United States Department of Agriculture

Soil Conservation Service

In cooperation with University of Georgia, College of Agricultural and Environmental Sciences, Agricultural Experiment Stations

Soil Survey of Glascock and Jefferson Counties, Georgia

How To Use This Soil Survey

General Soil Map

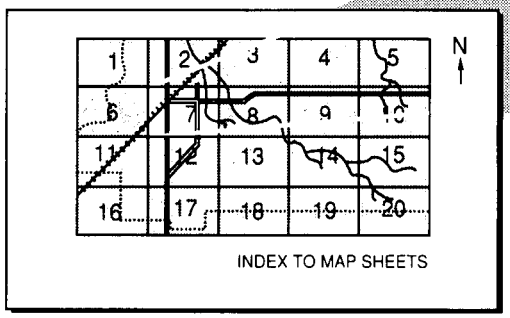
The general soil map, which is the color map preceding the detailed soil maps, shows the survey area divided into groups of associated soils called general soil map units. This map is useful in planning the use and management of large areas.

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.

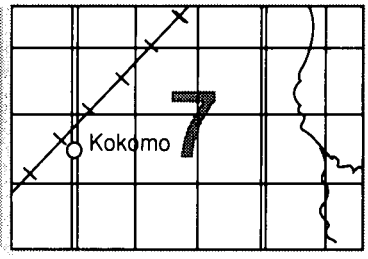
Detailed Soil Maps

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.



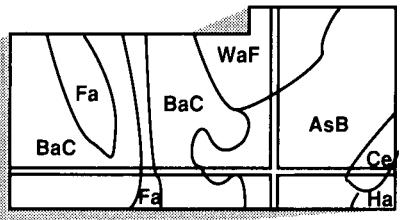
INDEX TO MAP SHEETS



MAP SHEET

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

MAP SHEET



AREA OF INTEREST

NOTE: Map unit symbols in a soil survey may consist only of numbers or letters, or they may be a combination of numbers and letters.

The **Summary of Tables** shows which table has data on a specific land use for each detailed soil map unit. See **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 Soil Conservation Service has leadership for the Federal part of the National Cooperative Soil Survey.

Major fieldwork for this soil survey was completed in 1987. Soil names and descriptions were approved in 1987. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1987. This soil survey was made cooperatively by the Soil Conservation Service and the University of Georgia, College of Agricultural and Environmental Sciences, Agricultural Experiment Stations. It is part of the technical assistance furnished to the Brier Creek 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.

All programs and services of the Soil Conservation Service are offered on a nondiscriminatory basis, without regard to race, color, national origin, religion, sex, age, marital status, or handicap.

Cover: A grassed waterway in an area of Faceville sandy loam, 2 to 5 percent slopes, helps to control erosion by conducting excess surface water away from cropland.

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Issued May 1994

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Foreword

This soil survey contains information that can be used in land-planning programs in Glascock and Jefferson Counties. It contains predictions of soil behavior for selected land uses. The survey also highlights limitations and hazards inherent in the soil, 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, foresters, and agronomists can use it to evaluate the suitability 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.

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 Soil Conservation Service or the Cooperative Extension Service.

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Soil Survey of Glascock and Jefferson Counties, Georgia

By Herschel L. Paulk, Soil Conservation Service

Fieldwork by Herschel L. Paulk, Mack Thomas, Jr., Steve Lawrence, James R. Lathem, Jon D. Jones, Jack R. Brown, and Darcus Roberson, Soil Conservation Service

United States Department of Agriculture, Soil Conservation Service,
in cooperation with
the University of Georgia, College of Agricultural and Environmental Sciences, Agricultural Experiment Stations

GLASCOCK AND JEFFERSON COUNTIES are in the east-central part of Georgia (fig. 1). They cover an area of about 675.5 square miles, or 432,313 acres. Glascock County has a land area of 92,377 acres, and Jefferson County has a land area of 339,936 acres. Gibson is the county seat of Glascock County, and Louisville is the county seat of Jefferson County.

Most of Glascock County is in the Carolina and Georgia Sand Hills major land resource area. Most of Jefferson County is in the Southern Coastal Plain major land resource area. The Carolina and Georgia Sand Hills major land resource area is made up of mainly very gently sloping to moderately steep soils on uplands. These soils are well drained to excessively drained. They commonly have a thick, sandy surface layer and a loamy subsoil or are sandy throughout. The subsoil, if it occurs, is generally firm. The Southern Coastal Plain major land resource area is made up of mainly nearly level to gently sloping soils on uplands. These soils are well drained and have a sandy surface layer and a loamy or clayey subsoil.

Many of the soils on uplands are uneroded, but the soils on hillsides in the Southern Coastal Plain major land resource area generally are eroded. Most of the soils in the Carolina and Georgia Sand Hills major land resource area are not well suited to farm uses. The soils in nearly level to gently sloping areas, however, are well suited to nonfarm uses. Most of the nearly level to gently sloping soils on uplands in the Southern Coastal Plain major land resource area are well suited to all uses.

The first soil survey of Jefferson County was

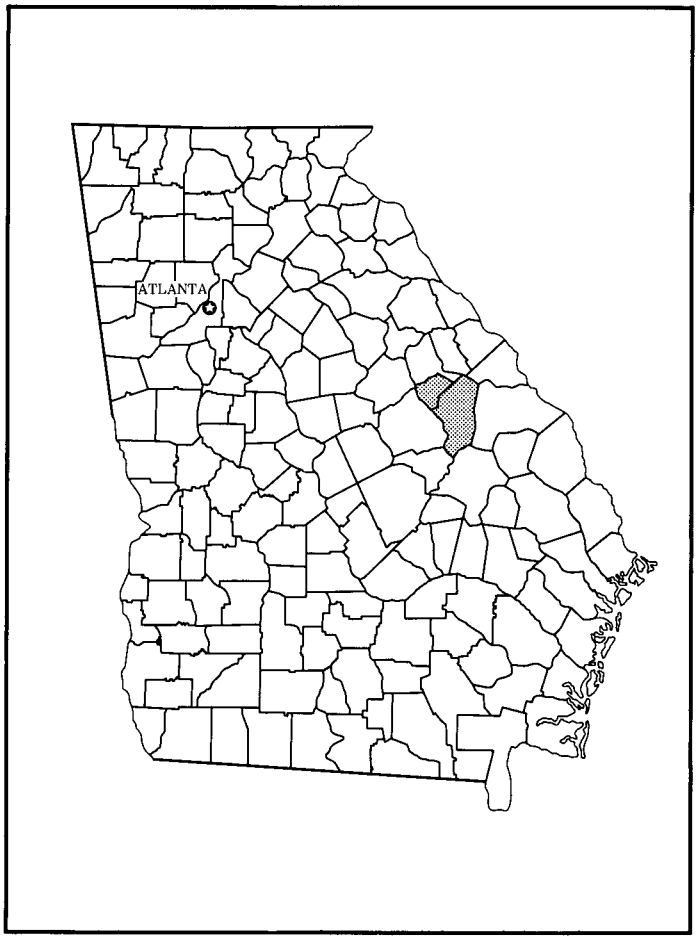

Figure 1.—Location of Glascock and Jefferson Counties in Georgia.

published in 1930 *(11)*. This survey updates the first survey and provides additional information. No previous soil survey has been published for Glascock County.

General Nature of the Survey Area

This section provides general information about the survey area. It describes geology, climate, settlement, water resources, and farming.

Geology

William R. Fulmer, geologist, Soil Conservation Service, prepared this section.

Glascock and Jefferson Counties are in the Carolina and Georgia Sand Hills and the Southern Coastal Plain major land resource areas, but crystalline rocks of the Southern Piedmont major land resource area are exposed in the valleys of the northern part of the survey area. Typically, the landforms in the area developed from marine sediments deposited in central and eastern Georgia 20 to 40 million years ago. These sediments are predominantly sands of the Barnwell Group of late Eocene age.

Streams in the northern part of the survey area have cut through the overlying sediments and exposed crystalline rocks. These rocks are essentially biotite and muscovite granites. Cecil and Wedowee soils formed in these materials. The Tuscaloosa Formation of Cretaceous age overlies the crystalline rocks in most places; however, in the northern part of the survey area, the Barnwell Group of late Eocene age rests directly on the crystalline rocks. The Tuscaloosa Formation consists of gray, pink, and white sand that has disseminated white particles and lenses of kaolin. Because of the thinness of the Tuscaloosa Formation, outcrops are limited to the valleys south of an imaginary line connecting Mitchell and Gibson, Georgia. The outcrop area of the Tuscaloosa Formation extends into the northern part of Jefferson County near Deep Rocky Creek, Sweetwater Creek, and Reedy Creek and the Ogeechee River.

The regional downward slope of these formations is south-southeast at approximately 15 feet per mile. Locally, the bedding appears to be nearly horizontal. The Dry Branch Formation of the Barnwell Group is dominant in the survey area. Two of its members, the Irwinton Sand and the underlying Twiggs Clay, are in most outcrops in the area. Twiggs Clay is a blocky, pale green, montmorillonite material that has thin interbedded sand layers and limestone. It outcrops near the lower valley slopes and at the bottom of the larger, well defined streams.

Overlying the Twiggs Clay, the distinctively orange and red Irwinton Sand caps the uplands of most of the survey area. It extends from the northern border of Glascock County to south of Louisville in Jefferson County. It typically consists of fine or medium grained, well sorted quartz sand that exhibits well developed horizontal bedding and crossbedding. Laminae or thin lenses of Twiggs Clay are common in the profile. The Irwinton Sand is loose and unconsolidated and has formed slopes in the area. Locally, chert beds form resistant ledges in the profile.

In the southern part of the survey area, the uplands are capped by sediments of the Hawthorn Formation of Miocene age. The Barnwell Group underlies the Hawthorn Formation and crops out along the stream valleys at the lower elevations. It is in areas near the Ogeechee River and Williamson Swamp Creek, where channel development has bisected the overlying Hawthorn Formation.

The material of the Hawthorn Formation has contributed to the nearly level fields and to the gentle topography that extends south of Louisville to the southern boundary of Jefferson County. This formation consists of a series of gray to yellow sands and sandy clay. Gravel deposits consisting chiefly of coarse, angular pebbles and locally cemented sandstone, referred to as the Altamaha Grit, also are significant constituents of the Hawthorn Formation.

The supply of ground water is abundant in the survey area. Many wells in the northern part of Glascock County penetrate the sediments and obtain water from the underlying granite. Joints and structures within the granite are charged with ground water from the overlying sediments. Adequate quantities of water also are available from the Barnwell Group, which supplies most of the wells in the survey area. The Tuscaloosa Formation has the potential for supplying large quantities of water, especially in the downward sloping areas underlying Jefferson County. The Hawthorn Formation is much less productive but furnishes small quantities of water for domestic use. The water-bearing material of the survey area also serves to recharge the principal artesian aquifer. This aquifer furnishes ground water for most of southern and eastern Georgia.

Climate

Table 1 gives data on temperature and precipitation for the survey area as recorded at Louisville, Georgia, in the period 1951 to 1987. 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 49 degrees F and the average daily minimum temperature is 37

degrees. The lowest temperature on record, which occurred at Louisville on January 21, 1985, is -2 degrees. In summer, the average temperature is 80 degrees and the average daily maximum temperature is 91 degrees. The highest recorded temperature, which occurred at Louisville on July 24, 1952, is 112 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 average annual precipitation is 44.48 inches. Of this, about 23 inches, or 52 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 18 inches. The heaviest 1-day rainfall during the period of record was 4.86 inches at Louisville on May 15, 1969. Thunderstorms occur on about 54 days each year.

Snowfall is rare. In 99 percent of the winters, there is no measurable snowfall. In 1 percent the snowfall, usually of short duration, is less than 1 inch.

The average relative humidity in midafternoon is about 50 percent. Humidity is higher at night, and the average at dawn is about 85 percent. The sun shines 65 percent of the time possible in summer and 55 percent in winter. The prevailing wind is from the southeast. Average windspeed is highest, 8 miles per hour, in spring.

Settlement

Glascock County was established by an act of the General Assembly of Georgia in 1857. It was originally part of Warren County. It was named for General Thomas Glascock, a veteran of the War of 1812 and of the Seminole Wars of 1818 to 1819. Gibson, the county seat, was named for Judge William Gibson.

Early in the eighteenth century, the first Indian traders moved into the area that is now Jefferson County. Settlers came from neighboring colonies and directly from European countries. The European immigrants were mainly Scotch-Irish. Jefferson County was created in 1796 from parts of Burke and Warren Counties. It was named for the author of the Declaration of Independence and the third President of the United States, Thomas Jefferson. Louisville, the county seat, was the first state capital of Georgia. It was named for King Louis XVI, who helped the colonies during the Revolutionary War.

Water Resources

The most abundant water supplies in Glascock County are the Ogeechee River and Rocky Comfort Creek. Those in Jefferson County are the Ogeechee River, Rocky Comfort Creek, Brier Creek, and Williamson Swamp Creek. Also, many ponds throughout the two counties are used for watering livestock or for irrigation or recreation.

Farming

The early settlers in the survey area were mostly farmers. Corn, wheat, potatoes, and different kinds of vegetables were grown. Hogs, cattle, and poultry were the main livestock. As settlement and farming increased, cotton and cowpeas were also grown and the number of livestock increased. After the invention of the cotton gin, cotton became the main cash crop. Subsistence crops were used for feeding livestock or for human consumption.

From the late 1920's until 1969, the acreage of cotton gradually decreased and the acreage of corn and wheat increased. Since 1969, the acreage of corn has decreased and that of soybeans has increased.

The main cultivated crops are soybeans, corn, cotton, peanuts, and small grain. Dairy products, beef cattle, and hogs are important sources of farm income. Glascock County has a smaller acreage of cultivated crops than Jefferson County, but about the same kinds of crops are grown in each county. About 58 percent of the survey area is wooded. Forest products contribute significantly to the income of the two counties.

Since about 1950, the number of farms in the survey area has decreased but the size of the average farm has increased. Conservation tillage systems and irrigation have increased crop yields.

Soil erosion and low soil fertility have been the major management concerns on farmland in the survey area over the years. In the early 1900's, farming became more intense and tenant farming was widespread. This intensive farming resulted in a dramatic increase in the extent of erosion. Changes in land ownership were common, and soil fertility was not maintained in most places.

Conservationists noted a definite need to protect the land against erosion. In 1937, legislation by the State of Georgia establishing soil conservation districts was supported by leading farmers in the survey area. Glascock and Jefferson Counties became a part of the Brier Creek Soil and Water Conservation District in 1941. Farmers began using terraces, grassed waterways, improved pastures, and ponds to control erosion and increase productivity. They used the soil

according to its capability and treated it in accordance with the needs of the crop. The soil survey maps made by the Soil Conservation Service became the basis for determining the capability of each soil. Grass or trees were planted in many sloping, severely eroded areas that had previously been cultivated.

In the 1960's and early 1970's, public concern about the productive capacity of American agriculture prompted a national inventory of important farmland. The best land available for producing food, feed, forage, fiber, and oilseed crops in the survey area is identified in the section "Important Farmland."

In 1982, farms covered about 186,000 acres, or about 43 percent of the survey area. These farms produced significant amounts of corn, peanuts, rye, grain sorghum, soybeans, and wheat.

Many of the soils in the survey area are well suited to sprinkler irrigation. The acreage of irrigated land has increased over the past few years. The irrigated land is used mostly for corn, peanuts, soybeans, and grain sorghum.

How This Survey Was Made

This survey was made to provide information about the soils in the survey area. The information includes a description of the soils and their location and a discussion of the suitability, limitations, and management of the soils for specified uses. Soil scientists observed the steepness, length, and shape of slopes; the general pattern of drainage; the kinds of crops and native plants growing on the soils; 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 from 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 in the survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil is associated with a particular kind of landscape or with a segment of the landscape. By observing the soils in the survey area and relating their position to specific segments of the landscape, a soil scientist develops a concept, or model, of how the soils were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil 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-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 soil 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. 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 are generally 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 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 assure 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.

Map Unit Composition

A map unit delineation on a soil map represents an area dominated by one major kind of soil or an area dominated by two or three kinds of soil. A map unit is identified and named according to the taxonomic classification of the dominant soil or soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural objects. In common with other natural objects, they have a characteristic variability in their properties. 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 soils of other taxonomic classes. Consequently, every map unit is made up of the soil or soils for which it is named and some soils that belong to other taxonomic classes. In the detailed soil map units, these latter soils are called inclusions or included soils. In the general soil map units, they are called soils of minor extent.

Most inclusions have properties and behavioral patterns 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 (similar) inclusions. They may or may not be mentioned in the map unit descriptions. Other inclusions, however, have properties and behavior divergent enough to affect use or require different management. These are contrasting (dissimilar) inclusions. They generally occupy small areas and cannot be shown separately on the soil maps because of the scale used in mapping. The inclusions of contrasting soils are mentioned in the map unit descriptions. A few inclusions may not have been observed and consequently are not mentioned in the descriptions, especially where the soil pattern was so complex that it was impractical to make enough observations to identify all of the kinds of soils on the landscape.

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

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 and some minor soils. It is named for the major soils. The soils making up one 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 a building or other structure. The soils in any one map unit differ from place to place in slope, depth, drainage, and other characteristics that affect management.

The soils in the survey area differ in suitability for major land uses. This section describes the visual elements of landform, water, vegetation or land use, and structures of each map unit. Map units are rated according to degree of visual diversity. This is a value rating of landscape elements and their pattern within a frame of reference developed for a local geographic area. Visual diversity can be used in conservation planning and in establishing a desirable continuity of landscape elements. The extent of the map units and their component soils are identified and described. The main concerns of management are pointed out, and the soil properties that limit use are indicated. Suitability or the degree of limitation is given for the common uses.

Nearly Level Soils on Flood Plains of the Carolina and Georgia Sand Hills and the Southern Coastal Plain

These poorly drained soils are on flood plains. Slopes are 0 to 2 percent. The soils have a mainly brownish surface layer that is loamy. They have grayish, loamy or sandy underlying layers or a clayey subsoil. The subsoil and the underlying layers are mottled.

1. Chastain-Bibb-Osier

Poorly drained soils that have a loamy surface layer and a dominantly clayey subsoil or are loamy or sandy throughout

The landscape of this map unit is characterized by nearly level soils in areas that are about 0.25 mile wide. These soils are on flood plains in the Carolina and Georgia Sand Hills and the Southern Coastal Plain. Slopes are 0 to 2 percent. The drainage system is not well formed. Flooding is frequent from late fall to midspring. The Ogeechee River and Rocky Comfort Creek are perennial. The soils in this unit support mostly sweetgum, blackgum, cypress, bay, poplar, and water oak. Except for roads and utility lines, this unit is characterized by little manmade development. The degree of visual diversity is low.

This unit makes up about 4 percent of Glascock County and 2 percent of Jefferson County. It is about 35 percent Chastain soils, 32 percent Bibb soils, 16 percent Osier soils, and 17 percent soils of minor extent.

Chastain soils have a loamy surface layer and a dominantly clayey subsoil. Typically, the surface layer is gray silty clay loam about 9 inches thick. It has brown mottles. The upper part of the subsoil, to a depth of about 20 inches, is gray clay loam that has brownish yellow mottles. The lower part to a depth of 60 inches or more is gray clay that has yellowish brown and strong brown mottles.

Bibb soils are loamy throughout. Typically, they have a surface layer of loam. The upper part is very dark grayish brown. It is about 7 inches thick. The lower part, to a depth of about 12 inches, is dark gray. The underlying material is sandy loam. The upper part, to a depth of about 24 inches, is dark gray and has yellowish brown mottles. The next part, to a depth of about 46 inches, is gray and has strong brown mottles. The lower part to a depth of 62 inches or more is light gray and has strong brown mottles.

Osier soils are sandy throughout. Typically, they have a surface layer of dark gray loamy sand about 12

inches thick. The upper part of the underlying material, to a depth of about 20 inches, is gray sand that has light gray mottles. The next part, to a depth of about 40 inches, is light gray sand that has gray mottles. The lower part to a depth of 62 inches or more is light gray coarse sand.

Of minor extent in this map unit are Chewacla, Dogue, Ocilla, Rains, and Wahee soils. The somewhat poorly drained Chewacla soils are in landscape positions similar to those of the major soils. The moderately well drained Dogue soils, the somewhat poorly drained Ocilla and Wahee soils, and Rains soils are mainly on stream terraces.

The main management concerns are wetness and control of flooding. The soils are well suited to the trees commonly growing in the area. They are unsuited to field crops, hay, and pasture, and they are severely limited as sites for nonfarm uses.

2. Herod-Muckalee-Meggett

Poorly drained soils that are loamy throughout or that have a loamy surface layer and sandy and loamy underlying layers or a clayey subsoil

The landscape of this map unit is characterized by nearly level soils in areas that are about 0.5 mile wide. These soils are on flood plains in the Southern Coastal Plain. Slopes are 0 to 2 percent. The drainage system is not well formed. Flooding is frequent from late fall to midspring. Most of the natural watercourses are perennial. The soils in this unit support mostly sweetgum, blackgum, cypress, bay, poplar, and water oak. Except for roads and utility lines, this unit is characterized by little manmade development. The degree of visual diversity is low.

This unit makes up about 5 percent of Jefferson County. It is about 33 percent Herod soils, 19 percent Muckalee soils, 13 percent Meggett soils, and 35 percent soils of minor extent.

Herod soils are loamy throughout. Typically, the surface layer is dark grayish brown loam about 8 inches thick. The upper part of the underlying material is gray sandy clay loam about 10 inches thick. The next part, to a depth of about 45 inches, is gray sandy clay loam that has olive yellow mottles. The lower part to a depth of 60 inches or more is gray sandy loam that has pale yellow mottles.

Muckalee soils have a loamy surface layer and sandy and loamy underlying layers. Typically, the surface layer is grayish brown loam about 6 inches thick. The underlying material is mainly gray. The upper part is about 6 inches of sandy loam that has brown mottles. The next part, to a depth of about 20 inches, is loamy sand. Below this, to a depth of about 30 inches, is sandy loam that has yellowish brown mottles. The next 10 inches is sandy loam. The lower part to a depth of 60 inches or more is loamy sand.

Meggett soils have a loamy surface layer and a clayey subsoil. Typically, the surface layer is dark brown loam about 3 inches thick. The subsoil is clay. The upper part, to a depth of about 12 inches, is gray and has yellowish brown mottles. The next part, to a depth of about 30 inches, is gray and has brownish yellow mottles. The lower part to a depth of 62 inches or more is light brownish gray and has olive yellow mottles. Concretions of calcium carbonate are in the middle and lower parts of the subsoil.

Of minor extent in this map unit are Dogue, Ocilla, Rains, and Wahee soils. The moderately well drained Dogue soils, the somewhat poorly drained Ocilla and Wahee soils, and Rains soils are mainly on stream terraces.

The main management concerns are wetness and the control of flooding. The soils are well suited to the trees commonly growing in the area. They are unsuited to field crops, hay, and pasture, and they are severely limited as sites for nonfarm uses.

Nearly Level to Strongly Sloping Soils on Ridgetops and Hillsides on Uplands, Mainly on the Southern Coastal Plain

These well drained soils are on uplands. Slopes range from 0 to 15 percent. The soils have colors mainly in shades of brown or red and generally have a sandy surface layer and a loamy subsoil. They generally are mottled in shades of red or brown in the middle or lower part of the subsoil. The lower part of the subsoil generally is mottled in shades of gray.

3. Dothan-Fuquay-Tifton

Well drained soils that have a sandy or loamy surface layer or a sandy surface layer and subsurface layer and a loamy subsoil

The landscape of this map unit is characterized by nearly level to gently sloping soils mainly on smooth and convex ridgetops and hillsides. Slopes range from 0 to 8 percent. Excess surface water drains into a system of intermittent and perennial streams. This unit has a few manmade ponds. The soils are used mainly for field crops, hay, or pasture, but many areas are wooded. Roads, utility lines, fences, and farm homes and associated structures are common. The degree of visual diversity is moderate.

This unit makes up about 15 percent of Glascock County and 30 percent of Jefferson County. It is about 48 percent Dothan soils, 20 percent Fuquay soils, 7

percent Tifton soils, and 25 percent soils of minor extent.

Dothan soils have a sandy or loamy surface layer. They have less than 5 percent nodules of ironstone in the surface layer and in the upper part of the subsoil. Typically, the surface layer is grayish brown loamy sand about 7 inches thick. The subsoil is sandy clay loam. The upper part, to a depth of about 30 inches, is yellowish brown. The next part, to a depth of about 50 inches, is yellowish brown and has yellowish red mottles. The lower part to a depth of 64 inches or more is yellowish brown and has gray, yellowish red, and red mottles. The content of plinthite is 5 percent or more below a depth of about 50 inches.

Fuquay soils have a sandy surface layer and subsurface layer. Typically, the surface layer is dark grayish brown loamy sand about 8 inches thick. The subsurface layer is loamy sand. The upper part, to a depth of about 16 inches, is light yellowish brown and has grayish brown splotches. The lower part, to a depth of about 28 inches, is light yellowish brown. The subsoil is mainly sandy clay loam. The upper part, to a depth of about 30 inches, is brownish yellow. The next part, to a depth of about 41 inches, is brownish yellow and has yellowish red mottles. The next 10 inches is brownish yellow and has yellowish red and red mottles. The lower part to a depth of 63 inches or more is mottled brownish yellow, yellowish red, red, and light gray. The content of plinthite is 5 percent or more below a depth of about 41 inches. A few nodules of ironstone are within a depth of about 28 inches.

Tifton soils have a sandy or loamy surface layer. They have 5 percent or more nodules of ironstone in the surface layer and in the upper part of the subsoil. Typically, the surface layer is dark grayish brown loamy sand about 8 inches thick. The subsoil is sandy clay loam. The upper part, to a depth of about 32 inches, is yellowish brown. The next part, to a depth of about 42 inches, is yellowish brown and has yellowish red mottles. The next 7 inches is yellowish brown and has yellowish red and pale brown mottles. The lower part to a depth of 65 inches or more is mottled yellowish brown, red, strong brown, and light gray. The content of plinthite is 5 percent or more below a depth of about 42 inches.

Of minor extent in this map unit are Bibb, Bonifay, Carnegie, Clarendon, Grady, Herod, Muckalee, Ocilla, Osier, Rains, and Rembert soils. The poorly drained Bibb, Herod, Muckalee, and Osier soils are on flood plains. Bonifay and Carnegie soils are in landscape positions similar to those of the major soils. The moderately well drained Clarendon soils are in smooth areas on uplands. The somewhat poorly drained Ocilla soils are in smooth, even areas on uplands and on stream terraces. The poorly drained Grady and Rembert soils are in depressions on uplands. The poorly drained Rains soils are in slight depressions on flood plains, at the head of streams, and on stream terraces.

The main management concerns are controlling erosion on the very gently sloping and gently sloping soils that have a sandy or loamy surface layer and the low available water capacity of the soils that have a sandy surface layer and subsurface layer. The soils are well suited to most uses; however, the low available water capacity of the soils that have a sandy surface layer and subsurface layer is a limitation for agricultural uses.

4. Orangeburg-Faceville-Lucy

Well drained soils that have a sandy or loamy surface layer or a sandy surface layer and subsurface layer and a loamy or clayey subsoil

The landscape of this map unit is characterized by nearly level to strongly sloping soils mainly on smooth and convex ridgetops and hillsides. Slopes range mainly from 0 to 15 percent. Excess surface water drains into a system of intermittent and perennial streams. Areas of open water are few. The soils are used mainly for field crops, hay, or pasture, but many areas are wooded. Roads, utility lines, fences, and farm homes and associated structures are common. The degree of visual diversity is moderate.

This unit makes up about 3 percent of Glascock County and 44 percent of Jefferson County. It is about 37 percent Orangeburg soils, 29 percent Faceville soils, 12 percent Lucy soils, and 22 percent soils of minor extent.

Orangeburg soils have a sandy or loamy surface layer and a loamy subsoil. Typically, the surface layer is dark brown loamy sand about 9 inches thick. The upper part of the subsoil, to a depth of about 17 inches, is strong brown sandy loam. The next part, to a depth of about 32 inches, is yellowish red sandy clay loam. The lower part to a depth of 64 inches or more is red sandy clay loam that has yellowish brown mottles.

Faceville soils have a sandy or loamy surface layer and a clayey subsoil. Typically, the surface layer is reddish brown sandy loam about 6 inches thick. The upper part of the subsoil, to a depth of about 9 inches, is red sandy clay loam. The next part, to a depth of about 50 inches, is red sandy clay. The lower part to a depth of 65 inches or more is red sandy clay that has yellowish red, strong brown, and light brown mottles.

Lucy soils have a sandy surface layer and subsurface layer and a loamy subsoil. Typically, the surface layer is brown loamy sand about 8 inches thick. The subsurface layer, to a depth of about 27 inches, is

brownish yellow loamy sand. The upper part of the subsoil, to a depth of about 29 inches, is yellowish red sandy loam. The next part to a depth of 36 inches is yellowish red sandy clay loam. The lower part to a depth of 65 inches or more is red sandy clay loam.

Of minor extent in this map unit are Bibb, Grady, Greenville, Ocilla, Rains, Rembert, and Troup soils. The poorly drained Bibb soils are on flood plains. The poorly drained Grady and Rembert soils are in depressions on uplands. The somewhat poorly drained Ocilla soils and the poorly drained Rains soils are mostly on stream terraces. Greenville and Troup soils are in landscape positions similar to those of the major soils.

The main management concerns are controlling erosion on the very gently sloping to strongly sloping soils that have a sandy or loamy surface layer and the low available water capacity of the soils that have a sandy surface layer and subsurface layer. The nearly level to gently sloping soils that have a sandy or loamy surface layer are well suited to most nonfarm uses; however, the suitability of the more sloping soils and of the soils that have a low available water capacity is limited for agricultural uses.

5. Nankin-Cowarts-Dothan

Well drained soils that have a sandy or loamy surface layer and a loamy or clayey subsoil

The landscape of this map unit is characterized by nearly level to strongly sloping soils mainly on smooth and convex ridgetops and on generally convex hillsides. Slopes range from 0 to 15 percent. Excess surface water drains into a system of intermittent and perennial streams. This unit has a few manmade ponds. The soils are mainly wooded, but some large areas are used for field crops, hay, or pasture. Roads, utility lines, fences, and farm homes and associated structures are common. The degree of visual diversity is moderate.

This unit makes up about 3 percent of Glascock County and 8 percent of Jefferson County. It is about 40 percent Nankin soils, 29 percent Cowarts soils, 10 percent Dothan soils, and 21 percent soils of minor extent.

Nankin soils have a clayey subsoil. Typically, the surface layer is dark grayish brown loamy sand about 5 inches thick. The subsurface layer is light yellowish brown loamy sand about 3 inches thick. The upper part of the subsoil, to a depth of about 22 inches, is strong brown sandy clay. The next part, to a depth of about 31 inches, is strong brown clay that has yellowish brown mottles. The lower part, to a depth of about 51 inches, is mottled strong brown, light gray, and red sandy clay loam. The substratum to a depth of 63 inches or more is yellowish red sandy clay loam that has light gray and brownish yellow mottles.

Cowarts soils have a loamy subsoil. Typically, the surface layer is dark grayish brown sandy loam about 5 inches thick. The subsoil is sandy clay loam. The upper part, to a depth of about 18 inches, is strong brown. The lower part, to a depth of about 31 inches, is yellowish brown and has yellowish red and brownish gray mottles. The substratum is firm. The upper part, to a depth of about 43 inches, is mottled and streaked yellowish brown, gray, weak red, and yellowish red sandy clay loam that has pockets of coarse or finer textured material. The lower part to a depth of 72 inches or more is mottled weak red, yellowish red, pinkish gray, and brownish yellow sandy loam that has pockets of finer textured material.

Dothan soils have a loamy subsoil. They have a few nodules of ironstone in the surface layer and in the upper part of the subsoil. Typically, the surface layer is grayish brown loamy sand about 7 inches thick. The subsoil is sandy clay loam. The upper part, to a depth of about 30 inches, is yellowish brown. The next part, to a depth of about 50 inches, is yellowish brown and has yellowish red mottles. The lower part to a depth of 64 inches or more is yellowish brown and has gray, yellowish red, and red mottles. The content of plinthite is 5 percent or more below a depth of about 50 inches.

Of minor extent in this map unit are Ailey, Arundel, Bibb, Carnegie, Faceville, Fuquay, Osier, Rains, and Tifton soils. Ailey, Arundel, Carnegie, Faceville, Fuquay, and Tifton soils are in landscape positions similar to those of the major soils. The poorly drained Bibb and Osier soils are on flood plains. The poorly drained Rains soils are on stream terraces, in slight depressions on flood plains, and at the head of streams.

The main management concern is controlling erosion on the soils that are very gently sloping to moderately steep. The soils on ridgetops and the gently sloping soils on hillsides are well suited to most nonfarm uses. Moderately slow or slow permeability is a limitation in places, and the slope is an additional limitation in the steeper areas on hillsides.

Nearly Level to Moderately Steep Soils on Ridgetops and Hillsides on Uplands, Mainly in the Carolina and Georgia Sand Hills

These well drained and excessively drained soils are on uplands. Slopes range from 1 to 30 percent. The soils have a sandy surface layer in shades of brown; a sandy subsurface layer in shades of red, yellow, and brown; or a sandy or loamy surface layer in shades of brown; or they are sandy throughout in shades of brown. In most places they have a loamy or clayey subsoil in shades of red or brown. The lower part of the

subsoil is generally mottled in shades of red, brown, and yellow.

6. Troup-Bonifay-Cowarts

Well drained soils that have a sandy surface layer and subsurface layer or a sandy or loamy surface layer and a loamy subsoil

The landscape of this map unit is characterized by nearly level to moderately steep soils mainly on undulating and convex ridgetops and rolling and convex hillsides. Slopes range from 1 to 25 percent. Excess surface water drains into a system of intermittent and perennial streams. This unit has a few manmade ponds. It is mainly wooded, but some large areas are used for field crops, hay, or pasture. Roads, utility lines, fences, and farm homes and associated structures are common. The degree of visual diversity is moderate.

This unit makes up about 64 percent of Glascock County and 1 percent of Jefferson County. It is about 35 percent Troup soils, 16 percent Bonifay soils, 14 percent Cowarts soils, and 35 percent soils of minor extent.

Troup soils have a sandy surface layer and subsurface layer. Typically, the surface layer is brown fine sand about 7 inches thick. The subsurface layer is fine sand. The upper part, to a depth of about 36 inches, is strong brown. The lower part, to a depth of about 68 inches, is yellowish red. The subsoil is red. The upper part, to a depth of about 75 inches, is sandy loam. The lower part to a depth of 90 inches or more is sandy clay loam.

