs slowly.	Severe: large stones.	Severe: large stones.
LeA Leeper	Severe: flooding, wetness, percs slowly.	Severe: percs slowly.	Severe: wetness, flooding.	Moderate: wetness, flooding.	Severe: flooding.
LfA Lenoir	Severe: flooding, wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.
LgA Louin	Severe: wetness, percs slowly.	Severe: too clayey, percs slowly.	Severe: too clayey, wetness.	Severe: too clayey.	Severe: too clayey.
LhA Lucedale	Slight	Slight	Slight	Slight	Slight.
LnB Luverne	Moderate: percs slowly.	Moderate: percs slowly.	Moderate: slope, small stones, percs slowly.	Slight	Slight.
LnD2 Luverne	Moderate: slope, percs slowly.	Moderate: slope, percs slowly.	Severe: slope.	Slight	Moderate: slope.

Table 9.--Recreational Development--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
LnE2------------------ Luverne	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
MaA------------------- Mayhew	Severe: wetness, percs slowly.	Severe: wetness, percs slowly.	Severe: wetness, percs slowly.	Severe: wetness, erodes easily.	Severe: wetness.
MdA:					
McCrory--------------	Severe: flooding, wetness, excess sodium.	Severe: wetness, excess sodium.	Severe: wetness, excess sodium.	Severe: wetness.	Severe: excess sodium, wetness.
Deerford-------------	Severe: flooding, wetness, excess sodium.	Severe: wetness, excess sodium.	Severe: wetness, excess sodium.	Severe: wetness.	Severe: excess sodium, wetness.
MnB------------------- McLaurin	Slight----------	Slight----------	Moderate: slope.	Slight----------	Slight.
OKA:					
Ochlockonee----------	Severe: flooding.	Moderate: flooding.	Severe: flooding.	Moderate: flooding.	Severe: flooding.
Kinston--------------	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.	Severe: wetness, flooding.
Iuka-----------------	Severe: flooding, wetness.	Moderate: flooding, wetness.	Severe: wetness, flooding.	Moderate: wetness, flooding.	Severe: flooding.
OtB------------------- Oktibbeha	Severe: percs slowly, too clayey.	Severe: too clayey, percs slowly.	Severe: too clayey, percs slowly.	Severe: too clayey.	Severe: too clayey.
Pt-------------------- Pits	Variable--------	Variable--------	Variable--------	Variable--------	Variable.
RbD2------------------ Rayburn	Severe: percs slowly.	Severe: percs slowly.	Severe: slope, percs slowly.	Severe: erodes easily.	Moderate: slope.
RvA------------------- Riverview	Severe: flooding.	Slight----------	Moderate: flooding.	Slight----------	Moderate: flooding.
SaA------------------- Savannah	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Slight----------	Slight.
SaB------------------- Savannah	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Moderate: slope, wetness, percs slowly.	Slight----------	Slight.
SmB------------------- Smithdale	Slight----------	Slight----------	Moderate: slope, small stones.	Slight----------	Slight.

Table 9.--Recreational Development--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
SmD------------------- Smithdale	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight----------	Moderate: slope.
StD2:					
Sumter---------------	Moderate: percs slowly.	Moderate: percs slowly.	Moderate: slope, percs slowly.	Severe: erodes easily.	Moderate: depth to rock.
StD2:					
Maytag---------------	Severe: percs slowly, too clayey.	Severe: percs slowly, too clayey.	Severe: percs slowly, too clayey.	Severe: too clayey.	Severe: too clayey.
StE2:					
Sumter---------------	Moderate: slope, percs slowly.	Moderate: slope, percs slowly.	Severe: slope.	Severe: erodes easily.	Moderate: slope, depth to rock.
Maytag---------------	Severe: too clayey.	Severe: too clayey.	Severe: slope, too clayey.	Severe: too clayey.	Severe: too clayey.
ToC2:					
Toxey----------------	Severe: percs slowly, too clayey.	Severe: too clayey, percs slowly.	Severe: too clayey, percs slowly.	Severe: too clayey.	Severe: too clayey.
Brantley-------------	Moderate: percs slowly.	Moderate: percs slowly.	Moderate: slope, percs slowly.	Slight----------	Slight.
Hannon---------------	Severe: percs slowly, too clayey.	Severe: too clayey, percs slowly.	Severe: too clayey, percs slowly.	Severe: too clayey.	Severe: too clayey.
UnA------------------- Una	Severe: flooding, ponding, percs slowly.	Severe: ponding, too clayey, percs slowly.	Severe: too clayey, ponding, flooding.	Severe: ponding, too clayey.	Severe: ponding, flooding, too clayey.
UrB:					
Urbo-----------------	Severe: flooding, wetness, percs slowly.	Severe: percs slowly.	Severe: wetness, flooding.	Moderate: wetness, flooding.	Severe: flooding.
Mooreville-----------	Severe: flooding.	Moderate: flooding, wetness.	Severe: flooding.	Moderate: wetness, flooding.	Severe: flooding.
Una------------------	Severe: flooding, ponding, percs slowly.	Severe: ponding, too clayey, percs slowly.	Severe: too clayey, ponding, flooding.	Severe: ponding, too clayey.	Severe: ponding, flooding, too clayey.
WaB------------------- Wadley	Moderate: too sandy.	Moderate: too sandy.	Moderate: slope, too sandy.	Moderate: too sandy.	Moderate: droughty.

Table 9.--Recreational Development--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
WcB------------------- Wilcox	Severe: percs slowly, too clayey.	Severe: too clayey, percs slowly.	Severe: too clayey, percs slowly.	Severe: too clayey.	Severe: too clayey.
WcD2------------------ Wilcox	Severe: percs slowly, too clayey.	Severe: too clayey, percs slowly.	Severe: slope, too clayey, percs slowly.	Severe: too clayey.	Severe: too clayey.
WmC------------------- Williamsville	Moderate: percs slowly.	Moderate: percs slowly.	Moderate: slope, percs slowly.	Slight----------	Slight.

Table 10.--Wildlife Habitat

(See text for definitions of "good," "fair," "poor," and "very poor." Absence of an entry indicates that the soil was not rated.)

Soil name and map symbol	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hardwood trees	Conif- erous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
AnA: Annemaine	Good	Good	Good	Good	Good	Good	Good	Good	Good	Poor.
ArF:										
Arundel	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
Cantuche	Very poor.	Poor	Poor	Very poor.	Very poor.	Very poor.	Very poor.	Poor	Very poor.	Very poor.
AwE:										
Arundel	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
Williamsville	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
BbA:										
Bibb	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
Iuka	Poor	Fair	Fair	Good	Good	Poor	Poor	Fair	Good	Poor.
BeB: Bigbee	Poor	Fair	Fair	Poor	Fair	Very poor.	Very poor.	Fair	Poor	Very poor.
BgD2: Boswell	Fair	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
BkB: Boykin	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
BnE2:										
Boykin	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
Luverne	Very poor.	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
Smithdale	Very poor.	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
BrE2:										
Brantley	Poor	Fair	Good	Good	Good	Poor	Very poor.	Fair	Good	Very poor.
Okeelala	Very poor.	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
BrF:										
Brantley	Poor	Fair	Good	Good	Good	Poor	Very poor.	Fair	Good	Very poor.
Okeelala	Very poor.	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
CaA: Cahaba	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.

Table 10.--Wildlife Habitat--Continued

Soil name and map symbol	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
CoC2--------------- Conecuh	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
FaA---------------- Fluvaquents	Very poor.	Poor	Poor	Very poor.	Very poor.	Good	Good	Poor	Poor	Good.
FrA---------------- Freest	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
HaB---------------- Halso	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
IzA---------------- Izagora	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
LaA---------------- Latonia	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
LdC2:										
Lauderdale--------	Poor	Poor	Fair	Fair	Fair	Poor	Very poor.	Poor	Fair	Very poor.
Arundel-----------	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
LeA---------------- Leeper	Poor	Fair	Fair	Good	Poor	Fair	Good	Fair	Good	Fair.
LfA---------------- Lenoir	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
LgA---------------- Louin	Fair	Fair	Fair	Good	Good	Poor	Fair	Fair	Good	Poor.
LhA---------------- Lucedale	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
LnB---------------- Luverne	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
LnD2--------------- Luverne	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
LnE2--------------- Luverne	Very poor.	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
MaA---------------- Mayhew	Poor	Fair	Good	Fair	Fair	Fair	Fair	Fair	Fair	Fair.
MdA:										
McCrory-----------	Fair	Fair	Fair	Fair	Fair	Good	Fair	Fair	Fair	Fair.
Deerford----------	Fair	Good	Good	Fair	Good	Fair	Fair	Fair	Fair	Fair.
MnB---------------- McLaurin	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
OKA:										
Ochlockonee-------	Poor	Fair	Fair	Good	Good	Poor	Very poor.	Fair	Good	Very poor.

Table 10.--Wildlife Habitat--Continued

Soil name and map symbol	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
OKA:										
Kinston	Very poor.	Poor	Poor	Poor	Poor	Good	Fair	Poor	Poor	Fair.
Iuka	Poor	Fair	Fair	Good	Good	Poor	Poor	Fair	Good	Poor.
OtB Oktibbeha	Fair	Fair	Fair	Good	Good	Poor	Very poor.	Fair	Good	Very poor.
Pt Pits	Very poor.	Very poor.	Very poor.	Very poor.	Very poor.	Very poor.	Very poor.	Very poor.	Very poor.	Very poor.
RbD2 Rayburn	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
RvA Riverview	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
SaA, SaB Savannah	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
SmB Smithdale	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
SmD Smithdale	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
StD2:										
Sumter	Fair	Fair	Fair	Fair	Fair	Poor	Poor	Fair	Fair	Very poor.
Maytag	Fair	Fair	Fair	Fair	Fair	Poor	Poor	Fair	Fair	Very poor.
StE2:										
Sumter	Fair	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
Maytag	Fair	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
ToC2:										
Toxey	Poor	Poor	Poor	Poor	Poor	Poor	Poor	Poor	Fair	Poor.
Brantley	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
Hannon	Fair	Fair	Fair	Fair	Fair	Poor	Poor	Fair	Good	Poor.
UnA Una	Poor	Very poor.	Very poor.	Poor	Poor	Good	Good	Very poor.	Very poor.	Good.
UrB:										
Urbo	Poor	Fair	Fair	Good	Fair	Fair	Fair	Fair	Fair	Fair.
Mooreville	Poor	Fair	Fair	Good	Good	Poor	Poor	Fair	Good	Poor.
Una	Poor	Very poor.	Very poor.	Poor	Poor	Good	Good	Very poor.	Very poor.	Good.

Table 10.--Wildlife Habitat--Continued

Soil name and map symbol	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herba-ceous plants	Hardwood trees	Conif-erous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
WaB---------------- Wadley	Poor	Fair	Fair	Poor	Poor	Very poor.	Very poor.	Fair	Poor	Very poor.
WcB---------------- Wilcox	Fair	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor.
WcD2--------------- Wilcox	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
WmC---------------- Williamsville	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.

Table 11.--Building Site Development

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation.)

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
AnA: Annemaine	Severe: wetness.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding.	Severe: low strength.	Moderate: wetness.
ArF:						
Arundel	Severe: slope, large stones.	Severe: shrink-swell, slope, large stones.	Severe: slope, shrink-swell, large stones.	Severe: shrink-swell, slope, large stones.	Severe: shrink-swell, low strength, slope.	Severe: slope, large stones.
Cantuche	Severe: depth to rock, large stones, slope.	Severe: slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: large stones, slope, droughty.
AwE:						
Arundel	Severe: slope.	Severe: shrink-swell, slope.	Severe: slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength, slope.	Severe: slope.
Williamsville	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope.	Severe: slope.
BbA:						
Bibb	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.	Severe: wetness, flooding.
Iuka	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding.	Severe: flooding.
BeB: Bigbee	Severe: cutbanks cave.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Moderate: flooding.	Moderate: droughty.
BgD2: Boswell	Severe: cutbanks cave.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, slope.	Severe: low strength, shrink-swell.	Moderate: slope.
BkB: Boykin	Severe: cutbanks cave.	Slight	Slight	Slight	Slight	Moderate: droughty.
BnE2:						
Boykin	Severe: cutbanks cave, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Luverne	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope.	Severe: slope.
Smithdale	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.

Table 11.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
BrE2, BrF:						
Brantley	Severe: cutbanks cave, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope.	Severe: slope.
Okeelala	Severe: cutbanks cave, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
CaA: Cahaba	Moderate: cutbanks cave.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Moderate: flooding.	Slight.
CoC2: Conecuh	Moderate: too clayey, cutbanks cave.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Moderate: droughty.
FaA: Fluvaquents	Severe: ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: low strength, ponding, flooding.	Severe: ponding, flooding.
FrA: Freest	Severe: wetness.	Moderate: shrink-swell.	Severe: wetness.	Moderate: shrink-swell.	Severe: low strength.	Slight.
HaB: Halso	Moderate: too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Slight.
IzA: Izagora	Severe: wetness.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding.	Severe: low strength.	Slight.
LaA: Latonia	Severe: cutbanks cave.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Moderate: flooding.	Moderate: droughty.
LdC2:						
Lauderdale	Severe: depth to rock, large stones.	Moderate: shrink-swell, depth to rock, large stones.	Severe: depth to rock, large stones.	Moderate: shrink-swell, slope, depth to rock.	Severe: large stones.	Severe: depth to rock, large stones.
Arundel	Moderate: depth to rock, too clayey, large stones.	Severe: shrink-swell, large stones.	Severe: shrink-swell, large stones.	Severe: shrink-swell, large stones.	Severe: shrink-swell, low strength, large stones.	Severe: large stones.
LeA: Leeper	Severe: wetness.	Severe: flooding, wetness, shrink-swell.	Severe: flooding, wetness, shrink-swell.	Severe: flooding, wetness, shrink-swell.	Severe: shrink-swell, low strength, flooding.	Severe: flooding.
LfA: Lenoir	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength.	Moderate: wetness.
LgA: Louin	Severe: wetness, cutbanks cave.	Severe: wetness, shrink-swell.	Severe: wetness, shrink-swell.	Severe: wetness, shrink-swell.	Severe: shrink-swell, low strength.	Severe: too clayey.
LhA: Lucedale	Slight	Slight	Slight	Slight	Slight	Slight.

Table 11.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
LnB-------------- Luverne	Moderate: too clayey.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell.	Severe: low strength.	Slight.
LnD2------------- Luverne	Moderate: too clayey, slope.	Moderate: shrink-swell, slope.	Moderate: slope, shrink-swell.	Severe: slope.	Severe: low strength.	Moderate: slope.
LnE2------------- Luverne	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope.	Severe: slope.
MaA-------------- Mayhew	Severe: wetness, cutbanks cave.	Severe: wetness, shrink-swell.	Severe: wetness, shrink-swell.	Severe: wetness, shrink-swell.	Severe: shrink-swell, low strength, wetness.	Severe: wetness.
MdA:						
McCrory----------	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.	Severe: excess sodium, wetness.
Deerford---------	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.	Severe: excess sodium, wetness.
MnB-------------- McLaurin	Moderate: cutbanks cave.	Slight---------	Slight---------	Slight---------	Slight---------	Moderate: droughty.
OKA:						
Ochlockonee------	Moderate: wetness.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.
Kinston----------	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, wetness, flooding.	Severe: wetness, flooding.
Iuka-------------	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding.	Severe: flooding.
OtB-------------- Oktibbeha	Severe: cutbanks cave.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Severe: too clayey.
Pt--------------- Pits	Variable-------	Variable-------	Variable-------	Variable-------	Variable-------	Variable.
RbD2------------- Rayburn	Moderate: too clayey, wetness, slope.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength.	Moderate: slope.
RvA-------------- Riverview	Severe: cutbanks cave.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Moderate: flooding.
SaA, SaB--------- Savannah	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: low strength, wetness.	Moderate: wetness.
SmB-------------- Smithdale	Slight---------	Slight---------	Slight---------	Slight---------	Slight---------	Slight.

Table 11.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
SmD--------------- Smithdale	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: slope.
StD2:						
Sumter-----------	Moderate: depth to rock, too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Moderate: depth to rock.
Maytag-----------	Severe: cutbanks cave.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Severe: too clayey.
StE2:						
Sumter-----------	Moderate: depth to rock, too clayey, slope.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength.	Moderate: slope, depth to rock.
Maytag-----------	Severe: cutbanks cave.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: slope, shrink-swell.	Severe: shrink-swell, low strength.	Severe: too clayey.
ToC2:						
Toxey------------	Moderate: slope, too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Severe: too clayey.
Brantley---------	Severe: cutbanks cave.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Severe: low strength.	Slight.
Hannon-----------	Severe: cutbanks cave.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Severe: too clayey.
UnA--------------- Una	Severe: ponding.	Severe: flooding, ponding, shrink-swell.	Severe: flooding, ponding, shrink-swell.	Severe: flooding, ponding, shrink-swell.	Severe: shrink-swell, low strength, ponding.	Severe: ponding, flooding, too clayey.
UrB:						
Urbo-------------	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, flooding.	Severe: flooding.
Mooreville-------	Severe: wetness.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding.	Severe: low strength, flooding.	Severe: flooding.
Una--------------	Severe: ponding.	Severe: flooding, ponding, shrink-swell.	Severe: flooding, ponding, shrink-swell.	Severe: flooding, ponding, shrink-swell.	Severe: shrink-swell, low strength, ponding.	Severe: ponding, flooding, too clayey.
WaB--------------- Wadley	Severe: cutbanks cave.	Slight---------	Slight---------	Slight---------	Moderate: cutbanks cave.	Moderate: droughty.
WcB--------------- Wilcox	Severe: cutbanks cave.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Severe: too clayey.

Table 11.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
WcD2-------------- Wilcox	Severe: cutbanks cave.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength.	Severe: too clayey.
WmC--------------- Williamsville	Moderate: too clayey.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Severe: low strength.	Slight.

Table 12.--Sanitary Facilities

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "good," and other terms. Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation.)

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
AnA: Annemaine	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness, too clayey.	Severe: wetness.	Poor: too clayey, hard to pack.
ArF:					
Arundel	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope, too clayey.	Severe: depth to rock, slope.	Poor: depth to rock, too clayey, hard to pack.
Cantuche	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope.	Poor: depth to rock, slope, large stones.
AwE:					
Arundel	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope, too clayey.	Severe: depth to rock, slope.	Poor: depth to rock, too clayey, hard to pack.
Williamsville	Severe: percs slowly, slope.	Severe: slope.	Severe: slope, too clayey.	Severe: slope.	Poor: slope.
BbA:					
Bibb	Severe: flooding, wetness.	Severe: seepage, flooding, wetness.	Severe: flooding, seepage, wetness.	Severe: flooding, seepage, wetness.	Poor: wetness.
Iuka	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Fair: wetness.
BeB: Bigbee	Severe: wetness, poor filter.	Severe: seepage.	Severe: seepage, wetness.	Severe: seepage.	Poor: seepage, too sandy.
BgD2: Boswell	Severe: percs slowly.	Severe: slope.	Severe: too clayey.	Moderate: slope.	Poor: too clayey, hard to pack.
BkB: Boykin	Moderate: percs slowly.	Severe: seepage.	Slight	Severe: seepage.	Good.
BnE2:					
Boykin	Severe: slope.	Severe: seepage, slope.	Severe: slope.	Severe: seepage, slope.	Poor: slope.
Luverne	Severe: percs slowly, slope.	Severe: slope.	Severe: slope, too clayey.	Severe: slope.	Poor: too clayey, hard to pack, slope.

Table 12.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
BnE2:					
Smithdale	Severe: slope.	Severe: seepage, slope.	Severe: seepage, slope.	Severe: seepage, slope.	Poor: slope.
BrE2, BrF:					
Brantley	Severe: percs slowly, slope.	Severe: slope.	Severe: slope, too clayey.	Severe: slope.	Poor: too clayey, slope.
Okeelala	Severe: slope.	Severe: seepage, slope.	Severe: seepage, slope.	Severe: slope, seepage.	Poor: slope.
CaA: Cahaba	Moderate: flooding.	Severe: seepage.	Severe: seepage.	Moderate: flooding.	Fair: thin layer.
CoC2: Conecuh	Severe: percs slowly.	Moderate: slope.	Severe: too clayey.	Slight	Poor: too clayey, hard to pack.
FaA: Fluvaquents	Severe: flooding, ponding, percs slowly.	Severe: flooding, ponding.	Severe: flooding, ponding, too clayey.	Severe: flooding, ponding.	Poor: too clayey, ponding.
FrA: Freest	Severe: wetness, percs slowly.	Slight	Severe: wetness, too clayey.	Severe: wetness.	Fair: too clayey, wetness.
HaB: Halso	Severe: percs slowly.	Moderate: depth to rock, slope.	Severe: depth to rock, too clayey.	Moderate: depth to rock.	Poor: too clayey, hard to pack.
IzA: Izagora	Severe: wetness, percs slowly.	Moderate: seepage.	Severe: wetness.	Severe: wetness.	Fair: too clayey, wetness.
LaA: Latonia	Severe: poor filter.	Severe: seepage.	Severe: seepage, too sandy.	Severe: seepage.	Fair: thin layer.
LdC2:					
Lauderdale	Severe: depth to rock, percs slowly.	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Poor: depth to rock, large stones.
Arundel	Severe: depth to rock, percs slowly.	Severe: depth to rock.	Severe: depth to rock, too clayey.	Severe: depth to rock.	Poor: depth to rock, too clayey, hard to pack.
LeA: Leeper	Severe: flooding, wetness, percs slowly.	Severe: flooding.	Severe: flooding, wetness, too clayey.	Severe: flooding, wetness.	Poor: too clayey, hard to pack, wetness.
LfA: Lenoir	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness, too clayey.	Severe: wetness.	Poor: too clayey, hard to pack, wetness.

Table 12.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
LgA----------------- Louin	Severe: wetness, percs slowly.	Slight-----------	Severe: wetness, too clayey.	Severe: wetness.	Poor: too clayey, hard to pack.
LhA----------------- Lucedale	Slight-----------	Moderate: seepage.	Slight-----------	Slight-----------	Good.
LnB----------------- Luverne	Severe: percs slowly.	Moderate: slope.	Severe: too clayey.	Slight-----------	Poor: too clayey, hard to pack.
LnD2---------------- Luverne	Severe: percs slowly.	Severe: slope.	Severe: too clayey.	Moderate: slope.	Poor: too clayey, hard to pack.
LnE2---------------- Luverne	Severe: percs slowly, slope.	Severe: slope.	Severe: slope, too clayey.	Severe: slope.	Poor: too clayey, hard to pack, slope.
MaA----------------- Mayhew	Severe: wetness, percs slowly.	Slight-----------	Severe: wetness, too clayey.	Severe: wetness.	Poor: too clayey, hard to pack, wetness.
MdA:					
McCrory------------	Severe: flooding, wetness, percs slowly.	Severe: flooding, wetness.	Severe: flooding, wetness, excess sodium.	Severe: flooding, wetness.	Poor: wetness, excess sodium.
Deerford-----------	Severe: flooding, wetness, percs slowly.	Severe: flooding, wetness.	Severe: flooding, wetness, excess sodium.	Severe: flooding, wetness.	Poor: wetness, excess sodium.
MnB----------------- McLaurin	Slight-----------	Severe: seepage.	Slight-----------	Severe: seepage.	Good.
OKA:					
Ochlockonee--------	Severe: flooding, wetness.	Severe: seepage, flooding, wetness.	Severe: flooding, seepage, wetness.	Severe: flooding, wetness.	Good.
Kinston------------	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
Iuka---------------	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Fair: wetness.
OtB----------------- Oktibbeha	Severe: percs slowly.	Moderate: slope.	Severe: too clayey.	Slight-----------	Poor: too clayey, hard to pack.
Pt------------------ Pits	Variable---------	Variable---------	Variable---------	Variable---------	Variable.

Table 12.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
RbD2: Rayburn	Severe: wetness, percs slowly.	Severe: slope.	Severe: depth to rock, too clayey.	Moderate: depth to rock, wetness, slope.	Poor: too clayey, hard to pack.
RvA: Riverview	Severe: flooding, wetness.	Severe: seepage, flooding, wetness.	Severe: flooding, seepage, wetness.	Severe: flooding, seepage, wetness.	Good.
SaA, SaB: Savannah	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.	Moderate: wetness.	Fair: wetness.
SmB: Smithdale	Slight	Severe: seepage.	Severe: seepage.	Severe: seepage.	Good.
SmD: Smithdale	Moderate: slope.	Severe: seepage, slope.	Severe: seepage.	Severe: seepage.	Fair: slope.
StD2:					
Sumter	Severe: depth to rock, percs slowly.	Severe: depth to rock.	Severe: depth to rock, too clayey.	Severe: depth to rock.	Poor: depth to rock, too clayey, hard to pack.
Maytag	Severe: percs slowly.	Moderate: slope.	Severe: too clayey.	Moderate	Poor: too clayey, hard to pack.
StE2:					
Sumter	Severe: depth to rock, percs slowly.	Severe: depth to rock, slope.	Severe: depth to rock, too clayey.	Severe: depth to rock.	Poor: depth to rock, too clayey, hard to pack.
Maytag	Severe: percs slowly.	Severe: slope.	Severe: too clayey.	Moderate: slope.	Poor: too clayey, hard to pack.
ToC2:					
Toxey	Severe: percs slowly.	Moderate: slope.	Severe: too clayey.	Slight	Poor: too clayey, hard to pack.
Brantley	Severe: percs slowly.	Moderate: seepage, slope.	Severe: too clayey.	Slight	Poor: too clayey.
Hannon	Severe: percs slowly.	Moderate: slope.	Severe: too clayey.	Slight	Poor: too clayey, hard to pack.
UnA: Una	Severe: flooding, ponding, percs slowly.	Severe: flooding, ponding.	Severe: flooding, ponding, too clayey.	Severe: flooding, ponding.	Poor: too clayey, hard to pack, ponding.

Table 12.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
UrB:					
Urbo	Severe: flooding, wetness, percs slowly.	Severe: flooding.	Severe: flooding, wetness, too clayey.	Severe: flooding, wetness.	Poor: too clayey, hard to pack, wetness.
Mooreville	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Fair: too clayey, wetness.
Una	Severe: flooding, ponding, percs slowly.	Severe: flooding, ponding.	Severe: flooding, ponding, too clayey.	Severe: flooding, ponding.	Poor: too clayey, hard to pack, ponding.
WaB Wadley	Slight	Severe: seepage.	Moderate: too sandy.	Severe: seepage.	Poor: seepage.
WcB Wilcox	Severe: wetness, percs slowly.	Moderate: depth to rock, slope.	Severe: depth to rock, wetness.	Moderate: depth to rock, wetness.	Poor: too clayey, hard to pack.
WcD2 Wilcox	Severe: wetness, percs slowly.	Severe: slope.	Severe: depth to rock, wetness, too clayey.	Moderate: depth to rock, wetness, slope.	Poor: too clayey, hard to pack.
WmC Williamsville	Severe: percs slowly.	Moderate: slope.	Severe: too clayey.	Slight	Fair: too clayey, hard to pack.

Table 13.--Construction Materials

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "good," "fair," and other terms. Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation.)

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
AnA: Annemaine	Fair: wetness, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
ArF:				
Arundel	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, large stones, slope.
Cantuche	Poor: depth to rock, large stones, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, large stones, slope.
AwE:				
Arundel	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, small stones, slope.
Williamsville	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, slope.
BbA:				
Bibb	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
Iuka	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Good.
BeB: Bigbee	Good	Probable	Improbable: excess fines.	Poor: too sandy.
BgD2: Boswell	Poor: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
BkB: Boykin	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: too sandy.
BnE2:				
Boykin	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Luverne	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, slope.
Smithdale	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.

Table 13.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
BrE2, BrF:				
Brantley	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, slope.
Okeelala	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
CaA Cahaba	Good	Probable	Improbable: excess fines.	Fair: too clayey.
CoC2 Conecuh	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
FaA Fluvaquents	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.
FrA Freest	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
HaB Halso	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
IzA Izagora	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
LaA Latonia	Good	Probable	Improbable: excess fines.	Fair: thin layer.
LdC2:				
Lauderdale	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, large stones.
Arundel	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, large stones.
LeA Leeper	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
LfA Lenoir	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
LgA Louin	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
LhA Lucedale	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
LnB, LnD2 Luverne	Good	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.

Table 13.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
LnE2: Luverne	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, slope.
MaA: Mayhew	Poor: shrink-swell, low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.
MdA:				
McCrory	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness, excess sodium.
Deerford	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness, excess sodium.
MnB: McLaurin	Good	Improbable: excess fines.	Improbable: excess fines.	Good.
OKA:				
Ochlockonee	Good	Improbable: excess fines.	Improbable: excess fines.	Good.
Kinston	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
Iuka	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Good.
OtB: Oktibbeha	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
Pt: Pits	Variable	Variable	Variable	Variable.
RbD2: Rayburn	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
RvA: Riverview	Good	Improbable: excess fines.	Improbable: excess fines.	Good.
SaA, SaB: Savannah	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: thin layer.
SmB: Smithdale	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
SmD: Smithdale	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, slope.
StD2, StE2:				
Sumter	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.

Table 13.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
StD2, StE2:				
Maytag	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
ToC2:				
Toxey	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
Brantley	Good	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
Hannon	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
UnA: Una	Poor: low strength, wetness, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.
UrB:				
Urbo	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
Mooreville	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
Una	Poor: low strength, wetness, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.
WaB: Wadley	Good	Probable	Improbable: excess fines.	Fair: too sandy.
WcB, WcD2: Wilcox	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
WmC: Williamsville	Good	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.

Table 14.--Water Management

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not evaluated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation.)