Bonifay soils have a sandy surface layer and subsurface layer. The content of plinthite in the subsoil is 5 percent or more. Typically, the surface layer is dark grayish brown fine sand about 7 inches thick. The subsurface layer is fine sand. The upper part, to a depth of about 47 inches, is light yellowish brown. The lower part, to a depth of about 54 inches, is brownish yellow. The subsoil is sandy clay loam. The upper part, to a depth of about 60 inches, is yellowish brown and has red mottles. The lower part to a depth of 70 inches or more is strong brown and has yellowish brown and pale yellow mottles.

Cowarts soils have a sandy or loamy surface layer. Typically, the surface layer is dark grayish brown sandy loam about 5 inches thick. The subsoil is sandy clay loam. The upper part, to a depth of about 18 inches, is strong brown. The lower part, to a depth of about 31 inches, is yellowish brown and has yellowish red and brownish gray mottles. The substratum is firm. The upper part, to a depth of about 43 inches, is mottled and streaked yellowish brown, gray, weak red, and yellowish red sandy clay loam that has pockets of coarser and finer textured material. The lower part to a depth of 72 inches or more is mottled weak red, yellowish red, pinkish gray, and brownish yellow sandy loam that has pockets of finer textured material.

Of minor extent in this map unit are Ailey, Bibb, Fuquay, Lucy, Nankin, Orangeburg, Osier, and Wedowee soils. The poorly drained Bibb and Osier soils are on flood plains. Ailey, Fuquay, Lucy, Nankin, Orangeburg, and Wedowee soils are in landscape positions similar to those of the major soils.

The main management concern is the low available water capacity of the soils that have a sandy surface layer and subsurface layer. The suitability of these soils for agricultural uses is limited. The nearly level to gently sloping soils are well suited to most nonfarm uses. Seepage generally is a limitation affecting most sanitary facilities, and the slope is an additional limitation in the steeper areas on hillsides.

7. Troup-Lucy-Lakeland

Well drained soils that have a sandy surface layer and subsurface layer and a loamy subsoil and excessively drained soils that are sandy throughout

The landscape of this map unit is characterized by nearly level to moderately steep soils mainly on undulating and convex ridgetops and rolling and convex hillsides. Slopes range from 1 to 30 percent. Excess surface water drains into a system of perennial streams. The soils are mainly wooded, but some small areas are used for field crops, hay, or pasture. Roads, utility lines, fences, and farm homes and associated structures are common. The degree of visual diversity is low.

The unit makes up about 7 percent of Glascock County and 10 percent of Jefferson County. It is about 50 percent Troup soils, 20 percent Lucy soils, 15 percent Lakeland soils, and 15 percent soils of minor extent.

Troup soils are well drained and have a sandy surface layer and subsurface layer 42 to 79 inches thick. Typically, the surface layer is brown fine sand about 7 inches thick. The subsurface layer is fine sand. The upper part, to a depth of about 36 inches, is strong brown. The lower part, to a depth of about 68 inches, is yellowish red. The subsoil is red. The upper part, to a depth of about 75 inches, is sandy loam. The lower part to a depth of 90 inches or more is sandy clay loam.

Lucy soils are well drained and have a sandy surface layer and subsurface layer 21 to 38 inches thick. Typically, the surface layer is brown loamy sand about 8 inches thick. The subsurface layer, to a depth of about 27 inches, is brownish yellow loamy sand. The upper part of the subsoil, to a depth of about 29 inches, is yellowish red sandy loam. The next part, to a depth

of about 36 inches, is yellowish red sandy clay loam. The lower part to a depth of 65 inches or more is red sandy clay loam.

Lakeland soils are excessively drained and sandy throughout. Typically, the surface layer is dark grayish brown sand about 5 inches thick. The upper part of the underlying material, to a depth of about 14 inches, is dark yellowish brown. The next part, to a depth of about 77 inches, is yellowish brown. The lower part to a depth of 118 inches or more is yellowish brown and has yellowish red mottles.

Of minor extent in this map unit are Bibb, Blanton, Chipley, Eustis, Fuquay, Orangeburg, and Osier soils. The poorly drained Bibb and Osier soils are on flood plains. The moderately well drained Blanton and Chipley soils, the somewhat excessively drained Eustis soils, and Fuquay and Orangeburg soils are in landscape positions similar to those of the major soils.

The main management concern is the low available water capacity. These soils have limited suitability for agricultural uses. The very gently sloping and gently sloping soils are well suited to most nonfarm uses. Seepage is a limitation affecting most sanitary facilities, and the slope is an additional limitation in the steeper areas on hillsides.

8. Wedowee-Ailey-Cecil

Well drained soils that have a loamy surface layer and a mainly clayey subsoil or a sandy surface layer and subsurface layer and a loamy subsoil

The landscape of this map unit is characterized by nearly level to moderately steep soils mostly on smooth and convex ridgetops and hillsides. Slopes range from 1 to 25 percent. Excess surface water drains into a system of intermittent and perennial streams. Open water areas are few. The soils are mainly wooded, but some areas are used for hay and pasture. Roads, utility lines, fences, and farm homes and associated structures are common. The degree of visual diversity is moderate.

This unit makes up about 4 percent of Glascock County. It is about 75 percent Wedowee soils, 10 percent Ailey soils, 6 percent Cecil soils, and 9 percent soils of minor extent.

Wedowee soils have a solum that ranges from 24 to 40 inches in thickness. Typically, the surface layer is dark brown sandy loam about 5 inches thick. The subsoil is strong brown. The upper part, to a depth of about 10 inches, is sandy clay loam. The next part, to a depth of about 26 inches, is clay. The lower part, to a depth of about 35 inches, is clay loam that has brownish yellow mottles. The substratum to a depth of 62 inches or more is brownish yellow, weathered bedrock. The bedrock crushes to a texture of sandy loam and has pale brown, white, and brown mottles.

Ailey soils have a sandy surface layer and subsurface layer. Typically, the surface layer is dark grayish brown sand about 4 inches thick. The subsurface layer, to a depth of about 25 inches, is yellowish brown sand. The upper part of the subsoil, to a depth of about 30 inches, is strong brown sandy loam. The next part, to a depth of about 40 inches, is yellowish red sandy clay loam that has red mottles. The lower part, to a depth of about 60 inches, is yellowish brown coarse sandy loam that has strong brown, red, and yellowish brown mottles. It is firm, and about 35 percent is brittle. Below this to a depth of 80 inches or more is red sandy clay loam that has strong brown mottles.

Cecil soils have a solum that ranges from 40 to more than 65 inches in thickness. Typically, the surface layer is brown sandy loam about 3 inches thick. The upper part of the subsoil, to a depth of about 6 inches, is yellowish red sandy clay loam. The next part, to a depth of about 21 inches, is red clay. Below this, to a depth of about 46 inches, is red sandy clay. The lower part of the subsoil to a depth of 60 inches or more is red sandy clay loam that has strong brown and pale brown mottles.

Of minor extent in this map unit are Chewacla and Cowarts soils. The somewhat poorly drained Chewacla soils are on flood plains. Cowarts soils are in landscape positions similar to those of the major soils.

The main management concerns are the hazard of erosion and a low available water capacity. The very gently sloping and gently sloping soils are well suited to most nonfarm uses. The shrink-swell potential limits some uses, and the slope is an additional limitation in the steeper areas on hillsides. The soils that have a low available water capacity have limited suitability for agricultural uses.

Broad Land Use Considerations

A considerable acreage in the survey area is used as cropland, pasture, or woodland. In general, the soils in the survey area that are well suited to cultivated crops also are well suited to urban development. When land use plans are made, the suitability of the soils for agricultural uses should be considered. The data about specific soils can be helpful in planning future land use patterns. Interpretations made from the general soil map for broad land use planning are specific for each county. The following broad land use considerations, however, apply to the entire survey area.

Many of the soils on uplands are used for cultivated crops, hay, or pasture. They are well suited to these

uses. Most of the soils are nearly level to gently sloping and well drained. Some are nearly level and moderately well drained. Some of the soils have a low available water capacity, a severe hazard of erosion, strong slopes, slow or moderately slow permeability, or a seasonal high water table. These soils are only moderately suited, poorly suited, or unsuited to farming. Most of the soils on flood plains are poorly drained and are wooded. They are poorly suited to farming.

About 58 percent of the survey area is used as woodland. The soils have mainly a moderate or high potential productivity for woodland. About three-fourths of the soils in the survey area are on ridgetops and hillsides on uplands. Most are well drained and are well suited to most nonfarm uses. However, about 9 percent of these soils have slopes of more than 8 percent and are less well suited to nonfarm uses. The rest of the soils are on flood plains or stream terraces, in upland depressions, and on smooth, nearly level areas in the uplands. They are less well drained, are seasonally wet, and are only moderately suited or poorly suited to nonfarm uses.

Detailed Soil Map Units

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

Each map unit on the detailed soil maps represents an area on the landscape and consists of one or more soils for which the unit is named.

A symbol identifying the soil precedes the map unit name in the soil descriptions. Each description includes general facts about the soil 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 or of the underlying material, 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 or of the underlying material. They also can differ in slope, stoniness, salinity, wetness, 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, Dothan loamy sand, 2 to 5 percent slopes, is a phase of the Dothan series.

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

A *soil 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 soil maps. The pattern and proportion of the components are somewhat similar in all areas. Pits-Udorthents complex, gently sloping, is an example.

An *undifferentiated group* is made up of two or more soils 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 in a mapped area are not uniform. An area can be made up of only one of the major soils, or it can be made up of all of them. Grady and Rembert loams, ponded, is an undifferentiated group in this survey area.

Most map units include small scattered areas of soils other than those for which the map unit is named. Some of these included soils have properties that differ substantially from those of the major soil or soils. Such differences could significantly affect use and management of the soils in the map unit. The included soils are identified in each map unit description. Some small areas of strongly contrasting soils are identified by a special symbol on the soil maps.

This survey includes *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. The "Pits" component of the Pits-Udorthents complex, gently sloping, is an example. Miscellaneous areas are shown on the soil maps. Some that are too small to be shown are identified by a special symbol on the soil maps.

Table 4 gives the acreage and proportionate extent of each map unit. Other tables (see "Summary of Tables") give properties of the soils and the limitations, capabilities, and suitabilities for many uses. The "Glossary" defines many of the terms used in describing the soils.

AeB—Ailey sand, 1 to 5 percent slopes. This well drained, nearly level and very gently sloping soil is on ridgetops and hillsides in the uplands. Slopes are smooth and convex. Individual areas are 10 to 60 acres in size.

Typically, the surface layer is dark grayish brown sand about 4 inches thick. The subsurface layer extends to a depth of about 25 inches. It is yellowish brown sand. The upper part of the subsoil, to a depth of about 30 inches, is strong brown sandy loam. The next part, to a depth of about 40 inches, is yellowish red sandy clay loam that has red mottles. The lower part of the subsoil, to a depth of about 60 inches, is yellowish brown coarse sandy loam that has strong brown, red, and yellowish brown mottles. It is firm, and about 35

percent is brittle. Below this to a depth of 80 inches or more is red sandy clay loam that has strong brown mottles.

This soil is low in natural fertility and organic matter content. Permeability is rapid in the surface layer and subsurface layer, moderate in the upper part of the subsoil, and slow in the lower part of the subsoil and in the substratum. Available water capacity is low. Tilth is good. The effective root zone is limited by the firm and brittle layer in the subsoil.

Included with this soil in mapping are a few small areas of Bonifay, Cowarts, Fuquay, and Troup soils. These soils are in landscape positions similar to those of the Ailey soil.

The Ailey soil is only moderately suited to field crops, hay, and pasture because of the low available water capacity. Returning crop residue to the soil conserves moisture. Soil blowing is a hazard if the soil is not protected.

The potential of this soil for woodland production is moderate. Slash pine and longleaf pine are the preferred trees to plant. Because of the low available water capacity, seedling mortality is a management concern. Proper planting procedures, the use of adapted drought-hardy plants, and the control of competing vegetation generally can increase the rate of seedling survival. Because of the sandiness of the soil, the use of conventional equipment generally is limited. Using special implements or scheduling planting and harvesting activities for the wetter periods can help to overcome the equipment limitation.

This soil is well suited to most urban uses. The slow permeability in the lower part of the subsoil and in the substratum is a limitation on sites for septic tank absorption fields. It is also a limitation affecting the irrigation of lawns and gardens. The slope and the low available water capacity are also limitations if this soil is irrigated. Seepage is a limitation affecting most kinds of sanitary facilities. Because of the sandy upper layers, the soil is poorly suited to most kinds of recreational development.

The capability subclass is IIIs, and the woodland ordination symbol is 8S.

AeC—Ailey sand, 5 to 8 percent slopes. This well drained, gently sloping soil is on ridgetops and hillsides in the uplands. Slopes are smooth and convex. Individual areas are 10 to 60 acres in size.

Typically, the surface layer is dark grayish brown sand about 7 inches thick. The subsurface layer extends to a depth of about 25 inches. It is loamy sand. The upper part is brownish yellow, and the lower part is yellowish brown. The subsoil, to a depth of about 50 inches, is dominantly sandy clay loam. Below a depth of 33 inches, it is firm if moist, hard if dry, and slightly brittle. The upper part of the subsoil is strong brown, the next part is strong brown and has yellowish red and pink mottles, and the lower part is yellowish red and has reddish brown, brownish yellow, and red mottles. The substratum extends to a depth of 80 inches or more. It is yellowish red coarse sandy loam. It is firm if moist and hard if dry.

This soil is low in natural fertility and organic matter content. Permeability is rapid in the surface layer and subsurface layer, moderate in the upper part of the subsoil, and slow in the lower part of the subsoil and in the substratum. Available water capacity is low. Tilth is good. The effective root zone is limited by the firm and brittle layer in the subsoil.

Included with this soil in mapping are a few small areas of Bonifay, Cowarts, Fuquay, and Troup soils. These soils are in landscape positions similar to those of the Ailey soil.

The Ailey soil is only moderately suited to field crops, hay, and pasture because of the low available water capacity. Returning crop residue to the soil conserves moisture. Soil blowing is a hazard if the soil is not protected.

The potential of this soil for woodland production is moderate. Slash pine and longleaf pine are the preferred trees to plant. Because of the low available water capacity, seedling mortality is a management concern. Proper planting procedures, the use of adapted drought-hardy plants, and the control of competing vegetation generally can increase the rate of seedling survival. Because of the sandiness of the soil, the use of conventional equipment generally is limited. Using special implements or scheduling planting and harvesting activities for the wetter periods can help to overcome the equipment limitation.

This soil is well suited to most urban uses. The slow permeability in the lower part of the subsoil and in the substratum is a limitation on sites for septic tank absorption fields. It is also a limitation affecting the irrigation of lawns and gardens. The slope and the low available water capacity are also limitations if this soil is irrigated. Seepage is a limitation affecting most kinds of sanitary facilities. Because of the sandy upper layers, the soil is poorly suited to recreational development.

The capability subclass is IVs, and the woodland ordination symbol is 8S.

AeD—Ailey sand, 8 to 15 percent slopes. This well drained, strongly sloping soil is on hillsides in the uplands. Slopes are convex. Individual areas are 10 to 60 acres in size.

Typically, the surface layer is dark grayish brown sand about 5 inches thick. The subsurface layer extends to a depth of about 28 inches. It is loamy sand. The upper part is yellowish brown, and the lower part is brownish yellow. The subsoil, to a depth of about 70 inches, is dominantly sandy clay loam. Below a depth of 40 inches, it is firm if moist, hard if dry, and brittle. The upper part of the subsoil is strong brown, the next part is strong brown and has brownish yellow and red mottles, and the lower part is red and has strong brown and brownish yellow mottles. The substratum extends to a depth of 80 inches or more. It is mottled strong brown, brownish yellow, weak red, and red sandy loam. It is firm if moist and hard if dry.

This soil is low in natural fertility and organic matter content. Permeability is rapid in the surface layer and subsurface layer, moderate in the upper part of the subsoil, and slow in the lower part of the subsoil and in the substratum. Available water capacity is low. Tilth is good. The effective root zone is limited by the firm and brittle layer in the subsoil.

Included with this soil in mapping are a few small areas of Cowarts, Lucy, Nankin, and Troup soils and soils that have a subsoil that is friable in the lower part. These soils are in landscape positions similar to those of the Ailey soil.

The Ailey soil is unsuited to field crops because of the low available water capacity and the slope. It is poorly suited to hay and pasture. Soil blowing is a hazard if the soil is not protected.

The potential of this soil for woodland production is moderate. Slash pine and longleaf pine are the preferred trees to plant. Because of the low available water capacity, seedling mortality is a management concern. Proper planting procedures, the use of adapted drought-hardy plants, and the control of competing vegetation generally can increase the rate of seedling survival. Because of the sandiness of the soil, the use of conventional equipment generally is limited. Using special implements or scheduling planting and harvesting activities for the wetter periods can help to overcome the equipment limitation.

This soil is only moderately suited to most urban uses because of the slope. The slow permeability in the lower part of the subsoil and in the substratum is a limitation on sites for septic tank absorption fields. It is also a limitation affecting the irrigation of lawns and gardens. The low available water capacity is also a limitation if this soil is irrigated. Seepage is a limitation affecting most kinds of sanitary facilities. Because of the sandy upper layers, the soil is poorly suited to recreational development.

The capability subclass is VIs, and the woodland ordination symbol is 8S.

AeE—Ailey sand, 15 to 25 percent slopes. This well drained, moderately steep soil is on hillsides in the uplands. Slopes are convex. Individual areas are 10 to 30 acres in size.

Typically, the surface layer is brown sand about 6 inches thick. The subsurface layer extends to a depth of about 26 inches. It is light yellowish brown loamy sand. The subsoil, to a depth of about 52 inches, is dominantly sandy clay loam. Below a depth of 40 inches, it is firm if moist, hard if dry, and brittle. The upper part of the subsoil is strong brown and has red mottles. The lower part is yellowish red and has red and brownish yellow mottles. The substratum extends to a depth of 80 inches or more. It is yellowish red sandy loam and has yellowish brown mottles. It is firm if moist and hard if dry.

This soil is low in natural fertility and organic matter content. Permeability is rapid in the surface layer and subsurface layer, moderate in the upper part of the subsoil, and slow in the lower part of the subsoil and in the substratum. Available water capacity is low. Tilth is good. The effective root zone is limited by the firm and brittle layer in the subsoil.

Included with this soil in mapping are a few small areas of Cowarts, Lucy, and Troup soils. These soils are in landscape positions similar to those of the Ailey soil.

The Ailey soil is unsuited to field crops and hay because of the slope. It is poorly suited to pasture. Soil blowing is a hazard if the soil is not protected.

The potential of this soil for woodland production is moderate. Slash pine and longleaf pine are the preferred trees to plant. Because of the low available water capacity, seedling mortality is a management concern. Proper planting procedures, the use of adapted drought-hardy plants, and the control of competing vegetation generally can increase the rate of seedling survival. Because of the sandiness of the soil, the use of conventional equipment generally is limited. Using special implements or scheduling planting and harvesting activities for the wetter periods can help to overcome the equipment limitation.

This soil is poorly suited to most urban uses because of the slope. The slow permeability in the lower part of the subsoil and in the substratum is a limitation on sites for septic tank absorption fields. It is also a limitation affecting the irrigation of lawns and gardens. The low available water capacity is also a limitation if this soil is irrigated. Seepage is a limitation affecting most kinds of sanitary facilities. Because of the slope and the sandy upper layers, the soil is poorly suited to recreational development.

The capability subclass is VIIe, and the woodland ordination symbol is 8S.

ArB—Arundel loamy sand, 2 to 5 percent slopes. This well drained, very gently sloping soil is on ridgetops and hillsides in the uplands. Slopes generally are smooth and convex. Individual areas are 5 to 40 acres in size.

Typically, the surface layer is brown loamy sand about 6 inches thick. The subsoil is clay. The upper part, to a depth of about 14 inches, is yellowish brown. The next part, to a depth of about 30 inches, is mottled yellowish brown, red, and light brownish gray. The lower part, to a depth of about 38 inches, is light gray and has red and strong brown mottles. White and pale yellow material that breaks into shalelike fragments is at a depth of about 38 inches.

This soil is low in natural fertility and organic matter content. Permeability is very slow. Available water capacity is moderate. Tilth is good. The effective root zone is limited by the firm, clayey subsoil.

Included with this soil in mapping are a few small areas of Cowarts and Nankin soils and soils that have shalelike fragments at a depth of 60 inches or more or at a depth of less than 30 inches. These soils are in landscape positions similar to those of the Arundel soil.

The Arundel soil is moderately suited to field crops, hay, and pasture. Yields are limited by the restricted effective rooting depth. Erosion is a moderate hazard if this soil is cultivated and not protected.

The potential of this soil for woodland production is moderate. Loblolly pine and shortleaf pine are the preferred trees to plant. Applying good woodland management practices and harvesting on the contour help to keep erosion to a minimum. Because of the clay in the subsoil, heavy use of equipment can result in compaction. Using a subsoiler or chisel can promote revegetation after harvesting.

This soil is poorly suited to most kinds of urban and recreational development. The very slow permeability in the subsoil and the depth to fuller's earth are limitations on sites for septic tank absorption fields. The very slow permeability in the subsoil and the slope are limitations affecting the irrigation of lawns and gardens. The high shrink-swell potential is a further limitation affecting urban uses.

The capability subclass is IIIe, and the woodland ordination symbol is 6C.

BB—Bibb and Osier soils, frequently flooded. This map unit consists of poorly drained, nearly level soils on flood plains. It is made up of areas of Bibb loam and Osier loamy sand that occur in an irregular pattern on the landscape. These soils are frequently flooded from late fall to midspring. Most mapped areas contain both soils, but a few areas contain only one of the soils. Because of present and predicted land uses, the soils were not separated in mapping. Slopes are 0 to 2 percent.

A typical area is about 60 percent Bibb soil, 30 percent Osier soil, and 10 percent included soils. In individual areas, the proportion of the soils may vary. Areas range from 25 to 1,000 acres in size.

Typically, the surface layer of the Bibb soil is loam. The upper part is very dark grayish brown. It is about 7 inches thick. The lower part, to a depth of about 12 inches, is dark gray. The underlying material is sandy loam. The upper part, to a depth of about 24 inches, is dark gray and has yellowish brown mottles. The next part, to a depth of about 46 inches, is gray and has strong brown mottles. The lower part to a depth of 62 inches or more is light gray and has strong brown mottles.

The Bibb soil is low in natural fertility and low or moderate in organic matter content. Permeability is moderate. Available water capacity also is moderate. The root zone is deep, but plants sensitive to wetness are affected by flooding or by a seasonal high water table. From late fall to midspring, the soil is flooded or the water table is at a depth of 0.5 foot to 1.5 feet.

Typically, the surface layer of the Osier soil is dark gray loamy sand about 12 inches thick. The upper part of the underlying material, to a depth of about 20 inches, is gray sand that has light gray mottles. The next part, to a depth of about 40 inches, is light gray sand that has gray mottles. The lower part to a depth of 62 inches or more is light gray coarse sand.

The Osier soil is low in natural fertility and moderate or high in organic matter content. Permeability is rapid. Available water capacity is low. The root zone is deep, but plants sensitive to wetness are affected by flooding or by a seasonal high water table. From late fall to early spring, the soil is flooded or the water table is at the surface or within a depth of 1 foot.

Included with these soils in mapping are a few areas of the somewhat poorly drained Ocilla soils and the poorly drained Rains soils. Ocilla soils are on the slightly higher stream terraces, and Rains soils are on stream terraces, in slight depressions on flood plains, and at the head of streams.

The Bibb and Osier soils are mostly wooded. The potential of these soils for woodland production is high. Loblolly pine, slash pine, sweetgum, eastern cottonwood, and yellow-poplar are the preferred trees to plant. The seasonal wetness limits the use of conventional equipment and increases the seedling mortality rate. The equipment limitation generally can be overcome by using modified equipment or by scheduling planting and harvesting activities for the drier periods. Site preparation, stand improvement, and

the use of adapted species generally can increase the rate of seedling survival.

These soils are not suited to field crops and hay because of the wetness and the flooding. They are poorly suited to pasture and recreational development and are severely limited for urban uses. The flooding can be overcome only by installing and maintaining extensive flood-control structures.

The capability subclass is Vw. The woodland ordination symbol assigned to the Bibb soil is 9W, and that assigned to the Osier soil is 11W.

BnB—Blanton sand, 0 to 5 percent slopes. This moderately well drained, nearly level and very gently sloping soil is in broad areas in the uplands. Slopes generally are smooth and convex. Individual areas generally are 10 to 30 acres in size.

Typically, the surface layer is grayish brown sand about 10 inches thick. The subsurface layer is sand. The upper part, to a depth of about 22 inches, is light yellowish brown. The lower part, to a depth of about 48 inches, is brownish yellow and has pale brown mottles. The upper part of the subsoil, to a depth of about 55 inches, is brownish yellow sandy loam. The next part, to a depth of about 65 inches, is yellowish brown sandy clay loam and has brownish gray, yellowish red, and red mottles. The lower part to a depth of 75 inches or more is sandy clay loam that is mottled gray, red, yellowish red, and yellowish brown.

This soil is low in natural fertility and organic matter content. Permeability is rapid in the surface layer and subsurface layer and mainly moderate in the lower part of the profile. Available water capacity is low. Tilth is good. The root zone is deep, but plants sensitive to wetness are affected by a seasonal high water table. From late fall to early spring, the water table is at a depth of 4 to 6 feet.

Included with this soil in mapping are a few areas of Bonifay, Fuquay, and Ocilla soils. The well drained Bonifay and Fuquay soils and the somewhat poorly drained Ocilla soils are in landscape positions similar to those of the Blanton soil.

The Blanton soil is only moderately suited to field crops, hay, and pasture because of the low available water capacity. Returning crop residue to the soil conserves moisture. Yields of the crops commonly grown in the survey area can be increased if the soil is irrigated. Soil blowing is a hazard if the soil is not protected.

The potential of this soil for woodland production is high. Slash pine, longleaf pine, and loblolly pine are the preferred trees to plant. Because of the low available water capacity, seedling mortality is a management concern. Proper planting procedures, the use of adapted drought-hardy plants, and the control of competing vegetation generally can increase the rate of seedling survival. Because of the sandiness of the soil, the use of conventional equipment generally is limited. Using special implements or scheduling planting and harvesting activities for the wetter periods can help to overcome the equipment limitation.

This soil is well suited to most urban uses. Seepage and the high content of sand are limitations affecting most kinds of sanitary facilities. The low available water capacity is a limitation affecting the irrigation of lawns and gardens. Because it is too sandy, the soil is poorly suited to recreational development.

The capability subclass is IIIs, and the woodland ordination symbol is 11S.

BoB—Bonifay fine sand, 1 to 5 percent slopes. This well drained, nearly level and very gently sloping soil is on broad ridgetops in the uplands. Slopes generally are undulating and convex. Individual areas generally are 15 to 250 acres in size.

Typically, the surface layer is dark grayish brown fine sand about 7 inches thick. The subsurface layer is fine sand. The upper part, to a depth of about 47 inches, is light yellowish brown. The lower part, to a depth of about 54 inches, is brownish yellow. The subsoil is sandy clay loam. The upper part, to a depth of about 60 inches, is yellowish brown and has red mottles. The lower part to a depth of 70 inches or more is strong brown and has yellowish brown and pale yellow mottles. The content of plinthite is 5 percent or more below a depth of about 54 inches.

This soil is low in natural fertility and low or moderate in organic matter content. Permeability is rapid in the surface layer and subsurface layer, moderate in the upper part of the subsoil, and moderately slow in the lower part of the subsoil. Available water capacity is low. Tilth is good. The root zone is deep, but plants sensitive to wetness are affected by a seasonal high water table. In winter the water table is at a depth of 4 to 5 feet.

Included with this soil in mapping are a few small areas of Fuquay, Lakeland, and Troup soils. The well drained Fuquay and Troup soils and the excessively drained Lakeland soils are in landscape positions similar to those of the Bonifay soil.

The Bonifay soil is only moderately suited to field crops, hay, and pasture because of the low available water capacity. Returning crop residue to the soil conserves moisture. Yields of the crops generally grown in the survey area can be increased if the soil is irrigated. Soil blowing is a hazard if the soil is not protected.

The potential of this soil for woodland production is

high. Slash pine, longleaf pine, and loblolly pine are the preferred trees to plant. Because of the low available water capacity, seedling mortality is a management concern. Proper planting procedures, the use of adapted drought-hardy plants, and the control of competing vegetation generally can increase the rate of seedling survival. Because of the sandiness of the soil, the use of conventional equipment generally is limited. Using special implements or scheduling planting and harvesting activities for the wetter periods can help to overcome the equipment limitation.

This soil is well suited to most urban uses. Seepage and the high content of sand are limitations affecting most kinds of sanitary facilities. The low available water capacity and the slope are limitations affecting the irrigation of lawns and gardens. Because it is too sandy, the soil is poorly suited to recreational development.

The capability subclass is IIIs, and the woodland ordination symbol is 10S.

BoC—Bonifay fine sand, 5 to 8 percent slopes. This well drained, gently sloping soil is on narrow ridgetops and long hillsides in the uplands. Slopes generally are undulating and convex. Individual areas commonly are 10 to 200 acres in size.

Typically, the surface layer is dark grayish brown sand about 7 inches thick. The subsurface layer extends to a depth of about 47 inches. It is light yellowish brown sand. The subsoil to a depth of 70 inches or more is mainly sandy clay loam. The upper part is yellowish brown and has strong brown mottles. The lower part is brownish yellow and has strong brown and red mottles. The content of plinthite is 5 percent or more below a depth of about 55 inches.

This soil is low in natural fertility and low or moderate in organic matter content. Permeability is rapid in the surface layer and subsurface layer, moderate in the upper part of the subsoil, and moderately slow in the lower part of the subsoil. Available water capacity is low. Tilth is good. The root zone is deep, but plants sensitive to wetness are affected by a seasonal high water table. In winter the water table is at a depth of 4 to 5 feet.

Included with this soil in mapping are a few small areas of Fuquay, Lakeland, and Troup soils. The well drained Fuquay and Troup soils and the excessively drained Lakeland soils are in landscape positions similar to those of the Bonifay soil.

The Bonifay soil is only moderately suited to field crops, hay, and pasture because of the low available water capacity. Returning crop residue to the soil conserves moisture. Yields of the crops generally grown in the survey area can be increased if the soil is irrigated. Soil blowing is a hazard if the soil is not protected.

The potential of this soil for woodland production is high. Slash pine, longleaf pine, and loblolly pine are the preferred trees to plant. Because of the low available water capacity, seedling mortality is a management concern. Proper planting procedures, the use of adapted drought-hardy plants, and the control of competing vegetation generally can increase the rate of seedling survival. Because of the sandiness of the soil, the use of conventional equipment generally is limited. Using special implements or scheduling planting and harvesting activities for the wetter periods can help to overcome the equipment limitation.

This soil is well suited to most urban uses. Seepage and the high content of sand are limitations affecting most kinds of sanitary facilities. The low available water capacity and the slope are limitations affecting the irrigation of lawns and gardens. Because it is too sandy, the soil is poorly suited to recreational development.

The capability subclass is IVs, and the woodland ordination symbol is 10S.

CaB2—Carnegie sandy loam, 3 to 5 percent slopes, eroded. This well drained, very gently sloping soil is on ridgetops and hillsides in the uplands. The surface layer is a mixture of the original surface soil and the upper part of the subsoil. Slopes contain galled spots, shallow gullies, or both. Individual areas of this soil are 5 to 30 acres in size.

Typically, the surface layer is brown sandy loam about 4 inches thick. The subsoil extends to a depth of 62 inches or more. The upper part is strong brown sandy clay loam. The next part is dominantly strong brown sandy clay that has yellowish brown and red mottles. The lower part is mottled red, strong brown, yellowish brown, and gray sandy clay that has pockets of sandy clay loam. Nodules of ironstone are in the surface layer and throughout the upper and middle parts of the subsoil. The content of plinthite is 5 percent or more below a depth of about 20 inches.

This soil is low in natural fertility and low or moderate in organic matter content. Permeability is moderately slow. Available water capacity is moderate. Runoff is rapid. Tilth is good. The effective root zone is limited to a depth of about 20 inches. The plinthite below this depth cannot be easily penetrated by plant roots.

Included with this soil in mapping are areas of Cowarts and Tifton soils and uneroded soils that have a surface layer of loamy sand. These soils are in landscape positions similar to those of the Carnegie soil.

The Carnegie soil is well suited to most field crops. It is only moderately suited to hay and pasture. The rapid

runoff rate and the eroded landscape are management concerns. Good tilth can be maintained in most places by returning crop residue to the soil. Erosion is a moderate hazard if the soil is cultivated and not protected. A conservation tillage system, a water management system, or a combination of both helps to control runoff and erosion.

The potential of this soil for woodland production is high. Loblolly pine and slash pine are the preferred trees to plant. Although no significant limitations hinder woodland use, applying good woodland management practices and harvesting on the contour help to keep erosion to a minimum.

This soil is well suited to most urban uses. The moderately slow permeability in the subsoil is a limitation on sites for septic tank absorption fields. The slope is a limitation affecting the irrigation of lawns and gardens. Generally, these limitations can be overcome by special design and proper installation. The soil is only moderately suited to most kinds of recreational development because of the moderately slow permeability.

The capability subclass is IIIe, and the woodland ordination symbol is 9A.

CaC2—Carnegie sandy loam, 5 to 8 percent slopes, eroded. This well drained, gently sloping soil is on hillsides in the uplands. The surface layer is a mixture of the original surface soil and the upper part of the subsoil. Slopes contain galled spots, shallow gullies, or both. Individual areas of this soil are 8 to 40 acres in size.

Typically, the surface layer is brown sandy loam about 4 inches thick. The upper part of the subsoil, to a depth of about 16 inches, is yellowish brown sandy clay loam. The next part, to a depth of about 40 inches, is strong brown sandy clay that has yellowish red, red, dusky red, and light gray mottles. The lower part to a depth of 62 inches or more is mottled yellowish red, red, light gray, and yellowish brown clay. Nodules of ironstone are mostly in the surface layer and the upper part of the subsoil. The content of plinthite is 5 percent or more below a depth of about 16 inches.

This soil is low in natural fertility and low or moderate in organic matter content. Permeability is moderately slow. Available water capacity is moderate. Runoff is rapid. Tilth is good. The effective root zone is limited to a depth of about 20 inches. The plinthite below this depth is not easily penetrated by plant roots.

Included with this soil in mapping are a few small areas of Cowarts and Tifton soils and severely eroded soils that have a surface layer of sandy clay loam. These soils are in landscape positions similar to those of the Carnegie soil.

The Carnegie soil is only moderately suited to field crops, hay, and pasture. The rapid runoff rate and the eroded landscape are management concerns. Good tilth can be maintained by returning crop residue to the soil. Erosion is a severe hazard if the soil is cultivated and not protected. A conservation tillage system, a water management system, or a combination of both helps to control runoff and erosion.

The potential of this soil for woodland production is high. Loblolly pine and slash pine are the preferred trees to plant. Although no significant limitations hinder woodland use, applying good woodland management practices and harvesting on the contour help to keep erosion to a minimum.

This soil is well suited to most urban uses. The moderately slow permeability in the subsoil is a limitation on sites for septic tank absorption fields. The slope is a limitation affecting the irrigation of lawns and gardens. Generally, these limitations can be overcome by special design and proper installation. The soil is only moderately suited to most kinds of recreational development because of the moderately slow permeability.

The capability subclass is IVe, and the woodland ordination symbol is 9A.

CeB—Cecil sandy loam, 2 to 6 percent slopes. This well drained, very gently sloping and gently sloping soil is on ridgetops in the uplands. Slopes are smooth and convex. Individual areas are 5 to 125 acres in size.

Typically, the surface layer is brown sandy loam about 3 inches thick. The upper part of the subsoil, to a depth of about 6 inches, is yellowish red sandy clay loam. The next part, to a depth of about 21 inches, is red clay. Below this, to a depth of about 46 inches, is red sandy clay. The lower part of the subsoil to a depth of 60 inches or more is red sandy clay loam that has strong brown and pale brown mottles.

This soil is low in natural fertility and low or moderate in organic matter content. Permeability is moderate. Available water capacity also is moderate. Tilth is good. The root zone is deep and can be easily penetrated by plant roots.

Included with this soil in mapping are a few small areas of soils that have a surface layer of sandy clay loam. These soils are in landscape positions similar to those of the Cecil soil.

The Cecil soil is well suited to most field crops. It is only moderately suited to hay and pasture. Good tilth can be easily maintained by returning crop residue to the soil. Erosion is a moderate hazard if the soil is cultivated and not protected. A conservation tillage system, a water management system, or a combination of both helps to control runoff and erosion.

The potential of this soil for woodland production is moderate. Loblolly pine and shortleaf pine are the preferred trees to plant. Although no significant limitations hinder woodland use, applying good woodland management practices and harvesting on the contour help to keep erosion to a minimum.

This soil is well suited to most kinds of urban and recreational development, but the moderate permeability is a limitation on sites for septic tank absorption fields. The slope is a limitation affecting the irrigation of lawns and gardens. Generally, these limitations can be overcome by special design and proper installation.

The capability subclass is IIe, and the woodland ordination symbol is 8A.

CfC2—Cecil sandy clay loam, 6 to 10 percent slopes, eroded. This well drained, gently sloping and strongly sloping soil is on narrow ridgetops and moderately long hillsides in the uplands. The surface layer is a mixture of the original surface soil and the upper part of the subsoil. Slopes contain galled spots, shallow gullies, or both. Individual areas of this soil are 5 to 75 acres in size.

Typically, the surface layer is reddish brown sandy clay loam about 3 inches thick. The subsoil is dominantly red. It extends to a depth of about 57 inches. The upper part is clay and has yellowish red mottles. The lower part is clay loam and has reddish yellow mottles. The substratum extends to a depth of 60 inches or more. It is yellowish red and strong brown silty clay loam and sandy clay loam.

This soil is low in natural fertility and organic matter content. Permeability is moderate. Available water capacity also is moderate. Tilth is poor because of the sandy clay loam surface layer. The root zone is deep and can be easily penetrated by plant roots.

Included with this soil in mapping are a few small areas of soils that are severely eroded and have many gullies. These soils are in landscape positions similar to those of the Cecil soil.

The Cecil soil is poorly suited to field crops because of poor tilth. It is moderately suited to pasture. Continued erosion is a severe hazard if cultivated crops are grown. Including grasses and legumes in the cropping system can help to control runoff and erosion.

The potential of this soil for woodland production is moderate. Loblolly pine and shortleaf pine are the preferred trees to plant. The main concern in management is minimizing further erosion. Other management concerns are the equipment limitation and seedling mortality. Applying good woodland management practices and harvesting on the contour, leaving slash scattered rather than piled, seeding heavily used areas after harvesting, and using erosion-control measures in firebreaks and during road construction can minimize further erosion. Scheduling woodland management practices and harvesting activities for the drier periods can help to keep further erosion within acceptable limits. These measures also help to keep compaction to a minimum. Proper planting procedures generally can increase the seedling survival rate. Using a chisel or subsoiler can promote quick revegetation in compacted areas and can improve the rate of seedling survival.

This soil is only moderately suited to most kinds of urban and recreational development. The slope is the main limitation. The moderate permeability is a limitation on sites for septic tank absorption fields. Generally, these limitations can be overcome by special design and proper installation.

The capability subclass is IVe, and the woodland ordination symbol is 7C.

Ch—Chastain silty clay loam, frequently flooded. This poorly drained, nearly level soil is generally in the lower areas on flood plains. It is frequently flooded from late fall to midspring. Slopes are 0 to 2 percent. Individual areas are 25 to 200 acres in size.

Typically, the surface layer is gray silty clay loam about 9 inches thick. It has grayish brown mottles. The upper part of the subsoil, to a depth of about 20 inches, is gray clay loam that has brownish yellow mottles. The lower part to a depth of 60 inches or more is gray clay that has yellowish brown and strong brown mottles.

This soil is medium in natural fertility and moderate or high in organic matter content. Permeability is slow. Available water capacity is moderate. Tilth is fair. The root zone is deep, but plants sensitive to wetness are affected by a seasonal high water table. From late fall to midspring, the soil is flooded or the water table is at the surface or within a depth of 1 foot.

Included with this soil in mapping are a few small areas of Bibb, Chewacla, and Osier soils. These soils are in landscape positions similar to those of the Chastain soil.

The Chastain soil is mostly wooded. The potential of this soil for woodland production is moderate. Sweetgum is the preferred tree to plant. The seasonal wetness limits the use of conventional equipment and increases the seedling mortality rate. The equipment limitation generally can be overcome by using modified equipment or by scheduling planting and harvesting activities for the drier periods. Site preparation, stand improvement, and the use of adapted plants generally can increase the rate of seedling survival.

Because of the wetness and the flooding, this soil is unsuited to field crops, hay, and pasture. It is poorly

suited to recreational development. The wetness and the flooding also severely limit the use of the soil for urban development. These limitations can be overcome only by installing and maintaining extensive flood-control structures.

The capability subclass is VIw, and the woodland ordination symbol is 8W.

Ck—Chewacla sandy loam, occasionally flooded. This somewhat poorly drained, nearly level soil is in the lower areas on flood plains. It is occasionally flooded from midfall to midspring. Slopes are 0 to 2 percent. Individual areas are 10 to 125 acres in size.

Typically, the surface layer is grayish brown sandy loam about 5 inches thick. The upper part of the subsoil, to a depth of about 18 inches, is dark brown fine sandy loam that has grayish brown mottles. The next part, to a depth of about 21 inches, is light yellowish brown sandy loam. Below this, to a depth of about 38 inches, is brownish yellow sandy clay loam that has light brownish gray mottles. The lower part of the subsoil, to a depth of about 56 inches, is brownish yellow fine sandy loam that has strong brown and light brownish gray mottles. The substratum extends to a depth of 65 inches or more. It is light gray sandy clay loam that has brownish yellow mottles.

This soil is low in natural fertility and low or moderate in organic matter content. Permeability is moderate. Available water capacity is high. Tilth is good. The root zone is deep, but plants sensitive to wetness are affected by a seasonal high water table. From midfall to midspring, the soil is flooded or the water table is at a depth of 0.5 foot to 1.5 feet.

Included with this soil in mapping are a few small areas of the poorly drained Chastain soils and a few small areas of soils that are well drained. These soils are in landscape positions similar to those of the Chewacla soil.

The Chewacla soil is highly productive; however, it is only moderately suited to field crops, hay, and pasture because flooding is likely during the planting season. Installing and maintaining a drainage system can reduce the effects of flooding.

The potential of this soil for woodland production is high. Loblolly pine, yellow-poplar, sweetgum, and American sycamore are the preferred trees to plant. The seasonal wetness limits the use of conventional equipment. The equipment limitation generally can be overcome by using modified or special equipment or by scheduling planting and harvesting activities for the drier periods.

This soil is poorly suited to urban and recreational development because of the wetness and the flooding. These limitations can be overcome only by installing and maintaining extensive flood-control structures and drainage systems.

The capability subclass is IIIw, and the woodland ordination symbol is 10W.

CmA—Chipley sand, 0 to 2 percent slopes. This moderately well drained, nearly level soil is in small, broad areas on uplands. Individual areas are 5 to 40 acres in size.

Typically, the surface layer is dark brown sand about 7 inches thick. The underlying material extends to a depth of 80 inches or more. The upper part, to a depth of about 31 inches, is brownish yellow sand. The next part, to a depth of about 42 inches, is brownish yellow sand that has yellowish brown and light gray mottles. Below this, to a depth of about 58 inches, is brownish yellow coarse sand that has light yellowish brown and light gray mottles. The lower part is light gray sand that has pale brown mottles.

This soil is low in natural fertility and moderate or high in organic matter content. Permeability is rapid. Available water capacity is low. Tilth is good. The root zone is deep, but plants sensitive to wetness are affected by a seasonal high water table. From late fall to midspring, the water table is at a depth of 2 to 3 feet.

Included with this soil in mapping are a few small areas of Ocilla and Rains soils. The somewhat poorly drained Ocilla soils are in landscape positions similar to those of the Chipley soil. The poorly drained Rains soils are in slight depressions on stream terraces.

The Chipley soil is only moderately suited to field crops, hay, and pasture because of the low available water capacity and the wetness. Returning crop residue to the soil conserves moisture. Soil blowing is a hazard if the soil is not protected.

The potential of this soil for woodland production is high. Slash pine and loblolly pine are the preferred trees to plant. The seasonal wetness limits the use of conventional equipment. It generally can be overcome by using modified or special equipment or by scheduling planting and harvesting activities for the drier periods.

This soil is poorly suited to most urban uses because of the wetness. The low available water capacity is a limitation affecting the irrigation of lawns and gardens. The wetness can be reduced by installing a drainage system. The soil is poorly suited to recreational development because it is too sandy.

The capability subclass is IIIs, and the woodland ordination symbol is 11S.

CnA—Clarendon loamy sand, 0 to 2 percent slopes. This moderately well drained, nearly level soil

generally is in smooth areas on uplands. Individual areas are 10 to 20 acres in size.

Typically, the surface layer is grayish brown loamy sand about 8 inches thick. The subsurface layer is light yellowish brown loamy sand about 4 inches thick. The upper part of the subsoil, to a depth of about 26 inches, is yellowish brown sandy clay loam. The next part, to a depth of about 29 inches, is yellowish brown sandy clay loam that has light gray and red mottles. Below this, to a depth of about 34 inches, is yellowish brown sandy clay loam that has red, gray, and yellowish red mottles. The next 8 inches is mottled gray, yellowish brown, red, and dark red sandy clay loam. The lower part of the subsoil to a depth of 62 inches or more is gray sandy clay loam that has yellowish brown, red, and dark red mottles. The content of plinthite is 5 percent or more below a depth of about 29 inches. Nodules of ironstone are throughout much of the soil.

This soil is low in natural fertility and low or moderate in organic matter content. Permeability is moderate in the upper part of the subsoil and moderately slow in the lower part. Available water capacity is moderate. Tilth is good. The root zone is deep, but plants sensitive to wetness are affected by a seasonal high water table. From late fall to early spring, the water table is at a depth of 1.5 to 2.5 feet.

Included with this soil in mapping are a few small areas of Dothan, Ocilla, and Tifton soils. Also included are a few small areas of moderately well drained and somewhat poorly drained soils that do not contain plinthite and have a sandy surface layer less than 20 inches thick. These included soils are in landscape positions similar to those of the Clarendon soil.

The Clarendon soil is well suited to field crops, hay, and pasture. It is somewhat restricted because of the wetness, and a drainage system is needed in most places.

The potential of this soil for woodland production is generally high. Loblolly pine, slash pine, yellow-poplar, American sycamore, and sweetgum are the preferred trees to plant. The seasonal wetness limits the use of equipment. It generally can be overcome by using modified or special equipment or by scheduling planting and harvesting activities for the drier periods.

This soil is only moderately suited to most kinds of urban and recreational development because of the wetness. The moderately slow permeability in the lower part of the subsoil is a limitation on sites for septic tank absorption fields. In most places the wetness and the restricted permeability can be overcome by special design and proper installation.

The capability subclass is IIw, and the woodland ordination symbol is 9W.

CoB—Cowarts loamy sand, 2 to 5 percent slopes. This well drained, very gently sloping soil is on ridgetops and hillsides in the uplands. Slopes generally are undulating and convex. Individual areas are 5 to 30 acres in size.

Typically, the surface layer is dark brown loamy sand about 7 inches thick. The subsoil extends to a depth of about 30 inches. It is dominantly strong brown sandy clay loam. It has red, yellowish red, and reddish brown mottles in the lower part. The substratum extends to a depth of 62 inches or more. It is firm sandy clay loam and sandy loam. It is mainly yellowish red, red, light pinkish gray, and brownish yellow.

This soil is low in natural fertility and organic matter content. Permeability is moderate in the subsoil and moderately slow or slow in the substratum. Available water capacity is low. Tilth is good. The effective root zone is limited to a depth of about 30 inches. The substratum cannot be easily penetrated by plant roots.

Included with this soil in mapping are areas of Ailey and Nankin soils, soils that have more clay in the upper part of the subsoil than the Cowarts soil, and severely eroded soils that have a surface layer of sandy clay loam. These soils are in landscape positions similar to those of the Cowarts soil. Also included are areas of wet soils that are less than three acres in size. These soils are indicated by a special symbol on the soil maps. They are in depressions on uplands.

The Cowarts soil is well suited to field crops. It is only moderately suited to hay and pasture. Yields are somewhat limited by the restricted root zone. Good tilth can be easily maintained by returning crop residue to the soil. Erosion is a moderate hazard if the soil is cultivated and not protected. A conservation tillage system, a water management system, or a combination of both helps to control runoff and erosion.

The potential of this soil for woodland production is high. Loblolly pine, slash pine, and longleaf pine are the preferred trees to plant. Although no significant limitations hinder woodland use, applying good woodland management practices and harvesting on the contour help to keep erosion to a minimum.

This soil is well suited to most urban uses. The restricted permeability in the substratum is a limitation on sites for septic tank absorption fields. The restricted permeability and the slope are limitations affecting the irrigation of lawns and gardens. Generally, these limitations can be overcome by special design and proper installation. The soil is only moderately suited to most kinds of recreational development because of the restricted permeability.

The capability subclass is IIe, and the woodland ordination symbol is 9A.

CtC2—Cowarts sandy loam, 5 to 8 percent slopes, eroded. This well drained, gently sloping soil is on hillsides in the uplands. The surface layer is a mixture of the original surface soil and the upper part of the subsoil. Slopes contain galled spots, shallow gullies, or both. Individual areas of this soil are 5 to 50 acres in size.

Typically, the surface layer is dark grayish brown sandy loam about 5 inches thick. The subsoil is sandy clay loam. The upper part, to a depth of about 18 inches, is strong brown. The lower part, to a depth of about 31 inches, is yellowish brown and has yellowish red and brownish gray mottles. The substratum is firm. The upper part, to a depth of about 43 inches, is mottled and streaked yellowish brown, gray, weak red, and yellowish red sandy clay loam. It has pockets of coarser and finer textured material. The lower part to a depth of 72 inches or more is mottled weak red, yellowish red, pinkish gray, and brownish yellow sandy loam that has pockets of finer textured material.

This soil is low in natural fertility and organic matter content. Permeability is moderate in the subsoil and moderately slow or slow in the substratum. Available water capacity is low. Runoff is rapid. The effective root zone is limited to a depth of about 31 inches. The substratum cannot be easily penetrated by plant roots.

Included with this soil in mapping are a few small areas of Carnegie and Nankin soils and uneroded soils that have a surface layer of loamy sand. These soils are in landscape positions similar to those of the Cowarts soil.

The Cowarts soil is only moderately suited to field crops, hay, and pasture because of the slope. The rapid runoff rate and the eroded landscape are management concerns. Good tilth can be maintained by returning crop residue to the soil. Erosion is a severe hazard if the soil is cultivated and not protected. Including grasses and legumes in the cropping system help to control runoff and erosion.

The potential of this soil for woodland production is high. Loblolly pine, slash pine, and longleaf pine are the preferred trees to plant. Although no significant limitations hinder woodland use, applying good woodland management practices and harvesting on the contour help to keep erosion to a minimum.

This soil is well suited to most urban uses. The restricted permeability in the substratum is a limitation on sites for septic tank absorption fields. The restricted permeability and the slope are limitations affecting the irrigation of lawns and gardens. Generally, these limitations can be overcome by special design and proper installation. The soil is only moderately suited to most kinds of recreational development because of the restricted permeability.

The capability subclass is IVe, and the woodland ordination symbol is 9A.

CtD2—Cowarts sandy loam, 8 to 15 percent slopes, eroded. This well drained, strongly sloping soil is on hillsides in the uplands. The surface layer is a mixture of the original surface soil and the upper part of the subsoil. Slopes contain galled spots, shallow gullies, or both. Individual areas of this soil are 5 to 25 acres in size.

Typically, the surface layer is brown sandy loam about 5 inches thick. The subsoil extends to a depth of about 31 inches. It is sandy clay loam. The upper part is strong brown, the next part is strong brown and has dark reddish brown and brownish yellow mottles, and the lower part is yellowish brown and has red, dark reddish brown, and light brownish gray mottles. The substratum to a depth of 72 inches or more is brownish yellow sandy loam that has red, dark reddish brown, and light brownish gray mottles.

This soil is low in natural fertility and organic matter content. Permeability is moderate in the subsoil and moderately slow or slow in the substratum. Available water capacity is low. Runoff is rapid. The effective root zone is limited to a depth of about 31 inches. The substratum cannot be easily penetrated by plant roots.

Included with this soil in mapping are a few small areas of Nankin soils, severely eroded soils that have a surface layer of sandy clay loam, and areas of soils that contain more than 5 percent nodules of ironstone in the surface layer. These soils are in landscape positions similar to those of the Cowarts soil.

The Cowarts soil is unsuited to field crops because of the slope. It is moderately suited to hay and pasture. Erosion is a severe hazard if this soil is cultivated and not protected.

The potential of this soil for woodland production is high. Loblolly pine, slash pine, and longleaf pine are the preferred trees to plant. Although no significant limitations hinder woodland use, applying good woodland management practices and harvesting on the contour help to keep erosion to a minimum.

This soil is only moderately suited to most kinds of urban and recreational development mainly because of the slope. The restricted permeability in the substratum is a limitation on sites for septic tank absorption fields. It also affects the irrigation of lawns and gardens. Generally, the slope and the restricted permeability can be overcome by special design and proper installation.

The capability subclass is VIe, and the woodland ordination symbol is 9A.

DgA—Dogue sandy loam, 0 to 2 percent slopes. This moderately well drained, nearly level soil is on stream terraces. Individual areas are 10 to 125 acres in size.

Typically, the surface layer is dark grayish brown sandy loam about 7 inches thick. The subsurface layer extends to a depth of about 11 inches. It is pale brown sandy loam. The upper part of the subsoil, to a depth of about 15 inches, is light yellowish brown sandy clay loam that has strong brown mottles. The next part, to a depth of about 26 inches, is strong brown sandy clay that has yellowish brown and red mottles. Below this, to a depth of about 42 inches, is strong brown sandy clay that has light gray and red mottles. The lower part of the subsoil, to a depth of about 59 inches, is mottled strong brown, light gray, yellowish red, and pale brown sandy clay loam. The substratum extends to a depth of 64 inches or more. It is mottled strong brown, light gray, red, and pale brown sandy loam.

This soil is low in natural fertility and organic matter content. Permeability is moderately slow. Available water capacity is moderate. Tilth is good. The root zone is deep, but plants sensitive to wetness are affected by a seasonal high water table. In winter the water table is at a depth of 1.5 to 3.0 feet.

Included with this soil in mapping are a few small areas of Ocilla and Rains soils. These soils are in landscape positions similar to those of the Dogue soil.

The Dogue soil is well suited to field crops, hay, and pasture. The wetness is a limitation in most places. A drainage system can reduce the wetness.

The potential of this soil for woodland production is high. Loblolly pine is the preferred tree to plant. The seasonal wetness limits the use of equipment. It generally can be overcome by using modified or special equipment or by scheduling planting and harvesting activities for the drier periods.

This soil is only moderately suited to most kinds of urban and recreational development mainly because of the wetness. The moderately slow permeability is a limitation on sites for septic tank absorption fields. In most places, the wetness and the restricted permeability can be overcome by special design and proper installation.

The capability subclass is IIw, and the woodland ordination symbol is 9W.

DoA—Dothan loamy sand, 0 to 2 percent slopes. This well drained, nearly level soil is on ridgetops in the uplands. Individual areas are 10 to 50 acres in size.

Typically, the surface layer is grayish brown loamy sand about 8 inches thick. The subsoil extends to a depth of 64 inches or more. It is sandy clay loam. The upper part is yellowish brown, and the lower part is mottled light gray, yellowish brown, and yellowish red. The content of plinthite is 5 percent or more below a depth of about 54 inches. A few nodules of ironstone are in the surface layer and in the upper part of the subsoil.

This soil is low in natural fertility and organic matter content. Permeability is moderate in the upper part of the subsoil and moderately slow in the lower part. Available water capacity is moderate. Tilth is good. The root zone is deep, but plants sensitive to wetness are affected by a seasonal high water table. From winter to midspring, the water table is at a depth of 3 to 5 feet.

Included with this soil in mapping are a few small areas of Clarendon, Fuquay, and Tifton soils. These soils are in landscape positions similar to those of the Dothan soil.

The Dothan soil is well suited to field crops (fig. 2), hay, and pasture. It responds favorably to irrigation during dry periods, and high yields can be obtained. A conservation tillage system helps to maintain the content of organic matter and conserves moisture.

The potential of this soil for woodland production is high. Slash pine, loblolly pine, and longleaf pine are the preferred trees to plant. No significant limitations hinder woodland use or management.

This soil is well suited to most kinds of urban and recreational development. The moderately slow permeability in the lower part of the subsoil is a limitation on sites for septic tank absorption fields. Generally, this limitation can be overcome by special design and proper installation.

The capability class is I, and the woodland ordination symbol is 12A.

DoB—Dothan loamy sand, 2 to 5 percent slopes. This well drained, very gently sloping soil is on ridgetops and hillsides in the uplands. Slopes are smooth and convex. Individual areas are 5 to 50 acres in size.

Typically, the surface layer is grayish brown loamy sand about 7 inches thick. The subsoil is sandy clay loam. The upper part, to a depth of about 30 inches, is yellowish brown. The next part, to a depth of about 50 inches, is yellowish brown and has yellowish red mottles. The lower part to a depth of 64 inches or more is yellowish brown and has yellowish red, gray, and red mottles. The content of plinthite is 5 percent or more below a depth of about 50 inches. A few nodules of ironstone are in the surface layer and in the upper part of the subsoil.

This soil is low in natural fertility and organic matter content. Permeability is moderate in the upper part of

Figure 2.—Corn in an area of Dothan loamy sand, 0 to 2 percent slopes. This soil is prime farmland.

the subsoil and moderately slow in the lower part. Available water capacity is moderate. Tilth is good. The root zone is deep, but plants sensitive to wetness are affected by a seasonal high water table. From winter to midspring, the water table is at a depth of 3 to 5 feet.

Included with this soil in mapping are a few small areas of Fuquay and Tifton soils. These soils are in landscape positions similar to those of the Dothan soil.

The Dothan soil is well suited to field crops (fig. 3), hay, and pasture. It responds favorably to irrigation during dry periods, and high yields can be obtained. Erosion is a moderate hazard if this soil is cultivated and not protected. A conservation tillage system, a water management system, or a combination of both helps to control runoff and erosion.

The potential of this soil for woodland production is high. Slash pine, loblolly pine, and longleaf pine are the preferred trees to plant. Although no significant limitations hinder woodland use, applying good woodland management practices and harvesting on the contour help to keep erosion to a minimum.

This soil is well suited to most kinds of urban and recreational development. The moderately slow permeability in the lower part of the subsoil is a limitation on sites for septic tank absorption fields. The slope is a limitation affecting the irrigation of lawns and gardens. Generally, these limitations can be overcome by special design and proper installation.

The capability subclass is IIe, and the woodland ordination symbol is 12A.

DtC2—Dothan sandy loam, 5 to 8 percent slopes, eroded. This well drained, gently sloping soil is on ridgetops and hillsides in the uplands. The surface layer is a mixture of the original surface soil and the upper part of the subsoil. Slopes contain galled spots, shallow gullies, or both. Individual areas of this soil are 5 to 20 acres in size.

Typically, the surface layer is brown sandy loam about 5 inches thick. The subsoil extends to a depth of 64 inches or more. It is sandy clay loam. The upper part is yellowish brown, the next part is yellowish brown and has yellowish red and red mottles, and the lower part is mottled yellowish brown, red, and light brownish gray. The content of plinthite is 5 percent or more below a depth of about 32 inches. A few nodules of ironstone are in the surface layer and in the upper part of the subsoil.

This soil is low in natural fertility and organic matter content. Permeability is moderate in the upper part of the subsoil and moderately slow in the lower part. Available water capacity is moderate. Tilth is good. The root zone is deep, but plants sensitive to wetness are affected by a seasonal high water table. From winter to midspring, the water table is at a depth of 3 to 5 feet.

Figure 3.—Soybeans in an area of Dothan loamy sand, 2 to 5 percent slopes. This soil is prime farmland and is well suited to the crops commonly grown in the survey area.

Included with this soil in mapping are a few small areas of Cowarts, Fuquay, and Tifton soils. These soils are in landscape positions similar to those of the Dothan soil.

The Dothan soil is well suited to most field crops. It is only moderately suited to hay and pasture. The eroded landscape is a management concern. Erosion is a severe hazard if this soil is cultivated and not protected. A conservation tillage system, a water management system, or a combination of both helps to control runoff and erosion.

The potential of this soil for woodland production is high. Slash pine, loblolly pine, and longleaf pine are the preferred trees to plant. Although no significant limitations hinder woodland use, applying good woodland management practices and harvesting on the contour help to keep erosion to a minimum.

This soil is well suited to most kinds of urban and

recreational development. The moderately slow permeability in the lower part of the subsoil is a limitation on sites for septic tank absorption fields. The slope is a limitation affecting the irrigation of lawns and gardens. Generally, these limitations can be overcome by special design and proper installation.

The capability subclass is IVe, and the woodland ordination symbol is 12A.

EuB—Eustis sand, 0 to 5 percent slopes. This somewhat excessively drained, nearly level and very gently sloping soil is mainly on broad ridgetops in the uplands. Slopes are smooth and convex. Individual areas are 5 to 150 acres in size.

Typically, the surface layer is dark brown sand about 9 inches thick. The subsoil extends to a depth of 90 inches or more. It is loamy sand. The upper part is yellowish red, and the lower part is red.

This soil is low in natural fertility and low or moderate in organic matter content. Permeability is rapid. Available water capacity is low. Tilth is good. The root zone is deep and can be easily penetrated by plant roots.

Included with this soil in mapping are a few small areas of Lakeland, Lucy, and Troup soils. The excessively drained Lakeland soils and the well drained Lucy and Troup soils are in landscape positions similar to those of the Eustis soil.

The Eustis soil is only moderately suited to field crops, hay, and pasture because of the low available water capacity. Returning crop residue to the soil conserves moisture. Yields of the crops commonly grown in the survey area can be increased if the soil is irrigated. Soil blowing is a hazard if the soil is not protected.

The potential of this soil for woodland production is high. Slash pine and loblolly pine are the preferred trees to plant. Because of the low available water capacity, seedling mortality is a management concern. Proper planting procedures, the use of adapted drought-hardy plants, and the control of competing vegetation generally can increase the rate of seedling survival. Because of the sandiness of the soil, the use of conventional equipment generally is limited. Using special implements or scheduling planting and harvesting activities for the wetter periods can help to overcome the equipment limitation.

This soil is well suited to most kinds of urban and recreational development. Seepage is a limitation affecting most kinds of sanitary facilities. The low available water capacity is a limitation affecting the irrigation of lawns and gardens.

The capability subclass is IIIs, and the woodland ordination symbol is 10S.

EuC—Eustis sand, 5 to 8 percent slopes. This somewhat excessively drained, gently sloping soil is on short hillsides in the uplands. Slopes are mostly smooth and convex. Individual areas are 5 to 40 acres in size.

Typically, the surface layer is dark brown sand about 9 inches thick. The subsurface layer extends to a depth of about 34 inches. It is yellowish red loamy sand. The subsoil to a depth of 90 inches or more is red loamy sand.

This soil is low in natural fertility and low or moderate in organic matter content. Permeability is rapid. Available water capacity is low. Tilth is good. The root zone is deep and can be easily penetrated by plant roots.

Included with this soil in mapping are a few small areas of Lakeland and Lucy soils. The excessively drained Lakeland soils and the well drained Lucy soils are in landscape positions similar to those of the Eustis soil.

The Eustis soil is only moderately suited to field crops, hay, and pasture because of the low available water capacity. Returning crop residue to the soil conserves moisture. Soil blowing is a hazard if the soil is not protected.

The potential of this soil for woodland production is high. Slash pine and loblolly pine are the preferred trees to plant. Because of the low available water capacity, seedling mortality is a management concern. Proper planting procedures, the use of adapted drought-hardy plants, and the control of competing vegetation generally can increase the rate of seedling survival. Because of the sandiness of the soil, the use of conventional equipment generally is limited. Using special implements or scheduling planting and harvesting activities for the wetter periods can help to overcome the equipment limitation.

This soil is well suited to most kinds of urban and recreational development. Seepage is a limitation affecting most kinds of sanitary facilities. The low available water capacity and the slope are limitations affecting the irrigation of lawns and gardens.

The capability subclass is IVs, and the woodland ordination symbol is 10S.

FaA—Faceville loamy sand, 0 to 2 percent slopes. This well drained, nearly level soil is on broad ridgetops in the uplands. Individual areas are 10 to 70 acres in size.

Typically, the surface layer is brown loamy sand about 8 inches thick. The subsoil to a depth of 64 inches or more is red sandy clay that has yellowish red and very pale brown mottles in the lower part.

This soil is medium in natural fertility and low in organic matter content. Permeability is moderate.

Available water capacity also is moderate. Tilth is good. The root zone is deep and can be easily penetrated by plant roots.

Included with this soil in mapping are a few small areas of Dothan, Greenville, and Orangeburg soils. These soils are in landscape positions similar to those of the Faceville soil.

The Faceville soil is well suited to field crops, hay, and pasture. It responds favorably to irrigation during dry periods, and high yields can be obtained. A conservation tillage system helps to maintain the organic matter content and conserves moisture.

The potential of this soil for woodland production is moderate. Loblolly pine and slash pine are the preferred trees to plant. No significant limitations hinder woodland use or management.

This soil is well suited to most kinds of urban and recreational development. The clayey subsoil is a limitation affecting a few uses.

The capability class is I, and the woodland ordination symbol is 8A.

FbB—Faceville sandy loam, 2 to 5 percent slopes. This well drained, very gently sloping soil is on ridgetops and hillsides in the uplands. Slopes are smooth and convex. Individual areas are 10 to 80 acres in size.

Typically, the surface layer is reddish brown sandy loam about 6 inches thick. The upper part of the subsoil, to a depth of about 9 inches, is red sandy clay loam. The next part, to a depth of about 50 inches, is red sandy clay. The lower part to a depth of 64 inches or more is red sandy clay that has yellowish red, strong brown, and light brown mottles.

This soil is medium in natural fertility and low or moderate in organic matter content. Permeability is moderate. Available water capacity also is moderate. Tilth is good. The root zone is deep and can be easily penetrated by plant roots.

Included with this soil in mapping are a few small areas of Dothan, Greenville, and Orangeburg soils. These soils are in landscape positions similar to those of the Faceville soil.

The Faceville soil is well suited to field crops, hay, and pasture. It responds favorably to irrigation during dry periods, and high yields can be obtained. Erosion is a moderate hazard if this soil is cultivated and not protected. A conservation tillage system, a water management system, or a combination of both helps to control runoff and erosion.

The potential of this soil for woodland production is moderate. Loblolly pine and slash pine are the preferred trees to plant. Although no significant limitations hinder woodland use, applying good woodland management practices and harvesting on the contour help to keep erosion to a minimum.

This soil is well suited to most kinds of urban and recreational development. The clayey subsoil is a limitation affecting a few uses. The slope is a limitation affecting the irrigation of lawns and gardens.

The capability subclass is IIe, and the woodland ordination symbol is 8A.

FcC2—Faceville sandy clay loam, 5 to 8 percent slopes, eroded. This well drained, gently sloping soil is on hillsides in the uplands. The surface layer is a mixture of the original surface soil and the upper part of the subsoil. Slopes contain galled spots, shallow gullies, or both. Individual areas of this soil are 5 to 40 acres in size.

Typically, the surface layer is reddish brown sandy clay loam about 4 inches thick. The subsoil extends to a depth of 64 inches or more. The upper part is red sandy clay loam, and the lower part is red sandy clay that has pale brown and yellowish brown mottles.

This soil is low in natural fertility and organic matter content. Permeability is moderate. Available water capacity also is moderate. The root zone is deep and can be easily penetrated by plant roots.

Included with this soil in mapping are a few small areas of Greenville and Orangeburg soils. These soils are in landscape positions similar to those of the Faceville soil.

The Faceville soil is only moderately suited to field crops, hay, and pasture because of the slope. The eroded landscape is a management concern. Returning crop residue to the soil helps to maintain tilth. Erosion is a severe hazard if the soil is cultivated and not protected. A conservation tillage system, a water management system, or a combination of both helps to control runoff and erosion.

The potential of this soil for woodland production is moderate. Loblolly pine and slash pine are the preferred trees to plant. Although no significant limitations hinder woodland use, applying good woodland management practices and harvesting on the contour help to keep erosion to a minimum.

This soil is well suited to most kinds of urban and recreational development. The clayey subsoil is a limitation affecting a few uses. The slope is a limitation affecting the irrigation of lawns and gardens.

The capability subclass is IVe, and the woodland ordination symbol is 8A.

FcD2—Faceville sandy clay loam, 8 to 12 percent slopes, eroded. This well drained, strongly sloping soil is on hillsides in the uplands. The surface layer is a mixture of the original surface soil and the upper part of

the subsoil. Slopes contain galled spots, shallow gullies, or both. Individual areas of this soil are 5 to 40 acres in size.

Typically, the surface layer is dark brown sandy clay loam about 4 inches thick. The subsoil extends to a depth of 64 inches or more. It is dominantly sandy clay. The upper part is yellowish red, the next part is red, and the lower part is red and has strong brown and yellowish brown mottles.