Soil name and map symbol	Limitations for--		Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Drainage	Irrigation	Terraces and diversions	Grassed waterways
AnA: Annemaine	Moderate: seepage.	Severe: hard to pack, wetness.	Percs slowly	Wetness, percs slowly.	Wetness, percs slowly.	Percs slowly.
ArF:						
Arundel	Severe: slope.	Severe: hard to pack.	Deep to water	Slope, percs slowly.	Slope, depth to rock.	Slope, depth to rock, large stones.
Cantuche	Severe: depth to rock, slope.	Severe: thin layer, large stones.	Deep to water	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, depth to rock.
AwE:						
Arundel	Severe: slope.	Severe: hard to pack.	Deep to water	Slope, percs slowly.	Slope, depth to rock.	Slope, depth to rock.
Williamsville	Severe: slope.	Moderate: hard to pack.	Deep to water	Slope	Slope	Slope.
BbA:						
Bibb	Severe: seepage.	Severe: seepage, wetness, piping.	Flooding	Wetness, flooding.	Wetness.	Wetness.
Iuka	Moderate: seepage.	Severe: piping, wetness.	Flooding	Wetness, flooding.	Wetness	Wetness.
BeB: Bigbee	Severe: seepage.	Severe: seepage, piping.	Deep to water	Droughty, fast intake.	Too sandy	Droughty.
BgD2: Boswell	Severe: slope.	Moderate: hard to pack.	Deep to water	Percs slowly, slope.	Slope, percs slowly.	Slope, percs slowly.
BkB: Boykin	Severe: seepage.	Moderate: piping.	Deep to water	Slope, droughty, fast intake.	Soil blowing	Droughty.
BnE2:						
Boykin	Severe: seepage, slope.	Moderate: piping.	Deep to water	Slope, droughty, fast intake.	Slope, soil blowing.	Slope, droughty.
Luverne	Severe: slope.	Severe: piping, hard to pack.	Deep to water	Slope	Slope	Slope.
Smithdale	Severe: seepage, slope.	Severe: piping.	Deep to water	Slope	Slope	Slope.

Table 14.--Water Management--Continued

Soil name and map symbol	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
BrE2, BrF:						
Brantley	Severe: slope.	Moderate: thin layer, piping.	Deep to water	Slope, percs slowly.	Slope, percs slowly.	Slope, percs slowly.
Okeelala	Severe: seepage, slope.	Severe: piping.	Deep to water	Slope	Slope	Slope.
CaA Cahaba	Severe: seepage.	Moderate: thin layer, piping.	Deep to water	Favorable	Favorable	Favorable.
CoC2 Conecuh	Moderate: slope.	Severe: hard to pack.	Deep to water	Slope, droughty.	Erodes easily, percs slowly.	Erodes easily, percs slowly.
FaA Fluvaquents	Slight	Severe: piping, ponding.	Ponding, percs slowly, flooding.	Ponding, percs slowly, flooding.	Ponding, percs slowly.	Wetness, percs slowly.
FrA Freest	Slight	Moderate: piping, wetness.	Favorable	Wetness	Wetness	Favorable.
HaB Halso	Moderate: depth to rock.	Severe: hard to pack.	Deep to water	Percs slowly	Percs slowly	Percs slowly.
IzA Izagora	Slight	Moderate: piping, wetness.	Favorable	Wetness	Wetness	Favorable.
LaA Latonia	Severe: seepage.	Severe: seepage, piping.	Deep to water	Droughty, fast intake.	Too sandy	Droughty.
LdC2:						
Lauderdale	Severe: depth to rock.	Severe: thin layer.	Deep to water	Slope, depth to rock, erodes easily.	Depth to rock, erodes easily, large stones.	Erodes easily, depth to rock, large stones.
Arundel	Moderate: depth to rock, slope.	Severe: hard to pack.	Deep to water	Slope, percs slowly.	Depth to rock, large stones.	Depth to rock, large stones.
LeA Leeper	Slight	Severe: hard to pack, wetness.	Percs slowly, flooding.	Wetness, percs slowly.	Wetness, percs slowly.	Wetness, percs slowly.
LfA Lenoir	Slight	Severe: wetness.	Percs slowly	Wetness, percs slowly, erodes easily.	Erodes easily, wetness, percs slowly.	Wetness, erodes easily, percs slowly.
LgA Louin	Slight	Severe: hard to pack.	Percs slowly	Wetness, slow intake.	Wetness, percs slowly.	Wetness, percs slowly.
LhA Lucedale	Moderate: seepage.	Severe: piping.	Deep to water	Favorable	Favorable	Favorable.
LnB Luverne	Moderate: slope.	Severe: piping, hard to pack.	Deep to water	Slope	Favorable	Favorable.

Table 14.--Water Management--Continued

Soil name and map symbol	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
LnD2, LnE2-------- Luverne	Severe: slope.	Severe: piping, hard to pack.	Deep to water	Slope----------	Slope----------	Slope.
MaA--------------- Mayhew	Slight---------	Severe: hard to pack, wetness.	Percs slowly---	Wetness, percs slowly.	Erodes easily, wetness.	Wetness, erodes easily.
MdA:						
McCrory----------	Slight---------	Severe: piping, wetness, excess sodium.	Flooding, excess sodium.	Wetness, droughty.	Wetness--------	Wetness, excess sodium, droughty.
Deerford---------	Slight---------	Severe: wetness, excess sodium, piping.	Percs slowly, excess sodium.	Wetness, percs slowly, rooting depth.	Erodes easily, wetness.	Wetness, excess sodium, erodes easily.
MnB--------------- McLaurin	Severe: seepage.	Severe: piping.	Deep to water	Slope----------	Favorable------	Favorable.
OKA:						
Ochlockonee------	Severe: seepage.	Severe: piping.	Deep to water	Flooding-------	Favorable------	Favorable.
Kinston----------	Moderate: seepage.	Severe: wetness.	Flooding-------	Wetness, flooding.	Wetness--------	Wetness.
Iuka-------------	Moderate: seepage.	Severe: piping, wetness.	Flooding-------	Wetness, flooding.	Wetness--------	Wetness.
OtB--------------- Oktibbeha	Slight---------	Severe: hard to pack.	Deep to water	Slow intake, percs slowly.	Percs slowly---	Percs slowly.
Pt---------------- Pits	Variable-------	Variable-------	Variable-------	Variable-------	Variable-------	Variable.
RbD2-------------- Rayburn	Severe: slope.	Severe: hard to pack.	Percs slowly, slope.	Slope, wetness.	Slope, erodes easily, wetness.	Slope, erodes easily, percs slowly.
RvA--------------- Riverview	Severe: seepage.	Severe: piping.	Deep to water	Flooding-------	Favorable.	Favorable.
SaA, SaB---------- Savannah	Moderate: seepage.	Severe: piping.	Favorable------	Wetness--------	Erodes easily, wetness.	Erodes easily, rooting depth.
SmB--------------- Smithdale	Severe: seepage.	Severe: piping.	Deep to water	Slope----------	Favorable------	Favorable.
SmD--------------- Smithdale	Severe: seepage, slope.	Severe: piping.	Deep to water	Fast intake, slope.	Slope----------	Slope.
StD2:						
Sumter-----------	Moderate: seepage, depth to rock, slope.	Severe: thin layer.	Deep to water	Slope, percs slowly.	Depth to rock, erodes easily, percs slowly.	Erodes easily, depth to rock, percs slowly.

Table 14.--Water Management--Continued

Soil name and map symbol	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
StD2:						
Maytag	Moderate: slope.	Severe: hard to pack.	Deep to water	Slope, percs slowly.	Percs slowly	Percs slowly.
StE2:						
Sumter	Severe: slope.	Severe: thin layer.	Deep to water	Slope, percs slowly.	Slope, depth to rock, erodes easily.	Slope, erodes easily, depth to rock.
Maytag	Severe: slope.	Severe: hard to pack.	Deep to water	Slope, slow intake, percs slowly.	Slope, percs slowly.	Slope, percs slowly.
ToC2:						
Toxey	Moderate: slope.	Severe: thin layer, hard to pack.	Deep to water, percs slowly.	Slope, slow intake, percs slowly.	Erodes easily, percs slowly.	Erodes easily, percs slowly.
Brantley	Moderate: seepage, slope.	Moderate: thin layer, piping.	Deep to water	Slope, percs slowly.	Percs slowly	Percs slowly.
Hannon	Moderate: slope.	Severe: hard to pack.	Deep to water	Slow intake, slope, droughty.	Percs slowly	Droughty, percs slowly.
UnA Una	Slight	Severe: ponding.	Ponding, percs slowly, flooding.	Ponding, slow intake, percs slowly.	Ponding, percs slowly.	Wetness, percs slowly.
UrB:						
Urbo	Slight	Severe: wetness.	Percs slowly, flooding.	Wetness, percs slowly.	Erodes easily, wetness, percs slowly.	Wetness, erodes easily, percs slowly.
Mooreville	Moderate: seepage.	Severe: wetness.	Flooding	Wetness, erodes easily, flooding.	Erodes easily, wetness.	Erodes easily.
Una	Slight	Severe: ponding.	Ponding, percs slowly, flooding.	Ponding, slow intake, percs slowly.	Ponding, percs slowly.	Wetness, percs slowly.
WaB Wadley	Severe: seepage.	Severe: seepage, piping.	Deep to water	Slope, droughty, fast intake.	Soil blowing	Droughty.
WcB Wilcox	Moderate: depth to rock, slope.	Severe: hard to pack.	Percs slowly, slope.	Slope, wetness, slow intake.	Erodes easily, wetness.	Erodes easily, percs slowly.
WcD2 Wilcox	Severe: slope.	Severe: hard to pack.	Percs slowly, slope.	Slope, wetness, slow intake.	Slope, erodes easily, wetness.	Slope, erodes easily, percs slowly.
WmC Williamsville	Moderate: slope.	Severe: piping, hard to pack.	Deep to water	Slope	Favorable	Favorable.

Table 15.--Engineering Index Properties

(Absence of an entry indicates that data were not estimated.)

Soil name and map symbol	Depth	USDA texture	Classification		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	4	10	40	200		
	In								Pct	
AnA-------------- Annemaine	0-4	Silt loam--------	ML, CL-ML	A-4	95-100	95-100	90-100	70-90	20-35	5-20
	4-35	Clay, silty clay, silty clay loam.	CH, MH, CL, ML	A-7-5	95-100	95-100	90-100	80-99	45-70	20-35
	35-65	Sandy clay loam, loam, clay loam.	SC, CL	A-4, A-6, A-7-6	95-100	95-100	80-100	36-80	20-45	8-27
ArF:										
Arundel---------	0-4	Loam-------------	ML, CL-ML	A-4	85-100	77-98	75-98	60-90	0-30	NP-10
	4-32	Silty clay loam, silty clay, clay.	CL, CH	A-7	85-100	80-100	80-100	65-90	44-70	22-41
	32-80	Weathered bedrock	---	---	---	---	---	---	---	---
Cantuche--------	0-6	Very channery sandy loam.	SC, SC-SM, CL, CL-ML	A-4, A-6	65-90	60-85	50-80	36-65	20-30	4-11
	6-11	Extremely channery loam, extremely channery sandy loam, very channery loam.	SC, SC-SM, CL, CL-ML	A-4, A-6	65-90	60-85	50-80	36-65	20-30	4-11
	11-80	Weathered bedrock	---	---	---	---	---	---	---	---
AwE:										
Arundel---------	0-8	Sandy loam-------	ML, SM	A-4, A-2-4	85-100	84-98	70-98	30-60	<20	NP
	8-36	Silty clay loam, silty clay, clay.	CL, CH	A-7	85-100	80-100	80-100	65-90	44-70	22-41
	36-80	Weathered bedrock	---	---	---	---	---	---	---	---
Williamsville---	0-4	Fine sandy loam	SC-SM, SM, CL-ML, ML	A-2, A-4	98-100	95-100	80-95	36-70	18-30	3-10
	4-36	Clay, sandy clay, clay loam.	CL, CH	A-6, A-7	98-100	80-100	80-100	50-80	38-60	20-36
	36-62	Sandy clay loam, loam, clay loam.	SC, CL	A-4, A-6	98-100	80-100	60-90	36-65	25-40	8-20
	62-80	Sandy loam, loam, sandy clay loam.	SM	A-2, A-4	98-100	80-100	60-75	15-45	<20	NP-3
BbA:										
Bibb------------	0-3	Fine sandy loam	SM, SC-SM, ML, CL-ML	A-2, A-4	95-100	90-100	60-90	30-60	<25	NP-7
	3-45	Sandy loam, loam, silt loam.	SM, SC-SM, ML, CL-ML	A-2, A-4	60-100	50-100	40-100	30-90	<30	NP-7
	45-60	Sand, loamy sand, loamy fine sand.	SM, SP-SM	A-2, A-3, A-1-b	95-100	90-100	40-90	8-35	<20	NP
Iuka------------	0-9	Fine sandy loam	SM, SC-SM, ML, CL-ML	A-4, A-2	95-100	90-100	70-100	30-60	<20	NP-7
	9-42	Fine sandy loam, loam, sandy loam.	SM, SC-SM, ML, CL-ML	A-4	95-100	85-100	65-100	36-75	<30	NP-7
	42-60	Sandy loam, fine sandy loam, loam.	SM, ML	A-2, A-4	95-100	90-100	70-100	25-60	<30	NP-7