This soil is low in natural fertility and organic matter content. Permeability is moderate. Available water capacity also is moderate. The root zone is deep and can be easily penetrated by plant roots.

Included with this soil in mapping are a few small areas of Greenville and Orangeburg soils. These soils are in landscape positions similar to those of the Faceville soil.

The Faceville soil is unsuited to field crops because of the slope. It is moderately suited to hay and pasture. Erosion is a severe hazard if this soil is cultivated and not protected. A conservation tillage system, a water management system, or a combination of both helps to control runoff and erosion.

The potential of this soil for woodland production is moderate. Loblolly pine and slash pine are the preferred trees to plant. Although no significant limitations hinder woodland use, applying good woodland management practices and harvesting on the contour help to keep erosion to a minimum.

This soil is only moderately suited to most kinds of urban and recreational development mainly because of the slope.

The capability subclass is VIe, and the woodland ordination symbol is 8A.

FuB—Fuquay loamy sand, 1 to 5 percent slopes. This well drained, nearly level and very gently sloping soil is on broad ridgetops in the uplands. Slopes are mostly smooth and convex. Individual areas are 5 to 30 acres in size.

Typically, the surface layer is dark grayish brown loamy sand about 8 inches thick. The subsurface layer is loamy sand. The upper part, to a depth of about 16 inches, is light yellowish brown and has grayish brown splotches. The lower part, to a depth of about 28 inches, is light yellowish brown. The upper part of the subsoil, to a depth of about 30 inches, is brownish yellow sandy clay loam. The next part, to a depth of about 41 inches, is brownish yellow sandy clay loam that has yellowish red mottles. Below this, to a depth of about 51 inches, is brownish yellow sandy clay loam that has yellowish red and red mottles. The lower part of the subsoil to a depth of 63 inches or more is mottled brownish yellow, yellowish red, red, and light gray sandy clay loam. The content of plinthite is 5 percent or more below a depth of about 41 inches. A few nodules of ironstone are within a depth of about 28 inches.

This soil is low in natural fertility and low or moderate in organic matter content. Permeability is rapid in the surface layer and subsurface layer. It is moderate in the upper part of the subsoil and slow in the lower part. Available water capacity is low. Tilth is good. The root zone is deep, but plants sensitive to wetness are affected by a seasonal high water table. From winter to early spring, the water table is at a depth of 4 to 6 feet.

Included with this soil in mapping are a few small areas of Dothan soils and soils that have a subsoil that is compact and brittle.

The Fuquay soil is only moderately suited to field crops, hay, and pasture because of the low available water capacity. Returning crop residue to the soil conserves moisture. This soil responds favorably to irrigation during dry periods, and high yields can be obtained. Soil blowing is a hazard if the soil is not protected.

The potential of this soil for woodland production is moderate. Longleaf pine and loblolly pine are the preferred trees to plant. Because of the low available water capacity, seedling mortality is a management concern. Proper planting procedures, the use of adapted drought-hardy plants, and the control of competing vegetation generally can increase the rate of seedling survival. Because of the sandiness of the soil, the use of conventional equipment generally is limited. Using special implements or scheduling planting and harvesting activities for the wetter periods can help to overcome the equipment limitation.

This soil is well suited to most urban uses. The slow permeability in the lower part of the subsoil is a limitation on sites for septic tank absorption fields. The low available water capacity and the slope are limitations affecting the irrigation of lawns and gardens. Generally, these limitations can be overcome by special design and proper installation. Because the soil is too sandy, it is only moderately suited to recreational development.

The capability subclass is IIs, and the woodland ordination symbol is 8S.

FuC—Fuquay loamy sand, 5 to 8 percent slopes. This well drained, gently sloping soil is on ridgetops and hillsides in the uplands. Slopes generally are smooth and convex. Individual areas are 5 to 25 acres in size.

Typically, the surface layer is grayish brown loamy sand about 8 inches thick. The subsurface layer extends to a depth of about 28 inches. It is brownish yellow loamy sand. The subsoil to a depth of 63 inches or more is sandy clay loam. The upper part is yellowish

brown. The next part is yellowish brown and has yellowish red and red mottles. The lower part is mottled yellowish red, red, yellowish brown, and light gray. The content of plinthite is 5 percent or more below a depth of about 37 inches.

This soil is low in natural fertility and low or moderate in organic matter content. Permeability is rapid in the surface layer and subsurface layer. It is moderate in the upper part of the subsoil and slow in the lower part. Available water capacity is low. Tilth is good. The root zone is deep, but plants sensitive to wetness are affected by a seasonal high water table. From winter to early spring, the water table is at a depth of 4 to 6 feet.

Included with this soil in mapping are a few small areas of Ailey and Bonifay soils. These soils are in landscape positions similar to those of the Fuquay soil.

The Fuquay soil is only moderately suited to field crops, hay, and pasture because of the low available water capacity. Returning crop residue to the soil conserves moisture. Soil blowing is a hazard if the soil is not protected.

The potential of this soil for woodland production is moderate. Longleaf pine and loblolly pine are the preferred trees to plant. Because of the low available water capacity, seedling mortality is a management concern. Proper planting procedures, the use of adapted drought-hardy plants, and the control of competing vegetation generally can increase the rate of seedling survival. Because of the sandiness of the soil, the use of conventional equipment generally is limited. Using special implements or scheduling harvesting activities during the wetter periods can help to overcome the equipment limitation.

This soil is well suited to most urban uses. The slow permeability in the lower part of the subsoil is a limitation on sites for septic tank absorption fields. The low available water capacity and the slope are limitations affecting the irrigation of lawns and gardens. Generally, these limitations can be overcome by special design and proper installation. Because the soil is too sandy, it is only moderately suited to recreational development.

The capability subclass is IIIs, and the woodland ordination symbol is 8S.

GR—Grady and Rembert loams, ponded. This map unit consists of poorly drained, nearly level soils in depressions on uplands. It is made up of areas of Grady loam and Rembert loam that occur in an irregular pattern on the landscape. These soils are ponded in winter and spring. Most mapped areas contain both soils, but a few areas contain only one of the soils. Because of present and predicted land uses, the soils were not separated in mapping. Slopes are 0 to 2 percent.

A typical area is about 70 percent Grady loam and 30 percent Rembert loam. In individual areas, however, the proportion of the soils may vary. Areas are saucer-shaped and are 5 to 90 acres in size.

Typically, the surface layer of the Grady soil is very dark gray loam about 4 inches thick. The upper part of the subsoil extends to a depth of about 10 inches. It is gray clay loam. The lower part of the subsoil to a depth of 65 inches or more is light gray clay that has strong brown mottles.

The Grady soil is low in natural fertility and moderate or low in organic matter content. Permeability is slow. Available water capacity is moderate. Tilth is good. The root zone is deep, but plants sensitive to wetness are affected by a seasonal high water table. The soil is ponded from late fall to late spring.

Typically, the surface layer of the Rembert soil is dark gray loam about 5 inches thick. The upper part of the subsoil extends to a depth of about 28 inches. It is gray clay that has red mottles. The next part, to a depth of about 54 inches, is gray clay that has strong brown and brownish yellow mottles. Below this, to a depth of about 59 inches, is gray sandy clay loam that has strong brown and yellowish brown mottles. The lower part of the subsoil to a depth of 63 inches or more is light gray sandy loam that has brownish yellow mottles.

The Rembert soil is low in natural fertility and low to high in organic matter content. Permeability is slow. Available water capacity is moderate. Tilth is good. The root zone is deep, but plants sensitive to wetness are affected by a seasonal high water table. The soil is ponded from late fall to late spring.

The Grady and Rembert soils are mostly wooded, but the potential of these soils for woodland production is low. American sycamore, baldcypress, and water tupelo are the preferred trees to plant. The ponding limits the use of conventional equipment and increases the seedling mortality rate. The equipment limitation generally can be overcome by scheduling planting and harvesting activities for the drier periods. Site preparation, stand improvement, and the use of adapted species generally can increase the rate of seedling survival.

These soils are not suited to field crops, hay, and pasture because of the ponding. They are poorly suited to recreational development and are severely limited for urban uses.

The capability subclass of the Grady soil is Vw, and that of the Rembert soil is VIw. The woodland ordination symbol assigned to the Grady soil is 6W, and that assigned to the Rembert soil is 7W.

GsB—Greenville sandy loam, 2 to 5 percent slopes. This well drained, very gently sloping soil is on broad ridgetops in the uplands. Slopes are smooth and convex. Individual areas are 10 to 200 acres in size.

Typically, the surface layer is dark reddish brown sandy loam about 10 inches thick. The subsoil extends to a depth of 65 inches or more. It is dark red sandy clay in the upper few inches and dark red clay in the lower part.

This soil is low in natural fertility and organic matter content. Permeability is moderate. Available water capacity also is moderate. Tilth is good. The root zone is deep and can be easily penetrated by plant roots.

Included with this soil in mapping are a few small areas of Faceville soils and soils that have a surface layer of sandy clay loam. These soils are in landscape positions similar to those of the Greenville soil.

The Greenville soil is well suited to field crops, hay, and pasture. It responds favorably to irrigation during dry periods, and high yields can be obtained. Good tilth can be easily maintained by returning crop residue to the soil. Erosion is a moderate hazard if the soil is cultivated and not protected. A conservation tillage system, a water management system, or a combination of both helps to control runoff and erosion.

The potential of this soil for woodland production is moderate. Loblolly pine, slash pine, and longleaf pine are the preferred trees to plant. Although no significant limitations hinder woodland use, applying good woodland management practices and harvesting on the contour help to keep erosion to a minimum.

This soil is well suited to most kinds of urban and recreational development. The clayey subsoil is a limitation affecting a few uses. The slope is a limitation affecting the irrigation of lawns and gardens.

The capability subclass is IIe, and the woodland ordination symbol is 8A.

GtA—Greenville sandy clay loam, 0 to 2 percent slopes. This well drained, nearly level soil is on broad ridgetops or in slight depressions on uplands. Individual areas are 10 to 150 acres in size.

Typically, the surface layer is dark reddish brown sandy clay loam about 10 inches thick. The subsoil extends to a depth of 65 inches or more. The upper part, to a depth of about 18 inches, is dark red sandy clay loam. The lower part is dark red clay.

This soil is low in natural fertility and organic matter content. Permeability is moderate. Available water capacity also is moderate. Tilth is good. The root zone is deep and can be easily penetrated by plant roots.

Included with this soil in mapping are a few small areas of Faceville soils. These soils are in landscape positions similar to those of the Greenville soil.

The Greenville soil is well suited to field crops, hay, and pasture. It responds favorably to irrigation during dry periods, and high yields can be obtained. A conservation tillage system conserves moisture and helps to maintain the content of organic matter.

The potential of this soil for woodland production is moderate. Loblolly pine, slash pine, and longleaf pine are the preferred trees to plant. No significant limitations hinder woodland use or management.

This soil is well suited to most kinds of urban and recreational development. The clayey subsoil is a limitation affecting a few uses.

The capability class is I, and the woodland ordination symbol is 8A.

GtC2—Greenville sandy clay loam, 5 to 8 percent slopes, eroded. This well drained, gently sloping soil is mainly on hillsides in the uplands. The surface layer is a mixture of the original surface soil and the upper part of the subsoil. Slopes contain galled spots, shallow gullies, or both. Individual areas of this soil are 5 to 40 acres in size.

Typically, the surface layer is dark reddish brown sandy clay loam about 6 inches thick. The subsoil to a depth of 65 inches or more is dark red sandy clay.

This soil is low in natural fertility and organic matter content. Permeability is moderate. Available water capacity also is moderate. The root zone is deep and can be easily penetrated by plant roots.

Included with this soil in mapping are a few small areas of Faceville soils. These soils are in landscape positions similar to those of the Greenville soil.

The Greenville soil is only moderately suited to field crops, hay, and pasture because of the slope. The eroded landscape is a management concern. Returning crop residue to the soil helps to maintain tilth. Erosion is a severe hazard if the soil is cultivated and not protected. A conservation tillage system, a water management system, or a combination of both helps to control runoff and erosion.

The potential of this soil for woodland production is moderate. Loblolly pine, slash pine, and longleaf pine are the preferred trees to plant. Although no significant limitations hinder woodland use, applying good woodland management practices and harvesting on the contour help to keep erosion to a minimum.

This soil is well suited to most kinds of urban and recreational development. The clayey subsoil is a limitation affecting a few uses. The slope is a limitation affecting the irrigation of lawns and gardens.

The capability subclass is IVe, and the woodland ordination symbol is 8A.

HM—Herod and Muckalee loams, frequently flooded. This map unit consists of poorly drained, nearly level soils on flood plains. It is made up of areas of Herod loam and Muckalee loam that are closely associated in an irregular pattern. These soils are frequently flooded from late fall to midspring. Some mapped areas contain both soils, but some areas contain only one of the soils. Because of present and predicted land uses, the soils were not separated in mapping. Slopes are 0 to 2 percent.

A typical area is about 60 percent Herod soil, 35 percent Muckalee soil, and 5 percent included soils. In individual areas, however, the proportion of the soils may vary. Areas are 50 to 300 acres in size.

Typically, the surface layer of the Herod soil is dark grayish brown loam about 8 inches thick. The upper part of the underlying material, to a depth of about 18 inches, is gray sandy clay loam. The next part, to a depth of about 45 inches, is gray sandy clay loam that has olive yellow mottles. The lower part to a depth of 60 inches or more is gray sandy loam that has pale yellow mottles.

The Herod soil is low in natural fertility and moderate or high in organic matter content. Permeability is moderate. Available water capacity is high. The root zone is deep, but plants sensitive to wetness are affected by a seasonal high water table. From late fall to midspring, the soil is flooded or the water table is at a depth of 0.5 foot to 1.5 feet.

Typically, the surface layer of the Muckalee soil is grayish brown loam about 6 inches thick. The underlying material is mainly gray. The upper part, to a depth of about 12 inches, is sandy loam that has brown mottles. The next part, to a depth of about 20 inches, is loamy sand. Below this, to a depth of about 30 inches, is sandy loam that has yellowish brown mottles. The next 10 inches is sandy loam. The lower part of the underlying material to a depth of 60 inches or more is loamy sand.

The Muckalee soil is low in natural fertility and organic matter content. Permeability is moderate. Available water capacity also is moderate. The root zone is deep, but plants sensitive to wetness are affected by a seasonal high water table. From late fall to midspring, the soil is flooded or the water table is at a depth of 0.5 foot to 1.5 feet.

Included with these soils in mapping are a few areas of the moderately well drained Dogue soils and the poorly drained Rains soils. Dogue soils are on stream terraces. Rains soils are in slight depressions on flood plains, at the head of streams, and on stream terraces.

The Herod and Muckalee soils are wooded. The potential of these soils for woodland production is moderate. Loblolly pine, slash pine, sweetgum, American sycamore, and eastern cottonwood are the preferred trees to plant. The seasonal wetness limits the use of conventional equipment and increases the seedling mortality rate. The equipment limitation generally can be overcome by using modified equipment or by scheduling planting and harvesting activities for the drier periods. Careful site selection, stand improvement, and the use of adapted plants generally can increase the rate of seedling survival.

These soils are not suited to field crops because of the wetness and the flooding. They are moderately suited to hay and pasture. They are poorly suited to recreational development and are severely limited for urban uses. The flooding can be overcome only by installing and maintaining extensive flood-control structures.

The capability subclass is Vw. The woodland ordination symbol assigned to the Herod soil is 9W, and that assigned to the Muckalee soil is 7W.

LaB—Lakeland sand, 1 to 5 percent slopes. This excessively drained, nearly level and very gently sloping soil is on broad ridgetops and on hillsides in the uplands. Slopes are smooth and convex. Individual areas are 30 to 200 acres in size.

Typically, the surface layer is dark grayish brown sand about 5 inches thick. The upper part of the underlying material, to a depth of about 14 inches, is dark yellowish brown sand. The next part, to a depth of about 77 inches, is yellowish brown sand. The lower part to a depth of 99 inches or more is yellowish brown sand that has yellowish red mottles.

This soil is low in natural fertility and organic matter content. Permeability is rapid. Available water capacity is low. Tilth is good. The root zone is deep and can be easily penetrated by plant roots.

Included with this soil in mapping are a few small areas of Bonifay and Troup soils and sandy soils that are nearly devoid of silt and clay. These soils are in landscape positions similar to those of the Lakeland soil.

The Lakeland soil is poorly suited to field crops because of the low available water capacity. It is moderately suited to hay and pasture. It responds well to irrigation, which can substantially increase yields. Returning crop residue to the soil conserves moisture. Soil blowing is a hazard if the soil is not protected.

The potential of this soil for woodland production is moderate. Slash pine and loblolly pine are the preferred trees to plant. Because of the low available water capacity, seedling mortality is a management concern. Proper planting procedures, the use of adapted drought-hardy plants, and the control of competing

vegetation generally can increase the rate of seedling survival. Because of the sandiness of the soil, the use of conventional equipment generally is limited. Using special implements or scheduling planting and harvesting activities for the wetter periods can help to overcome the equipment limitation.

This soil is well suited to most urban uses. Seepage and the high content of sand are limitations affecting most kinds of sanitary facilities. The low available water capacity and the slope are limitations affecting the irrigation of lawns and gardens. Because it is too sandy, the soil is poorly suited to most kinds of recreational development.

The capability subclass is IVs, and the woodland ordination symbol is 9S.

LaD—Lakeland sand, 5 to 12 percent slopes. This excessively drained, gently sloping and strongly sloping soil is mainly on hillsides in the uplands. Slopes are undulating and convex. Individual areas are 10 to 50 acres in size.

Typically, the surface layer is brown sand about 7 inches thick. The underlying material extends to a depth of 99 inches or more. The upper part is strong brown sand, and the lower part is brownish yellow sand.

This soil is low in natural fertility and organic matter content. Permeability is rapid. Available water capacity is low. Tilth is good. The root zone is deep and can be easily penetrated by plant roots.

Included with this soil in mapping are a few small areas of Lucy and Troup soils. These soils are in landscape positions similar to those of the Lakeland soil.

The Lakeland soil is unsuited to field crops because of the slope. It is moderately suited to hay and pasture. Soil blowing is a hazard if this soil is not protected.

The potential of this soil for woodland production is moderate. Slash pine and loblolly pine are the preferred trees to plant. Because of the low available water capacity, seedling mortality is a management concern. Proper planting procedures, the use of adapted drought-hardy plants, and the control of competing vegetation generally can increase the rate of seedling survival. Because of the sandiness of the soil, the use of conventional equipment generally is limited. Using special implements or scheduling planting and harvesting activities for the wetter periods can help to overcome the equipment limitation.

This soil is only moderately suited to most urban uses because of the slope. Seepage is a limitation affecting most kinds of sanitary facilities. The low available water capacity is a limitation affecting the irrigation of lawns and gardens. Because it is too sandy, the soil is poorly suited to most kinds of recreational development.

The capability subclass is VIs, and the woodland ordination symbol is 9S.

LaE—Lakeland sand, 12 to 30 percent slopes. This excessively drained, strongly sloping and moderately steep soil is mainly on hillsides in the uplands. Slopes are convex. Individual areas are 10 to 50 acres in size.

Typically, the surface layer is dark brown sand about 2 inches thick. The underlying material extends to a depth of 99 inches or more. The upper part is yellowish brown sand, and the lower part is strong brown sand.

This soil is low in natural fertility and organic matter content. Permeability is rapid. Available water capacity is low. Tilth is good. The root zone is deep and can be easily penetrated by plant roots.

Included with this soil in mapping are a few small areas of Lucy and Troup soils. These soils are in landscape positions similar to those of the Lakeland soil.

The Lakeland soil is unsuited to field crops and hay because of the slope. It is moderately suited to pasture. Soil blowing is a hazard if this soil is not protected.

The potential of this soil for woodland production is moderate. Slash pine and loblolly pine are the preferred trees to plant. Because of the low available water capacity, seedling mortality is a management concern. Proper planting procedures, the use of adapted drought-hardy plants, and the control of competing vegetation generally can increase the rate of seedling survival. Because of the sandiness of the soil, the use of conventional equipment generally is limited. Using special implements or scheduling planting and harvesting activities for the wetter periods can help to overcome the equipment limitation.

This soil is poorly suited to most urban uses because of the slope. Seepage is a limitation affecting most kinds of sanitary facilities. The low available water capacity is a limitation affecting the irrigation of lawns and gardens. Because it is too sloping and too sandy, the soil is poorly suited to most kinds of recreational development.

The capability subclass is VIIs, and the woodland ordination symbol is 9S.

LmB—Lucy loamy sand, 1 to 5 percent slopes. This well drained, nearly level and very gently sloping soil is on broad ridgetops in the uplands. Slopes are smooth and convex. Individual areas are 10 to 75 acres in size.

Typically, the surface layer is brown loamy sand about 8 inches thick. The subsurface layer, to a depth of about 27 inches, is brownish yellow loamy sand. The

upper part of the subsoil, to a depth of about 29 inches, is yellowish red sandy loam. The next part, to a depth of about 36 inches, is yellowish red sandy clay loam. The lower part to a depth of 65 inches or more is red sandy clay loam.

This soil is low in natural fertility and organic matter content. Permeability is rapid in the surface layer and subsurface layer and is mainly moderate in the subsoil. Available water capacity is low. Tilth is good. The root zone is deep and can be easily penetrated by plant roots.

Included with this soil in mapping are a few small areas of Lakeland, Orangeburg, and Troup soils. These soils are in landscape positions similar to those of the Lucy soil.

The Lucy soil is only moderately suited to field crops, hay, and pasture because of the low available water capacity. Returning crop residue to the soil conserves moisture. The soil responds favorably to irrigation during dry periods, and high yields can be obtained. Soil blowing is a hazard if the soil is not protected.

The potential of this soil for woodland production is moderate. Slash pine, longleaf pine, and loblolly pine are the preferred trees to plant. Because of the low available water capacity, seedling mortality is a management concern. Proper planting procedures, the use of adapted drought-hardy plants, and the control of competing vegetation generally can increase the rate of seedling survival. Because of the sandiness of the soil, the use of conventional equipment generally is limited. Using special implements or scheduling planting and harvesting activities for the wetter periods can help to overcome the equipment limitation.

This soil is well suited to most urban uses. Seepage is a limitation affecting some kinds of sanitary facilities. The low available water capacity and the slope are limitations affecting the irrigation of lawns and gardens. Because it is too sandy, the soil is only moderately suited to recreational development.

The capability subclass is IIs, and the woodland ordination symbol is 8S.

LmC—Lucy loamy sand, 5 to 8 percent slopes. This well drained, gently sloping soil is mainly on hillsides in the uplands. Slopes are smooth and convex. Individual areas are 10 to 50 acres in size.

Typically, the surface layer is dark grayish brown loamy sand about 6 inches thick. The subsurface layer extends to a depth of about 25 inches. It is yellowish brown loamy sand. The subsoil to a depth of 65 inches or more is sandy clay loam. The upper part is yellowish red, and the lower part is red and has reddish yellow and brown mottles.

This soil is low in natural fertility and organic matter content. Permeability is rapid in the surface layer and subsurface layer and is mainly moderate in the subsoil. Available water capacity is low. Tilth is good. The root zone is deep and can be easily penetrated by plant roots.

Included with this soil in mapping are a few small areas of Lakeland, Orangeburg, and Troup soils. These soils are in landscape positions similar to those of the Lucy soil.

The Lucy soil is only moderately suited to field crops, hay, and pasture because of the low available water capacity. Returning crop residue to the soil conserves moisture. Soil blowing is a hazard if the soil is not protected.

The potential of this soil for woodland production is moderate. Slash pine, longleaf pine, and loblolly pine are the preferred trees to plant. Because of the low available water capacity, seedling mortality is a management concern. Proper planting procedures, the use of adapted drought-hardy plants, and the control of competing vegetation generally can increase the rate of seedling survival. Because of the sandiness of the soil, the use of conventional equipment generally is limited. Using special implements or scheduling planting and harvesting activities for the wetter periods can help to overcome the equipment limitation.

This soil is well suited to most urban uses. Seepage is a limitation affecting some kinds of sanitary facilities. The low available water capacity and the slope are limitations affecting the irrigation of lawns and gardens. Because it is too sandy, the soil is only moderately suited to recreational development.

The capability subclass is IIIs, and the woodland ordination symbol is 8S.

LmD—Lucy loamy sand, 8 to 12 percent slopes. This well drained, strongly sloping soil is on hillsides in the uplands. Slopes are convex. Individual areas are 10 to 50 acres in size.

Typically, the surface layer is dark brown loamy sand about 4 inches thick. The subsurface layer extends to a depth of about 25 inches. It is loamy sand. The upper part is dark brown, and the lower part is yellowish red. The subsoil extends to a depth of 65 inches or more. The upper part is red sandy loam, and the lower part is red sandy clay loam.

This soil is low in natural fertility and organic matter content. Permeability is rapid in the surface layer and subsurface layer and is mainly moderate in the subsoil. Available water capacity is low. Tilth is good. The root zone is deep and can be easily penetrated by plant roots.

Included with this soil in mapping are a few small areas of Orangeburg and Troup soils and soils that

have a compact and brittle subsoil. These soils are in landscape positions similar to those of the Lucy soil.

The Lucy soil is only moderately suited to field crops, hay, and pasture because of the slope. Returning crop residue to the soil conserves moisture. Soil blowing is a hazard if the soil is not protected.

The potential of this soil for woodland production is moderate. Slash pine, longleaf pine, and loblolly pine are the preferred trees to plant. Because of the low available water capacity, seedling mortality is a management concern. Proper planting procedures, the use of adapted drought-hardy plants, and the control of competing vegetation generally can increase the rate of seedling survival. Because of the sandiness of the soil, the use of conventional equipment generally is limited. Using special implements or scheduling planting and harvesting activities for the wetter periods can help to overcome the equipment limitation.

This soil is only moderately suited to most kinds of urban and recreational development because of the slope. Seepage is a limitation affecting some kinds of sanitary facilities. The low available water capacity is a limitation affecting the irrigation of lawns and gardens.

The capability subclass is IVs, and the woodland ordination symbol is 8S.

LmE—Lucy loamy sand, 12 to 30 percent slopes. This well drained, strongly sloping and moderately steep soil is on hillsides in the uplands. Slopes are convex. Individual areas are 10 to 40 acres in size.

Typically, the surface layer is dark brown loamy sand about 2 inches thick. The subsurface layer extends to a depth of about 26 inches. It is yellowish red loamy sand. The subsoil extends to a depth of 65 inches or more. The upper part is red sandy loam, and the lower part is red sandy clay loam.

This soil is low in natural fertility and organic matter content. Permeability is rapid in the surface layer and subsurface layer and is mainly moderate in the subsoil. Available water capacity is low. The root zone is deep and can be easily penetrated by plant roots.

Included with this soil in mapping are a few small areas of Orangeburg and Troup soils. These soils are in landscape positions similar to those of the Lucy soil.

The Lucy soil is unsuited to field crops and hay because of the slope. It is moderately suited to pasture. Soil blowing is a hazard if this soil is not protected.

The potential of this soil for woodland production is moderate. Longleaf pine and loblolly pine are the preferred trees to plant. Because of the low available water capacity, seedling mortality is a management concern. Proper planting procedures, the use of adapted drought-hardy plants, and the control of competing vegetation generally can increase the rate of seedling survival. Because of the sandiness of the soil, the use of conventional equipment generally is limited. Using special implements or scheduling planting and harvesting activities for the wetter periods can help to overcome the equipment limitation. Because of the slope, the hazard of erosion is a management concern. Applying good woodland management practices and harvesting on the contour, placing water bars in firebreaks, and properly establishing skid trails can help to control erosion. Harvesting during the drier periods and providing temporary cover during regeneration can help to keep erosion to a minimum.

This soil is poorly suited to most kinds of urban and recreational development because of the slope. The low available water capacity is a limitation affecting the irrigation of lawns and gardens.

The capability subclass is VIe, and the woodland ordination symbol is 8R.

Me—Meggett loam, frequently flooded. This poorly drained, nearly level soil is on flood plains. It is frequently flooded from winter to midspring. Slopes are 0 to 2 percent. Individual areas are 50 to 300 acres in size.

Typically, the surface layer is dark brown loam about 3 inches thick. The subsoil is clay. The upper part, to a depth of about 12 inches, is gray and has yellowish brown mottles. The next part, to a depth of about 30 inches, is gray and has brownish yellow mottles. The lower part to a depth of 62 inches or more is light brownish gray and has olive yellow mottles. Concretions of calcium carbonate are in the middle and lower parts of the subsoil.

This soil is low in natural fertility and moderate or high in organic matter content. Permeability is slow. Available water capacity is moderate. The root zone is deep, but plants sensitive to wetness are affected by a seasonal high water table. From late fall to midspring, the soil is flooded or the water table is at the surface or within a depth of 1 foot.

Included with this soil in mapping are a few small areas of Herod and Muckalee soils. These soils are in landscape positions similar to those of the Meggett soil.

The potential of the Meggett soil for woodland production is high. Slash pine and loblolly pine are the preferred trees to plant. The seasonal wetness limits the use of conventional equipment and increases the seedling mortality rate. The equipment limitation generally can be overcome by using modified equipment or by scheduling planting and harvesting activities for the drier periods. Preparing sites for planting, improving existing stands, and using adapted species generally can increase the rate of seedling survival.

This soil is unsuited to field crops, hay, and pasture because of the wetness and the flooding. It is poorly suited to recreational development and is severely limited for urban uses. The flooding can be overcome only by installing and maintaining extensive flood-control structures.

The capability subclass is VIw, and the woodland ordination symbol is 13W.

NaB—Nankin loamy sand, 2 to 5 percent slopes. This well drained, very gently sloping soil is on narrow ridgetops in the uplands. Slopes are undulating and convex. Individual areas are 5 to 30 acres in size.

Typically, the surface layer is dark grayish brown loamy sand about 5 inches thick. The subsurface layer is light yellowish brown loamy sand about 3 inches thick. The upper part of the subsoil, to a depth of about 22 inches, is strong brown sandy clay. The next part, to a depth of about 31 inches, is strong brown clay that has yellowish brown mottles. The lower part, to a depth of about 51 inches, is mottled strong brown, light gray, and red sandy clay loam. The substratum extends to a depth of 63 inches or more. It is yellowish red sandy clay loam that has brownish yellow and light gray mottles.

This soil is low in natural fertility and organic matter content. Permeability is moderately slow. Available water capacity is moderate. Tilth is good. The effective root zone is limited to a depth of about 4 feet. The substratum cannot be easily penetrated by plant roots.

Included with this soil in mapping are a few small areas of Cowarts, Dothan, and Tifton soils and soils that have wetness characteristics at a shallower depth than is common for the Nankin soil. These soils are in landscape positions similar to those of the Nankin soil.

The Nankin soil is well suited to field crops, hay, and pasture, but yields are somewhat limited because of the restricted effective rooting depth. Good tilth can be maintained by returning crop residue to the soil. Erosion is a moderate hazard if the soil is cultivated and not protected. A conservation tillage system, a water management system, or a combination of both helps to control runoff and erosion.

The potential of this soil for woodland production is moderate. Loblolly pine and slash pine are the preferred trees to plant. Although no significant limitations hinder woodland use, applying good woodland management practices and harvesting on the contour help to keep erosion to a minimum.

This soil is well suited to most urban uses. The moderately slow permeability in the subsoil is a limitation on sites for septic tank absorption fields. The slope is a limitation affecting the irrigation of lawns and gardens. Generally, these limitations can be overcome by special design and proper installation. The soil is only moderately suited to most kinds of recreational development because of the restricted permeability

The capability subclass is IIe, and the woodland ordination symbol is 8A.

NkB2—Nankin sandy loam, 2 to 5 percent slopes, eroded. This well drained, very gently sloping soil is on ridgetops and hillsides in the uplands. The surface layer is a mixture of the original surface soil and the upper part of the subsoil. Slopes contain galled spots, shallow gullies, or both. Individual areas of this soil are 10 to 30 acres in size.

Typically, the surface layer is brown sandy loam about 4 inches thick. The subsoil extends to a depth of about 55 inches. It is sandy clay. The upper part is yellowish brown, the next part is strong brown and has yellowish red and yellowish brown mottles, and the lower part is mottled yellowish brown, light gray, and yellowish red. The substratum extends to a depth of 63 inches or more. It is mottled red, strong brown, and gray sandy clay loam.

This soil is low in natural fertility and organic matter content. Permeability is moderately slow. Available water capacity is moderate. Runoff is rapid. The effective root zone is limited to a depth of about 4 feet. The substratum cannot be easily penetrated by plant roots.

Included with this soil in mapping are a few small areas of Cowarts and Tifton soils and soils that have wetness characteristics at a shallower depth than is common for the Nankin soil. These soils are in landscape positions similar to those of the Nankin soil.

The Nankin soil is well suited to field crops. It is only moderately suited to hay and pasture. The rapid runoff rate and the eroded landscape are management concerns. Returning crop residue to the soil helps to maintain tilth. Erosion is a severe hazard if the soil is cultivated and not protected. A conservation tillage system, a water management system, or a combination of both helps to control runoff and erosion.

The potential of this soil for woodland production is moderate. Loblolly pine and slash pine are the preferred trees to plant. Although no significant limitations hinder woodland use, applying good woodland management practices and harvesting on the contour help to keep erosion to a minimum.

This soil is well suited to most urban uses. The moderately slow permeability in the subsoil is a limitation on sites for septic tank absorption fields. The slope is a limitation affecting the irrigation of lawns and gardens. Generally, these limitations can be overcome by special design and proper installation. The soil is only moderately suited to most kinds of recreational

development because of the restricted permeability.

The capability subclass is IIIe, and the woodland ordination symbol is 8A.

NkC2—Nankin sandy loam, 5 to 8 percent slopes, eroded. This well drained, gently sloping soil is on hillsides in the uplands. The surface layer is a mixture of the original surface soil and the upper part of the subsoil. Slopes contain galled spots, shallow gullies, or both. Individual areas of this soil are 10 to 30 acres in size.

Typically, the surface layer is brown sandy loam about 4 inches thick. The subsoil extends to a depth of about 55 inches. The upper part is yellowish red sandy clay. The next part is yellowish red sandy clay that has pale brown and brownish yellow mottles. The lower part is mottled yellowish brown, light gray, and yellowish red clay. The substratum extends to a depth of 63 inches or more. It is mottled strong brown, red, and gray sandy clay loam.

This soil is low in natural fertility and organic matter content. Permeability is moderately slow. Available water capacity is moderate. Runoff is rapid. The effective root zone is limited to a depth of about 4 feet. The substratum cannot be easily penetrated by plant roots.

Included with this soil in mapping are small areas of Cowarts and Tifton soils and soils that have wetness characteristics at a shallower depth than is common for the Nankin soil. These soils are in landscape positions similar to those of the Nankin soil.

The Nankin soil is only moderately suited to field crops, hay, and pasture because of the slope. The rapid runoff rate and the eroded landscape are management concerns. Returning crop residue to the soil helps to maintain tilth. Erosion is a severe hazard if the soil is cultivated and not protected. A conservation tillage system, a water management system, or a combination of both helps to control runoff and erosion.

The potential of this soil for woodland production is moderate. Loblolly pine and slash pine are the preferred trees to plant. Although no significant limitations hinder woodland use, applying good woodland management practices and harvesting on the contour help to keep erosion to a minimum.

This soil is well suited to most urban uses. The moderately slow permeability in the subsoil is a limitation on sites for septic tank absorption fields. The slope is a limitation affecting the irrigation of lawns and gardens. Generally, these limitations can be overcome by special design and proper installation. The soil is only moderately suited to most kinds of recreational development because of the restricted permeability.

The capability subclass is IVe, and the woodland ordination symbol is 8A.

OcA—Ocilla loamy sand, 0 to 2 percent slopes. This somewhat poorly drained, nearly level soil generally is in broad, smooth, even areas on uplands and on stream terraces. Individual areas are 5 to 50 acres in size.

Typically, the surface layer is dark gray loamy sand about 8 inches thick. The subsurface layer extends to a depth of about 24 inches. It is grayish brown loamy sand that has light brownish gray mottles. The upper part of the subsoil, to a depth of about 28 inches, is brownish yellow sandy loam that has strong brown and light brownish gray mottles. The next part, to a depth of about 40 inches, is brownish yellow sandy clay loam that has yellowish red and gray mottles. The lower part to a depth of 65 inches or more is light gray sandy clay loam that has brownish yellow mottles.

This soil is low in natural fertility and low or moderate in organic matter content. Permeability is moderately rapid or rapid in the surface layer and subsurface layer and moderate in the subsoil. Available water capacity is low. Tilth is good. The root zone is deep, but plants sensitive to wetness are affected by a seasonal high water table. From late fall to midspring, the water table is at a depth of 1.0 foot to 2.5 feet.

Included with this soil in mapping are a few small areas of Clarendon and Rains soils. The moderately well drained Clarendon soils are in smooth areas on uplands. The poorly drained Rains soils are on stream terraces.

The Ocilla soil is only moderately suited to field crops, hay, and pasture because of the wetness.

The potential of this soil for woodland production is moderate. Loblolly pine and slash pine are the preferred trees to plant. The seasonal wetness limits the use of conventional equipment and increases the seedling mortality rate. The equipment limitation generally can be overcome by using modified or special implements or by scheduling planting and harvesting activities for the drier periods. Preparing sites for planting, improving existing stands, and planting adapted trees generally increase the rate of seedling survival.

This soil is poorly suited to most urban uses and is only moderately suited to recreational development because of the wetness. The wetness can be reduced by installing a drainage system. The low available water capacity is a limitation affecting the irrigation of lawns and gardens.

The capability subclass is IIIw, and the woodland ordination symbol is 8W.

OoA—Ocilla loamy sand, 0 to 2 percent slopes, occasionally flooded. This somewhat poorly drained, nearly level soil is on low stream terraces. It is occasionally flooded from late fall to midspring. Individual areas are 5 to 50 acres in size.

Typically, the surface layer is brown loamy sand about 8 inches thick. The subsurface layer extends tc a depth of about 24 inches. It is loamy sand. The upper part is brownish yellow, and the lower part is light yellowish brown and has light brownish gray mottles. The subsoil to a depth of 65 inches or more is dominantly sandy clay loam. The upper part is brownish yellow and has yellowish brown, yellowish red, and light brownish gray mottles. The lower part is gray and has yellowish brown mottles.

This soil is low in natural fertility and low or moderate in organic matter content. Permeability is moderately rapid or rapid in the surface layer and subsurface layer and moderate in the subsoil. Available water capacity is low. Tilth is good. The root zone is deep, but plants sensitive to wetness are affected by a seasonal high water table. From late fall to midspring, the soil is flooded or the water table is at a depth of 1.0 foot to 2.5 feet.

Included with this soil in mapping are a few small areas of Rains soils and soils that have a subsoil that is sandy in the lower part. These soils are in landscape positions similar to those of the Ocilla soil.

The Ocilla soil is poorly suited to field crops because of the flooding. It is moderately suited to hay and pasture. A drainage system generally can help to overcome the wetness. Installing and maintaining a drainage system can reduce the effects of flooding.

The potential of this soil for woodland production is moderate. Loblolly pine and slash pine are the preferred trees to plant. The seasonal wetness and the flooding limit the use of conventional equipment. The wetness also increases the seedling mortality rate. The equipment limitation and the flooding generally can be overcome by using modified or special implements or by scheduling planting and harvesting activities for the drier periods. Installing a drainage system and controlling competing vegetation generally increase the rate of seedling survival.

This soil is poorly suited to most kinds of urban and recreational development because of the flooding and the wetness. The flooding and the wetness are severe limitations on sites for urban development. They can only be overcome if major flood-control structures and extensive drainage systems are established and maintained. The low available water capacity is a limitation affecting the irrigation of lawns and gardens.

The capability subclass is IVw, and the woodland ordination symbol is 8W.

OrA—Orangeburg loamy sand, 0 to 2 percent slopes. This well drained, nearly level soil is on broad ridgetops in the uplands. Individual areas are 10 to 300 acres in size.

Typically, the surface layer is dark brown loamy sand about 6 inches thick. The subsoil extends to a depth of 64 inches or more. It is dominantly sandy clay loam. The upper part is yellowish red, and the lower part is red.

This soil is low in natural fertility and organic matter content. Permeability is moderate. Available water capacity also is moderate. Tilth is good. The root zone is deep and can be easily penetrated by plant roots.

Included with this soil in mapping are a few small areas of Faceville and Lucy soils. These soils are in landscape positions similar to those of the Orangeburg soil.

The Orangeburg soil is well suited to field crops, hay, and pasture. It responds favorably to irrigation during dry periods, and high yields can be obtained. A conservation tillage system conserves moisture and helps to maintain organic matter content.

The potential of this soil for woodland production is moderate. Loblolly pine and slash pine are the preferred trees to plant. No significant limitations affect woodland use or management.

This soil is well suited to urban uses and recreational development.

The capability class is I, and the woodland ordination symbol is 8A.

OrB—Orangeburg loamy sand, 2 to 5 percent slopes. This well drained, very gently sloping soil is on ridgetops and hillsides in the uplands. Slopes are smooth and convex. Individual areas are 10 to 200 acres in size.

Typically, the surface layer is dark brown loamy sand about 9 inches thick. The subsoil extends to a depth of 64 inches or more. The upper part, to a depth of about 17 inches, is strong brown sandy loam. The next part, to a depth of about 32 inches, is yellowish red sandy clay loam. The lower part is red sandy clay loam that has yellowish brown mottles.

This soil is low in natural fertility and organic matter content. Permeability is moderate. Available water capacity also is moderate. Tilth is good. The root zone is deep and can be easily penetrated by plant roots.

Included with this soil in mapping are a few small areas of Faceville and Lucy soils and eroded soils that have a surface layer of sandy loam. These soils are in landscape positions similar to those of the Orangeburg soil.

The Orangeburg soil is well suited to field crops, hay, and pasture. It responds favorably to irrigation during

dry periods, and high yields can be obtained. Erosion is a moderate hazard if this soil is cultivated and not protected. A conservation tillage system, a water management system, or a combination of both helps to control runoff and erosion.

The potential of this soil for woodland production is moderate. Loblolly pine and slash pine are the preferred trees to plant. Although no significant limitations hinder woodland use, applying good woodland management practices and harvesting on the contour help to keep erosion to a minimum.

This soil is well suited to most kinds of urban and recreational development. The slope is a limitation affecting the irrigation of lawns and gardens.

The capability subclass is IIe, and the woodland ordination symbol is 8A.

OsC2—Orangeburg sandy clay loam, 5 to 8 percent slopes, eroded. This well drained, gently sloping soil is on hillsides in the uplands. The surface layer is a mixture of the original surface soil and the upper part of the subsoil. Slopes contain galled spots, shallow gullies, or both. Individual areas of this soil are 5 to 30 acres in size.

Typically, the surface layer is dark brown sandy clay loam about 4 inches thick. The subsoil extends to a depth of 65 inches or more. It is dominantly sandy clay loam. The upper part is red, and the lower part is red and has brownish yellow mottles.

This soil is low in natural fertility and organic matter content. Permeability is moderate. Available water capacity also is moderate. The root zone is deep and can be easily penetrated by plant roots.

Included with this soil in mapping are a few small areas of Faceville soils. These soils are in landscape positions similar to those of the Orangeburg soil.

The Orangeburg soil is only moderately suited to most field crops because of the slope and the eroded landscape. It is well suited to hay and pasture. Returning crop residue to the soil helps to maintain tilth. Erosion is a severe hazard if the soil is cultivated and not protected. A conservation tillage system, a water management system, or a combination of both helps to control runoff and erosion.

The potential of this soil for woodland production is moderate. Loblolly pine and slash pine are the preferred trees to plant. Although no significant limitations hinder woodland use, applying good woodland management practices and harvesting on the contour help to keep erosion to a minimum.

This soil is well suited to most kinds of urban and recreational development. The slope is a limitation affecting the irrigation of lawns and gardens.

The capability subclass is IIIe, and the woodland ordination symbol is 8A.

OsD2—Orangeburg sandy clay loam, 8 to 15 percent slopes, eroded. This well drained, strongly sloping soil is on hillsides in the uplands. The surface layer is a mixture of the original surface soil and the upper part of the subsoil. Slopes contain galled spots, shallow gullies, or both. Individual areas of this soil are 5 to 50 acres in size.

Typically, the surface layer is dark brown sandy clay loam about 4 inches thick. The subsoil extends to a depth of 65 inches or more. It is red sandy clay loam. It has strong brown mottles in the lower part.

This soil is low in natural fertility and organic matter content. Permeability is moderate. Available water capacity also is moderate. The root zone is deep and can be easily penetrated by plant roots.

Included with this soil in mapping are a few small areas of Faceville and Lucy soils and soils that have a subsoil that extends to a depth of less than 60 inches. These soils are in landscape positions similar to those of the Orangeburg soil.

The Orangeburg soil is poorly suited to most field crops because of the slope and the eroded landscape. It is well suited to hay and pasture. Returning crop residue to the soil helps to maintain tilth. Erosion is a severe hazard if the soil is cultivated and not protected.

The potential of this soil for woodland production is moderate. Loblolly pine and slash pine are the preferred trees to plant. Although no significant limitations hinder woodland use, applying good woodland management practices and harvesting on the contour help to keep erosion to a minimum.

This soil is only moderately suited to most kinds of urban and recreational development because of the slope.

The capability subclass is IVe, and the woodland ordination symbol is 8A.

PuB—Pits-Udorthents complex, gently sloping. This map unit consists of pits and disturbed soil material at the contact between the Carolina and Georgia Sand Hills and the Southern Coastal Plain. The pits are deep and were formed by removing the soil material that overlies deposits of kaolin. The soil material is piled in high mounds or is leveled and smoothed. The pits and the disturbed soil material occur as areas so closely intermingled that they could not be separated at the scale used in mapping. Slopes range from 5 to 8 percent. Most mapped areas are 5 acres or more in size.

Pits make up about 55 percent of each mapped area.

Typically, they are about 15 to 75 feet deep. Some contain water.

Udorthents make up about 45 percent of each mapped area. Typically, the soil material is yellowish brown, strong brown, red, light gray, and white. It generally occurs as strata that are variable and are sandy, loamy, or clayey. These strata are low in natural fertility and organic matter content. They are strongly acid or very strongly acid.

Pits commonly are nearly barren. Those that contain water have been stocked with fish.

Udorthents in smoothed, leveled, and adequately prepared areas can support grasses and legumes if lime and fertilizer are applied. Generally, rye is planted in smoothed and shaped areas in the fall and winter to provide crop residue, which helps to control erosion and conserves moisture during the establishment of perennial vegetation. Some of the smoothed areas are used as pasture. Some areas have revegetated naturally to woodland. Other areas have been planted to loblolly pine.

No capability classification or woodland ordination symbol is assigned.

Ra—Rains sandy loam, occasionally flooded. This poorly drained, nearly level soil is in slight depressions on flood plains, at the head of streams, and on stream terraces. It is occasionally flooded from midfall to midspring. Slopes are 0 to 2 percent. Individual areas are 5 to 60 acres in size.

Typically, the surface layer is dark gray sandy loam about 7 inches thick. The subsurface layer extends to a depth of about 12 inches. It is gray loamy sand. The upper part of the subsoil, to a depth of about 21 inches, is gray sandy loam that has yellowish brown mottles. The lower part to a depth of 63 inches or more is gray sandy clay loam that has yellowish brown mottles.

This soil is low in natural fertility and moderate or high in organic matter content. Permeability is moderate. Available water capacity also is moderate. Tilth is good during the drier periods. The root zone is deep, but plants sensitive to wetness are affected by a seasonal high water table. From late fall to midspring, the water table is within a depth of 1 foot or the soil is flooded.

Included with this soil in mapping are a few small areas of the poorly drained Bibb, Grady, Rembert, and Osier soils and the moderately well drained Clarendon soils. Bibb and Osier soils are on flood plains. Clarendon soils are in smooth areas on uplands. Grady and Rembert soils are in depressions on uplands.

The Rains soil is poorly suited to field crops and hay because flooding is likely during the planting season. It is only moderately suited to pasture.

The potential of this soil for woodland production is high. Loblolly pine, slash pine, sweetgum, and American sycamore are the preferred trees to plant. The seasonal wetness limits the use of conventional equipment and increases the seedling mortality rate. The equipment limitation generally can be overcome by using modified or special equipment or by scheduling planting and harvesting activities for the drier periods. Preparing sites for planting, improving existing stands, and planting adapted trees generally can increase the rate of seedling survival.

This soil is poorly suited to recreational development because of the wetness and the flooding. The wetness and the flooding also are severe limitations on sites for urban development. The flooding can only be overcome by installing and maintaining extensive flood-control structures.

The capability subclass is IVw, and the woodland ordination symbol is 9W.

TfA—Tifton loamy sand, 0 to 2 percent slopes. This well drained, nearly level soil is on ridgetops in the uplands. Individual areas are 5 to 80 acres in size.

Typically, the surface layer is dark grayish brown loamy sand about 8 inches thick. The subsoil extends to a depth of 65 inches or more. It is dominantly sandy clay loam. The upper part is yellowish brown, and the lower part is mottled yellowish brown, yellowish red, strong brown, and light brownish gray. The content of plinthite is 5 percent or more below a depth of about 36 inches. Nodules of ironstone are mainly on the surface, in the surface layer, and in the upper part of the subsoil.

This soil is low in natural fertility and organic matter content. Permeability is moderate in the upper part of the subsoil and moderately slow in the lower part. Available water capacity is moderate. Tilth is good. The root zone is deep, but plants sensitive to wetness are affected by a seasonal high water table. In winter the water table is at a depth of 3.5 to 6.0 feet.

Included with this soil in mapping are a few small areas of Clarendon, Dothan, and Fuquay soils and soils that have a surface layer of gravelly loamy sand. These soils are in landscape positions similar to those of the Tifton soil.

The Tifton soil is well suited to field crops, hay, and pasture. It responds favorably to irrigation during dry periods, and high yields can be obtained. A conservation tillage system helps to maintain the organic matter content and conserves moisture.

The potential of this soil for woodland production is high. Loblolly pine and slash pine are the preferred trees to plant. No significant limitations hinder woodland use or management.

This soil is well suited to most kinds of urban and recreational development. The moderately slow permeability in the lower part of the subsoil is a limitation on sites for septic tank absorption fields. Generally, this limitation can be overcome by special design and proper installation.

The capability class is I, and the woodland ordination symbol is 9A.

TfB—Tifton loamy sand, 2 to 5 percent slopes. This well drained, very gently sloping soil is mainly on ridgetops in the uplands. Slopes generally are smooth and convex. Individual areas are 5 to 75 acres in size.

Typically, the surface layer is dark grayish brown loamy sand about 8 inches thick. The upper part of the subsoil, to a depth of about 32 inches, is yellowish brown sandy clay loam. The next part, to a depth of about 42 inches, is yellowish brown sandy clay loam that has yellowish red mottles. Below this, to a depth of about 49 inches, is yellowish brown sandy clay loam that has yellowish red and pale brown mottles. The lower part of the subsoil to a depth of 65 inches or more is mottled yellowish brown, red, strong brown, and light gray sandy clay loam. The content of plinthite is 5 percent or more below a depth of about 42 inches. Nodules of ironstone are mainly on the surface, in the surface layer, and in the upper part of the subsoil.

This soil is low in natural fertility and organic matter content. Permeability is moderate in the upper part of the subsoil and moderately slow in the lower part. Available water capacity is moderate. Tilth is good. The root zone is deep, but plants sensitive to wetness are affected by a seasonal high water table. In winter the water table is at a depth of 3.5 to 6.0 feet.

Included with this soil in mapping are a few small areas of Dothan, Fuquay, and Orangeburg soils and soils that have a surface layer of gravelly loamy sand. These soils are in landscape positions similar to those of the Tifton soil.

The Tifton soil is well suited to field crops (fig. 4), hay, and pasture. It responds favorably to irrigation during dry periods, and high yields can be obtained. Good tilth can be easily maintained by returning crop residue to the soil. Erosion is a moderate hazard if the soil is cultivated and not protected. A conservation tillage system, a water management system, or a combination of both helps to control runoff and erosion.

The potential of this soil for woodland production is high. Loblolly pine and slash pine are the preferred trees to plant. Although no significant limitations hinder woodland use, applying good woodland management practices and harvesting on the contour help to keep erosion to a minimum.

This soil is well suited to most kinds of urban and recreational development. The moderately slow permeability in the lower part of the subsoil is a limitation on sites for septic tank absorption fields. The slope is a limitation affecting the irrigation of lawns and gardens. Generally, these limitations can be overcome by special design and proper installation.

The capability subclass is IIe, and the woodland ordination symbol is 9A.

TnC2—Tifton sandy loam, 5 to 8 percent slopes, eroded. This well drained, gently sloping soil is mainly on hillsides in the uplands. The surface layer is a mixture of the original surface soil and the upper part of the subsoil. Slopes contain galled spots, shallow gullies, or both. Individual areas of this soil are 5 to 25 acres in size.

Typically, the surface layer is brown sandy loam about 5 inches thick. The subsoil extends to a depth of 65 inches or more. It is sandy clay loam. The upper part is yellowish brown, the next part is yellowish brown and has red mottles, and the lower part is mottled red, dark red, strong brown, yellowish brown, and light gray. The content of plinthite is 5 percent or more below a depth of about 28 inches. Nodules of ironstone are mainly on the surface, in the surface layer, and in the upper part of the subsoil.

This soil is low in natural fertility and low or moderate in organic matter content. Permeability is moderate in the upper part of the subsoil and moderately slow in the lower part. Available water capacity is moderate. Tilth is good. The root zone is deep, but plants sensitive to wetness are affected by a seasonal high water table. In winter the water table is at a depth of 3.5 to 6.0 feet.

Included with this soil in mapping are a few small areas of Cowarts soils and uneroded soils that have a surface layer of loamy sand. These soils are in landscape positions similar to those of the Tifton soil.

The Tifton soil is well suited to field crops, hay, and pasture. The eroded landscape is a management concern. Erosion is a severe hazard if this soil is cultivated and not protected. A conservation tillage system, a water management system, or a combination of both helps to control runoff and erosion.

The potential of this soil for woodland production is high. Loblolly pine and slash pine are the preferred trees to plant. Although no significant limitations hinder woodland use, applying good woodland management practices and harvesting on the contour help to keep erosion to a minimum.

This soil is well suited to most kinds of urban and recreational development. The moderately slow permeability in the lower part of the subsoil is a limitation on sites for septic tank absorption fields. The slope is a limitation affecting the irrigation of lawns and

Figure 4.—Cotton in an area of Tifton loamy sand, 2 to 5 percent slopes. Farming on the contour helps to control erosion.

gardens. Generally, these limitations can be overcome by special design and proper installation.

The capability subclass is IIIe, and the woodland ordination symbol is 9A.

TrB—Troup fine sand, 1 to 5 percent slopes. This well drained, nearly level and very gently sloping soil is on broad ridgetops in the uplands. Slopes generally are undulating and convex. Individual areas range from 30 to more than 300 acres in size.

Typically, the surface layer is brown fine sand about 7 inches thick. The subsurface layer is fine sand. The upper part, to a depth of about 36 inches, is strong brown. The lower part, to a depth of about 68 inches, is yellowish red. The upper part of the subsoil, to a depth of about 75 inches, is red sandy loam. The lower part to

a depth of 90 inches or more is red sandy clay loam.

This soil is low in natural fertility and organic matter content. Permeability is rapid in the surface layer and subsurface layer and moderate in the subsoil. Available water capacity is low. Tilth is good. The root zone is deep and can be easily penetrated by plant roots.

Included with this soil in mapping are a few small areas of Eustis, Lakeland, and Lucy soils and soils that have a seasonal high water table between depths of 40 and 60 inches. Eustis soils are somewhat excessively drained. Lakeland soils are excessively drained. The included soils are in landscape positions similar to those of the Troup soil.

The Troup soil is only moderately suited to field crops, hay, and pasture because of the low available water capacity. Returning crop residue to the soil conserves moisture. Yields of the crops commonly grown in the survey area can be substantially increased if the soil is irrigated. Soil blowing is a hazard if the soil is not protected.

The potential of this soil for woodland production is moderate. Loblolly pine and longleaf pine are the preferred trees to plant. Because of the low available water capacity, seedling mortality is a management concern. Proper planting procedures, the use of adapted drought-hardy plants, and the control of competing vegetation generally can increase the rate of seedling survival.

This soil is well suited to most urban uses. Seepage is a limitation affecting most kinds of sanitary facilities. The low available water capacity and the slope are limitations affecting the irrigation of lawns and gardens. Because it is too sandy, the soil is poorly suited to most kinds of recreational development.

The capability subclass is IIIs, and the woodland ordination symbol is 8S.

TrC—Troup fine sand, 5 to 8 percent slopes. This well drained, gently sloping soil is on narrow ridgetops and long, broad hillsides in the uplands. Slopes generally are undulating and convex. Individual areas range from 10 to more than 200 acres in size.

Typically, the surface layer is brown fine sand about 6 inches thick. The subsurface layer extends to a depth of about 49 inches. It is fine sand. The upper part is brownish yellow and has very pale brown mottles. The next part is reddish yellow. The lower part is yellowish red. The subsoil to a depth of 90 inches or more is yellowish red sandy clay loam.

This soil is low in natural fertility and organic matter content. Permeability is rapid in the surface layer and subsurface layer and moderate in the subsoil. Available water capacity is low. Tilth is good. The root zone is deep and can be easily penetrated by plant roots.

Included with this soil in mapping are a few small areas of Bonifay, Eustis, Lakeland, and Lucy soils. Eustis soils are somewhat excessively drained. Lakeland soils are excessively drained. The included soils are in landscape positions similar to those of the Troup soil.

The Troup soil is only moderately suited to field crops, hay, and pasture because of the low available water capacity. Returning crop residue to the soil conserves moisture. Soil blowing is a hazard if the soil is not protected.

The potential of this soil for woodland production is moderate. Loblolly pine and longleaf pine are the preferred trees to plant. Because of the low available water capacity, seedling mortality is a management concern. Proper planting procedures, the use of adapted drought-hardy plants, and the control of competing vegetation generally can increase the rate of seedling survival.

This soil is well suited to most urban uses. Seepage is a limitation affecting most kinds of sanitary facilities. The low available water capacity and the slope are limitations affecting the irrigation of lawns and gardens. Because it is too sandy, the soil is poorly suited to most kinds of recreational development.

The capability subclass is IVs, and the woodland ordination symbol is 8S.

TrD—Troup fine sand, 8 to 12 percent slopes. This well drained, strongly sloping soil is on hillsides in the uplands. Slopes are rolling and convex. Individual areas are 10 to 75 acres in size.

Typically, the surface layer is dark brown fine sand about 8 inches thick. The subsurface layer extends to a depth of about 66 inches. It is brownish yellow fine sand. The subsoil to a depth of 90 inches or more is yellowish red sandy loam that has strong brown mottles.

This soil is low in natural fertility and organic matter content. Permeability is rapid in the surface layer and subsurface layer and moderate in the subsoil. Available water capacity is low. Tilth is good. The root zone is deep and can be easily penetrated by plant roots.

Included with this soil in mapping are small areas of Lucy soils and the excessively drained Lakeland soils. These soils are in landscape positions similar to those of the Troup soil.

The Troup soil is unsuited to most field crops because of the low available water capacity and the slope. It is moderately suited to hay and pasture. Soil blowing is a hazard if this soil is not protected.

The potential of this soil for woodland production is moderate. Loblolly pine and longleaf pine are the preferred trees to plant. Because of the low available water capacity, seedling mortality is a management

concern. Proper planting procedures, the use of adapted drought-hardy plants, and the control of competing vegetation generally can increase the rate of seedling survival.

This soil is only moderately suited to most urban uses because of the slope. Seepage is a limitation affecting most kinds of sanitary facilities. The low available water capacity is a limitation affecting the irrigation of lawns and gardens. Because it is too sandy, the soil is poorly suited to recreational development.

The capability subclass is VIs, and the woodland ordination symbol is 8S.

TrE—Troup fine sand, 12 to 25 percent slopes. This well drained, strongly sloping and moderately steep soil is on hillsides in the uplands. Slopes are hilly and convex. Individual areas are 5 to 40 acres in size.

Typically, the surface layer is dark brown fine sand about 4 inches thick. The subsurface layer extends to a depth of about 70 inches. It is fine sand. The upper part is yellowish brown, the next part is reddish yellow, and the lower part is yellowish red and has light yellowish brown and strong brown mottles. The subsoil to a depth of 90 inches or more is red sandy loam.

This soil is low in natural fertility and organic matter content. Permeability is rapid in the surface layer and subsurface layer and moderate in the subsoil. Available water capacity is low. The root zone is deep and can be easily penetrated by plant roots.

Included with this soil in mapping are small areas of Lucy soils and the excessively drained Lakeland soils. These soils are in landscape positions similar to those of the Troup soil.

The Troup soil is unsuited to field crops and hay because of the low available water capacity and the slope. It is moderately suited to pasture. Soil blowing is a hazard if this soil is not protected.

The potential of this soil for woodland production is high. Slash pine is the preferred tree to plant. Because of the slope, the hazard of erosion is a management concern. Applying good woodland management practices and harvesting on the contour, placing water bars in firebreaks, and properly establishing skid trails can help to control erosion. Scheduling harvesting for the drier periods and providing temporary cover during regeneration can help to keep erosion to a minimum. Because of the low available water capacity, seedling mortality is a management concern. Proper planting procedures, the use of adapted drought-hardy plants, and the control of competing vegetation commonly can increase the rate of seedling survival. Because of the sandiness of the soil, the use of conventional equipment generally is limited. Using special implements or scheduling planting and harvesting activities for the wetter periods can help to overcome the equipment limitation.

This soil is poorly suited to most urban uses because of the slope. The low available water capacity is a limitation affecting the irrigation of lawns and gardens. Because it is too sloping and too sandy, the soil is poorly suited to most kinds of recreational development.

The capability subclass is VIIe, and the woodland ordination symbol is 8R.

Wa—Wahee fine sandy loam, frequently flooded. This somewhat poorly drained, nearly level soil is on low stream terraces along the larger streams. It is frequently flooded for brief periods from late fall to midspring. Individual areas are 10 to 65 acres in size.

Typically, the surface layer is brown fine sandy loam about 4 inches thick. The upper part of the subsoil, to a depth of about 13 inches, is yellowish brown sandy clay that has strong brown and light brownish gray mottles. The next part, to a depth of about 35 inches, is light gray clay that has brownish yellow and strong brown mottles. The lower part, to a depth of about 50 inches, is light gray sandy clay loam that has brownish yellow and strong brown mottles. The substratum to a depth of 65 inches or more is light gray and yellowish brown loamy sand.

This soil is low in natural fertility and low to high in organic matter content. Permeability is slow. Available water capacity is high. The root zone is deep, but plants sensitive to wetness are affected by a seasonal high water table. From late fall to early spring, the soil is flooded or the water table is at a depth of 0.5 foot to 1.5 feet.

Included with this soil in mapping are a few small areas of Bibb, Chastain, and Osier soils. These soils are poorly drained and are on flood plains.

The Wahee soil is poorly suited to field crops because of the wetness and the flooding. It is moderately suited to hay and pasture. A drainage system and protection from flooding are needed.

The potential of this soil for woodland production is generally high. Loblolly pine, slash pine, sweetgum, American sycamore, and water oak are the preferred trees to plant. The seasonal wetness limits the use of conventional equipment and increases the seedling mortality rate. The equipment limitation generally can be overcome by using modified or special equipment or by scheduling planting and harvesting activities for the drier periods. Installing a drainage system, controlling plant competition, and planting adapted species generally can increase the rate of seedling survival.

This soil is poorly suited to most kinds of recreational development because of the wetness and the flooding. The wetness and the flooding also are severe

limitations on sites for urban development. They can be overcome only by installing and maintaining extensive flood-control structures and drainage systems.

The capability subclass is IVw, and the woodland ordination symbol is 9W.

WeB—Wedowee sandy loam, 2 to 6 percent slopes. This well drained, very gently sloping and gently sloping soil is on ridgetops in the uplands. Slopes are smooth and convex. Individual areas are 5 to 90 acres in size.

Typically, the surface layer is dark brown sandy loam about 5 inches thick. The subsoil extends to a depth of about 35 inches. The upper part is strong brown sandy clay loam. The next part is strong brown clay. The lower part is strong brown clay loam that has brownish yellow mottles. The substratum extends to a depth of 62 inches or more. It is light gray, red, and reddish yellow sandy clay loam saprolite.

This soil is low in natural fertility and organic matter content. Permeability is moderate. Available water capacity also is moderate. Tilth is good. The root zone is deep and can be easily penetrated by plant roots.

Included with this soil in mapping are a few small areas of Cecil soils, soils that have a surface layer of loamy sand, and soils that have a surface layer of sandy clay loam. These soils are in landscape positions similar to those of the Wedowee soil.

The Wedowee soil is well suited to most field crops. It is only moderately suited to hay and pasture. Good tilth can be easily maintained by returning crop residue to the soil. Erosion is a moderate hazard if the soil is cultivated and not protected. A conservation tillage system, a water management system, or a combination of both helps to control runoff and erosion.

The potential of this soil for woodland production is moderate. Loblolly pine, yellow-poplar, and shortleaf pine are the preferred trees to plant. Although no significant limitations hinder woodland use, applying good woodland management practices and harvesting on the contour help to keep erosion to a minimum.

This soil is well suited to most kinds of urban and recreational development, but the moderate permeability is a limitation on sites for septic tank absorption fields. The slope is a limitation affecting the irrigation of lawns and gardens. Generally, these limitations can be overcome by special design and proper installation.

The capability subclass is IIe, and the woodland ordination symbol is 8A.

WeC—Wedowee sandy loam, 6 to 10 percent slopes. This well drained, gently sloping and strongly sloping soil is on ridgetops and on long hillsides in the uplands. Slopes are smooth and convex. Individual areas are 5 to 60 acres in size.

Typically, the surface layer is dark brown sandy loam about 5 inches thick. The upper part of the subsoil, to a depth of about 10 inches, is strong brown sandy clay loam. The next part, to a depth of about 26 inches, is strong brown clay. The lower part, to a depth of about 35 inches, is strong brown clay loam that has yellowish brown mottles. The substratum extends to a depth of 62 inches or more. It is brownish yellow saprolite. It crushes to sandy loam and has pale brown, white, and brown mottles.

This soil is low in natural fertility and organic matter content. Permeability is moderate. Available water capacity also is moderate. Tilth is good. The root zone is deep and can be easily penetrated by plant roots.

Included with this soil in mapping are a few small areas of Ailey and Cowarts soils, soils that have a surface layer of sandy clay loam, and soils that have a surface layer of loamy sand. These soils are in landscape positions similar to those of the Wedowee soil.

The Wedowee soil is only moderately suited to field crops, hay, and pasture because of the slope. Good tilth can be easily maintained by returning crop residue to the soil. Erosion is a severe hazard if the soil is cultivated and not protected. A conservation tillage system, a water management system, or a combination of both helps to control runoff and erosion.

The potential of this soil for woodland production is moderate. Loblolly pine, yellow-poplar, and shortleaf pine are the preferred trees to plant. Although no significant limitations hinder woodland use, applying good woodland management practices and harvesting on the contour help to keep erosion to a minimum.

This soil is only moderately suited to most kinds of urban and recreational development. The slope is the main limitation. The moderate permeability is a limitation on sites for septic tank absorption fields. Generally, these limitations can be overcome by special design and proper installation.

The capability subclass is IIIe, and the woodland ordination symbol is 8A.

WeD—Wedowee sandy loam, 10 to 15 percent slopes. This well drained, strongly sloping soil is on hillsides in the uplands. Slopes are smooth and convex. Individual areas are 10 to 45 acres in size.

Typically, the surface layer is dark grayish brown sandy loam about 5 inches thick. The subsoil extends to a depth of about 32 inches. The upper few inches is strong brown sandy clay loam. The lower part is strong brown sandy clay that has yellowish red and yellowish brown mottles. The substratum extends to a depth of 62

inches or more. It is mottled strong brown and yellowish brown saprolite that crushes to sandy loam.

This soil is low in natural fertility and organic matter content. Permeability is moderate. Available water capacity also is moderate. Tilth is good. The root zone is deep and can be easily penetrated by plant roots.

Included with this soil in mapping are small areas of Ailey and Cowarts soils. These soils are in landscape positions similar to those of the Wedowee soil.

The Wedowee soil is poorly suited to field crops because of the slope. It is moderately suited to hay and pasture. Erosion is a severe hazard if this soil is cultivated and not protected. Maintaining grasses and legumes in the cropping system helps to control runoff and erosion.

The potential of this soil for woodland production is moderate. Loblolly pine, yellow-poplar, and shortleaf pine are the preferred trees to plant. Although no significant limitations hinder woodland use, applying good woodland management practices and harvesting on the contour help to keep erosion to a minimum.

This soil is moderately suited to urban uses and recreational development. The slope is the main limitation. The moderate permeability in the subsoil is a limitation on sites for septic tank absorption fields. Generally, these limitations can be overcome by special design and proper installation.

The capability subclass is IVe, and the woodland ordination symbol is 8A.

WeE—Wedowee sandy loam, 15 to 25 percent slopes. This well drained, moderately steep soil is on hillsides in the uplands. Slopes are smooth and convex. Individual areas are 10 to 45 acres in size.