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In								Pct	
BeB--------------	0-6	Loamy sand-------	SM	A-2-4	100	95-100	60-90	15-30	<20	NP
Bigbee	6-23	Loamy sand, fine sand.	SM, SP, SP-SM	A-2-4, A-3	100	95-100	50-80	10-25	<20	NP
	23-70	Sand, fine sand	SP-SM, SM	A-2-4, A-3	85-100	85-100	50-75	5-20	<20	NP
BgD2-------------	0-4	Fine sandy loam	SM, ML	A-4	100	100	60-85	40-55	<20	NP
Boswell	4-80	Clay, silty clay, clay loam.	CH	A-7	100	100	90-100	75-95	50-70	25-40
BkB--------------	0-5	Loamy fine sand	SM, SC-SM	A-2-4, A-4	97-100	95-100	75-98	17-45	16-25	NP-5
Boykin	5-22	Loamy fine sand, loamy sand.	SM, SC-SM	A-2-4, A-4	97-100	95-100	70-98	17-45	16-25	NP-5
	22-60	Fine sandy loam, sandy clay loam.	SC, CL	A-4, A-6, A-7-6	95-100	95-100	80-98	36-55	22-45	8-30
BnE2:										
Boykin----------	0-3	Loamy fine sand	SM, SC-SM	A-2-4, A-4	97-100	95-100	75-98	17-45	16-25	NP-5
	3-33	Loamy fine sand, loamy sand.	SM, SC-SM	A-2-4, A-4	97-100	95-100	70-98	17-45	16-25	NP-5
	33-80	Fine sandy loam, sandy clay loam.	SC, CL	A-4, A-6, A-7-6	95-100	95-100	80-98	36-55	22-45	8-30
Luverne---------	0-7	Fine sandy loam	ML, SM	A-4, A-2	95-100	90-100	80-100	30-60	<20	NP
	7-36	Clay loam, sandy clay, clay.	ML, MH	A-5, A-7, A-4	95-100	90-100	85-100	50-95	38-70	8-30
	36-49	Clay loam, sandy clay loam.	ML, MH, SM	A-4, A-5, A-7	95-100	85-100	85-100	36-76	32-56	8-30
	49-80	Sandy loam, sandy clay loam, clay loam.	SM, SC, SC-SM	A-4, A-6	95-100	95-100	70-100	36-65	28-49	8-30
Smithdale-------	0-13	Loamy sand-------	SM	A-2	100	85-100	50-75	15-30	<20	NP
	13-48	Clay loam, sandy clay loam, sandy loam.	SC-SM, SC, CL, CL-ML	A-6, A-4	100	85-100	80-96	45-75	23-38	7-16
	48-80	Loam, sandy loam	SM, ML, CL, SC	A-4	100	85-100	65-95	36-70	<30	NP-10
BrE2:										
Brantley--------	0-2	Loam-------------	SM, SC-SM, ML, CL-ML	A-4	95-100	95-100	95-100	36-55	<30	NP-7
	2-34	Clay, clay loam, sandy clay.	CL, ML	A-7	95-100	95-100	90-100	60-75	41-50	16-22
	34-54	Sandy clay loam, clay loam.	SC, SM, CL, ML	A-4, A-6	95-100	95-100	80-100	36-70	30-40	7-15
	54-65	Sandy loam, fine sandy loam, sandy clay loam.	SM, SC, ML	A-2, A-4	95-100	95-100	70-100	30-60	<38	NP-9
Okeelala--------	0-12	Loamy sand-------	SM	A-2	98-100	85-100	50-85	15-35	<20	NP
	12-52	Clay loam, sandy clay loam, sandy loam.	SM, SC, CL, ML	A-4, A-6	98-100	85-100	80-96	45-75	23-38	7-16
	52-80	Loamy sand, sandy loam, fine sandy loam.	SP-SM, SM	A-2-4, A-3	98-100	85-100	50-75	5-35	<20	NP

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	4	10	40	200		
	In								Pct	
BrF:										
Brantley--------	0-10	Fine sandy loam	SM, SC-SM, ML, CL-ML	A-4	95-100	95-100	95-100	36-55	<30	NP-7
	10-46	Clay, clay loam, sandy clay.	CL, ML	A-7	95-100	95-100	90-100	60-75	41-50	16-22
	46-80	Sandy loam, fine sandy loam, sandy clay loam.	SM, SC, ML	A-2, A-4	95-100	95-100	70-100	30-60	<38	NP-9
Okeelala--------	0-16	Fine sandy loam	SM	A-2	98-100	85-100	75-85	20-35	<20	NP
	16-61	Clay loam, sandy clay loam, loam.	SM, SC, CL, ML	A-4, A-6	98-100	85-100	80-96	45-75	23-38	7-16
	61-80	Loamy sand, sandy loam, fine sandy loam.	SP-SM, SM	A-2-4, A-3	98-100	85-100	50-75	5-35	<20	NP
CaA-------------- Cahaba	0-13	Sandy loam-------	SM	A-4, A-2-4	95-100	95-100	65-90	30-45	<20	NP
	13-38	Sandy clay loam, loam, clay loam.	SC, CL	A-4, A-6	90-100	80-100	75-90	40-75	22-35	8-15
	38-60	Loamy sand, fine sandy loam, sandy loam.	SM, SP-SM	A-2-4	95-100	90-100	60-85	10-35	<20	NP
CoC2------------- Conecuh	0-5	Loam------------	CL-ML, CL	A-4, A-6	95-100	95-100	80-100	60-85	20-35	5-15
	5-48	Clay loam, clay, silty clay.	ML, MH, CL, CH	A-7, A-6	95-100	95-100	85-100	70-95	35-60	10-30
	48-76	Clay, silty clay	ML, MH, CH	A-7	95-100	95-100	90-100	80-98	45-70	15-45
	76-80	Variable---------	---	---	---	---	---	---	---	---
FaA-------------- Fluvaquents	0-7	Loam------------	SM, ML, CL-ML	A-2, A-4	100	90-100	60-90	30-60	<25	NP-7
	7-80	Stratified sandy loam to clay.	ML, CL	A-7, A-4, A-6	100	90-100	75-100	60-95	20-45	8-22
FrA-------------- Freest	0-12	Fine sandy loam	SM, CL, ML, CL-ML	A-4	100	95-100	60-90	40-70	<30	NP-8
	12-29	Loam, sandy clay loam, clay loam.	CL	A-4, A-6	100	95-100	80-95	55-75	25-40	7-20
	29-80	Clay loam, clay, silty clay.	CL, CH	A-7	100	95-100	90-100	80-95	41-55	20-30
HaB-------------- Halso	0-2	Silt loam--------	CL-ML, CL	A-4, A-6	95-100	95-100	80-100	70-90	20-35	5-15
	2-6	Clay loam, silty clay loam.	ML, MH, CL, CH	A-7, A-6	95-100	95-100	85-100	70-95	35-60	10-30
	6-30	Clay, silty clay	ML, MH	A-7	95-100	95-100	90-100	80-98	45-70	15-35
	30-45	Clay loam, silty clay loam, clay.	CL, CH, MH	A-6, A-7	65-95	65-80	60-80	55-75	30-65	12-30
	45-80	Weathered bedrock	---	---	---	---	---	---	---	---
IzA-------------- Izagora	0-7	Fine sandy loam	SM, SC-SM, ML, CL-ML	A-4	95-100	95-100	70-95	40-65	<25	NP-5
	7-65	Loam, clay loam, silty clay loam.	CL, ML	A-4, A-6, A-7	95-100	95-100	85-100	60-95	25-45	8-25
LaA-------------- Latonia	0-6	Loamy sand-------	SM	A-2-4	90-100	85-100	50-80	15-35	<20	NP
	6-43	Sandy loam, loam, fine sandy loam.	SM	A-2-4, A-4	90-100	85-100	60-85	30-50	<20	NP-10
	43-68	Sand, loamy sand	SM, SP-SM	A-2-4	90-100	85-100	50-75	10-30	<20	NP

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In								Pct	
LdC2:										
Lauderdale------	0-3	Silt loam--------	ML, CL-ML, CL	A-4	85-100	77-98	75-98	60-90	<25	NP-10
	3-16	Clay loam, sandy clay loam, silty clay loam.	CL	A-4, A-6	85-98	77-95	70-85	60-80	20-35	8-20
	16-80	Weathered bedrock	---	---	---	---	---	---	---	---
Arundel---------	0-7	Fine sandy loam	ML, SM	A-4, A-2-4	85-100	84-98	70-98	30-60	<20	NP
	7-34	Silty clay loam, silty clay, clay.	CL, CH	A-7	85-100	80-100	80-100	65-90	44-70	22-41
	34-80	Weathered bedrock	---	---	---	---	---	---	---	---
LeA-------------- Leeper	0-4	Silty clay loam	CH, CL	A-7	100	100	90-100	85-95	45-55	25-35
	4-60	Clay, silty clay, clay loam.	CH	A-7	100	100	95-100	80-97	52-75	30-50
LfA-------------- Lenoir	0-8	Silt loam--------	ML, CL, CL-ML	A-4	100	100	70-98	40-85	20-35	3-10
	8-80	Clay, silty clay, clay loam.	CL, CH	A-6, A-7	100	100	85-99	55-95	40-65	11-35
LgA-------------- Louin	0-2	Silty clay-------	MH, CH	A-7	100	100	95-100	90-100	50-60	20-30
	2-38	Clay, silty clay	CH, MH	A-7	100	100	95-100	85-100	50-90	30-50
	38-76	Clay, silty clay	CH, MH	A-7	95-100	95-100	90-100	85-100	50-90	30-52
	76-80	Weathered bedrock	---	---	---	---	---	---	---	---
LhA-------------- Lucedale	0-5	Fine sandy loam	SM, ML	A-2, A-4	100	95-100	80-95	25-65	<30	NP-3
	5-80	Sandy clay loam, clay loam, loam.	CL-ML, SC, CL, SC-SM	A-4, A-6, A-2	95-100	95-100	80-100	30-75	25-40	4-15
LnB-------------- Luverne	0-11	Sandy loam-------	ML, SM	A-4, A-2	87-100	84-100	80-100	30-60	<20	NP
	11-29	Clay loam, sandy clay, clay.	ML, MH	A-5, A-7, A-4	95-100	90-100	85-100	50-95	38-70	8-30
	29-42	Clay loam, sandy clay loam.	ML, MH, SM	A-4, A-5, A-7	95-100	85-100	85-100	36-76	32-56	8-30
	42-65	Sandy loam, clay loam, sandy clay loam.	SM, SC, SC-SM	A-4, A-6	95-100	95-100	70-100	36-65	28-49	8-30
LnD2, LnE2------- Luverne	0-10	Sandy loam-------	ML, SM	A-4, A-2	87-100	84-100	80-100	30-60	<20	NP
	10-29	Clay loam, sandy clay, clay.	ML, MH	A-5, A-7, A-4	95-100	90-100	85-100	50-95	38-70	8-30
	29-49	Clay loam, sandy clay loam.	ML, MH, SM	A-4, A-5, A-7	95-100	85-100	85-100	36-76	32-56	8-30
	49-80	Sandy loam, clay loam, sandy clay loam.	SM, SC, SC-SM	A-4, A-6	95-100	95-100	70-100	36-65	28-49	8-30
MaA-------------- Mayhew	0-2	Silty clay loam	CL	A-6, A-7	100	100	90-100	70-95	36-50	15-28
	2-42	Silty clay loam, silty clay, clay.	CH, CL	A-7-6, A-7-5	100	100	95-100	85-95	46-75	25-50
	42-60	Silty clay, clay, silty clay loam.	CH, CL	A-7-6	100	90-100	90-100	75-95	45-80	25-50
	60-80	Weathered bedrock	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In								Pct	
MdA:										
McCrory---------	0-4	Loam-------------	SM, SC-SM	A-4	100	100	70-85	40-50	<25	NP-7
	4-63	Sandy clay loam, clay loam, loam.	SC, CL, CL-ML	A-4, A-6	100	100	70-90	40-55	20-40	5-15
	63-80	Fine sandy loam, very fine sandy loam.	SM, SC-SM	A-4, A-2	100	100	60-85	25-50	<25	NP-7
Deerford--------	0-10	Loam-------------	ML, CL-ML	A-4	100	100	100	95-100	<28	NP-7
	10-49	Clay loam, loam, sandy clay loam.	CL	A-6, A-7-6	100	100	100	95-100	32-49	11-25
	49-80	Loam, very fine sandy loam, sandy clay loam.	CL, CL-ML	A-6, A-4, A-7-6	100	100	80-100	50-95	25-49	5-25
MnB-------------- McLaurin	0-6	Fine sandy loam	SM	A-4	90-100	90-100	70-85	36-45	<30	NP-4
	6-36	Sandy loam, fine sandy loam, loam.	SM, SC, SC-SM	A-4	90-100	90-100	85-95	36-45	<30	NP-10
	36-48	Loamy fine sand, loamy sand, sandy loam.	SM	A-2, A-4	90-100	90-100	50-85	15-45	<20	NP-4
	48-80	Sandy loam, sandy clay loam.	SC, ML, CL, SM	A-4, A-6	90-100	90-100	70-80	36-55	30-40	6-15
OKA:										
Ochlockonee-----	0-10	Sandy loam-------	SM, ML, SC-SM, CL-ML	A-4, A-2	100	95-100	65-90	40-70	<26	NP-5
	10-60	Fine sandy loam, sandy loam, loamy fine sand.	SM, ML, SC, CL	A-4	100	95-100	95-100	36-75	<32	NP-9
Kinston---------	0-4	Fine sandy loam	SM, SC, SC-SM	A-2, A-4	100	98-100	55-100	25-49	20-35	NP-10
	4-60	Loam, clay loam, sandy clay loam.	CL	A-4, A-6, A-7	100	95-100	75-100	60-95	20-45	8-22
Iuka------------	0-6	Fine sandy loam	SM, SC-SM, ML, CL-ML	A-4, A-2	95-100	90-100	70-100	30-60	<20	NP-7
	6-32	Fine sandy loam, loam, sandy loam.	SM, SC-SM, ML, CL-ML	A-4	95-100	85-100	65-100	36-75	<30	NP-7
	32-60	Sandy loam, fine sandy loam, loam.	SM, ML	A-2, A-4	95-100	90-100	70-100	25-60	<30	NP-7
OtB-------------- Oktibbeha	0-2	Clay-------------	CH, CL	A-7	100	100	90-100	90-100	42-64	30-40
	2-17	Clay-------------	CH	A-7	100	100	95-100	95-100	55-75	35-50
	17-36	Clay-------------	CH	A-7	100	100	95-100	95-100	55-75	35-50
	36-61	Clay, silty clay	CL	A-7	100	100	90-100	90-100	42-65	30-45
	61-80	Weathered bedrock	---	---	---	---	---	---	---	---
Pt--------------- Pits	0-60	Variable---------	---	---	---	---	---	---	---	---
RbD2------------- Rayburn	0-5	Silt loam--------	CL-ML, ML, CL	A-4	100	100	75-99	60-90	16-30	NP-10
	5-55	Clay, silty clay	CH	A-7	100	100	90-100	75-95	51-80	25-50
	55-65	Weathered bedrock	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In								Pct	
RvA-------------- Riverview	0-5	Loam-------------	ML, SM, CL-ML, SC-SM	A-2, A-4	95-100	90-100	85-95	30-60	<20	NP-7
	5-33	Clay loam, loam, fine sandy loam.	CL, ML, CL-ML	A-4, A-6	100	100	90-100	60-95	20-40	3-20
	33-80	Loamy fine sand, fine sandy loam, loam.	SM, SC-SM	A-2, A-4	100	100	50-95	15-45	<20	NP-7
SaA, SaB--------- Savannah	0-11	Silt loam--------	ML, CL-ML	A-4	100	90-100	80-100	60-90	<25	NP-7
	11-30	Sandy clay loam, clay loam, loam.	CL, SC, CL-ML	A-4, A-6	98-100	90-100	80-100	40-80	23-40	7-19
	30-80	Loam, clay loam, sandy clay loam.	CL, SC, CL-ML	A-4, A-6, A-7, A-2	94-100	90-100	60-100	30-80	23-43	7-19
SmB-------------- Smithdale	0-5	Sandy loam-------	SM, SC-SM	A-4, A-2	100	85-100	60-95	28-49	<20	NP-5
	5-58	Clay loam, sandy clay loam, loam.	SC-SM, SC, CL, CL-ML	A-6, A-4	100	85-100	80-96	45-75	23-38	7-16
	58-65	Loam, sandy loam	SM, ML, CL, SC	A-4	100	85-100	65-95	36-70	<30	NP-10
SmD-------------- Smithdale	0-5	Loamy fine sand--	SM	A-2-4	100	85-100	50-80	15-35	<20	NP
	5-13	Loamy fine sand, fine sandy loam.	SM, SC-SM	A-2, A-4	100	85-100	60-95	28-49	<20	NP-5
	13-49	Clay loam, sandy clay loam, loam.	SC-SM, SC, CL, CL-ML	A-6, A-4	100	85-100	80-96	45-75	23-38	7-16
	49-65	Loam, sandy loam	SM, ML, CL, SC	A-4	100	85-100	65-95	36-70	<30	NP-10
StD2:										
Sumter----------	0-5	Silty clay loam	CL	A-7, A-6	90-100	85-100	80-98	75-90	35-50	16-25
	5-27	Silty clay, clay, silty clay loam.	CH, CL	A-7, A-6	85-100	78-98	75-95	75-95	35-55	16-32
	27-80	Weathered bedrock	---	---	---	---	---	---	---	---
Maytag----------	0-5	Silty clay loam	CL, ML, CL-ML	A-4, A-6, A-7	98-100	95-100	90-100	75-90	20-45	3-25
	5-52	Silty clay, clay, silty clay loam.	CH, MH	A-7	98-100	95-100	90-100	85-98	60-95	30-60
	52-80	Silty clay, clay, silty clay loam.	CH, MH	A-7	98-100	95-100	90-100	75-98	60-95	30-60
StE2:										
Sumter----------	0-2	Silty clay loam	CL	A-7, A-6	90-100	85-100	80-98	75-90	35-50	16-25
	2-29	Silty clay, clay, silty clay loam.	CH, CL	A-7, A-6	85-100	78-98	75-95	75-95	35-55	16-32
	29-80	Weathered bedrock	---	---	---	---	---	---	---	---
Maytag----------	0-2	Silty clay loam--	CH, MH	A-7	98-100	95-100	90-100	85-98	50-70	20-35
	2-50	Silty clay, clay, silty clay loam.	CH, MH	A-7	98-100	95-100	90-100	85-98	60-95	30-60
	50-80	Silty clay, clay, silty clay loam.	CH, MH	A-7	98-100	95-100	90-100	75-98	60-95	30-60