Typically, the surface layer is brown sandy loam about 5 inches thick. The subsoil extends to a depth of about 37 inches. The upper part is dominantly yellowish red sandy clay, and the lower part is strong brown sandy clay loam that has yellowish red and light brownish gray mottles. The substratum extends to a depth of 62 inches or more. It is strong brown sandy clay loam saprolite that has yellowish brown, yellowish red, and white mottles.

This soil is low in natural fertility and organic matter content. Permeability is moderate. Available water capacity also is moderate. Tilth is good. The root zone is deep and can be easily penetrated by plant roots.

Included with this soil in mapping are small areas of Ailey and Cowarts soils. These soils are in landscape positions similar to those of the Wedowee soil.

The Wedowee soil is unsuited to field crops and hay because of the slope. It is moderately suited to pasture.

The potential of this soil for woodland production is moderate. Loblolly pine, yellow-poplar, and shortleaf pine are the preferred trees to plant. Because of the slope, the main management concerns are the hazard of erosion and the equipment limitation. Applying good woodland management practices and harvesting on the contour, placing water bars in firebreaks, and properly establishing skid trails can minimize the hazard of erosion. Scheduling harvesting activities for the drier periods and providing temporary cover during regeneration can keep erosion to a minimum. The proper placement of access systems reduces the equipment limitation. The need for heavy machinery can be reduced if seedlings are planted by hand and winching is used to skid trees and logs during harvesting activities. Placing log decks near the top of the slope further reduces the equipment limitation.

This soil is poorly suited to urban uses and recreational development. The slope is the main limitation. Generally, it can be overcome by special design and proper installation.

The capability subclass is VIe, and the woodland ordination symbol is 8R.

Important Farmland

In Glascock and Jefferson Counties, some soils are important for producing food, feed, fiber, forage, and oilseed crops.

The map units, or soils, that make up *prime farmland* and *additional farmland of statewide importance,* and the acreage of each, are listed in table 5. This list does not constitute a recommendation for a particular land use. The location of each map unit is shown on the detailed soil maps at the back of this publication. The soil qualities that affect use and management are described in the section "Detailed Soil Map Units."

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. The acreage of high-quality farmland is limited, and the U.S. Department of Agriculture recognizes that government at local, State, and Federal levels, as well as individuals, must encourage and facilitate the wise use of our Nation's prime farmland.

Prime farmland soils, as defined by the U.S. Department of Agriculture, are soils that are best suited to food, feed, forage, fiber, and oilseed crops. Such soils have properties that favor the economic production of sustained high yields of crops. The soils need only to be treated and managed by acceptable farming methods. The moisture supply must be adequate, and the growing season must be sufficiently long. Prime farmland soils produce the highest yields with minimal expenditure of energy and economic resources. Farming these soils results in the least damage to the environment.

Prime farmland soils may presently be used as cropland, pasture, or woodland or for other purposes. They either are used for food or fiber or are available for these uses. Urban or built-up land, public land, and water areas cannot be considered prime farmland. Urban or built-up land is any contiguous unit of land 10 acres or more in size that is used for such purposes as housing, industrial, and commercial sites, sites for institutions or public buildings, small parks, golf courses, cemeteries, railroad yards, airports, sanitary landfills, sewage treatment plants, and water-control structures. Public land is land not available for farming in National forests, National parks, military reservations, and State parks.

Prime farmland soils usually receive an adequate and dependable supply of moisture from precipitation or irrigation. The temperature and growing season are favorable. The acidity or alkalinity level of the soils is acceptable. The soils have few or no rocks and are permeable to water and air. They are not excessively erodible or saturated with water for long periods and are not frequently flooded during the growing season. The slope ranges mainly from 0 to 8 percent.

About 159,075 acres in the survey area, or about 37 percent of the total acreage, meets the soil requirements for prime farmland. (See table 5.)

A recent trend in land use in some parts of the survey area has been the loss of some prime farmland to industrial and urban uses. The loss of prime farmland to other uses puts pressure on additional farmland of statewide importance.

Additional Farmland of Statewide Importance

In the survey area, 153,406 acres is additional farmland of statewide importance. (See table 5.) This farmland is an important part of the agricultural resource base in the survey area, but it does not meet the requirements for prime farmland. It is droughty, is seasonally wet, cannot be easily cultivated, and is more erodible and generally less productive than prime farmland. The slope generally is 8 percent or less.

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 suitabilities 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 for predicting soil behavior.

Information in this section can be used to plan the use and management of soils for crops and pasture; as 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 suitability 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 that is in harmony with nature.

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

James E. Dean, conservation agronomist, Soil Conservation Service, helped prepare this section.

General management needed for crops and pasture is suggested in this section. The crops or pasture plants best suited to the soils, including some not commonly grown in the survey area, are identified; the system of land capability classification used by the Soil Conservation Service is explained; and the estimated yields of the main crops and hay and pasture plants are listed for each soil.

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 Soil Conservation Service or the Cooperative Extension Service.

Controlling erosion, removing excess water, and maintaining good tilth and productivity are the most common needs in the management of farmland. Many of the soils in the survey area, such as Carnegie, Cowarts, Dothan, Faceville, Greenville, Nankin, Orangeburg, and Tifton soils, are susceptible to erosion. The degree of susceptibility depends on the frequency and intensity of rainfall, the steepness and length of the slopes, and the management of crop residue.

Loss of the surface layer through erosion is damaging for two reasons. First, productivity is reduced as the surface layer is lost and part of the subsoil is incorporated into the plow layer. Loss of the surface layer is especially damaging on soils that have a clayey subsoil, such as Carnegie and Nankin soils. Second, soil erosion on farmland results in the sedimentation of streams. Control of erosion minimizes this pollution and improves the quality of water for municipal and recreational uses and for fish and wildlife.

Erosion-control practices provide a protective surface cover, help to control runoff, and increase the rate of water infiltration. A cropping system that keeps a plant cover on the surface for extended periods helps to maintain the productive capacity of the soil. On livestock farms, which require pasture and hay, including grass forage crops in the cropping system helps to control erosion on sloping land and improves tilth for the following crop.

Using a system of conservation tillage that leaves adequate amounts of crop residue on the surface increases the rate of water infiltration and helps to control runoff and erosion. This practice can be applied

on most of the soils in the survey area. No-till planting of corn and soybeans is increasing. This method helps to control erosion on sloping land and can be adapted to most of the soils in the survey area.

Terraces and diversions reduce the length of slopes and help to control runoff. They also control concentrated waterflow. They are most practical on well drained, very gently sloping or gently sloping soils. Carnegie, Cowarts, Dothan, Faceville, Greenville, Nankin, Orangeburg, and Tifton soils are suitable for terraces in most places.

Contour farming is an effective erosion-control practice. It is most effective on soils that have relatively short, uniform slopes, including most areas of the very gently sloping or gently sloping Carnegie, Cowarts, Dothan, Faceville, Greenville, Nankin, Orangeburg, and Tifton soils.

Soil blowing is a management concern on the sandy Ailey, Blanton, Bonifay, Chipley, Eustis, Fuquay, Lakeland, Lucy, and Troup soils. Soil blowing can damage these soils and the young plants growing on them if the soils are dry and have little surface mulch. Maintaining the plant cover or surface mulch or keeping the surface rough through proper tillage minimizes soil blowing. Windbreaks help to control soil blowing in broad, open fields.

Information about the design of erosion-control measures for each kind of soil is available from local offices of the Soil Conservation Service.

Generally, excess water is the main limitation in areas of soils that are not well drained. The type of drainage system needed depends on the amount of water in the soil and the kind of crops grown. The design of both surface and subsurface drainage systems varies with the kind of soil. After the water is controlled, only practices that help to maintain productivity and good tilth are needed. Erosion is not a serious hazard on these soils.

Soil fertility is naturally low in most of the soils in the survey area, but the soils respond well to applications of fertilizer and to other good management practices. The poorly drained soils in depressions on uplands, on stream terraces, and on flood plains, such as Bibb, Chastain, Grady, Herod, Meggett, Muckalee, Osier, Rains, and Rembert soils, commonly contain more organic matter than most of the better drained soils in the higher areas.

Most of the soils in the survey area are naturally acid. If the soils used for field crops, hay, or pasture have never been limed, applications of ground limestone are needed to raise the pH level sufficiently for good growth of legumes and other crops that grow well on nearly neutral soils. Herod and Muckalee soils are naturally less acid than other soils in the survey area. Levels of available phosphorus and potash are naturally low in most of the soils. On all soils, additions of lime and fertilizer should be based on the results of soil tests, on the needs of the crop, and on the desired level of yields. The Cooperative Extension Service can help in determining the kinds and amounts of fertilizer and lime to apply.

Soil tilth is an important factor affecting the germination of seeds and the infiltration of water into the soil. Soils with good tilth are granular and porous. In this survey area, most of the soils used for crops have a surface layer of loamy sand or sandy loam that is low in content of organic matter. Tilth is generally good, except in eroded areas where the subsoil is exposed. Regular additions of crop residue, manure, and other organic material help to maintain tilth.

Fall plowing is not a good practice unless a cover crop is maintained. Most of the soils used for crops are subject to damaging erosion if they are plowed in the fall.

Many field crops are suited to the soils and climate in the survey area. Corn, soybeans, and peanuts are commonly grown. Cotton is increasing in importance. Wheat, rye, and oats are the common small grain crops. Improved bermudagrass and bahiagrass are common pasture grasses. Moderately well drained and well drained, loamy or clayey soils, such as Clarendon, Dothan, and Tifton soils, are well suited to these grasses. The excessively drained Lakeland soils, the somewhat excessively drained Eustis soils, the well drained Bonifay, Fuquay, Lucy, and Troup soils, and the moderately well drained Blanton and Chipley soils have a low available water capacity. They are best suited to improved bermudagrass. The somewhat poorly drained Ocilla soils, which are seasonally wet, are best suited to bahiagrass.

Specialty crops grown commercially in the survey area include vegetables and tree fruits. Soils that have good natural drainage and that warm up early in the spring are especially well suited to many vegetables and small fruits. Soils that have slopes of 8 percent or less, such as Carnegie, Cecil, Cowarts, Dothan, Faceville, Greenville, Nankin, Orangeburg, and Tifton soils, are suited to these crops. If irrigated, Ailey, Blanton, Bonifay, Eustis, Fuquay, Lakeland, Lucy, and Troup soils also are well suited to vegetables and small fruits. Crops can generally be planted and harvested earlier on these soils than on the other soils in the survey area. If excess water is removed, the somewhat poorly drained Ocilla soils and the moderately well drained Clarendon and Chipley soils are well suited to a wide range of vegetables.

Most of the well drained soils are suitable for orchards and nursery plants. Soils in the lower positions

on the landscape, where frost is frequent and air drainage is poor, generally are poorly suited to early vegetables, small fruits, and orchard crops. The most current information and suggestions for growing specialty crops can be obtained from local offices of the Cooperative Extension Service and the Soil Conservation Service.

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 table 6. 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 the table.

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 fertilizer needs of specific crops can be determined by soil tests. General recommendations for fertilizing field crops are available in a circular published in 1976 *(5)*.

For yields of irrigated crops, it is assumed that the irrigation system is adapted to the soils and to the crops grown, that good-quality irrigation water is uniformly applied as needed, and that tillage is kept to a minimum.

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 table 6 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 Soil Conservation Service or of the Cooperative Extension Service 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 use as cropland. 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 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 Roman 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 they 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 a 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.

There are no subclasses in class I because the soils in this class have few limitations. The soils in class V are subject to little or no erosion, but they have other limitations that restrict their use to pasture, woodland, wildlife habitat, or recreation. Class V contains only the subclasses indicated by *w, s,* or *c.*

The acreage of soils in each capability class and subclass is shown in table 7. The capability classification of each map unit is given in the section "Detailed Soil Map Units" and in the yields table.

Woodland Management and Productivity

Gary L. Tyre, forester, Soil Conservation Service, helped prepare this section.

Glascock and Jefferson Counties include a significant amount of commercial forest land. Commercial forest land makes up 64,365 acres in Glascock County and 187,730 acres in Jefferson County *(10).* About 29 percent of the forest land in Glascock County supports pines, 25 percent supports a pine-hardwood forest type, and 46 percent supports hardwoods. About 5,000 acres supports an elm-ash-cottonwood forest type. About 35 percent of the forest land in Jefferson County supports southern pine, 10 percent supports a mixed oak-pine forest type, and 55 percent supports oak-hickory or oak-gum-cypress forest types. These forest types were significant in the original woodland, where stands of mixed pine-hardwood and hardwood predominated.

The pattern of woodland ownership in the survey area is similar to that in most other counties in Georgia. In Glascock County about 46,000 acres, or 71 percent, of the woodland is privately owned. In Jefferson County about 143,200 acres, or 76 percent, of the woodland is privately owned. Generally, the most significant management problems and the greatest potential for increased growth are on private land.

The woodland in the survey area is on a variety of soils. The potential for woodland production is high or moderate. Most of the soils are on uplands; some are on flood plains.

Some of the highly productive soils on uplands are Carnegie, Cowarts, Dothan, and Tifton soils. Moderately productive soils on uplands include the sandy Ailey, Fuquay, Lucy, and Troup soils. The low available water capacity of these sandy soils influences the seedling mortality rate. The sandy texture can also limit the use of equipment.

Herod and Meggett soils are examples of highly productive soils on flood plains. Seasonal wetness on these soils, however, limits the use of conventional equipment and increases the seedling mortality rate.

Soils vary in their ability to produce trees. Available water capacity and depth of the root zone have major effects on tree growth. Fertility and texture also influence tree growth. Elevation, aspect, and climate determine the kinds of trees that can grow on a site. Elevation and aspect are of particular importance in mountainous areas.

This soil survey can be used by woodland managers planning ways to increase the productivity of forest land. Some soils respond better to applications of fertilizer than others, and some are more susceptible to landslides and erosion after roads are built and timber is harvested. Some soils require special reforestation efforts. In the section "Detailed Soil Map Units," the description of each map unit in the survey area suitable for timber includes information about productivity, limitations in harvesting timber, and management concerns in producing timber. Table 8 summarizes this forestry information and rates the soils for a number of factors to be considered in management. *Slight, moderate,* and *severe* are used to indicate the degree of the major soil limitations to be considered in forest management.

Table 8 lists the *ordination symbol* for each soil. The first part of the ordination symbol, a number, indicates the potential productivity of a soil for the indicator species in cubic meters per hectare. The larger the number, the greater the potential productivity. Potential productivity is based on the site index and the point where mean annual increment is the greatest.

The second part of the ordination symbol, a letter, indicates the major kind of soil limitation affecting use and management. The letter *R* indicates a soil that has a significant limitation because of steepness of slope. The letter *X* indicates that a soil has restrictions because of stones or rocks on the surface. The letter *W* indicates a soil in which excessive water, either seasonal or year-round, causes a significant limitation. The letter *T* indicates a soil that has, within the root zone, excessive alkalinity or acidity, sodium salts, or other toxic substances that limit the development of desirable trees. The letter *D* indicates a soil that has a limitation because of a restricted rooting depth, such as a shallow soil that is underlain by hard bedrock, a hardpan, or other layers that restrict roots. The letter *C* indicates a soil that has a limitation because of the kind or amount of clay in the upper part of the profile. The letter *S* indicates a dry, sandy soil. The letter *F* indicates a soil that has a large amount of coarse fragments. The letter *A* indicates a soil having no significant limitations that affect forest use and management. If a soil has more than one limitation, the priority is as follows: R, X, W, T, D, C, S, and F.

Ratings of the *erosion hazard* indicate the probability that damage may occur if site preparation or harvesting activities expose the soil. The risk is *slight* if no particular preventive measures are needed under ordinary conditions, *moderate* if erosion-control measures are needed for particular silvicultural activities, and *severe* if special precautions are needed to control erosion for most silvicultural activities. Ratings of moderate or severe indicate the need for construction of higher standard roads, additional maintenance of roads, additional care in planning harvesting and reforestation activities, or the use of special equipment.

Ratings of *equipment limitation* indicate limits on the use of forest management equipment, year-round or seasonal, because of such soil characteristics as slope, wetness, stoniness, or susceptibility of the surface layer to compaction. As slope gradient and length increase, it becomes more difficult to use wheeled equipment. On the steeper slopes, tracked equipment is needed. On the steepest slopes, even tracked equipment cannot be operated and more sophisticated systems are needed. The rating is *slight* if equipment use is restricted by soil wetness for less than 2 months and if special equipment is not needed. The rating is *moderate* if slopes are so steep that wheeled equipment cannot be operated safely across the slope, if wetness restricts equipment use for 2 to 6 months per year, if stoniness restricts the use of ground-based equipment, or if special equipment is needed to prevent or minimize compaction. The rating is *severe* if slopes are so steep that tracked equipment cannot be operated safely across the slope, if wetness restricts equipment use for more than 6 months per year, if stoniness restricts the use of ground-based equipment, or if special equipment is needed to prevent or minimize compaction. Ratings of moderate or severe indicate a need to choose the most suitable equipment and to carefully plan the timing of harvesting and other management activities.

Ratings of *seedling mortality* refer to the probability of the death of naturally occurring or properly planted seedlings of good stock in periods of normal rainfall, as influenced by kinds of soil or topographic features. Seedling mortality is caused primarily by too much water or too little water. The factors used in rating a soil for seedling mortality are texture of the surface layer, depth to a seasonal high water table and length of the period when the water table is high, rock fragments in the surface layer, rooting depth, and the aspect of the slope. The mortality rate generally is highest on soils that have a sandy or clayey surface layer. The risk is *slight* if, after site preparation, expected mortality is less than 25 percent; *moderate* if expected mortality is between 25 and 50 percent; and *severe* if expected mortality exceeds 50 percent. Ratings of moderate or severe indicate that it may be necessary to use containerized or larger than usual planting stock or to make special site preparations, such as bedding, furrowing, installing a surface drainage system, and providing artificial shade for seedlings. Reinforcement planting is often needed if the risk is moderate or severe.

The *potential productivity* of *common trees* on a soil is expressed as a *site index*. Common trees are listed in the order of their observed general occurrence. Generally, only two or three tree species dominate. The first tree listed for each soil is the indicator species for that soil. An indicator species is a tree that is common in the area and that is generally the most productive on a given soil.

The *site index* is determined by taking height measurements and determining the age of selected trees within stands of a given species. This index is the average height, in feet, that the trees attain in a specified number of years. This index applies to fully stocked, even-aged, unmanaged stands. The estimates of the productivity of the soils in this survey are based on published data *(3, 4, 7, 8, 9)*.

The *productivity class* represents an expected volume produced by the most important trees, expressed in cubic meters per hectare per year calculated at the age of culmination of mean annual increment.

Trees to plant are those that are used for reforestation or, under suitable conditions, natural regeneration. They are suited to the soils and can produce a commercial wood crop. The desired product, topographic position (such as a low, wet area), and personal preference are three factors among many that can influence the choice of trees for use in reforestation.

Recreation

The survey area provides many opportunities for recreation. The many farm ponds and the Ogeechee River provide opportunities for fishing. The flood plains near the creeks and rivers, depressional areas, and areas in low uplands provide an environment that is well suited to nature study, hunting, and similar activities. The well drained Dothan, Faceville, Greenville, Orangeburg, and Tifton soils generally are on ridgetops or hillsides, or both. These soils are well suited to campsites, picnic areas, parks, paths and trails, golf courses, and nature study areas. The soils on ridgetops can be leveled and smoothed for use as playgrounds. The small stones on the Carnegie and Tifton soils, however, are a limitation.

In table 9, the soils of the survey area are rated according to the 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 recreation use 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 table 9, 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 by a combination of these measures.

The information in table 9 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

Louis Justice, biologist, Soil Conservation Service, helped prepare this section.

Glascock and Jefferson Counties are largely rural, and their characteristic environment of cropland and woodland provides fair wildlife habitat. Fish and wildlife are important for recreation and contribute to the local economy.

About 58 percent of the survey area is forested, and nearly 40 percent is used for row crops or pasture. The cypress-gum-oak forest type of the lowland and river swamp hardwoods, the oak-gum-cypress community of the upland depressions, the gum-red bay-sweet bay community of Carolina bays and bay swamps, and the lowland evergreen hardwoods make up about 25 percent of the woodland. Pine, the mixed longleaf pine-dwarf oak community of the dry pine barrens, and loblolly pine-shortleaf pine-persimmon community of pine plantations make up 33 percent or more. The loblolly pine-slash pine-blackgum-oak community typical of the pine-deciduous hardwood stands and the oak-hickory plant community of the upland hardwoods make up about 42 percent.

The major plant species of importance to terrestrial wildlife include greenbrier, bush lespedeza, annual lespedeza, panic grass, croton, ragweed, partridge pea, paspalum, tickclover, and sumac. Overstory and understory woodland species of importance are sweetgum, blackgum, cypress, oak, hickory, holly, blackberry, hackberry, buttonbush, and maple. Domestic species of importance to wildlife include peanuts, corn, soybeans, bahiagrass, and small grain.

Areas of cropland and pasture interspersed with pine and hardwood forests provide habitat for white-tailed deer, turkey, mourning dove, raccoon, gray squirrel,

opossum, fox, and other wildlife. Rabbit and bobwhite quail populations are high in areas that have suitable food and cover. Unmanaged pasture, old fields, young pine plantations, and thinned stands of trees produce numerous native woody and herbaceous plants that provide food and cover for white-tailed deer, turkey, rabbit, fox, quail, and other wildlife.

Extensive clearing of woodland for row crops and the installation of irrigation systems affect fish and wildlife populations. The removal of crop residue from fields, the removal of hedgerows, and increased siltation are elements of this land use trend that adversely affect the habitat for fish and wildlife. Many of the chemicals used to increase agricultural production are harmful to small birds and animals. The most seriously affected game species is the quail.

Wildlife habitat can be improved by restoring hedgerows, windbreaks, field borders, and certain other areas in fields and pastures. Also, retaining mast-producing trees, such as oaks, can improve the ability of pine plantations to support wildlife.

Wetland habitat supports a variety of wildlife, including beaver, bobcat, raccoon, alligator, and waterfowl. The best available wetland habitat is in the areas of hardwoods on the flood plains along the Ogeechee River and along Big Creek, Brushy Creek, Deep Creek, Duhart Creek, Reedy Creek, Rocky Creek, Rocky Comfort Creek, and Williamson Swamp Creek. Wetland habitat also is along Carolina bays and numerous beaver ponds.

The survey area contains about 893 small ponds and about 149 miles of streams. Important sport fish include largemouth bass, bluegill, redear sunfish, crappie, and catfish. Because of the fragile habitat requirements of fish, special efforts are needed to control water pollution from both point and nonpoint sources.

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, and rye.

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, bush lespedeza, annual lespedeza, common bermudagrass, clover, and alfalfa.

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 bluestem, goldenrod, beggarweed, partridge pea, croton, and ragweed.

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, poplar, cherry, sweetgum, hawthorn, dogwood, hickory, blackberry, and blueberry. Examples of fruit-producing shrubs that are suitable for

planting on soils rated *good* are dogwood, 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 and red cedar.

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, salinity, slope, and surface stoniness. Examples of wetland plants are smartweed, wild millet, barnyardgrass, arrowleaf, bur-reed, rushes, and sedges.

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, and 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, and red fox.

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, and deer.

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, and beaver.

Engineering

John P. McEvoy, Jr., state conservation engineer, Soil Conservation Service, helped prepare this section.

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 recreation 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, a cemented pan, 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. Depth to a high water table, depth to bedrock or to a cemented pan, 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 or to a cemented pan, depth to 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, frost action 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, depth to a high water table, depth to bedrock or to a cemented pan, 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.

Table 12 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, depth to a high water table, depth to bedrock or to a cemented pan, and flooding affect absorption of the effluent. Large stones and bedrock or a cemented pan 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.

Table 12 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, depth to a high water table, depth to bedrock or to a cemented pan, 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, bedrock, and cemented pans 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 table 12 are based on soil properties, site features, and observed performance of the soils. Permeability, depth to bedrock or to a cemented pan, depth to 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 soil blowing.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over bedrock, a cemented pan, or the water table to permit revegetation. The soil material used as 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 table 13, 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 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 releases a variety of plant nutrients as it decomposes.

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 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.

Figure 5.—A pond in an area of Rains sandy loam, occasionally flooded. A properly constructed pond can enhance the beauty of the landscape.

Pond reservoir areas hold water behind a dam or embankment (fig. 5). 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, to a cemented pan, 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 or to a cemented pan, 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, or 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 or to a cemented pan affect the construction of terraces and diversions. A restricted rooting depth, a severe hazard of soil blowing 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 or to a cemented pan affect the construction of grassed waterways. A hazard of soil blowing, low available water capacity, restricted rooting depth, toxic substances such as salts or 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.

Estimates of soil properties are based on field examinations and on laboratory tests of samples of similar soils in nearby areas *(13)*. 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 *(2)* and the system adopted by the American Association of State Highway and Transportation Officials *(1)*.

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, SP-SM.

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.

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 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 nearby areas and on field examination.

The estimates of grain-size distribution, liquid limit, and plasticity index generally are 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 the shrink-swell potential, permeability, and 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 movement of water through the soil 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; and *high,* more than 6 percent. *Very high,* more than 9 percent, is sometimes used.

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 0.05 to 0.69.

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 table 16, 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 used to estimate runoff from precipitation. Soils not protected by vegetation are assigned to one of four groups. They are grouped according to the infiltration of water when the soils 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 permanent 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.

If a soil is assigned to two hydrologic groups in table 17, the first letter is for drained areas and the second is for undrained areas.

Flooding, the temporary inundation of an area, is caused by overflowing streams, by runoff from adjacent slopes, or by tides. Shallow water standing or flowing for short periods after rainfall or snowmelt is not considered flooding. Standing water in swamps and marshes or in a closed depression is considered ponding.

Table 17 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* means that flooding is unlikely but possible under unusual weather conditions (the chance of flooding is nearly 0 percent to 5 percent in any year). *Occasional* means that flooding occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year). *Frequent* means that flooding occurs often under normal weather conditions (the chance of flooding is more than 50 percent in any year). *Common* is used when the occasional and frequent classes are grouped for certain purposes. Duration is expressed as *very brief* (less than 2 days), *brief* (2 to 7 days), *long* (7 days to 1 month), and *very long* (more than 1 month). The time of year that floods are most likely to occur is 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 the evidence of a saturated zone, namely grayish colors or mottles in the soil. Indicated in table 17 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 table 17.

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. In places an upper, or perched, water table is separated from a lower one by a dry 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 analysis of several typical pedons in the survey area are given in tables 18, 19, and 20 and the results of chemical analysis in table 21. The data are for soils sampled at carefully selected sites. The pedons are typical of the series and are described in the section "Soil Series and Their Morphology." The results of analysis of several other pedons are available in the Georgia State Office of the Soil Conservation Service. Soil samples were analyzed by the Soil Survey Laboratory, Soil Conservation Service, Lincoln, Nebraska, and by the University of Georgia, College of Agriculture, Agricultural Experiment Stations.

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 *(15).*

Coarse materials—(2-75 mm fraction) weight estimates of the percentages of all material less than 75 mm (3B1).

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).

Water retained—pressure extraction, percentage of ovendry weight of less than 2 mm material; ⅓ or 1/10 bar (4B1), 15 bars (4B2).

Water-retention difference—between ⅓ bar and 15 bars for whole soil (4C1).

Bulk density—of less than 2 mm material, saran-coated clods field moist (4A1a), ⅓ bar (4A1d), ovendry (4A1h).

Organic carbon—wet combustion. Walkley-Black modified acid-dichromate, ferric sulfate titration (6A1c).

Total nitrogen—Kjeldahl (6B3).

Extractable cations—ammonium acetate pH 7.0, atomic absorption; calcium (6N2e), magnesium (6O2d), sodium (6P2b), potassium (6Q2b).

Extractable acidity—barium chloride-triethanolamine IV (6H5a).

Cation-exchange capacity—sum of cations (5A3a).

Effective cation-exchange capacity—sum extractable cations plus aluminum (5A3b).

Base saturation—ammonium acetate, pH 7.0 (5C1).

Base saturation—sum of cations, TEA, pH 8.2 (5C3).

Reaction (pH)—1:1 water dilution (8C1f).

Reaction (pH)—potassium chloride (8C1g).

Reaction (pH)—calcium chloride (8C1f).

Aluminum—potassium chloride extraction (6G9).
Aluminum saturation—bases plus aluminum (5G1).
Sesquioxides—dithionate-citrate extract; iron (6C2b), aluminum (6G7a), manganese (6D2a).
Ratio to total clay—cation-exchange capacity and 15-bar water retention (8D1).
Mineralogy—x-ray diffraction; thin film on glass (7A2i).
Mineralogy—DTA.

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories *(14)*. 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 22 shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

ORDER. Eleven 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 Entisol.

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 Aquent (*Aqu,* meaning water, plus *ent,* from Entisol).

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; 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 Fluvaquents (*Fluv,* meaning flood plain, plus *aquent,* the suborder of the Entisols that has an aquic moisture regime).

SUBGROUP. Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic 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 known kind of soil. 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 Fluvaquents.

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 class, mineral content, temperature regime, depth of the root zone, consistence, moisture equivalent, slope, and permanent cracks. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is fine, mixed, acid, thermic Typic Fluvaquents.

SERIES. The series consists of soils that have similar horizons in their profile. The horizons are similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile. The texture of the surface layer or of the underlying material can differ within a series.

Soil Series and Their Morphology

In this section, each soil series recognized in the survey area is described. The descriptions are arranged in alphabetic order.

Characteristics of the soil and the material in which it formed are identified for each series. The soil is compared with similar soils and with nearby soils of other 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" *(12)*. Many of the technical terms used in the descriptions are defined in "Soil Taxonomy" *(14)*. Unless otherwise stated, 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."

Ailey Series

The Ailey series consists of well drained soils that formed in sandy and loamy marine sediments on uplands. Permeability is rapid in the sandy epipedon,

moderate in the upper part of the subsoil, and slow in the lower part of the subsoil and in the substratum. These soils are in the Carolina and Georgia Sand Hills and on the Southern Coastal Plain. Slopes range from 1 to 25 percent. The soils are loamy, siliceous, thermic Arenic Kanhapludults.

Ailey soils are geographically associated with Bonifay, Cowarts, and Troup soils. These associated soils are in landscape positions similar to those of the Ailey soils. Bonifay and Troup soils are grossarenic and do not have dense properties in the subsoil. Bonifay soils contain 5 percent or more plinthite in the subsoil. Cowarts soils have an epipedon less than 20 inches thick. They are fine-loamy.

Typical pedon of Ailey sand, 1 to 5 percent slopes, 4.2 miles northwest on Georgia Highway 16 from the junction with Georgia Highway 296; 1.4 miles west on Hobbs Road; 150 feet south of road; in Glascock County:

A—0 to 4 inches; dark grayish brown (10YR 4/2) sand; weak fine granular structure; very friable; many fine and medium roots; very strongly acid; clear wavy boundary.

E1—4 to 9 inches; yellowish brown (10YR 5/4) sand; weak fine granular structure; very friable; few fine and common medium roots; strongly acid; clear wavy boundary.

E2—9 to 25 inches; yellowish brown (10YR 5/8) sand; weak fine granular structure; very friable; common medium and few fine roots; strongly acid; clear wavy boundary.

Bt1—25 to 30 inches; strong brown (7.5YR 5/8) sandy loam; weak fine subangular blocky structure; very friable; common fine and medium roots; very strongly acid; gradual wavy boundary.

Bt2—30 to 40 inches; yellowish red (5YR 5/8) sandy clay loam; few medium prominent red (2.5YR 5/8) mottles; moderate medium subangular blocky structure; friable; common fine and medium roots; common distinct clay films on faces of peds; about 2 percent quartz pebbles; very strongly acid; gradual wavy boundary.

2Btx—40 to 60 inches; yellowish brown (10YR 5/4) coarse sandy loam; common medium prominent strong brown (7.5YR 5/6) and red (2.5YR 5/8) and common medium faint yellowish brown (10YR 5/8) mottles; moderate thick platy structure; firm; brittle in about 35 percent of the horizon, by volume; few fine roots in cracks; common distinct clay films on faces of peds; very strongly acid; clear wavy boundary.

3Cd—60 to 80 inches; red (2.5YR 5/8) sandy clay loam; common coarse prominent strong brown (7.5YR 5/6) mottles; massive; firm; common fine flakes of mica; very strongly acid.

The thickness of the solum ranges from 44 to more than 60 inches. Reaction is strongly acid or very strongly acid throughout the profile, except for the surface layer in areas that have been limed.

The sandy epipedon is 24 to 34 inches thick. The A horizon is 4 to 9 inches thick. It has hue of 10YR, value of 3 to 5, and chroma of 1 or 2. The E horizon is 16 to 31 inches thick. It has hue of 10YR, value of 5 or 6, and chroma of 3 to 8.

The Bt horizon has hue of 10YR to 5YR, value of 5, and chroma of 6 to 8. It is sandy loam or sandy clay loam.

The Btx horizon has hue of 10YR to 5YR, value of 5, and chroma of 4 to 8. In some pedons it has strong brown, red, light gray, and yellowish brown mottles. By volume, 10 to 40 percent of the horizon is brittle.

The C horizon has matrix colors and mottles in shades of brown, red, or yellow, or it is mottled throughout in shades of brown, red, or yellow and has no dominant matrix colors. It is massive and firm if moist and hard if dry. It is sandy loam or sandy clay loam.

Arundel Series

The Arundel series consists of well drained soils that formed mainly in clayey marine sediments on uplands. Permeability is very slow. These soils are on the Southern Coastal Plain. Slopes range from 2 to 5 percent. The soils are clayey, montmorillonitic, thermic Typic Hapludults.

The Arundel soils in this survey area are taxadjuncts because they are underlain by a shalelike C horizon rather than by bedrock of sandstone, siltstone, or buhrstone. This difference, however, does not significantly affect the use or behavior of the soils.

Arundel soils are geographically associated with Carnegie, Cowarts, and Nankin soils. These associated soils are in landscape positions similar to those of the Arundel soils. Carnegie soils have a subsoil that contains 5 percent or more plinthite below a depth of about 18 inches. Cowarts soils are fine-loamy. Nankin soils have kaolinitic mineralogy.

Typical pedon of Arundel loamy sand, 2 to 5 percent slopes, in Wrens; 0.35 mile south on Young Street from the intersection with Broad Street; 50 feet west of Young Street; in Jefferson County:

Ap—0 to 6 inches; brown (10YR 4/3) loamy sand; weak fine granular structure; very friable; many fine roots; strongly acid; abrupt smooth boundary.