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plas- ticity index
	In								Pct	
ToC2:										
Toxey-----------	0-3	Clay-------------	CL, CH	A-7	100	100	95-100	90-100	42-64	30-40
	3-15	Clay, silty clay	CH	A-7	100	100	95-100	95-100	65-85	45-60
	15-24	Clay, silty clay, silty clay loam.	CH, CL	A-7, A-6	100	95-100	95-100	90-100	45-60	30-40
	24-80	Clay loam, silty clay loam, clay.	CH, CL	A-7, A-6	100	90-100	70-100	55-95	35-60	15-40
Brantley--------	0-2	Fine sandy loam	SM, SC-SM, ML, CL-ML	A-4	95-100	95-100	95-100	36-55	<30	NP-7
	2-21	Clay, clay loam, sandy clay.	CL, ML	A-7	95-100	95-100	90-100	60-75	41-50	16-22
	21-66	Sandy clay loam, clay loam.	SC, SM, CL, ML	A-4, A-6	95-100	95-100	80-100	36-70	30-40	7-15
	66-92	Sandy loam, fine sandy loam, sandy clay loam.	SM, SC, ML	A-2, A-4	95-100	95-100	70-100	30-60	<38	NP-9
Hannon----------	0-3	Clay-------------	CH, CL	A-7	100	100	90-100	90-100	42-64	30-40
	3-24	Clay, silty clay	CH	A-7	100	100	95-100	90-100	55-75	35-50
	24-29	Clay, silty clay	CH	A-7	100	100	95-100	90-100	55-75	35-50
	29-80	Stratified sandy loam to clay.	CL, CH	A-6, A-7	100	90-100	80-90	75-85	35-55	15-30
UnA-------------- Una	0-4	Clay-------------	CH, CL	A-7	100	94-100	90-100	75-95	41-65	20-40
	4-60	Clay, silty clay loam, silty clay.	CH, CL	A-7	100	94-100	90-100	75-95	41-65	20-40
UrB:										
Urbo------------	0-9	Silty clay-------	CL, CH	A-6, A-7	100	100	95-100	95-100	30-40	15-25
	9-80	Silty clay, clay loam, silty clay loam.	CL, CH	A-7	100	100	95-100	80-98	44-62	20-36
Mooreville------	0-3	Loam-------------	CL-ML, CL, SC-SM, SC	A-4	100	100	80-100	40-85	20-30	5-10
	3-51	Sandy clay loam, clay loam, loam.	CL, SC	A-6, A-7	100	100	80-95	45-80	28-50	15-30
	51-80	Loam, sandy clay loam, sandy loam.	SC, CL	A-6, A-7	100	100	80-95	45-80	28-50	15-30
Una-------------	0-5	Silty clay loam--	CH, CL	A-7	100	94-100	90-100	75-95	41-65	20-40
	5-60	Clay, silty clay loam, silty clay.	CH, CL	A-7	100	94-100	90-100	75-95	41-65	20-40
WaB-------------- Wadley	0-7	Loamy fine sand--	SM	A-2-4	100	95-100	60-90	15-30	<20	NP
	7-55	Loamy fine sand, loamy sand.	SM, SP-SM	A-2	98-100	95-100	75-100	10-40	<20	NP
	55-80	Sandy loam, fine sandy loam, sandy clay loam.	SC, SM, SC-SM	A-2, A-4, A-6	100	95-100	70-100	20-50	<40	NP-17
WcB, WcD2-------- Wilcox	0-3	Silty clay-------	CH	A-7	100	100	95-100	80-98	30-90	25-60
	3-35	Clay-------------	CH, MH	A-7-5	100	100	95-100	80-98	55-95	22-63
	35-60	Clay, silty clay	CH	A-7-5	100	100	90-100	75-98	55-95	39-60
	60-80	Weathered bedrock	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	4	10	40	200		
	In								Pct	
WmC-------------- Williamsville	0-5	Fine sandy loam	ML, SM	A-4, A-2	100	95-100	80-95	36-70	<20	NP
	5-17	Fine sandy loam, loamy sand.	ML, SM	A-4, A-2	87-100	84-100	80-100	30-60	<20	NP
	17-43	Clay loam, sandy clay, clay.	CL, CH	A-6, A-7	95-100	90-100	85-100	50-95	38-70	20-30
	43-59	Clay loam, sandy clay loam.	ML, MH, SM	A-4, A-5, A-7	95-100	85-100	85-100	36-76	32-56	8-30
	59-80	Stratified loamy sand to sandy clay loam.	SM, ML	A-4, A-6, A-2, A-7	90-100	85-100	70-100	25-65	28-49	3-16

Table 16.--Physical and Chemical Properties of the Soils

(Entries under "Erosion factors--T" apply to the entire profile. Entries under "Organic matter" apply only to the surface layer. Absence of an entry indicates that data were not available or were not estimated.)

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors K	Erosion factors T	Organic matter
	In	Pct	g/cc	In/hr	In/in	pH				Pct
AnA-------------- Annemaine	0-4	9-20	1.30-1.55	0.6-2.0	0.12-0.16	3.6-5.5	Low----------	0.28	5	.5-2
	4-35	35-60	1.25-1.40	0.06-0.2	0.14-0.18	3.6-5.5	Moderate-----	0.37		
	35-65	20-40	1.30-1.60	0.2-0.6	0.14-0.18	3.6-5.5	Low----------	0.37		
ArF:										
Arundel---------	0-4	15-25	1.40-1.50	0.6-2.0	0.14-0.17	3.6-5.0	Low----------	0.28	3	.5-2
	4-32	35-70	1.55-1.65	<0.06	0.12-0.18	3.6-5.0	High---------	0.32		
	32-80	---	---	<0.06	---	---	-------------	----		
Cantuche--------	0-6	10-20	1.30-1.50	0.6-2.0	0.06-0.13	4.5-5.5	Low----------	0.20	2	.5-2
	6-11	10-20	1.30-1.50	0.6-2.0	0.04-0.10	4.5-5.5	Low----------	0.20		
	11-80	---	---	<0.06	---	---	-------------	----		
AwE:										
Arundel---------	0-8	7-20	1.35-1.65	0.6-2.0	0.11-0.15	3.6-5.0	Low----------	0.28	3	.5-2
	8-36	35-70	1.55-1.65	<0.06	0.12-0.18	3.6-5.0	High---------	0.32		
	36-80	---	---	<0.06	---	---	-------------	----		
Williamsville---	0-4	10-18	1.40-1.55	0.6-2.0	0.12-0.17	4.5-6.0	Low----------	0.28	5	.5-2
	4-36	35-55	1.40-1.60	0.2-0.6	0.14-0.20	4.5-5.5	Moderate-----	0.24		
	36-62	12-30	1.40-1.50	0.6-2.0	0.14-0.18	4.5-5.5	Low----------	0.24		
	62-80	8-25	1.40-1.50	2.0-6.0	0.06-0.12	4.5-5.5	Low----------	0.24		
BbA:										
Bibb------------	0-3	2-18	1.50-1.70	0.6-2.0	0.12-0.18	3.6-5.5	Low----------	0.20	5	2-5
	3-45	2-18	1.45-1.75	0.6-2.0	0.10-0.20	3.6-5.5	Low----------	0.37		
	45-60	2-12	1.60-1.75	2.0-6.0	0.06-0.10	3.6-5.5	Low----------	0.15		
Iuka------------	0-9	6-15	1.30-1.50	2.0-6.0	0.10-0.15	4.5-5.5	Low----------	0.24	5	.5-3
	9-42	8-18	1.35-1.55	0.6-2.0	0.10-0.20	4.5-5.5	Low----------	0.28		
	42-60	5-15	1.35-1.55	0.6-2.0	0.10-0.20	4.5-5.5	Low----------	0.20		
BeB-------------- Bigbee	0-6	4-10	1.40-1.50	6.0-20	0.05-0.10	4.5-5.5	Low----------	0.10	5	.5-1
	6-23	2-10	1.40-1.50	6.0-20	0.05-0.08	4.5-5.5	Low----------	0.10		
	23-70	1-10	1.40-1.50	6.0-20	0.05-0.08	4.5-5.5	Low----------	0.17		
BgD2------------- Boswell	0-4	5-20	1.40-1.55	0.6-2.0	0.15-0.20	4.5-5.5	Low----------	0.28	5	.5-2
	4-70	38-60	1.30-1.60	<0.06	0.14-0.18	3.6-5.0	High---------	0.32		
BkB-------------- Boykin	0-5	3-10	1.40-1.60	6.0-20	0.05-0.09	4.5-6.0	Low----------	0.20	5	.5-1
	5-22	3-10	1.40-1.60	6.0-20	0.05-0.09	4.5-6.0	Low----------	0.20		
	22-60	18-30	1.45-1.70	0.6-2.0	0.10-0.16	4.5-5.5	Low----------	0.28		
BnE2:										
Boykin----------	0-3	3-10	1.40-1.60	6.0-20	0.05-0.09	4.5-6.0	Low----------	0.20	5	.5-1
	3-33	3-10	1.40-1.60	6.0-20	0.05-0.09	4.5-6.0	Low----------	0.20		
	33-80	18-30	1.45-1.70	0.6-2.0	0.10-0.16	4.5-5.5	Low----------	0.28		
Luverne---------	0-7	7-20	1.35-1.65	2.0-6.0	0.11-0.15	4.5-5.5	Low----------	0.24	5	.5-2
	7-36	35-50	1.25-1.55	0.2-0.6	0.12-0.18	4.5-5.5	Moderate-----	0.28		
	36-49	20-40	1.35-1.65	0.2-0.6	0.12-0.18	4.5-5.5	Low----------	0.28		
	49-80	10-35	1.35-1.65	0.2-0.6	0.05-0.10	4.5-5.5	Low----------	0.28		
Smithdale-------	0-13	2-8	1.40-1.50	2.0-6.0	0.05-0.10	4.5-5.5	Low----------	0.15	5	.5-2
	13-48	18-33	1.40-1.55	0.6-2.0	0.15-0.17	4.5-5.5	Low----------	0.24		
	48-80	12-27	1.40-1.55	2.0-6.0	0.14-0.16	4.5-5.5	Low----------	0.28		

Table 16.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors K	Erosion factors T	Organic matter
	In	Pct	g/cc	In/hr	In/in	pH				Pct
BrE2:										
Brantley	0-2	8-21	1.35-1.65	0.6-2.0	0.10-0.15	4.5-5.5	Low	0.28	5	.5-2
	2-34	35-55	1.35-1.55	0.06-0.2	0.12-0.20	4.5-5.5	Moderate	0.28		
	34-54	25-35	1.35-1.65	0.6-2.0	0.12-0.20	4.5-5.5	Low	0.24		
	54-65	10-25	1.40-1.65	0.6-2.0	0.10-0.15	4.5-5.5	Low	0.20		
Okeelala	0-12	4-10	1.30-1.50	6.0-20.0	0.05-0.10	4.5-5.5	Low	0.15	5	.5-2
	12-52	18-35	1.35-1.55	0.6-2.0	0.12-0.15	4.5-5.5	Low	0.24		
	52-80	5-18	1.40-1.60	2.0-6.0	0.07-0.12	4.5-5.5	Low	0.15		
BrF:										
Brantley	0-10	8-21	1.35-1.65	0.6-2.0	0.10-0.15	4.5-5.5	Low	0.28	5	.5-2
	10-46	35-55	1.35-1.55	0.06-0.2	0.12-0.20	4.5-5.5	Moderate	0.28		
	46-80	10-25	1.40-1.65	0.6-2.0	0.10-0.15	4.5-5.5	Low	0.20		
Okeelala	0-16	7-15	1.30-1.50	2.0-6.0	0.09-0.12	4.5-5.5	Low	0.20	5	.5-2
	16-61	18-35	1.35-1.55	0.6-2.0	0.12-0.15	4.5-5.5	Low	0.24		
	61-80	2-18	1.40-1.60	2.0-6.0	0.07-0.12	4.5-5.5	Low	0.15		
CaA	0-13	7-17	1.35-1.60	2.0-6.0	0.10-0.14	4.5-6.0	Low	0.24	5	.5-2
Cahaba	13-38	18-35	1.35-1.60	0.6-2.0	0.12-0.20	4.5-6.0	Low	0.28		
	38-60	5-20	1.40-1.70	2.0-20	0.05-0.10	4.5-6.0	Low	0.24		
CoC2	0-5	10-25	1.35-1.60	0.6-2.0	0.15-0.24	4.5-5.5	Low	0.37	5	.5-2
Conecuh	5-48	35-50	1.35-1.60	0.06-0.2	0.12-0.18	4.5-5.5	Moderate	0.32		
	48-76	45-70	1.30-1.55	<0.06	0.08-0.19	4.5-5.5	High	0.32		
	76-80	---	---	<0.06	---	---	-------------	----		
FaA	0-7	2-18	1.25-1.35	2.0-6.0	0.10-0.15	3.6-5.5	Low	0.20	5	3-10
Fluvaquents	7-80	15-45	1.35-1.60	0.06-0.2	0.10-0.20	3.6-5.5	Low	0.37		
FrA	0-12	3-10	1.40-1.50	0.6-2.0	0.10-0.15	4.5-5.5	Low	0.28	5	.5-2
Freest	12-29	10-25	1.40-1.50	0.2-0.6	0.15-0.18	4.5-6.0	Moderate	0.32		
	29-80	27-50	1.40-1.55	0.06-0.2	0.15-0.18	4.5-6.0	High	0.28		
HaB	0-2	9-27	1.25-1.55	0.6-2.0	0.14-0.20	3.6-5.5	Low	0.32	4	.5-2
Halso	2-6	27-35	1.20-1.50	0.06-0.2	0.12-0.18	3.6-5.5	Moderate	0.32		
	6-30	40-70	1.10-1.40	<0.06	0.12-0.18	3.6-5.5	High	0.32		
	30-45	25-65	1.30-1.65	<0.06	0.12-0.18	3.6-5.5	Moderate	0.24		
	45-80	---	---	<0.06	---	---	-------------	----		
IzA	0-7	6-20	1.40-1.65	2.0-6.0	0.11-0.20	3.6-5.5	Low	0.28	5	.5-2
Izagora	7-65	18-35	1.40-1.60	0.6-2.0	0.12-0.20	3.6-5.5	Low	0.32		
LaA	0-6	3-12	1.40-1.50	6.0-20	0.05-0.10	4.5-5.5	Low	0.17	5	.5-2
Latonia	6-43	10-16	1.40-1.50	2.0-6.0	0.10-0.15	4.5-5.5	Low	0.20		
	43-68	3-10	1.40-1.50	6.0-20	0.05-0.10	4.5-5.5	Low	0.17		
LdC2:										
Lauderdale	0-3	10-15	1.40-1.50	0.6-2.0	0.15-0.20	3.6-5.0	Low	0.37	2	.5-2
	3-16	20-35	1.40-1.50	0.2-0.6	0.15-0.20	3.6-5.0	Moderate	0.32		
	16-80	---	---	<0.06	---	---	-------------	----		
Arundel	0-7	7-20	1.35-1.65	0.6-2.0	0.11-0.15	3.6-5.5	Low	0.28	3	.5-2
	7-34	35-70	1.55-1.65	<0.06	0.12-0.18	3.6-5.0	High	0.32		
	38-80	---	---	<0.06	---	---	-------------	----		
LeA	0-4	27-35	1.45-1.60	0.06-0.2	0.18-0.22	6.1-8.4	High	0.32	5	1-4
Leeper	4-60	35-50	1.40-1.60	<0.06	0.18-0.20	6.1-8.4	High	0.32		

Table 16.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors K	Erosion factors T	Organic matter
	In	Pct	g/cc	In/hr	In/in	pH				Pct
LfA--------------	0-8	6-20	1.30-1.50	0.6-2.0	0.14-0.18	3.6-5.5	Low----------	0.37	5	1-4
Lenoir	8-80	35-60	1.20-1.35	0.06-0.2	0.13-0.15	3.6-5.5	Moderate-----	0.32		
LgA--------------	0-2	40-60	1.10-1.40	0.06-0.2	0.10-0.15	4.5-5.5	High---------	0.32	5	1-5
Louin	2-38	40-60	1.00-1.30	<0.06	0.10-0.15	4.5-6.0	Very high----	0.32		
	38-76	40-75	1.10-1.40	<0.06	0.10-0.15	6.6-8.4	Very high----	0.32		
	76-80	---	---	<0.06	---	7.9-8.4	-------------	----		
LhA--------------	0-5	5-18	1.40-1.55	0.6-2.0	0.15-0.20	5.1-6.5	Low----------	0.24	5	.5-2
Lucedale	5-80	20-30	1.55-1.70	0.6-2.0	0.14-0.18	4.5-5.5	Low----------	0.24		
LnB--------------	0-11	7-20	1.35-1.65	2.0-6.0	0.11-0.15	4.5-5.5	Low----------	0.24	5	.5-2
Luverne	11-29	35-50	1.25-1.55	0.2-0.6	0.12-0.18	4.5-5.5	Moderate-----	0.28		
	29-42	20-40	1.35-1.65	0.2-0.6	0.12-0.18	4.5-5.5	Low----------	0.28		
	42-65	10-35	1.35-1.65	0.2-0.6	0.05-0.10	4.5-5.5	Low----------	0.28		
LnD2, LnE2-------	0-10	7-20	1.35-1.65	2.0-6.0	0.11-0.15	4.5-5.5	Low----------	0.24	5	.5-2
Luverne	10-29	35-50	1.25-1.55	0.2-0.6	0.12-0.18	4.5-5.5	Moderate-----	0.28		
	29-49	20-40	1.35-1.65	0.2-0.6	0.12-0.18	4.5-5.5	Low----------	0.28		
	49-80	10-35	1.35-1.65	0.2-0.6	0.05-0.10	4.5-5.5	Low----------	0.28		
MaA--------------	0-2	27-40	1.35-1.45	0.06-0.2	0.20-0.22	4.5-5.5	Moderate-----	0.37	5	1-3
Mayhew	2-42	35-60	1.40-1.55	<0.06	0.18-0.20	3.5-5.5	High---------	0.32		
	42-60	35-75	1.40-1.55	<0.06	0.18-0.20	3.5-5.5	High---------	0.32		
	60-80	---	---	<0.06	---	---	-------------	----		
MdA:										
McCrory---------	0-4	10-27	1.30-1.60	0.6-2.0	0.11-0.15	3.5-5.5	Low----------	0.24	4	1-4
	4-63	15-35	1.30-1.60	0.06-0.2	0.08-0.18	3.5-8.4	Low----------	0.32		
	63-80	5-20	1.30-1.65	0.2-0.6	0.03-0.12	6.6-8.4	Low----------	0.24		
Deerford--------	0-10	5-27	1.30-1.60	0.6-2.0	0.21-0.23	3.5-5.5	Low----------	0.24	4	1-4
	10-49	10-35	1.30-1.60	0.06-0.2	0.08-0.18	3.5-8.4	Low----------	0.32		
	49-80	10-30	1.30-1.65	0.2-0.6	0.03-0.12	6.6-8.4	Low----------	0.24		
MnB--------------	0-6	5-10	1.40-1.60	0.6-2.0	0.12-0.15	4.5-5.5	Low----------	0.20	5	.5-2
McLaurin	6-36	10-18	1.40-1.60	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.20		
	36-48	5-15	1.30-1.70	2.0-6.0	0.05-0.10	4.5-5.5	Low----------	0.20		
	48-80	5-27	1.40-1.60	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.20		
OKA:										
Ochlockonee-----	0-10	3-18	1.40-1.60	2.0-6.0	0.07-0.14	4.5-5.5	Low----------	0.20	5	.5-2
	10-60	8-18	1.40-1.60	0.6-2.0	0.10-0.20	4.5-5.5	Low----------	0.20		
Kinston---------	0-4	5-18	1.40-1.60	2.0-6.0	0.13-0.19	4.5-5.5	Low----------	0.24	5	2-5
	4-60	18-35	1.30-1.50	0.6-2.0	0.14-0.18	4.5-5.5	Low----------	0.32		
Iuka------------	0-6	6-15	1.30-1.50	2.0-6.0	0.10-0.15	4.5-5.5	Low----------	0.24	5	.5-2
	6-32	8-18	1.35-1.55	0.6-2.0	0.10-0.20	4.5-5.5	Low----------	0.28		
	32-60	5-15	1.35-1.55	0.6-2.0	0.10-0.20	4.5-5.5	Low----------	0.20		
OtB--------------	0-2	40-60	1.10-1.40	0.00-0.06	0.12-0.16	4.5-5.5	High---------	0.32	5	1-4
Oktibbeha	2-17	60-80	1.00-1.30	0.00-0.06	0.05-0.10	3.5-5.5	Very high----	0.32		
	17-36	60-80	1.00-1.30	0.00-0.06	0.05-0.10	3.5-6.5	Very high----	0.32		
	36-61	50-70	1.10-1.40	0.00-0.06	0.05-0.10	6.6-8.4	Very high----	0.32		
	61-80	---	---	0.00-0.06	---	7.9-8.4	-------------	----		
Pt.										
Pits										

Table 16.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors K	Erosion factors T	Organic matter
	In	Pct	g/cc	In/hr	In/in	pH				Pct
RbD2 Rayburn	0-5	10-27	1.40-1.50	0.6-2.0	0.14-0.17	3.5-5.0	Low	0.43	4	.5-3
	5-55	40-62	1.30-1.50	<0.06	0.12-0.18	3.5-5.0	High	0.37		
	55-65	---	---	0.01-0.6	---	---	-------------	----		
RvA Riverview	0-5	10-27	1.30-1.60	0.6-2.0	0.12-0.18	4.5-6.0	Low	0.24	5	.5-2
	5-33	18-35	1.20-1.40	0.6-2.0	0.15-0.22	4.5-6.0	Low	0.24		
	33-80	4-18	1.20-1.50	2.0-6.0	0.07-0.11	4.5-6.0	Low	0.17		
SaA, SaB Savannah	0-11	3-16	1.40-1.60	0.6-2.0	0.15-0.24	4.5-5.5	Low	0.37	4	.5-2
	11-30	18-32	1.45-1.65	0.6-2.0	0.11-0.17	4.5-5.5	Low	0.28		
	30-80	18-32	1.60-1.80	0.2-0.6	0.05-0.10	4.5-5.5	Low	0.24		
SmB Smithdale	0-5	2-15	1.40-1.50	2.0-6.0	0.14-0.16	4.5-5.5	Low	0.28	5	.5-2
	5-58	18-33	1.40-1.55	0.6-2.0	0.15-0.17	4.5-5.5	Low	0.24		
	58-65	12-27	1.40-1.55	2.0-6.0	0.14-0.16	4.5-5.5	Low	0.28		
SmD Smithdale	0-5	2-8	1.40-1.50	2.0-6.0	0.05-0.10	4.5-5.5	Low	0.17	5	.5-2
	5-13	2-15	1.40-1.50	2.0-6.0	0.14-0.16	4.5-5.5	Low	0.24		
	13-49	18-33	1.40-1.55	0.6-2.0	0.15-0.17	4.5-5.5	Low	0.24		
	49-65	12-27	1.40-1.55	2.0-6.0	0.14-0.16	4.5-5.5	Low	0.28		
StD2:										
Sumter	0-5	28-40	1.30-1.60	0.06-2.0	0.12-0.17	7.4-8.4	Moderate	0.37	2	2-5
	5-27	35-57	1.15-1.55	0.06-2.0	0.12-0.17	7.4-8.4	High	0.37		
	27-80	---	---	0.00-0.01	---	7.4-8.4	-------------	----		
Maytag	0-5	30-40	1.20-1.60	0.2-0.6	0.15-0.20	6.6-8.4	Moderate	0.32	5	2-5
	5-52	35-60	1.15-1.50	0.06-0.2	0.12-0.17	7.4-8.4	High	0.32		
	52-80	35-70	1.15-1.50	0.06-0.2	0.12-0.17	7.4-8.4	High	0.32		
StE2:										
Sumter	0-2	28-40	1.30-1.60	0.06-2.0	0.12-0.17	6.6-8.4	Moderate	0.37	2	2-5
	2-29	35-57	1.15-1.55	0.06-2.0	0.12-0.17	7.4-8.4	High	0.37		
	29-80	---	---	0.00-0.01	---	---	-------------	----		
Maytag	0-2	30-40	1.15-1.55	0.06-0.2	0.14-0.18	7.4-8.4	High	0.32	5	2-5
	2-50	35-60	1.15-1.50	0.06-0.2	0.12-0.17	7.4-8.4	High	0.32		
	50-80	35-70	1.15-1.50	0.06-0.2	0.12-0.17	7.4-8.4	High	0.32		
ToC2:										
Toxey	0-3	40-70	1.10-1.40	<0.06	0.12-0.16	4.5-5.5	High	0.32	2	2-5
	3-15	60-80	1.00-1.40	<0.06	0.12-0.16	4.5-6.0	High	0.32		
	15-24	35-60	1.00-1.40	<0.06	0.12-0.16	6.1-8.4	High	0.37		
	24-80	27-50	1.00-1.40	<0.06	0.08-0.12	7.4-8.4	Moderate	0.28		
Brantley	0-2	8-21	1.35-1.65	0.6-2.0	0.10-0.15	4.5-5.5	Low	0.28	5	.5-2
	2-21	35-55	1.35-1.55	0.06-0.2	0.12-0.20	4.5-5.5	Moderate	0.28		
	21-66	25-35	1.35-1.65	0.6-2.0	0.12-0.20	4.5-5.5	Low	0.24		
	66-92	10-25	1.40-1.65	0.6-2.0	0.10-0.15	4.5-5.5	Low	0.20		
Hannon	0-3	40-60	1.10-1.30	0.01-0.06	0.12-0.16	4.5-5.5	High	0.32	5	1-4
	3-24	50-75	1.10-1.30	0.01-0.06	0.05-0.10	5.1-6.5	Very high	0.32		
	24-29	50-75	1.10-1.30	0.01-0.06	0.05-0.10	7.4-8.4	Very high	0.32		
	29-80	25-60	1.15-1.50	0.01-0.06	0.05-0.10	7.4-8.4	Moderate	0.28		
UnA Una	0-4	40-50	1.40-1.60	<0.06	0.19-0.20	4.5-5.5	High	0.32	5	1-3
	4-60	35-55	1.40-1.60	<0.06	0.15-0.20	4.5-5.5	High	0.28		
UrB:										
Urbo	0-9	40-48	1.40-1.50	0.06-0.2	0.19-0.20	4.5-5.5	Moderate	0.49	5	1-3
	9-80	34-55	1.45-1.55	<0.06	0.18-0.20	4.5-5.5	High	0.28		

Table 16.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors K	Erosion factors T	Organic matter
	In	Pct	g/cc	In/hr	In/in	pH				Pct
UrB:										
Mooreville	0-3	5-27	1.40-1.50	0.6-2.0	0.14-0.20	4.5-5.5	Low	0.37	5	.5-2
	3-51	18-35	1.40-1.50	0.6-2.0	0.14-0.18	4.5-5.5	Moderate	0.28		
	51-80	10-40	1.40-1.60	0.6-2.0	0.14-0.18	4.5-5.5	Moderate	0.28		
Una	0-5	40-50	1.40-1.60	<0.06	0.15-0.20	4.5-5.5	High	0.32	5	1-3
	5-60	35-55	1.40-1.60	<0.06	0.15-0.20	4.5-5.5	High	0.28		
WaB Wadley	0-7	4-10	1.35-1.65	6.0-20	0.05-0.10	4.5-6.0	Low	0.15	5	.5-1
	7-55	2-10	1.35-1.65	6.0-20	0.05-0.10	4.5-6.0	Low	0.15		
	55-80	13-35	1.55-1.65	0.6-2.0	0.10-0.13	4.5-6.0	Low	0.20		
WcB, WcD2 Wilcox	0-3	40-70	1.10-1.35	0.06-0.2	0.10-0.15	4.5-5.5	High	0.37	4	.5-2
	3-35	60-85	1.00-1.35	<0.06	0.05-0.10	3.6-5.5	Very high	0.32		
	35-60	40-85	1.10-1.40	<0.06	0.05-0.10	3.6-5.5	Very high	0.28		
	60-80	---	---	<0.06	---	---	-------------	----		
WmC Williamsville	0-5	3-12	1.40-1.55	0.6-2.0	0.12-0.18	4.5-6.0	Low	0.28	5	.5-3
	5-17	3-20	1.35-1.65	2.0-6.0	0.11-0.15	4.5-6.0	Low	0.24		
	17-43	35-50	1.25-1.55	0.2-0.6	0.12-0.18	4.5-5.5	Moderate	0.28		
	43-59	20-40	1.35-1.65	0.2-0.6	0.12-0.18	4.5-5.5	Low	0.28		
	59-80	10-35	1.35-1.65	0.2-0.6	0.05-0.10	4.5-5.5	Low	0.28		

Table 17.--Soil and Water Features

("Flooding" and "water table" and terms such as "rare," "brief," "apparent," and "perched" are explained in the text. Absence of an entry indicates that the feature is not a concern or that data were not estimated.)