Bt1—6 to 10 inches; yellowish brown (10YR 5/6) clay; moderate fine subangular blocky structure; firm; common fine roots; few faint clay films on faces of peds; very strongly acid; clear smooth boundary.
Bt2—10 to 14 inches; yellowish brown (10YR 5/6) clay; strong fine subangular blocky structure; firm; few fine roots; common prominent clay films on faces of peds; very strongly acid; gradual wavy boundary.
Bt3—14 to 30 inches; mottled yellowish brown (10YR 5/6), red (2.5YR 4/8), and light brownish gray (10YR 6/2) clay; strong fine angular blocky structure; firm; many prominent clay films on faces of peds; very strongly acid; gradual smooth boundary.
Bt4—30 to 38 inches; light gray (10YR 7/2) clay; many fine prominent red (10YR 4/6) and few fine prominent strong brown (7.5YR 5/6) mottles; strong fine angular blocky structure; firm; many prominent clay films on faces of peds; very strongly acid; gradual smooth boundary.
Cr—38 to 60 inches; white (2.5Y 8/2) and pale yellow (2.5Y 8/4) fuller's earth that breaks into shalelike fragments having a very high content of montmorillonite and varying in size and in degree of hardness.

The thickness of the solum and the depth to fuller's earth range from 20 to 40 inches. Reaction is very strongly acid or strongly acid throughout the profile, except for the surface layer in areas that have been limed.

The A horizon is 3 to 6 inches thick. It has hue of 10YR, value of 3 to 5, and chroma of 2 or 3.

The upper part of the Bt horizon has hue of 10YR to 5YR and value and chroma of 4 to 6. It is sandy clay or clay. The middle part of this horizon has hue of 10YR to 5YR, value of 5 or 6, and chroma of 4 to 6. It generally has few to many mottles, but in some pedons it is mottled throughout and has no dominant matrix colors. The lower part of the Bt horizon has hue of 10YR or 2.5Y, value of 6 or 7, and chroma of 1 or 2. In some pedons it is mottled, and in other pedons it is mottled throughout and has no dominant matrix colors.

The Cr horizon has hue of 10YR or 2.5Y, value of 6 to 8, and chroma of 1 to 4, or it is neutral in hue and has value of 6 or 7. The soil material ranges from very hard to soft. It breaks into shalelike fragments ranging from soft clay to rocklike material.

Bibb Series

The Bibb series consists of poorly drained soils that formed in loamy sediments on flood plains. Permeability is moderate. These soils are mainly on the Southern Coastal Plain. Slopes are 0 to 2 percent. The soils are coarse-loamy, siliceous, acid, thermic Typic Fluvaquents.

Bibb soils are geographically associated with Ocilla, Osier, and Rains soils. The somewhat poorly drained Ocilla soils are in broad, smooth, even areas on uplands and on stream terraces. They have an arenic epipedon and are loamy. Osier soils are in landscape positions similar to those of the Bibb soils. They are mainly sandy throughout. Rains soils are in slight depressions on flood plains, at the head of streams, and on stream terraces. They are fine-loamy.

Typical pedon of Bibb loam, in an area of Bibb and Osier soils, frequently flooded; 1.1 miles northeast on Arnington Street in Bartow to Coal Creek from the junction with Georgia Highway 78; 450 feet northwest; in Jefferson County:

A—0 to 6 inches; very dark grayish brown (10YR 3/2) loam; weak fine granular structure; very friable; many very fine and fine roots; few very fine and fine pores; strongly acid; clear wavy boundary.
Ag—6 to 12 inches; dark gray (10YR 4/1) loam; weak fine granular structure; very friable; few very fine and fine roots; strongly acid; clear wavy boundary.
Cg1—12 to 24 inches; dark gray (10YR 4/1) sandy loam; few fine prominent yellowish brown (10YR 5/6) mottles; massive; friable; few fine roots; few medium pores; strongly acid; gradual wavy boundary.
Cg2—24 to 46 inches; gray (10YR 5/1) sandy loam; common medium prominent strong brown (7.5YR 5/6) mottles; massive; friable; few fine and medium roots; very strongly acid; gradual wavy boundary.
Cg3—46 to 62 inches; light gray (10YR 6/1) sandy loam; common medium and coarse prominent strong brown (7.5YR 5/6) mottles; massive; friable; few fine roots; strongly acid.

Thickness of the sediments is 60 inches or more. Reaction is strongly acid or very strongly acid throughout the profile, except for the surface layer in areas that have been limed.

The A horizon is 5 to 20 inches thick. The Ap horizon, if it occurs, has hue of 10YR, value of 2 to 4, and chroma of 1 or 2. The Ag horizon has hue of 10YR, value of 4 to 7, and chroma of 1 or 2. In some pedons it has mottles with hue of 7.5YR or 10YR, value of 5 to 8, and chroma of 3 to 6. The Ag horizon is loam or sandy loam.

The Cg horizon has hue of 10YR, value of 4 to 7, and chroma of 1 or 2. It has few to many fine or medium mottles in shades of brown and yellow. It is sandy loam or loam. In some pedons it has thin strata of sand or loamy sand.

Blanton Series

The Blanton series consists of moderately well drained soils that formed in sandy and loamy marine sediments on uplands. Permeability is rapid in the sandy epipedon and is mainly moderate below the epipedon. These soils are on the Southern Coastal Plain. Slopes range from 0 to 5 percent. The soils are loamy, siliceous, thermic Grossarenic Paleudults.

Blanton soils are geographically associated with Bonifay, Fuquay, Lakeland, and Ocilla soils. The well drained Bonifay and Fuquay soils and the excessively drained Lakeland soils are in landscape positions similar to those of the Blanton soils. Bonifay and Fuquay soils contain 5 percent or more plinthite in the subsoil. Also, Fuquay soils have an arenic epipedon. Lakeland soils are sandy throughout. The somewhat poorly drained Ocilla soils are in broad, smooth, even areas on uplands and on stream terraces. They have an arenic epipedon.

Typical pedon of Blanton sand, 0 to 5 percent slopes, 2.7 miles northwest on Georgia Highway 171 from the junction with U.S. Highway 221 southwest of Louisville; 1.6 miles northeast on a field road; 100 feet west of field road; in Jefferson County:

A—0 to 10 inches; grayish brown (10YR 5/2) sand; weak fine granular structure; very friable; common very fine and fine roots; very strongly acid; clear smooth boundary.

E1—10 to 22 inches; light yellowish brown (10YR 6/4) sand; weak fine granular structure; very friable; few very fine roots; pockets of uncoated sand grains; very strongly acid; gradual wavy boundary.

E2—22 to 48 inches; brownish yellow (10YR 6/6) sand; common medium faint pale brown (10YR 6/3) mottles; single grained; loose; few very fine roots; pockets of uncoated sand grains; very strongly acid; clear wavy boundary.

Bt1—48 to 55 inches; brownish yellow (10YR 6/8) sandy loam; weak fine subangular blocky structure; very friable; few fine pockets of uncoated sand grains; strongly acid; clear wavy boundary.

Bt2—55 to 65 inches; yellowish brown (10YR 5/6) sandy clay loam; common medium distinct brownish gray (10YR 6/2) and few medium prominent yellowish red (5YR 5/8) and red (2.5YR 4/8) mottles; moderate medium subangular blocky structure; friable; sand grains coated and bridged with clay; strongly acid; gradual wavy boundary.

Bt3—65 to 75 inches; mottled gray (10YR 6/1), red (2.5YR 4/8), yellowish red (5YR 5/8), and yellowish brown (10YR 5/8) sandy clay loam; moderate medium subangular blocky structure; friable; about 2 percent plinthite; strongly acid.

The thickness of the solum is 90 inches or more. Reaction is strongly acid or very strongly acid throughout the profile, except for the surface layer in areas that have been limed.

The sandy epipedon is 46 to 65 inches thick. The A horizon is 7 to 10 inches thick. It has hue of 10YR, value of 3, and chroma of 2 or value of 4 to 6 and chroma of 1 to 3. The E horizon is 36 to 57 inches thick. It has hue of 10YR, value of 5 to 8, and chroma of 3 to 6 or hue of 2.5YR, value of 5 to 8, and chroma of 2 to 6.

The Bt1 horizon has hue of 10YR, value of 5 to 7, and chroma of 6 to 8. The Bt2 horizon has hue of 10YR, value of 5 to 7, and chroma of 3 to 6 and is mottled gray, yellowish brown, strong brown, yellowish red, and red. The Bt3 horizon is mottled gray, yellowish red, red, and yellowish brown. It is sandy loam or sandy clay loam. In some pedons the Bt horizon contains as much as 8 to 10 percent plinthite below a depth of about 60 inches.

Bonifay Series

The Bonifay series consists of well drained soils that formed in sandy and loamy marine sediments on uplands. Permeability is rapid in the sandy epipedon, moderate in the upper part of the subsoil, and moderately slow in the lower part of the subsoil. These soils are in the Carolina and Georgia Sand Hills and on the Southern Coastal Plain. Slopes range from 1 to 8 percent. The soils are loamy, siliceous, thermic Grossarenic Plinthic Paleudults.

Bonifay soils are geographically associated with Fuquay, Lakeland, and Troup soils. These associated soils are in landscape positions similar to those of the Bonifay soils. Fuquay soils have an arenic epipedon. They contain 5 percent or more plinthite. The excessively drained Lakeland soils are sandy throughout. They do not contain plinthite. Troup soils contain less than 5 percent plinthite within a depth of 60 inches.

Typical pedon of Bonifay fine sand, 1 to 5 percent slopes, 2.1 miles south on U.S. Highway 221 from Brier Creek; 0.3 mile east on an unpaved road; 200 feet north of the road; in Jefferson County:

Ap—0 to 7 inches; dark grayish brown (10YR 4/2) fine sand; weak fine granular structure; very friable; common very fine and fine roots; very strongly acid; clear smooth boundary.

E1—7 to 47 inches; light yellowish brown (10YR 6/4)

fine sand; single grained; loose; few very fine roots; very strongly acid; gradual wavy boundary.
E2—47 to 54 inches; brownish yellow (10YR 6/6) fine sand; single grained; loose; few very fine roots; strongly acid; gradual wavy boundary.
Btv1—54 to 60 inches; yellowish brown (10YR 5/6) sandy clay loam; common prominent red (2.5YR 4/8) mottles; moderate medium subangular blocky structure; friable; about 10 percent nodular plinthite; very strongly acid; gradual wavy boundary.
Btv2—60 to 70 inches; strong brown (7.5YR 5/6) sandy clay loam; common medium distinct yellowish brown (10YR 5/6) and common medium prominent pale yellow (2.5Y 7/4) mottles; moderate medium subangular blocky structure; friable; about 8 percent nodular plinthite; very strongly acid.

The thickness of the solum is 70 inches or more. Reaction is strongly acid or very strongly acid throughout the profile, except for the surface layer in areas that have been limed. The depth to horizons containing 5 percent or more plinthite is 41 to 60 inches.

The sandy epipedon is 40 to 56 inches thick. The Ap horizon is 3 to 7 inches thick. It has hue of 10YR, value of 4 or 5, and chroma of 2 or 3. The E horizon is 37 to 52 inches thick. It has hue of 10YR, value of 5 or 6, and chroma of 3 to 6.

The Btv horizon has hue of 10YR or 7.5YR, value of 5 or 6, and chroma of 6 to 8. It has few or common mottles in shades of yellow, brown, and red. It is sandy loam or sandy clay loam. In some pedons the lower part of this horizon has many mottles or is reticulately mottled in shades of yellow, brown, and red.

Carnegie Series

The Carnegie series consists of well drained soils that formed in loamy and clayey marine sediments on uplands. Permeability is moderately slow. These soils are mainly on the Southern Coastal Plain. Slopes range from 3 to 8 percent. The soils are clayey, kaolinitic, thermic Plinthic Kandiudults.

Carnegie soils are geographically associated with Cowarts, Dothan, and Tifton soils. These associated soils are in landscape positions similar to those of the Carnegie soils. They are fine-loamy. Cowarts soils contain less than 5 percent plinthite and have a thinner solum than the Carnegie soils, and Dothan and Tifton soils contain 5 percent or more plinthite at a lower depth in the subsoil. Also, Dothan soils contain fewer nodules of ironstone than the Carnegie soils.

Typical pedon of Carnegie sandy loam, 5 to 8 percent slopes, eroded, 3.1 miles northeast on Georgia Highway 16 from the Jefferson County line; 200 feet southwest of the highway; in Glascock County:

Apc—0 to 4 inches; brown (10YR 4/3) sandy loam; weak fine granular structure; very friable; many fine roots; about 13 percent hard nodules of ironstone 0.12 to 0.50 inch in diameter; strongly acid; clear wavy boundary.
Btc—4 to 16 inches; yellowish brown (10YR 5/8) sandy clay loam; moderate medium subangular blocky structure; friable; common fine roots in upper part; few faint clay films on faces of peds; about 8 percent hard nodules of ironstone; very strongly acid; gradual wavy boundary.
Btv1—16 to 30 inches; strong brown (7.5YR 5/6) sandy clay; common medium prominent yellowish red (5YR 5/8) and red (2.5YR 4/6) mottles; moderate medium subangular blocky structure; firm; few fine roots; about 10 percent nodular plinthite; common distinct clay films on faces of peds; few nodules of ironstone; very strongly acid; gradual wavy boundary.
Btv2—30 to 40 inches; strong brown (7.5YR 5/6) sandy clay; common medium prominent red (2.5YR 4/6), dusky red (10YR 3/4), and light gray (10YR 6/1) mottles (the light gray mottles are lithochromic and are not a result of wetness) and common medium distinct yellowish red (5YR 5/6) mottles; moderate medium subangular blocky structure; firm; about 15 percent nodular plinthite; common distinct clay films on faces of peds; very strongly acid; gradual wavy boundary.
Bt—40 to 62 inches; clay, coarsely mottled yellowish red (5YR 5/6), red (10R 4/6), light gray (10YR 7/1), and yellowish brown (10YR 5/6) (the light gray mottles are lithochromic and are not a result of wetness); weak medium subangular blocky structure; firm; about 3 percent plinthite; patchy clay films on faces of peds; very strongly acid.

The thickness of the solum is 61 inches or more. Reaction is strongly acid or very strongly acid throughout the profile, except for the surface layer in areas that have been limed. The depth to horizons containing 5 percent or more plinthite is 14 to 22 inches.

The A horizon is 4 to 6 inches thick. The Ap horizon has hue of 10YR, value of 3 to 5, and chroma of 2 or 3. Nodules of ironstone range from 5 to 15 percent, by volume.

The B horizon has hue of 5YR to 10YR, value of 5, and chroma of 6 to 8. In some pedons the content of ironstone nodules ranges from 1 to 10 percent. The Btc horizon is sandy clay loam or sandy clay. The Btv and Bt horizons have mottles in shades of red, brown, and

gray. They are sandy clay or clay. In some pedons the Bt horizon has pockets of sandy clay loam.

Cecil Series

The Cecil series consists of well drained soils that formed in material weathered from granite, gneiss, and schist on uplands. Permeability is moderate. These soils are in the Carolina and Georgia Sand Hills. Slopes range from 2 to 10 percent. The soils are clayey, kaolinitic, thermic Typic Hapludults.

Cecil soils are geographically associated with Wedowee soils. Wedowee soils are in landscape positions similar to those of the Cecil soils. They have a yellower subsoil and a thinner solum than the Cecil soils.

Typical pedon of Cecil sandy loam, 2 to 6 percent slopes, 1.6 miles south on Georgia Highway 123 from the Warren County line; 300 feet northwest of the highway; in Glascock County:

Ap—0 to 3 inches; brown (7.5YR 5/4) sandy loam; weak fine granular structure; friable; many fine roots; medium acid; clear smooth boundary.

Bt1—3 to 6 inches; yellowish red (5YR 5/6) sandy clay loam; weak medium subangular blocky structure; friable; common fine roots; strongly acid; clear smooth boundary.

Bt2—6 to 21 inches; red (2.5YR 4/6) clay; moderate medium subangular blocky structure; firm; few fine roots; few distinct clay films on faces of peds; few fine flakes of mica; very strongly acid; gradual smooth boundary.

Bt3—21 to 46 inches; red (2.5YR 4/8) clay; common medium prominent yellowish red (5YR 5/6) and strong brown (7.5YR 5/8) mottles; moderate medium subangular blocky structure; firm; few very fine roots; common distinct clay films on faces of peds; few fine flakes of mica; very strongly acid; clear smooth boundary.

BC—46 to 60 inches; red (2.5YR 4/8) sandy clay loam; common medium prominent strong brown (7.5YR 5/8) and pale brown (10YR 6/3) mottles; weak medium subangular blocky structure; friable; few very fine roots; few faint clay films on faces of peds; few fine flakes of mica; very strongly acid.

The thickness of the solum ranges from 40 to more than 65 inches. The depth to bedrock ranges from 6 to more than 25 feet. Reaction is very strongly acid or strongly acid throughout the profile, except for the surface layer in areas that have been limed.

The A horizon is 3 to 8 inches thick. It has hue of 5YR to 10YR, value of 4 or 5, and chroma of 3 to 6. It is sandy loam or sandy clay loam.

The Bt1 horizon has hue of 2.5YR or 5YR, value of 4 to 6, and chroma of 4 to 8. It is sandy clay loam, sandy clay, or clay.

The Bt2 and Bt3 horizons have hue of 2.5YR, value of 4 or 5, and chroma of 4 to 8. They are clay loam, sandy clay, or clay. In some pedons the lower part of the Bt3 horizon has few medium reddish yellow and yellowish red mottles.

The BC horizon has hue of 2.5YR, value of 4 or 5, and chroma of 6 to 8. It is sandy clay loam or clay loam. In some pedons it has common or many medium reddish yellow, yellowish red, pale brown, or strong brown mottles.

The C horizon, if it occurs, is weathered granite or granite gneiss that crushes to sandy loam, sandy clay loam, or clay loam.

Chastain Series

The Chastain series consists of poorly drained soils that formed in clayey sediments on flood plains. Permeability is slow. These soils are on the Southern Coastal Plain and in the Carolina and Georgia Sand Hills. Slopes are 0 to 2 percent. The soils are fine, mixed, acid, thermic Typic Fluvaquents.

Chastain soils are geographically associated with Bibb, Chewacla, and Osier soils. These associated soils are in landscape positions similar to those of the Chastain soils. Bibb soils are coarse-loamy. The somewhat poorly drained Chewacla soils are fine-loamy. Osier soils are sandy.

Typical pedon of Chastain silty clay loam, frequently flooded, at the intersection of Georgia Highway 80 and Rocky Comfort Creek; 300 feet south of the highway and 200 feet east of the creek; in Glascock County:

A—0 to 9 inches; gray (10YR 6/1) silty clay loam; common medium distinct brown (10YR 4/3) mottles; weak fine subangular blocky structure; friable; many fine roots; medium acid; clear smooth boundary.

Bg1—9 to 20 inches; gray (10YR 6/1) clay loam; few medium prominent brownish yellow (10YR 6/6) mottles; weak fine subangular blocky structure; firm; common fine roots; strongly acid; gradual wavy boundary.

Bg2—20 to 60 inches; gray (10YR 6/1) clay; common medium prominent yellowish brown (10YR 5/8) and strong brown (7.5YR 5/6) mottles; weak fine subangular blocky structure; firm; strongly acid.

The thickness of the solum is 52 inches or more. Reaction ranges from very strongly acid to medium acid throughout the profile, except for the surface layer in areas that have been limed.

The A horizon is 4 to 12 inches thick. It has hue of

7.5YR or 10YR, value of 4 to 6, and chroma of 1 to 4. In some pedons it has few or common brown mottles.

The Bg horizon has hue of 10YR, value of 4 to 6, and chroma of 1 or 2, or it is neutral in hue and has value of 4 to 7. It has few to many mottles in shades of brown, yellow, and red. It is clay loam, silty clay loam, silty clay, or clay. In some pedons it has few or common very fine to medium flakes of mica.

The C horizon, if it occurs, has hue of 10YR or 2.5Y, value of 6 or 7, and chroma of 1 or 2. It has few to many mottles in shades of brown and red. It is stratified loamy sand, sandy loam, or sandy clay loam.

Chewacla Series

The Chewacla series consists of somewhat poorly drained soils that formed in loamy sediments on flood plains. Permeability is moderate. These soils are in the Carolina and Georgia Sand Hills. Slopes are 0 to 2 percent. The soils are fine-loamy, mixed, thermic Fluvaquentic Dystrochrepts.

Chewacla soils are geographically associated with Bibb, Chastain, and Osier soils. These associated soils are poorly drained and are in landscape positions similar to those of the Chewacla soils. Bibb soils are coarse-loamy, Chastain soils are clayey, and Osier soils are sandy.

Typical pedon of Chewacla sandy loam, occasionally flooded, at the intersection of Georgia Highway 80 and Rocky Comfort Creek; 300 feet east of the highway and 500 feet north of the creek; in Glascock County:

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

Bw1—5 to 18 inches; dark brown (10YR 4/3) fine sandy loam; common medium distinct grayish brown (10YR 5/2) mottles; weak medium granular structure; very friable; few fine and medium roots; few fine flakes of mica; very strongly acid; gradual wavy boundary.

Bw2—18 to 21 inches; light yellowish brown (10YR 6/4) sandy loam; weak medium subangular blocky structure; friable; few medium roots; very strongly acid; gradual wavy boundary.

Bw3—21 to 38 inches; brownish yellow (10YR 6/6) sandy clay loam; few medium distinct light brownish gray (10YR 6/2) mottles; weak medium subangular blocky structure; friable; common fine flakes of mica; very strongly acid; gradual wavy boundary.

BC—38 to 56 inches; brownish yellow (10YR 6/6) fine sandy loam; common medium faint strong brown (7.5YR 5/6) and common medium distinct light brownish gray (10YR 6/2) mottles; massive; very friable; common fine flakes of mica; very strongly acid; gradual wavy boundary.

Cg—56 to 65 inches; light gray (10YR 6/1) sandy clay loam; common medium prominent brownish yellow (10YR 6/8) mottles; massive; friable; common fine flakes of mica; very strongly acid.

The thickness of the solum ranges from 50 to more than 65 inches. Reaction ranges from very strongly acid to slightly acid, except for the surface layer in areas that have been limed.

The A horizon is 5 to 9 inches thick. It has hue of 10YR or 7.5YR, value of 3 to 5, and chroma of 2 to 4.

The Bw1 horizon has hue of 5YR to 10YR, value of 4 to 6, and chroma of 3 to 6. In some pedons it has few or common mottles in shades of brown and gray within a depth of 10 inches. The lower part of the Bw horizon and the BC horizon have hue of 10YR or 7.5YR, value of 5 to 7, and chroma of 1 to 6, or they are neutral in hue and have value of 5 to 7. The Bw and BC horizons are loam, sandy loam, fine sandy loam, or sandy clay loam. They have common or many mottles in shades of gray, brown, and yellow.

The C horizon, if it occurs, has matrix colors similar to those of the lower part of the B horizon or is mottled brown, very dark gray, and gray in most pedons. It is loamy sand, sandy loam, silt loam, or sandy clay loam.

Chipley Series

The Chipley series consists of moderately well drained soils that formed in sandy marine sediments on uplands. Permeability is rapid. These soils are on the Southern Coastal Plain. Slopes are 0 to 2 percent. The soils are thermic, coated Aquic Quartzipsamments.

Chipley soils are geographically associated with Bibb, Ocilla, Osier, and Rains soils. The poorly drained Bibb and Osier soils are on flood plains. The somewhat poorly drained Ocilla soils are in broad, smooth, even areas on uplands and on stream terraces. The poorly drained Rains soils are in slight depressions on flood plains, at the head of streams, and on stream terraces. Bibb soils are coarse-loamy. Ocilla soils have an arenic epipedon and are loamy. Rains soils are fine-loamy.

Typical pedon of Chipley sand, 0 to 2 percent slopes, 1.6 miles north of U.S. Highway 221 from the junction with Georgia Highway 78 in Bartow; 0.5 mile northwest on a paved county road; 1.2 miles west on a field road; in Jefferson County:

Ap—0 to 7 inches; dark brown (10YR 4/2) sand; weak medium granular structure; very friable; many fine roots; strongly acid; clear smooth boundary.

C1—7 to 31 inches; brownish yellow (10YR 6/8) sand;

single grained; loose; common fine roots; strongly acid; gradual wavy boundary.

C2—31 to 42 inches; brownish yellow (10YR 6/6) sand; common medium distinct light yellowish brown (10YR 6/4) and light gray (10YR 7/2) mottles; single grained; loose; few fine roots; strongly acid; gradual wavy boundary.

C3—42 to 58 inches; brownish yellow (10YR 6/6) coarse sand; common medium distinct light yellowish brown (10YR 6/4) and light gray (10YR 7/2) mottles; single grained; loose; strongly acid; gradual wavy boundary.

Cg—58 to 80 inches; light gray (10YR 7/1) sand; common medium distinct pale brown (10YR 6/3) mottles; single grained; loose; strongly acid.

The thickness of the sand is 80 inches or more. Reaction is strongly acid or very strongly acid throughout the profile, except for the surface layer in areas that have been limed.

The A horizon is 5 to 9 inches thick. It has hue of 10YR, value of 3 to 5, and chroma of 1 or 2.

The C1 horizon has hue of 10YR, value of 5 to 7, and chroma of 3 to 8. The C2 and C3 horizons have hue of 10YR, value of 5 to 7, and chroma of 1 to 8. In some pedons the C1 and C3 horizons have few or common fine or medium mottles in shades of brown, yellow, and gray. In some pedons the C1 and C2 horizons have pockets of uncoated, light gray sand grains.

Clarendon Series

The Clarendon series consists of moderately well drained soils that formed mainly in loamy marine sediments on uplands. Permeability is moderate in the upper part of the subsoil and moderately slow in the lower part. These soils are on the Southern Coastal Plain. Slopes are 0 to 2 percent. The soils are fine-loamy, siliceous, thermic Plinthaquic Paleudults.

Clarendon soils are geographically associated with Dothan, Rains, and Tifton soils. The well drained Dothan and Tifton soils are in landscape positions similar to those of the Clarendon soils. The poorly drained Rains soils are in slight depressions on flood plains, at the head of streams, and on stream terraces.

Typical pedon of Clarendon loamy sand, 0 to 2 percent slopes, 1.6 miles west of Georgia Highway 78 from the junction with U.S. Highway 1 in Wadley; 0.6 mile north on a dirt road; 75 feet west; in Jefferson County:

Ap—0 to 8 inches; grayish brown (10YR 5/2) loamy sand; weak fine granular structure; friable; many fine and very fine roots; few very fine pores; few nodules of ironstone; strongly acid; abrupt smooth boundary.

E—8 to 12 inches; light yellowish brown (10YR 6/4) loamy sand; weak fine angular blocky and weak fine granular structure; friable; common fine and very fine roots; common very fine and medium pores; few nodules of ironstone; strongly acid; clear smooth boundary.

Bt1—12 to 26 inches; yellowish brown (10YR 5/6) sandy clay loam; moderate fine subangular blocky structure; friable; common fine roots; common fine and very fine pores; few nodules of ironstone; strongly acid; gradual wavy boundary.

Bt2—26 to 29 inches; yellowish brown (10YR 5/6) sandy clay loam; few fine distinct light gray (10YR 7/2) and common medium prominent red (2.5YR 4/6) mottles; moderate medium subangular blocky structure; friable; common fine roots; common fine pores; about 4 percent nodular plinthite; few distinct clay films on faces of peds; few nodules of ironstone; strongly acid; gradual wavy boundary.

Btv1—29 to 34 inches; yellowish brown (10YR 5/6) sandy clay loam; common medium prominent red (2.5YR 4/6), gray (10YR 5/1), and yellowish red (5YR 5/8) mottles; moderate medium subangular blocky and angular blocky structure; friable; few fine roots; common very fine and fine pores; few distinct clay films on faces of peds; about 10 percent nodular plinthite; few nodules of ironstone; strongly acid; gradual wavy boundary.

Btv2—34 to 42 inches; mottled gray (10YR 6/1), yellowish brown (10YR 5/8), red (2.5YR 4/6), and dark red (10R 3/6) sandy clay loam; moderate medium subangular blocky structure; common distinct clay films on faces of peds; about 6 percent nodular plinthite; few nodules of ironstone; strongly acid; gradual wavy boundary.

Btgv—42 to 62 inches; gray (10YR 5/1) sandy clay loam; common medium prominent yellowish brown (10YR 5/8), red (2.5Y 4/6), and dark red (10R 3/6) mottles; weak medium subangular blocky structure; friable; about 5 percent nodular plinthite; very strongly acid.

The thickness of the solum is 60 inches or more. Reaction is strongly acid or very strongly acid throughout the profile, except for the surface layer in areas that have been limed. The depth to horizons containing 5 percent or more plinthite is 24 to 34 inches. The content of plinthite ranges from 5 to 10 percent to a depth of 60 inches or more.

The A horizon is 6 to 9 inches thick. It has hue of 10YR, value of 4 or 5, and chroma of 2. The E horizon has hue of 10YR, value of 5 to 7, and chroma of 3 or 4.

The BE horizon, if it occurs, has hue of 10YR, value of 5 or 6, and chroma of 4 to 8. The Bt horizon has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 4 to 8. The upper part is sandy loam or sandy clay loam. The lower part has mottles in shades of red and gray. The Btv horizon is mainly mottled in shades of red, brown, and gray.

Cowarts Series

The Cowarts series consists of well drained soils that formed in loamy marine sediments on uplands. Permeability is moderate in the subsoil and moderately slow or slow in the substratum. These soils are in the Carolina and Georgia Sand Hills and on the Southern Coastal Plain. Slopes range from 2 to 15 percent. The soils are fine-loamy, siliceous, thermic Typic Kanhapludults.

Cowarts soils are geographically associated with Ailey, Carnegie, and Nankin soils. These associated soils are in landscape positions similar to those of the Cowarts soils. They have a thicker solum than the Cowarts soils. Ailey soils have an arenic epipedon. Carnegie and Nankin soils are clayey.

Typical pedon of Cowarts sandy loam, 5 to 8 percent slopes, eroded, 4.0 miles northwest on Georgia Highway 16 from the Jefferson County line; 0.2 mile west of the highway; in Glascock County:

Ap—0 to 5 inches; dark grayish brown (10YR 4/2) sandy loam; weak fine granular structure; very friable; many fine and medium roots; few nodules of ironstone; strongly acid; abrupt smooth boundary.

Bt1—5 to 18 inches; strong brown (7.5YR 5/8) sandy clay loam; moderate medium subangular blocky structure; friable; few faint clay films on faces of peds; few fine roots; strongly acid; gradual wavy boundary.

Bt2—18 to 31 inches; yellowish brown (10YR 5/8) sandy clay loam; common medium prominent yellowish red (5YR 4/6) and few medium prominent brownish gray (10YR 6/2) mottles (the brownish gray mottles are lithochromic and are not a result of wetness); weak medium subangular blocky structure; friable; about 3 percent nodular plinthite; few faint clay films on faces of peds; few fine flakes of mica; very strongly acid; gradual wavy boundary.

Cd1—31 to 43 inches; mottled and streaked yellowish brown (10YR 5/8), gray (10YR 6/1), weak red (10R 4/4), and yellowish red (5YR 4/8) sandy clay loam that has pockets of coarser and finer textured material; massive; firm; about 1 percent platy plinthite; very strongly acid; gradual smooth boundary.

Cd2—43 to 72 inches; mottled weak red (10YR 4/4), yellowish red (5YR 4/6), pinkish gray (7.5YR 7/2), and brownish yellow (10YR 6/6) sandy loam that has pockets of finer textured material; massive; firm; very strongly acid.

The thickness of the solum ranges from 24 to 40 inches. Reaction is strongly acid or very strongly acid throughout the profile, except for the surface layer in areas that have been limed.

The A horizon is 4 to 9 inches thick. The Ap horizon has hue of 10YR, value of 4 or 5, and chroma of 2 or 3. It is loamy sand or sandy loam. Nodules of ironstone make up 1 to 4 percent of the horizon.

The E horizon, if it occurs, has hue of 10YR or 2.5Y, value of 6, and chroma of 4 to 6. It is loamy sand or sandy loam.

The BE horizon, if it occurs, has hue of 10YR or 7.5YR, value of 5 or 6, and chroma of 6 to 8. It is loamy sand or sandy loam.

The Bt horizon has hue of 10YR to 5YR, value of 5, and chroma of 6 to 8. In some pedons nodules of ironstone make up as much as 5 percent of the upper part of the subsoil. In other pedons the lower part of the Bt horizon has mottles in shades of red, gray, yellow, or brown.

The C horizon has the same range of matrix colors as the Bt horizon, or it is mottled in shades of red, brown, yellow, and gray. It is sandy clay loam or sandy loam. Generally, it has pockets and layers of sandier or finer textured material.

Dogue Series

The Dogue series consists of moderately well drained soils that formed in loamy and clayey sediments on stream terraces. Permeability is moderately slow. These soils are in the Carolina and Georgia Sand Hills and on the Southern Coastal Plain. Slopes are 0 to 2 percent. The soils are clayey, mixed, thermic Aquic Hapludults.

Dogue soils are geographically associated with Ocilla and Rains soils. The somewhat poorly drained Ocilla soils are in broad, smooth, even areas on uplands and on stream terraces. The poorly drained Rains soils are in slight depressions on flood plains, at the head of streams, and on stream terraces. Ocilla soils have an arenic epipedon and are loamy. Rains soils are fine-loamy.

Typical pedon of Dogue sandy loam, 0 to 2 percent slopes, on U.S. Highway 1; 1.0 mile south of Brier Creek; 0.7 mile southeast on a paved county road; 3.0 miles southeast on a private road; 1,600 feet southeast of the end of the road, in a field; in Jefferson County:

Ap—0 to 7 inches; dark grayish brown (10YR 4/2)

sandy loam; weak fine granular structure; very friable; common very fine and fine roots; strongly acid; clear wavy boundary.

E—7 to 11 inches; pale brown (10YR 6/3) sandy loam; weak medium subangular blocky structure; very friable; few very fine and fine roots; strongly acid; gradual wavy boundary.

Bt1—11 to 15 inches; light yellowish brown (10YR 6/4) sandy clay loam; common medium prominent strong brown (7.5YR 5/6) mottles; moderate medium subangular blocky structure; friable; few fine roots; strongly acid; gradual wavy boundary.

Bt2—15 to 26 inches; strong brown (7.5YR 5/6) sandy clay; common medium prominent light yellowish brown (10YR 6/4) and few fine prominent red (2.5YR 5/8) mottles; moderate medium subangular blocky structure; friable; strongly acid; gradual wavy boundary.

Bt3—26 to 42 inches; strong brown (7.5YR 5/6) sandy clay; common medium prominent red (2.5YR 5/8) and light gray (10YR 7/1) mottles; moderate medium subangular blocky structure; friable; common distinct clay films on faces of peds; strongly acid; gradual wavy boundary.

BC—42 to 59 inches; mottled strong brown (7.5YR 5/6), light gray (10YR 7/2), yellowish red (5YR 5/6), and pale brown (10YR 6/3) sandy clay loam; weak medium subangular blocky structure; friable; very strongly acid; gradual wavy boundary.