Soil name and map symbol	Hydro-logic group	Flooding			High water table			Bedrock		Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hard-ness	Uncoated steel	Concrete
					Ft			In			
AnA: Annemaine	C	Rare	---	---	1.5-2.5	Apparent	Jan-Mar	>60	---	High	High.
ArF:											
Arundel	C	None	---	---	>6.0	---	---	20-40	Soft	High	High.
Cantuche	D	None	---	---	>6.0	---	---	10-20	Soft	Low	Moderate.
AwE:											
Arundel	C	None	---	---	>6.0	---	---	20-40	Soft	High	High.
Williamsville	C	None	---	---	>6.0	---	---	>60	---	High	High.
BbA:											
Bibb	D	Frequent	Brief	Dec-Apr	0.5-1.0	Apparent	Dec-Apr	>60	---	High	Moderate.
Iuka	C	Frequent	Brief	Dec-Apr	1.0-3.0	Apparent	Dec-Apr	>60	---	Moderate	High.
BeB: Bigbee	A	Rare	---	---	3.5-6.0	Apparent	Jan-Mar	>60	---	Low	Moderate.
BgD2: Boswell	D	None	---	---	>6.0	---	---	>60	---	High	Moderate.
BkB: Boykin	B	None	---	---	>6.0	---	---	>60	---	Moderate	High.
BnE2:											
Boykin	B	None	---	---	>6.0	---	---	>60	---	Moderate	High.
Luverne	C	None	---	---	>6.0	---	---	>60	---	High	High.
Smithdale	B	None	---	---	>6.0	---	---	>60	---	Low	Moderate.
BrE2, BrF:											
Brantley	C	None	---	---	>6.0	---	---	>60	---	High	High.
Okeelala	B	None	---	---	>6.0	---	---	>60	---	Moderate	Moderate.
CaA: Cahaba	B	Rare	---	---	>6.0	---	---	>60	---	Moderate	Moderate.
CoC2: Conecuh	D	None	---	---	>6.0	---	---	>60	---	High	High.
FaA: Fluvaquents	D	Frequent	Brief	Dec-Apr	+2-1.0	Apparent	Dec-Jul	>60	---	High	High.
FrA: Freest	C	None	---	---	1.5-2.5	Perched	Jan-Mar	>60	---	High	High.
HaB: Halso	D	None	---	---	>6.0	---	---	40-60	Soft	High	High.

Table 17.--Soil and Water Features--Continued

Soil name and map symbol	Hydro-logic group	Flooding: Frequency	Flooding: Duration	Flooding: Months	High water table: Depth	High water table: Kind	High water table: Months	Bedrock: Depth	Bedrock: Hard-ness	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
					Ft			In			
IzA: Izagora	C	Rare	---	---	2.0-3.0	Perched	Jan-Mar	>60	---	Moderate	High.
LaA: Latonia	B	Rare	---	---	>6.0	---	---	>60	---	Low	Moderate.
LdC2:											
Lauderdale	D	None	---	---	>6.0	---	---	10-20	Soft	Low	Moderate.
Arundel	C	None	---	---	>6.0	---	---	20-40	Soft	High	High.
LeA: Leeper	D	Frequent	Brief	Dec-Apr	1.0-2.0	Perched	Dec-Apr	>60	---	High	Low.
LfA: Lenoir	D	Rare	---	---	1.0-2.5	Apparent	Jan-Mar	>60	---	High	High.
LgA: Louin	D	None	---	---	1.0-2.0	Perched	Jan-Mar	>60	---	High	High.
LhA: Lucedale	B	None	---	---	>6.0	---	---	>60	---	Moderate	Moderate.
LnB, LnD2, LnE2: Luverne	C	None	---	---	>6.0	---	---	>60	---	High	High.
MaA: Mayhew	D	None	---	---	0-1.0	Perched	Jan-Mar	>60	---	High	High.
MdA:											
McCrory	D	Occasional	Brief	Dec-Apr	0.5-1.0	Perched	Dec-Apr	>60	---	High	Moderate.
Deerford	D	Occasional	Brief	Dec-Apr	0.5-1.5	Perched	Dec-Apr	>60	---	High	Moderate.
MnB: McLaurin	B	None	---	---	>6.0	---	---	>60	---	Low	Moderate.
OKA:											
Ochlockonee	B	Frequent	Brief	Dec-Apr	3.0-5.0	Apparent	Dec-Apr	>60	---	Low	High.
Kinston	D	Frequent	Brief	Dec-Apr	0-1.0	Apparent	Dec-May	>60	---	High	High.
Iuka	C	Frequent	Brief	Dec-Apr	1.0-3.0	Apparent	Dec-Apr	>60	---	Moderate	High.
OtB: Oktibbeha	D	None	---	---	>6.0	---	---	>60	---	High	High.
Pt: Pits	---	None	---	---	>6.0	---	---	>60	---	---	---
RbD2: Rayburn	D	None	---	---	2.5-4.5	Perched	Jan-Mar	40-60	Soft	High	High.
RvA: Riverview	B	Occasional	Brief	Dec-Apr	3.0-5.0	Apparent	Dec-Apr	>60	---	Low	Moderate.
SaA, SaB: Savannah	C	None	---	---	1.5-3.0	Perched	Jan-Mar	>60	---	Moderate	High.
SmB, SmD: Smithdale	B	None	---	---	>6.0	---	---	>60	---	Low	Moderate.

Table 17.--Soil and Water Features--Continued

Soil name and map symbol	Hydrologic group	Flooding: Frequency	Flooding: Duration	Flooding: Months	High water table: Depth	High water table: Kind	High water table: Months	Bedrock: Depth	Bedrock: Hardness	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
					Ft			In			
StD2, StE2:											
Sumter	C	None	---	---	>6.0	---	---	20-40	Soft	Moderate	Low.
Maytag	D	None	---	---	>6.0	---	---	>60	---	High	Low.
ToC2:											
Toxey	D	None	---	---	>6.0	---	---	>60		High	High.
Brantley	C	None	---	---	>6.0	---	---	>60	---	High	High.
Hannon	D	None	---	---	>6.0	---	---	>60	---	High	Low.
UnA Una	D	Frequent	Long	Dec-Apr	+2-0.5	Perched	Dec-Jul	>60	---	High	High.
UrB:											
Urbo	D	Frequent	Brief	Dec-Apr	1.0-2.0	Perched	Dec-Apr	>60	---	High	High.
Mooreville	C	Frequent	Brief	Dec-Apr	1.5-3.0	Apparent	Dec-Apr	>60	---	Moderate	High.
Una	D	Frequent	Long	Dec-Apr	+2-0.5	Perched	Dec-Jul	>60	---	High	High.
WaB Wadley	A	None	---	---	>6.0	---	---	>60	---	Low	High.
WcB, WcD2 Wilcox	D	None	---	---	1.5-3.0	Perched	Jan-Mar	40-60	Soft	High	High.
WmC Williamsville	C	None	---	---	>6.0	---	---	>60	---	High	High.

Table 18.--Physical Analyses of Selected Soils

Soil name and sample number	Depth	Horizon	Particle-size distribution (Percent less than 2.0 mm)		
			Sand (2.0-0.05 mm)	Silt (0.05-0.002 mm)	Clay (<0.002 mm)
	In				
Annemaine:*	0-4	Ap	36.7	54.0	9.3
(S89AL-023-2)	4-8	Bt1	14.3	39.4	46.3
	8-19	Bt2	12.6	37.5	49.9
	19-35	Bt3	15.0	32.5	52.5
	35-51	Bt4	39.9	25.5	34.6
	51-62	Bt5	27.4	33.0	39.6
	62-65	Bt6	42.2	25.4	32.4
Arundel:**	3-21	Bt	9.3	23.0	67.7
(S78AL-023-1)	21-31	BC	16.6	29.8	53.6
	31-39	C	8.1	25.1	66.8
Deerford:*	0-3	A	34.8	42.7	22.5
(S92AL-023-1)	3-7	E	64.3	30.9	4.8
	7-10	E/B	63.2	31.5	5.3
	10-20	Btn1	48.2	28.0	23.8
	20-27	Btn2	48.1	26.2	25.7
	27-35	Btn3	33.8	34.8	31.4
	35-49	Btng	50.8	28.8	20.4
	49-61	BC	53.2	28.8	18.0
	61-80	C	60.9	22.7	16.4
Izagora:*	0-7	Ap	47.3	46.3	6.4
(S89AL-023-3)	7-13	E	40.9	50.2	8.9
	13-22	Bt1	33.3	44.7	22.0
	22-27	Bt2	39.9	42.5	17.6
	27-36	Bt3	39.9	39.1	21.0
	36-47	Bt4	37.7	32.6	29.7
	47-55	Bt5	18.9	47.0	34.1
	55-65	Bt6	16.7	47.7	35.6
Mayhew:*	0-2	A1	7.1	55.1	37.8
(S92AL-023-3)	2-6	A2	7.4	51.2	41.4
	6-13	Btg1	5.5	45.4	49.1
	13-22	Btg2	5.7	42.4	51.9
	22-42	Bssg1	4.4	40.8	54.8
	42-60	Bssg2	4.4	36.0	59.6
	60-80	C	2.5	33.1	64.4
McCrory:*	0-4	Ap	35.3	47.1	17.6
(S92AL-023-2)	4-10	B/E	28.9	45.4	25.7
	10-22	Btg	26.1	40.7	33.2
	22-36	Btng1	28.0	38.7	33.3
	36-43	Btng2	33.1	33.9	33.0
	43-50	Btng3	43.4	27.1	29.5
	50-63	Btng4	46.5	28.2	25.3
	63-80	C	59.1	23.7	17.2
Rayburn:*	0-2	A	29.2	60.3	10.5
(S93AL-023-3)	2-5	E	31.5	55.3	13.2
	5-12	Bt	2.5	36.1	61.4
	12-19	Btss1	1.2	38.8	60.0
	19-34	Btss2	0.7	46.5	52.8
	34-43	Btss3	1.8	50.3	47.9
	43-55	BC	1.2	47.4	54.1
	55-65	Cr	0.8	50.2	49.0

Table 18.--Physical Analyses of Selected Soils--Continued

Soil name and sample number	Depth	Horizon	Particle-size distribution (Percent less than 2.0 mm)		
			Sand (2.0-0.05 mm)	Silt (0.05-0.002 mm)	Clay (<0.002 mm)
	In				
Savannah:*	0-3	Ap1	43.0	51.5	5.5
(S91AL-023-1)	3-7	Ap2	44.0	50.5	5.5
	7-11	E	36.0	57.1	6.9
	11-24	Bt1	24.4	49.2	26.4
	24-30	Bt2	33.4	47.8	18.8
	30-46	Btx1	35.4	43.6	21.0
	46-65	Btx2	38.7	35.6	25.7
	65-80	B't	42.9	29.5	27.6
Toxey:*	0-3	Ap	7.6	29.6	62.8
(S95AL-023-3)	3-7	Bw1	6.3	25.5	68.2
	7-15	Bw2	3.5	29.9	66.6
	15-24	BC	2.7	43.5	53.8
	24-44	2C1	4.5	52.2	43.3
	44-53	2C2	15.7	56.7	27.6
	53-63	2C3	32.0	28.7	39.3
	63-80	2C4	42.2	26.0	31.8
Wilcox:*	0-3	Ap	17.8	42.1	40.1
(S89AL-023-1)	3-9	Bt1	3.2	22.8	74.0
	9-13	Bt2	3.3	20.6	76.1
	13-20	Btss	3.7	18.5	77.8
	20-30	Bssg1	2.2	24.4	73.4
	30-35	Bssg2	10.0	19.4	70.6
	35-60	C/B	1.1	31.3	67.6
Williamsville:*	0-5	A	66.2	30.3	3.5
(S96AL-023-1)	5-14	E	68.3	28.7	3.0
	14-17	BE	56.2	28.3	15.5
	17-27	Bt1	39.2	14.0	46.8
	27-43	Bt2	44.6	8.1	47.3
	43-59	Bt3	59.3	7.1	33.6
	59-80	C	72.1	3.5	24.4

* This is the typical pedon for the series in Choctaw County. For the description and location of the pedon, see the section "Soil Series and Their Morphology." Analyses by the Agronomy and Soils Clay Mineralogy Laboratory, Auburn University, Auburn, Alabama.

** This pedon is an included similar soil in an area of Lauderdale-Arundel complex, 2 to 10 percent slopes, stony, eroded. These soils are very-fine, smectitic, thermic, Typic Hapludults. The pedon is about 1,200 feet south and 1,000 feet east of the northwest corner of sec. 7, T. 9 N., R. 2 W. Analyses by the National Soil Survey Laboratory, Natural Resources Conservation Service, Lincoln, Nebraska.

Table 19.--Chemical Analyses of Selected Soils

Soil name and sample number	Depth	Horizon	Extractable bases: Ca	Mg	K	Na	Extractable acidity	Cation-exchange capacity: CEC-7	ECEC	Base saturation	pH
	In		Milliequivalents per 100 grams of soil							Pct	
Annemaine:* (S89AL-023-2)	0-4	Ap	2.58	0.26	0.15	0.13	0.88	5.15	4.00	45	5.4
	4-8	Bt1	1.84	1.37	0.19	0.14	4.08	12.20	7.62	33	5.0
	8-19	Bt2	1.62	1.93	0.19	0.14	5.33	14.43	9.22	24	4.9
	19-35	Bt3	0.33	2.66	0.19	0.19	8.51	16.85	11.88	18	5.0
	35-51	Bt4	0.14	1.09	0.70	0.20	8.23	12.65	10.36	12	4.8
	51-62	Bt5	0.18	1.19	0.66	0.19	10.73	16.20	12.94	11	4.4
	62-65	Bt6	0.24	0.96	0.33	0.17	8.42	12.51	10.12	11	5.0
Arundel:** (S78AL-023-1)	3-21	Bt	8.7	7.4	0.9	0.1	34.9	44.7	19.2	33	4.4
	21-31	BC	0.7	3.2	1.0	0.7	34.5	39.8	8.1	14	3.9
	31-39	C	0.6	4.1	0.9	0.2	43.4	45.0	8.8	12	3.8
Deerford:* (S92AL-023-1)	0-3	A	2.37	2.37	0.18	2.30	4.85	25.29	12.07	44	3.8
	3-7	E	0.46	0.37	0.04	0.57	0.49	2.57	1.92	58	5.4
	7-10	E/B	0.37	0.47	0.04	0.78	0.36	2.67	2.01	61	5.4
	10-20	Btn1	2.55	3.66	0.13	4.94	0.00	9.51	11.27	88	6.2
	20-27	Btn2	3.07	4.99	0.18	6.06	0.00	11.37	14.31	92	7.5
	27-35	Btn3	4.43	6.14	0.25	6.10	0.00	14.30	16.92	87	8.0
	35-49	Btng	3.15	4.49	0.18	4.33	0.00	10.34	12.15	96	8.1
	49-61	BC	3.68	4.88	0.21	4.02	0.00	11.31	12.79	94	8.2
	61-80	C	4.62	4.96	0.21	3.07	---	11.68	17.13	96	8.2
Izagora:* (S89AL-023-3)	0-7	Ap	0.49	0.14	0.65	0.11	1.80	5.70	3.18	21	4.8
	7-13	E	0.41	0.36	0.42	0.11	0.75	2.36	2.05	34	5.4
	13-22	Bt1	0.30	0.94	0.62	0.13	3.36	6.87	5.35	24	5.1
	22-27	Bt2	0.16	0.75	0.47	0.12	2.90	5.48	4.39	22	5.2
	27-36	Bt3	0.19	1.10	0.41	0.12	3.55	7.17	5.37	28	5.1
	36-47	Bt4	0.17	1.66	0.65	0.11	6.71	11.17	9.30	18	4.8
	47-55	Bt5	0.16	2.24	0.34	0.18	9.74	15.33	12.66	19	4.6
	55-65	Bt6	0.17	2.29	0.49	0.17	10.39	16.00	13.50	18	5.0
Mayhew:* (S92AL-023-3)	0-2	A1	6.03	5.47	0.57	0.34	0.96	31.51	13.36	68	4.9
	2-6	A2	3.72	5.52	0.61	0.29	4.34	22.75	14.47	66	4.6
	6-13	Btg1	3.41	5.87	0.65	0.43	8.41	24.85	18.77	63	4.5
	13-22	Btg2	2.91	6.21	0.70	0.56	9.73	26.02	20.11	62	4.4
	22-42	Bssg1	3.58	8.09	0.79	0.97	9.53	28.36	22.96	68	4.4
	42-60	Bssg2	3.84	10.49	0.99	1.46	8.58	32.46	25.36	71	4.4
	60-80	C	6.22	16.05	1.51	2.14	6.87	42.10	32.79	87	4.0
McCrory:* (S92AL-023-2)	0-4	Ap	0.47	0.64	0.17	0.61	7.03	11.51	8.92	25	4.1
	4-10	B/E	0.66	0.81	0.15	0.57	7.89	12.06	10.09	25	4.5
	10-22	Btg	0.99	1.88	0.20	1.74	7.94	16.40	12.76	38	4.8
	22-36	Btng1	1.78	4.24	0.27	6.63	3.94	16.64	16.87	72	4.1
	36-43	Btng2	3.13	5.71	0.31	9.46	1.62	16.10	20.22	86	4.3
	43-50	Btng3	3.22	5.12	0.26	9.02	0.82	13.74	18.44	85	4.6
	50-63	Btng4	4.62	4.53	0.26	7.39	0.03	12.89	16.83	84	7.0
	63-80	C	3.00	4.16	0.22	4.93	0.05	11.15	12.35	94	7.4
Rayburn:* (S93AL-023-3)	0-2	A	0.50	0.83	0.14	0.00	4.62	9.26	6.10	17	4.1
	2-5	E	0.25	0.65	0.12	0.01	4.68	7.43	5.71	12	4.3
	5-12	Bt	2.28	13.20	0.92	0.12	17.58	41.56	34.10	73	4.4
	12-19	Btss1	2.17	14.72	0.92	0.19	17.58	42.27	35.59	74	4.2
	19-34	Btss2	1.67	13.74	0.76	0.49	12.66	34.97	29.33	71	4.2
	34-43	Btss3	1.83	13.63	0.72	0.62	10.06	31.44	26.86	70	4.2
	43-55	BC	2.72	16.92	0.76	1.07	8.37	35.21	29.85	75	4.0
	55-65	Cr	3.67	18.37	0.83	1.51	5.12	30.69	29.51	77	3.9

Table 19.--Chemical Analyses of Selected Soils--Continued

Soil name and sample number	Depth	Horizon	Extractable bases Ca	Mg	K	Na	Extract-aable acidity	Cation-exchange capacity CEC-7	ECEC	Base saturation	pH
	In		-------Milliequivalents per 100 grams of soil------							Pct	
Savannah:*	0-3	Ap1	1.14	0.55	0.12	0.10	0.76	6.34	2.67	34	4.9
(S91AL-023-1)	3-7	Ap2	0.95	0.48	0.08	0.09	0.25	4.07	1.85	42	5.4
	7-11	E	0.76	0.45	0.06	0.08	0.27	2.75	1.62	46	5.5
	11-24	Bt1	1.08	2.00	0.16	0.11	2.63	8.40	5.99	37	5.0
	24-30	Bt2	0.46	0.96	0.11	0.11	2.29	5.35	3.92	25	4.9
	30-46	Btx1	0.19	0.94	0.09	0.10	2.69	5.47	4.01	21	4.9
	46-65	Btx2	0.12	0.82	0.11	0.14	3.52	6.82	4.71	17	5.0
	65-80	B't	0.10	1.01	0.10	0.22	3.94	7.11	5.38	19	5.0
Toxey:*	0-3	Ap	31.64	4.31	0.96	0.05	0.27	60.83	37.24	87	5.0
(S95AL-023-3)	3-7	Bw1	36.44	5.14	0.75	0.12	0.38	60.58	42.82	93	5.1
	7-15	Bw2	34.96	4.33	0.75	0.28	0.13	62.87	40.43	90	5.3
	15-24	BC	37.59	5.09	1.04	0.28	0.16	61.46	44.17	96	6.4
	24-44	2C1	89.10	2.81	0.78	0.67	0.24	44.87	93.61	98	7.5
	44-53	2C2	107.84	1.99	0.40	0.51	0.00	27.23	110.75	99	7.8
	53-63	2C3	103.77	4.22	0.84	0.72	0.05	37.69	109.60	99	7.7
	63-80	2C4	94.68	3.48	0.69	0.63	0.07	33.33	99.55	98	7.6
Wilcox:*	0-3	Ap	8.50	6.95	0.72	0.19	0.86	26.37	17.22	76	5.3
(S89AL-023-1)	3-9	Bt1	10.46	12.79	1.44	0.26	7.14	42.39	32.08	78	4.7
	9-13	Bt2	9.17	12.02	1.37	0.39	12.29	42.79	35.24	64	4.4
	13-20	Btss	8.44	12.02	1.41	0.60	13.94	44.77	36.40	57	4.4
	20-30	Bssg1	8.62	13.34	1.28	0.72	12.88	43.10	36.84	62	4.6
	30-35	Bssg2	8.87	13.26	1.15	0.90	11.26	42.95	35.43	61	4.6
	35-60	C/B	9.54	15.49	1.07	1.32	5.99	38.49	33.41	75	4.2
Williamsville:*	0-5	A	1.88	0.43	0.10	0.02	0.31	6.08	2.74	42	5.6
(S96AL-023-1)	5-14	E	0.51	0.19	0.05	0.10	0.18	2.00	1.03	49	5.3
	14-17	BE	1.43	1.42	0.20	0.11	1.50	6.51	4.66	52	4.9
	17-27	Bt1	3.65	4.53	0.54	0.13	6.48	21.79	15.33	45	4.9
	27-43	Bt2	2.06	3.44	0.55	0.19	8.68	21.71	14.93	33	4.8
	43-59	Bt3	0.85	2.99	0.40	0.15	8.92	18.36	13.31	29	4.7
	59-80	C	0.61	2.00	0.29	0.07	6.37	12.22	9.55	31	4.6

* This is the typical pedon for the series in Choctaw County. For the description and location of the pedon, see the section "Soil Series and Their Morphology." Analyses by the Agronomy and Soils Clay Mineralogy Laboratory, Auburn University, Auburn, Alabama.

** This pedon is an included similar soil in an area of Lauderdale-Arundel complex, 2 to 10 percent slopes, stony, eroded. These soils are very-fine, smectitic, thermic, Typic Hapludults. The pedon is about 1,200 feet south and 1,000 feet east of the northwest corner of sec. 7, T. 9 N., R. 2 W. Analyses by the National Soil Survey Laboratory, Natural Resources Conservation Service, Lincoln, Nebraska.

Table 20.--Engineering Index Test Data

(Analyses by the Alabama Department of Highways and Transportation, Montgomery, Alabama)

Soil name, report number, horizon, and depth in inches	Classification		Grain-size distribution Percentage passing sieve--						Liquid limit	Plas- ticity index	Moisture density	
	AASHTO	Unified	2 in.	1 in.	No. 4	No. 10	No. 40	No. 200			Maximum dry density	Optimum moisture
									Pct		Lb/cu ft	Pct
Annemaine:												
(S89AL-023-2)												
Bt2------- 8-19	A-7-5	CH	100	100	100	100	100	91	56	26	95	22
Bt3------- 19-35	A-7-5	MH	100	100	100	100	100	89	53	21	94	23
Bt4------- 35-51	A-7-6	CL	100	100	100	100	100	73	43	27	101	19
Bt6------- 62-65	A-7-6	CL	100	100	100	100	100	67	45	20	101	19
Mayhew:												
(S92AL-023-3)												
Btg1------ 6-13	A-7-6	CH	100	100	100	100	97	93	58	28	95	21
Btg2------ 13-22	A-7-6	CH	100	100	100	99	97	94	60	32	93	21
Bssg1----- 22-42	A-7-5	CH	100	100	100	99	97	95	71	40	94	26
Bssg2----- 42-60	A-7-6	CH	100	100	100	98	97	95	68	41	92	25
Savannah:												
(S91AL-023-1)												
Bt1------- 11-24	A-6	CL	100	100	100	100	99	78	34	15	111	16
Btx1------ 30-46	A-6	CL	100	100	100	100	99	71	33	11	110	15
Btx2------ 46-65	A-6	CL	100	100	100	100	100	67	35	15	111	15
B't------- 65-80	A-7-6	CL	100	100	100	100	100	63	41	17	107	16
Wilcox:												
(S89AL-023-1)												
Btss------ 13-20	A-7-5	CH	100	100	100	99	99	98	90	56	83	29
Bssg1----- 20-30	A-7-5	CH	100	100	100	95	99	98	94	63	88	26
C/B------- 35-60	A-7-5	CH	100	100	100	99	100	98	92	56	86	26

Table 21.--Classification of the Soils

(An asterisk in the first column indicates that the soil is a taxadjunct to the series. See text for a description of those characteristics of the soil that are outside the range of the series.)

Soil name	Family or higher taxonomic class
Annemaine	Fine, mixed, semiactive, thermic Aquic Hapludults
Arundel	Fine, smectitic, thermic Typic Hapludults
Bibb	Coarse-loamy, siliceous, active, acid, thermic Typic Fluvaquents
Bigbee	Thermic, coated Typic Quartzipsamments
Boswell	Fine, mixed, active, thermic Vertic Paleudalfs
Boykin	Loamy, siliceous, active, thermic Arenic Paleudults
Brantley	Fine, mixed, active, thermic Ultic Hapludalfs
Cahaba	Fine-loamy, siliceous, semiactive, thermic Typic Hapludults
Cantuche	Loamy-skeletal, mixed, active, acid, thermic, shallow Typic Udorthents
Conecuh	Fine, smectitic, thermic Vertic Hapludults
*Deerford	Fine-silty, mixed, active, thermic Albic Glossic Natraqualfs
Fluvaquents	Typic Fluvaquents
Freest	Fine-loamy, siliceous, active, thermic Aquic Paleudalfs
Halso	Fine, smectitic, thermic Vertic Hapludults
Hannon	Fine, smectitic, thermic Chromic Hapluderts
Iuka	Coarse-loamy, siliceous, active, acid, thermic Aquic Udifluvents
Izagora	Fine-loamy, siliceous, semiactive, thermic Aquic Paleudults
Kinston	Fine-loamy, siliceous, semiactive, acid, thermic Fluvaquentic Endoaquepts
Latonia	Coarse-loamy, siliceous, semiactive, thermic Typic Hapludults
Lauderdale	Loamy, mixed, active, thermic, shallow Typic Hapludults
Leeper	Fine, smectitic, nonacid, thermic Vertic Epiaquepts
Lenoir	Fine, mixed, semiactive, thermic Aeric Paleaquults
Louin	Fine, smectitic, thermic Aquic Dystruderts
Lucedale	Fine-loamy, siliceous, subactive, thermic Rhodic Paleudults
Luverne	Fine, mixed, semiactive, thermic Typic Hapludults
Mayhew	Fine, smectitic, thermic Chromic Dystraquerts
Maytag	Fine, smectitic, thermic Oxyaquic Hapluderts
McCrory	Fine-loamy, mixed, active, thermic Albic Glossic Natraqualfs
McLaurin	Coarse-loamy, siliceous, subactive, thermic Typic Paleudults
Mooreville	Fine-loamy, siliceous, active, thermic Fluvaquentic Dystrudepts
Ochlockonee	Coarse-loamy, siliceous, active, acid, thermic Typic Udifluvents
Okeelala	Fine-loamy, siliceous, semiactive, thermic Ultic Hapludalfs
Oktibbeha	Very-fine, smectitic, thermic Chromic Dystruderts
Rayburn	Fine, smectitic, thermic Vertic Hapludalfs
Riverview	Fine-loamy, mixed, active, thermic Fluventic Dystrudepts
Savannah	Fine-loamy, siliceous, semiactive, thermic Typic Fragiudults
Smithdale	Fine-loamy, siliceous, subactive, thermic Typic Hapludults
Sumter	Fine-silty, carbonatic, thermic Rendollic Eutrudepts
Toxey	Fine, smectitic, thermic Vertic Eutrudepts
Una	Fine, mixed, active, acid, thermic Typic Epiaquepts
*Urbo	Fine, mixed, active, acid, thermic Vertic Epiaquepts
Wadley	Loamy, siliceous, subactive, thermic Grossarenic Paleudults
Wilcox	Very-fine, smectitic, thermic Chromic Dystruderts
Williamsville	Fine, mixed, active, thermic Typic Hapludults