C—59 to 64 inches; mottled strong brown (7.5YR 5/6), light gray (10YR 7/2), red (2.5YR 5/8), and pale brown (10YR 6/3) sandy loam; massive; very friable; few very fine flakes of mica; very strongly acid.

The thickness of the solum ranges from 40 to more than 60 inches. Reaction is very strongly acid or strongly acid throughout the profile, except for the surface layer in areas that have been limed.

The A horizon is 4 to 8 inches thick. It has hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 2 or 3. The E horizon is 4 to 8 inches thick. It has hue of 10YR, value of 5 or 6, and chroma of 3 or 4. Some pedons do not have an E horizon.

The Bt1 horizon has hue of 10YR or 7.5YR, value of 5 or 6, and chroma of 4 to 6. In some pedons it has few or common fine or medium mottles in shades of red, gray, or brown. It has no gray mottles in the upper few inches. It is sandy clay loam or sandy clay.

The Bt2, Bt3, and BC horizons are mottled in shades of gray, brown, and red; or they have matrix colors with hue of 10YR, value of 6 or 7, and chroma of 1 to 6; or they have matrix colors with hue of 7.5YR, value of 5 to 7, and chroma of 2 to 6. The Bt2 horizon is sandy clay or clay. The Bt3 horizon is sandy clay or sandy clay loam. The BC horizon is sandy loam or sandy clay loam.

The C horizon has matrix colors similar to those of the lower part of the Bt horizon. It is coarse sand, sand, loamy sand, sandy loam, or sandy clay loam.

Dothan Series

The Dothan series consists of well drained soils that formed mainly in loamy marine sediments on uplands. Permeability is moderate in the upper part of the subsoil and moderately slow in the lower part. These soils are mainly on the Southern Coastal Plain. Slopes range from 0 to 8 percent. The soils are fine-loamy, siliceous, thermic Plinthic Kandiudults.

Dothan soils are geographically associated with Clarendon, Fuquay, and Tifton soils. The moderately well drained Clarendon soils and Fuquay and Tifton soils are in landscape positions similar to those of the Dothan soils. Fuquay soils have an arenic epipedon. Tifton soils have more nodules of ironstone than the Dothan soils.

Typical pedon of Dothan loamy sand, 2 to 5 percent slopes, about 1.1 miles north on U.S. Highway 221 from the junction with Georgia Highway 78 in Bartow; 600 feet west of the highway; in Jefferson County:

Ap—0 to 7 inches; grayish brown (10YR 5/2) loamy sand; weak medium granular structure; very friable; many very fine roots; few nodules of ironstone; slightly acid; abrupt wavy boundary.

Bt1—7 to 30 inches; yellowish brown (10YR 5/6) sandy clay loam; moderate medium subangular blocky structure; friable; few very fine roots; common fine pores; few faint clay films on faces of some peds; few nodules of ironstone; medium acid; gradual wavy boundary.

Bt2—30 to 50 inches; yellowish brown (10YR 5/6) sandy clay loam; few medium prominent yellowish red (5YR 5/6) mottles; moderate medium subangular blocky structure; friable; about 3 percent nodular plinthite; common distinct clay films on faces of peds; strongly acid; gradual wavy boundary.

Btv—50 to 64 inches; yellowish brown (10YR 5/8) sandy clay loam; common medium prominent yellowish red (5YR 4/6), gray (10YR 6/1), and red (2.5YR 4/8) mottles; moderate medium subangular blocky structure; friable; about 8 percent nodular plinthite; common distinct clay films on faces of peds; strongly acid.

The thickness of the solum is 60 inches or more. Reaction ranges from very strongly acid to medium acid

throughout the profile, except for the surface layer in areas that have been limed. The depth to horizons containing 5 percent or more plinthite is 32 to 60 inches. The content of plinthite ranges from 5 to 20 percent to a depth of 60 inches or more.

The A horizon is 5 to 10 inches thick. The Ap horizon has hue of 10YR, value of 4 or 5, and chroma of 2, or it has hue of 2.5Y, value of 4 or 5, and chroma of 2 to 4.

The E horizon, if it occurs, is 4 to 8 inches thick. It has hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 2 to 4. It contains 2 to 4 percent ironstone nodules, by volume. It is loamy sand or sandy loam.

The Bt horizon has hue of 10YR, value of 5 to 7, and chroma of 6 to 8. It contains 2 to 5 percent ironstone nodules, by volume. It is sandy loam or sandy clay loam in the upper part.

The Btv horizon has hue of 10YR or 7.5YR, value of 5 or 6, and chroma of 6 to 8. It has common or many mottles in shades of brown, red, and gray.

Eustis Series

The Eustis series consists of somewhat excessively drained soils that formed in sandy marine sediments on uplands. Permeability is rapid. These soils are mainly on the Southern Coastal Plain. Slopes range from 0 to 8 percent. The soils are sandy, siliceous, thermic Psammentic Paleudults.

Eustis soils are geographically associated with Lakeland, Lucy, and Troup soils. The excessively drained Lakeland soils and the well drained Lucy and Troup soils are in landscape positions similar to those of the Eustis soils. Lakeland soils do not have an argillic horizon. Lucy and Troup soils are loamy. Lucy soils have an arenic epipedon, and Troup soils have a grossarenic epipedon.

Typical pedon of Eustis sand, 5 to 8 percent slopes, 2.75 miles northeast on paved county road from the junction with U.S. Highway 1 in Louisville; 2.3 miles north on a field road; 300 feet east of the road; in Jefferson County:

Ap—0 to 9 inches; dark brown (7.5YR 4/4) sand; weak fine granular structure; loose, very friable; many fine roots; very strongly acid; clear smooth boundary.

EB—9 to 34 inches; yellowish red (5YR 5/8) loamy sand; weak medium granular structure; very friable; sand grains coated with clay; very strongly acid; gradual wavy boundary.

Bt—34 to 90 inches; red (2.5YR 4/8) loamy sand; weak medium granular structure; very friable; sand grains coated with clay; very strongly acid.

The thickness of the solum ranges from 65 to more than 70 inches. Reaction is strongly acid throughout the profile, except for the surface layer in areas that have been limed.

The A horizon is 3 to 22 inches thick. It has hue of 7.5YR or 10YR, value of 3 to 5, and chroma of 2 to 4. Some pedons have an E horizon, which has hue of 7.5YR or 10YR, value of 3 to 5, and chroma of 4 to 6.

In some pedons the Bt horizon has bands or lamellae of loamy sand that are cumulatively more than 6 inches thick between a depth of 14 and 80 inches. The content of clay is at least 10 percent but ranges to 15 percent. The content of silt and very fine sand plus clay ranges from 10 to 30 percent. The Bt horizon has hue of 2.5YR or 7.5YR, value of 4 or 5, and chroma of 4 to 8. In some pedons it has few fine faint light yellowish brown and brownish yellow mottles below a depth of 50 inches.

Faceville Series

The Faceville series consists of well drained soils that formed mainly in clayey marine sediments on uplands. Permeability is moderate. These soils are mainly on the Southern Coastal Plain. Slopes range from 0 to 12 percent. The soils are clayey, kaolinitic, thermic Typic Kandiudults.

Faceville soils are geographically associated with Dothan, Greenville, and Orangeburg soils. These associated soils are in landscape positions similar to those of the Faceville soils. Dothan and Orangeburg soils are fine-loamy. Dothan soils have mainly a yellowish brown subsoil that contains 5 percent or more plinthite in the lower part. Greenville soils are rhodic.

Typical pedon of Faceville sandy loam, 2 to 5 percent slopes, 1.34 miles north of Bartow on U.S. Highway 221 from the junction with Georgia Highway 78; 0.8 mile northwest into a field; in Jefferson County:

Ap—0 to 6 inches; reddish brown (5YR 4/4) sandy loam; weak fine granular structure; very friable; many fine and very fine roots; medium acid; abrupt smooth boundary.

Bt1—6 to 9 inches; red (2.5YR 4/6) sandy clay loam; moderate medium subangular blocky structure; friable; few fine roots; strongly acid; gradual wavy boundary.

Bt2—9 to 50 inches; red (2.5YR 4/6) sandy clay; moderate medium subangular blocky structure; friable; common distinct clay films on faces of peds; very strongly acid; gradual wavy boundary.

Bt3—50 to 64 inches; red (2.5YR 4/6) sandy clay; few medium distinct yellowish red (5YR 5/6), few medium prominent strong brown (7.5YR 5/8), and few fine distinct light brown (5YR 6/4) mottles; moderate medium subangular blocky structure;

friable; common distinct clay films on faces of peds; very strongly acid.

The thickness of the solum is 64 inches or more. Reaction is strongly acid or very strongly acid throughout the profile, except for the surface layer in areas that have been limed.

The A horizon is 4 to 8 inches thick. It has hue of 5YR to 10YR, value of 4 or 5, and chroma of 2 to 4. It is generally loamy sand or sandy loam, but the range includes sandy clay loam in eroded areas.

The Bt horizon has hue of 2.5YR or 5YR, value of 4 or 5, and chroma of 6 to 8. The upper part is sandy clay loam or sandy clay. The lower part is sandy clay or clay and generally is mottled in shades of brown, yellow, or red.

Fuquay Series

The Fuquay series consists of well drained soils that formed in sandy and loamy sediments on uplands. Permeability is rapid in the sandy epipedon and in the upper part of the subsoil and slow in the lower part of the subsoil. These soils are on the Southern Coastal Plain and in the Carolina and Georgia Sand Hills. Slopes range from 1 to 8 percent. The soils are loamy, siliceous, thermic Arenic Plinthic Paleudults.

Fuquay soils are geographically associated with Clarendon, Dothan, and Tifton soils. These associated soils are in landscape positions similar to those of the Fuquay soils. They have an epipedon that is less than 20 inches thick. Clarendon soils are moderately well drained. Tifton soils have more nodules of ironstone than the Fuquay soils.

Typical pedon of Fuquay loamy sand, 1 to 5 percent slopes, 0.6 mile south on Georgia Highway 296 from the junction with Georgia Highway 80 in Stapleton; 1.9 miles southwest on a dirt road; 150 feet east of the road; in Jefferson County:

Ap—0 to 8 inches; dark grayish brown (10YR 4/2) loamy sand; weak fine granular structure; very friable; many fine and medium roots; strongly acid; clear smooth boundary.

E1—8 to 16 inches; light yellowish brown (10YR 6/4) loamy sand; common medium grayish brown (10YR 5/2) splotches; weak medium granular structure; very friable; common fine and medium roots; common fine pores; strongly acid; clear wavy boundary.

E2—16 to 28 inches; light yellowish brown (10YR 6/4) loamy sand; weak medium granular structure; very friable; common fine pores; few nodules of ironstone; strongly acid; clear wavy boundary.

Bt1—28 to 30 inches; brownish yellow (10YR 6/6) sandy loam; weak medium subangular blocky structure; friable; common fine roots; few fine pores; few nodules of ironstone; strongly acid; gradual wavy boundary.

Bt2—30 to 41 inches; brownish yellow (10YR 6/8) sandy clay loam; few medium prominent red (2.5YR 4/8) mottles, yellowish red (5YR 5/8) mottles in the lower part; moderate medium subangular blocky structure; friable; common fine and few medium roots; many fine pores; 3 percent nodular plinthite in the lower part; few faint clay films on faces of peds; strongly acid; gradual wavy boundary.

Btv1—41 to 51 inches; brownish yellow (10YR 6/8) sandy clay loam; common medium prominent yellowish red (5YR 5/8) and red (2.5YR 4/6) mottles; moderate medium subangular blocky and angular blocky structure; firm; common fine roots; common fine pores; 10 to 15 percent nodular plinthite; few distinct clay films on faces of peds; strongly acid; gradual wavy boundary.

Btv2—51 to 63 inches; mottled brownish yellow (10YR 6/8), yellowish red (5YR 5/8), red (2.5YR 4/6), and light gray (10YR 7.2) sandy clay loam; moderate medium angular blocky and subangular blocky structure; firm; few fine and medium roots; few fine pores; about 8 percent platy plinthite; common distinct clay films on faces of peds; strongly acid.

The thickness of the solum is 81 inches or more. Reaction is very strongly acid or strongly acid throughout the profile, except for the surface layer in areas that have been limed. The depth to horizons containing 5 percent or more plinthite is 40 to 60 inches. The content of plinthite ranges from 5 to 15 percent to a depth of 81 inches or more.

The sandy epipedon is 25 to 35 inches thick. The A horizon has hue of 10YR, value of 4 or 5, and chroma of 1 or 2. The E horizon has hue of 10YR or 2.5Y, value of 6 or 7, and chroma of 3 to 6.

The Bt horizon has hue of 10YR, value of 5 or 6, and chroma of 4 to 8. It is sandy loam or sandy clay loam in the upper part. In some pedons it has common medium or coarse mottles in shades of brown, red, and gray in the lower part. In other pedons it has few or common nodules of ironstone in the upper part.

Grady Series

The Grady series consists of poorly drained soils that formed predominantly in clayey marine sediments on uplands. Permeability is slow. These soils are on the Southern Coastal Plain. Slopes are 0 to 2 percent. The soils are clayey, kaolinitic, thermic Typic Paleaquults.

Grady soils are geographically associated with

Clarendon, Dothan, Fuquay, Rains, and Rembert soils. The moderately well drained Clarendon soils and the well drained Dothan and Fuquay soils are on uplands. Rembert soils are in depressions on uplands. Rains soils are in slight depressions on flood plains, at the head of streams, and on stream terraces. Clarendon, Dothan, and Fuquay soils contain 5 percent or more plinthite within a depth of 60 inches. Clarendon, Rains, and Dothan soils are fine-loamy. Fuquay soils are loamy and have a sandy epipedon. Rembert soils have a shallower solum than the Grady soils.

Typical pedon of Grady loam, in an area of Grady and Rembert loams, ponded; 2.2 miles northwest on Middleground Road from U.S. Highway 1 in Louisville; 0.6 mile northwest on a dirt road; 0.4 mile west of the dirt road; in Jefferson County:

A—0 to 4 inches; very dark gray (10YR 3/1) loam; weak fine granular structure; very friable; many very fine and fine roots; very strongly acid; clear smooth boundary.

Btg1—4 to 10 inches; gray (10YR 5/1) clay loam; moderate medium subangular blocky structure; firm; few fine roots; very strongly acid; gradual wavy boundary.

Btg2—10 to 65 inches; light gray (10YR 7/1) clay; few fine distinct strong brown (7.5YR 5/8) mottles; moderate medium subangular blocky structure; firm, very sticky; few fine roots; few distinct clay films on faces of peds; very strongly acid.

The thickness of the solum is 60 inches or more. Reaction is very strongly acid or strongly acid throughout the profile, except for the surface layer in areas that have been limed.

The A horizon is 4 to 8 inches thick. It has hue of 10YR, value of 2 or 3, and chroma of 1.

The E horizon, if it occurs, is 5 to 10 inches thick. It has hue of 10YR, value of 5 or 6, and chroma of 1 or 2. It is sandy loam or loamy sand.

The Btg horizon has hue of 10YR, value of 4 to 7, and chroma of 1. In some pedons it has few to many mottles in shades of brown, yellow, and red. It is sandy clay loam or clay loam in the upper part and sandy clay or clay in the lower part.

Greenville Series

The Greenville series consists of well drained soils that formed predominantly in clayey marine sediments on uplands. Permeability is moderate. These soils are on the Southern Coastal Plain. Slopes range from 0 to 8 percent. The soils are clayey, kaolinitic, thermic Rhodic Kandiudults.

Greenville soils are geographically associated with Faceville, Lucy, and Orangeburg soils. These associated soils are in landscape positions similar to those of the Greenville soils. Faceville and Orangeburg soils have a predominantly red B horizon. Orangeburg soils are fine-loamy. Lucy soils have an arenic epipedon. They are loamy.

Typical pedon of Greenville sandy clay loam, 0 to 2 percent slopes, 2 miles southeast of Georgia Highway 171 from Georgia Highway 88 in Grange; 100 feet north of the highway; in Jefferson County:

Ap—0 to 10 inches; dark reddish brown (5YR 3/4) sandy clay loam; weak medium granular structure; very friable; common fine roots; mixed with a few small clods of material from the Bt1 horizon; few small nodules of ironstone; strongly acid; abrupt smooth boundary.

Bt1—10 to 18 inches; dark red (2.5YR 3/6) sandy clay loam; weak fine subangular blocky structure; slightly hard, friable, slightly sticky; few fine roots; few faint clay films on faces of peds; few small nodules of ironstone; strongly acid; clear smooth boundary.

Bt2—18 to 65 inches; dark red (2.5YR 3/6) clay; moderate medium subangular blocky structure; hard, friable, sticky; many prominent clay films on faces of peds; few small nodules of ironstone; very strongly acid.

The thickness of the solum is 65 inches or more. Reaction is strongly acid or very strongly acid throughout the profile, except for the surface layer in areas that have been limed.

The A horizon is 4 to 10 inches thick. It has hue of 2.5YR to 7.5YR, value of 3, and chroma of 2 to 4. It is sandy loam or sandy clay loam.

The Bt1 horizon has hue of 2.5YR or 5YR, value of 3, and chroma of 4 to 6. It is sandy clay loam or sandy clay.

The Bt2 horizon has hue of 2.5YR or 10R, value of 3, and chroma of 4 to 6. It is sandy clay or clay. In some pedons it has few or common small ironstone nodules or manganese concretions.

Herod Series

The Herod series consists of poorly drained soils that formed in loamy sediments on flood plains. Permeability is moderate. These soils are on the Southern Coastal Plain. Slopes are 0 to 2 percent. The soils are fine-loamy, siliceous, nonacid, thermic Typic Fluvaquents.

Herod soils are geographically associated with Meggett, Muckalee, and Rains soils. Meggett and Muckalee soils are in landscape positions similar to those of the Herod soils. Rains soils are in slight depressions on flood plains, at the head of streams,

and on stream terraces. Meggett soils are fine textured, Muckalee soils are coarse-loamy, and Rains soils are fine-loamy.

Typical pedon of Herod loam, in an area of Herod and Muckalee loams, frequently flooded; 0.8 mile south on U.S. Highway Business Route 1 from the railroad in Wadley; 0.9 mile west on a paved road; 1.2 miles north on a field road; 300 feet west, near a creek; in Jefferson County:

A—0 to 8 inches; dark grayish brown (10YR 4/2) loam; weak fine granular structure; very friable; many fine and medium roots; many partially decayed bits of forest litter; strongly acid; clear wavy boundary.
Cg1—8 to 18 inches; gray (10YR 5/1) sandy clay loam; massive; friable; many fine and medium roots; few bits of partially decomposed forest litter; medium acid; clear wavy boundary.
Cg2—18 to 45 inches; gray (10YR 6/1) sandy clay loam; common strata of sandy loam and sandy clay 0.2 inch thick; common medium prominent olive yellow (2.5Y 6/6) mottles; massive; friable; few medium roots; few bits of partially decomposed forest litter; slightly acid; gradual wavy boundary.
Cg3—45 to 60 inches; gray (10YR 6/1) sandy loam; common medium prominent pale yellow (2.5Y 7/4) mottles; massive; very friable; slightly acid.

Loamy sediments range from 20 to more than 40 inches in thickness. Reaction is strongly acid or medium acid in the A horizon and ranges from medium acid to neutral in the C horizon.

The A horizon is 3 to 8 inches thick. It has hue of 10YR, value of 3 to 5, and chroma of 1 or 2.

The Cg horizon has hue of 10YR, value of 4 to 6, and chroma of 1 or 2. The Cg1 and Cg2 horizons are sandy loam, loam, or sandy clay loam. The Cg3 horizon is sandy loam or sandy clay loam. Some pedons have a Cg4 horizon. This horizon is sand, loamy sand, sandy loam, or sandy clay loam. Thin strata of sandy or clayey material are generally throughout the Cg horizon.

Lakeland Series

The Lakeland series consists of excessively drained soils that formed in sandy marine sediments on uplands. Permeability is rapid. These soils are in the Carolina and Georgia Sand Hills and on the Southern Coastal Plain. Slopes range from 1 to 30 percent. The soils are thermic, coated Typic Quartzipsamments.

Lakeland soils are geographically associated with Bonifay, Fuquay, and Troup soils. These associated soils are well drained and are in landscape positions similar to those of the Lakeland soils. They have an argillic horizon. Bonifay and Fuquay soils contain plinthite.

Typical pedon of Lakeland sand, 1 to 5 percent slopes, 1.0 mile south of Brier Creek on U.S. Highway 1; 0.7 mile southeast on a paved county road; 3.0 miles southeast on a private road; 0.3 mile northwest; in Jefferson County:

A—0 to 5 inches; dark grayish brown (10YR 4/2) sand; weak fine granular structure; very friable; common very fine and fine roots; strongly acid; clear smooth boundary.
C1—5 to 14 inches; dark yellowish brown (10YR 4/4) sand; single grained; loose; few fine roots; very strongly acid; gradual wavy boundary.
C2—14 to 77 inches; yellowish brown (10YR 5/6) sand; single grained; loose; many uncoated sand grains; very strongly acid; gradual wavy boundary.
C3—77 to 99 inches; yellowish brown (10YR 5/6) sand; few fine prominent yellowish red (5YR 5/8) mottles; single grained; loose; very strongly acid.

The thickness of the sand is 81 inches or more. Reaction is strongly acid or very strongly acid throughout the profile, except for the surface layer in areas that have been limed.

The A horizon is 2 to 8 inches thick. It has hue of 10YR, value of 3 to 5, and chroma of 1 to 3.

The C horizon has hue of 10YR to 5YR, value of 4 to 7, and chroma of 4 to 8.

Lucy Series

The Lucy series consists of well drained soils that formed in sandy and loamy marine sediments on uplands. Permeability is rapid in the sandy epipedon and is mainly moderate in the subsoil. These soils are mainly on the Southern Coastal Plain. Slopes range from 1 to 30 percent. The soils are loamy, siliceous, thermic Arenic Kandiudults.

Lucy soils are geographically associated with Eustis, Faceville, Orangeburg, and Troup soils. These associated soils are in landscape positions similar to those of the Lucy soils. The somewhat excessively drained Eustis soils are mainly loamy sand throughout. Faceville and Orangeburg soils have an epipedon that is less than 20 inches thick. Faceville soils are clayey. Orangeburg soils are fine-loamy. Troup soils have a grossarenic epipedon.

Typical pedon of Lucy loamy sand, 1 to 5 percent slopes, 1.2 miles southwest of Georgia Highway 88 near Keysville from the intersection with Brier Creek; 0.8 mile west on a dirt road; 350 feet north of the road; in Jefferson County:

A—0 to 8 inches; brown (10YR 4/3) loamy sand; weak fine granular structure; very friable; many fine roots; strongly acid; clear wavy boundary.
E—8 to 27 inches; brownish yellow (10YR 6/6) loamy sand; weak medium granular structure; very friable; common fine roots; strongly acid; clear smooth boundary.
Bt1—27 to 29 inches; yellowish red (5YR 4/6) sandy loam; weak medium subangular blocky structure; friable; strongly acid; gradual wavy boundary.
Bt2—29 to 36 inches; yellowish red (5YR 4/6) sandy clay loam; moderate medium subangular blocky structure; friable; strongly acid; gradual wavy boundary.
Bt3—36 to 65 inches; red (2.5YR 4/6) sandy clay loam; moderate medium subangular blocky structure; friable; few patchy clay films on faces of peds; strongly acid.

The thickness of the solum is 60 inches or more. Reaction is very strongly acid or strongly acid throughout the profile, except for the surface layer in areas that have been limed.

The sandy epipedon is 21 to 38 inches thick. The A or Ap horizon has hue of 10YR or 7.5YR, value of 3 to 5, and chroma of 2 or 3. The E horizon has hue of 10YR or 7.5YR and value and chroma of 4 to 6.

Some pedons have an EB horizon, which has hue of 7.5YR or 5YR, value of 4 or 5, and chroma of 6 to 8. The BE horizon, if it occurs, has hue of 2.5YR or 5YR, value of 4 or 5, and chroma of 6 to 8.

The Bt horizon has hue of 2.5YR or 5YR, value of 4 or 5, and chroma of 6 to 8. In some pedons it has mottles in shades of yellow or brown below a depth of about 36 inches.

Meggett Series

The Meggett series consists of poorly drained soils that formed in clayey sediments on flood plains. Permeability is slow. These soils are on the Southern Coastal Plain. Slopes are 0 to 2 percent. The soils are fine, mixed, thermic Typic Albaqualfs.

Meggett soils are geographically associated with Herod, Muckalee, and Rains soils. Herod and Muckalee soils are in landscape positions similar to those of the Meggett soils. Rains soils are in slight depressions on flood plains, at the head of streams, and on stream terraces. Muckalee soils are coarse-loamy, and Herod and Rains soils are fine-loamy.

Typical pedon of Meggett loam, frequently flooded, 950 feet west on Georgia Highway 78 from the Ogeechee River; 150 feet north of the road; in Jefferson County:

A—0 to 3 inches; dark brown (10YR 4/3) loam; weak fine granular structure; very friable; many fine and medium roots; medium acid; abrupt smooth boundary.
Btg1—3 to 12 inches; gray (10YR 6/1) clay; common medium prominent yellowish brown (10YR 5/6) mottles; moderate medium subangular blocky structure; firm; common fine roots; few faint clay films on faces of peds; neutral; gradual wavy boundary.
Btg2—12 to 30 inches; gray (10YR 6/1) clay; common medium prominent brownish yellow (10YR 6/6) mottles; moderate medium subangular blocky structure; firm; few fine roots; common distinct clay films on faces of peds; mildly alkaline; gradual wavy boundary.
Btg3—30 to 41 inches; light brownish gray (2.5Y 6/2) clay; common medium distinct olive yellow (2.5Y 6/6) mottles; moderate medium subangular blocky structure; firm; few fine concretions of calcium carbonate; few faint clay films on faces of peds; mildly alkaline; gradual wavy boundary.
Btg4—41 to 62 inches; light brownish gray (2.5Y 6/2) clay; common medium distinct olive yellow (2.5Y 6/6) mottles; weak medium subangular blocky structure; friable; many medium concretions of calcium carbonate; thin faint clay films on faces of peds; mildly alkaline.

The thickness of the solum ranges from 60 to 80 inches. Reaction is medium acid or strongly acid in the A horizon. It ranges from medium acid to mildly alkaline in the upper part of the B horizon and is neutral or mildly alkaline in the lower part.

The A horizon is 3 to 6 inches thick. It has hue of 10YR, value of 4 or 5, and chroma of 1 to 3. Some pedons have an E horizon, which has hue of 10YR, value of 5, and chroma of 1 or 2.

The Btg horizon has hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 1 or 2. It has few to many brownish yellow, yellowish brown, and strong brown mottles. It is clay, sandy clay, or clay loam. The Btg3 and Btg4 horizons have few to many concretions of calcium carbonate.

Some pedons have a BCg horizon, which has matrix colors similar to those of the Btg horizon. This horizon has few or common shell fragments and concretions of calcium carbonate. It is sandy clay or sandy clay loam.

Muckalee Series

The Muckalee series consists of poorly drained soils that formed in loamy and sandy sediments on flood plains. Permeability is moderate. These soils are on the Southern Coastal Plain. Slopes are 0 to 2 percent. The

soils are coarse-loamy, siliceous, nonacid, thermic Typic Fluvaquents.

Muckalee soils are geographically associated with Herod, Meggett, and Rains soils. Herod and Meggett soils are in landscape positions similar to those of the Muckalee soils. Rains soils are in slight depressions on flood plains, at the head of streams, and on stream terraces. Herod and Rains soils are fine-loamy, and Meggett soils are fine textured.

Typical pedon of Muckalee loam, in an area of Herod and Muckalee loams, frequently flooded; 900 feet east of the intersection of Rocky Comfort Creek and U.S. Highway 221; 75 feet north of the highway; in Jefferson County:

A—0 to 6 inches; grayish brown (10YR 5/2) loam; weak fine granular structure; very friable; strongly acid; many fine and medium roots; clear wavy boundary.

Cg1—6 to 12 inches; gray (10YR 6/1) sandy loam; common medium prominent strong brown (7.5YR 5/8) mottles; massive; very friable; many fine and medium roots; medium acid; gradual wavy boundary.

Cg2—12 to 20 inches; light gray (10YR 7/1) loamy sand; massive; very friable; common medium roots; slightly acid; gradual wavy boundary.

Cg3—20 to 30 inches; gray (10YR 6/1) sandy loam; common medium prominent yellowish brown (10YR 5/6) mottles; massive; very friable; common fine and medium roots; medium acid; gradual wavy boundary.

Cg4—30 to 40 inches; gray (5Y 6/1) sandy loam; massive; very friable; common fine and medium roots; neutral; gradual wavy boundary.

Cg5—40 to 60 inches; gray (N 6/0) loamy sand; massive; very friable; common medium roots; neutral.

Thickness of the loamy and sandy sediments is 60 inches or more. Reaction is strongly acid or medium acid in the A horizon and ranges from medium acid to neutral in the Cg horizon.

The A horizon is 3 to 8 inches thick. It has hue of 10YR, value of 3 to 5, and chroma of 1 or 2.

The Cg horizon has hue of 10YR, 5Y, or 2.5Y, value of 4 to 7, and chroma of 1 or 2, or it is neutral in hue and has value of 5 to 7. It has streaks with hue of 10YR, value of 4 to 7, and chroma of 2 to 8 or hue of 2.5Y, value of 4 to 7, and chroma of 2 to 8. It is sandy loam or loamy sand. In some pedons it has thin strata of sandy clay loam.

Nankin Series

The Nankin series consists of well drained soils that formed in predominantly clayey marine sediments on uplands. Permeability is moderately slow. These soils are in the Carolina and Georgia Sand Hills and on the Southern Coastal Plain. Slopes range from 2 to 8 percent. The soils are clayey, kaolinitic, thermic Typic Kanhapludults.

Nankin soils are geographically associated with Cowarts, Dothan, and Tifton soils. These associated soils are in landscape positions similar to those of the Nankin soils. They are fine-loamy. Dothan and Tifton soils contain 5 percent or more plinthite in the lower part of the subsoil. Tifton soils have 5 percent or more nodules of ironstone on the surface and in the upper part of the profile.

Typical pedon of Nankin loamy sand, 2 to 5 percent slopes, 0.2 mile northwest on County Road 70 from the Jefferson County line; 0.4 mile east near a gas line right-of-way; 50 feet north of the right-of-way; in Glascock County:

Ap—0 to 5 inches; dark grayish brown (10YR 4/2) loamy sand; weak fine granular structure; many fine and medium roots; strongly acid; clear smooth boundary.

E—5 to 8 inches; light yellowish brown (10YR 6/4) loamy sand; weak fine granular structure; very friable; many fine and medium roots; strongly acid; clear smooth boundary.

Bt1—8 to 22 inches; strong brown (7.5YR 5/6) sandy clay; moderate medium subangular blocky structure; slightly hard, friable, sticky; common fine and medium roots; few distinct clay films on faces of peds; strongly acid; clear wavy boundary.

Bt2—22 to 31 inches; strong brown (7.5YR 5/8) clay; common medium prominent yellowish brown (10YR 7/6) mottles; strong medium angular blocky structure; firm; many prominent clay films on faces of peds; very strongly acid; gradual wavy boundary.

Bt3—31 to 51 inches; mottled strong brown (7.5YR 5/8), light gray (10YR 7/1), and red (2.5YR 4/6) sandy clay loam; weak medium subangular blocky structure; firm; few fine roots; few distinct clay films on faces of peds; very strongly acid; gradual wavy boundary.

C—51 to 63 inches; yellowish red (5YR 5/8) sandy clay loam; common medium prominent brownish yellow (10YR 6/6) and light gray (10YR 7/2) mottles; massive; friable; very strongly acid.

The thickness of the solum ranges from 40 to more than 65 inches. Reaction is strongly acid or very strongly acid throughout the profile, except for the surface layer in areas that have been limed.

The A horizon is 2 to 9 inches thick. It has hue of 10YR, value of 3 or 4, and chroma of 2 or 3. In some

pedons it has few or common fragments of ironstone and quartz gravel.

The E horizon, if it occurs, has hue of 10YR and value and chroma of 4 to 6, or it has hue of 10YR, value of 5 or 6, and chroma of 8.

The upper part of the Bt horizon has hue of 5YR to 10YR, value of 4 or 5, and chroma of 6 to 8. It is dominantly clay or sandy clay. The lower part of the Bt horizon has hue of 5YR or 7.5YR, value of 5, and chroma of 6 to 8. In some pedons it has common or many mottles in shades of red. Few or common light gray mottles are below a depth of 36 inches. The lower part of the Bt horizon is sandy clay loam, sandy clay, or clay.

The BC horizon, if it occurs, is sandy clay loam or sandy loam. It is mottled in shades of brown, red, or gray.

The C horizon is mottled in shades of red, gray, or yellow, or it has matrix colors similar to those of the lower part of the Bt horizon. It generally is sandy clay loam, but it has strata of loamy sand or sandy loam.

Ocilla Series

The Ocilla series consists of somewhat poorly drained soils that formed mainly in sandy and loamy marine sediments on uplands and stream terraces. Permeability is moderately rapid or rapid in the sandy epipedon and moderate in the subsoil. These soils are on the Southern Coastal Plain. Slopes are 0 to 2 percent. The soils are loamy, siliceous, thermic Aquic Arenic Paleudults.

Ocilla soils are geographically associated with Clarendon, Dogue, and Rains soils. These associated soils do not have an arenic epipedon. The moderately well drained Clarendon soils are in smooth areas on uplands. The moderately well drained Dogue soils are on stream terraces. The poorly drained Rains soils are in slight depressions on flood plains, at the head of streams, and on stream terraces. Clarendon and Rains soils are fine-loamy. Clarendon soils contain 5 percent or more plinthite below a depth of 24 to 34 inches. Dogue soils are clayey.

Typical pedon of Ocilla loamy sand, 0 to 2 percent slopes, 1.4 miles east on Georgia Highway 78 from the junction with U.S. Highway 1; 0.9 mile south on a dirt road; 25 feet east of the road; in Jefferson County:

A—0 to 8 inches; dark gray (10YR 4/1) loamy sand; weak fine granular structure; very friable; many fine and very fine roots; strongly acid; clear smooth boundary.

E—8 to 24 inches; grayish brown (10YR 5/2) loamy sand; common medium faint light brownish gray (10YR 6/2) mottles; weak fine granular structure; loose, very friable; common fine and medium roots; very strongly acid; clear wavy boundary.

Bt1—24 to 28 inches; brownish yellow (10YR 6/6) sandy loam; few fine distinct light brownish gray (10YR 6/2) and common medium prominent strong brown (7.5YR 5/8) mottles; weak medium subangular blocky structure; friable; strongly acid; gradual wavy boundary.

Bt2—28 to 40 inches; brownish yellow (10YR 6/6) sandy clay loam; common medium prominent yellowish red (5YR 5/8) and gray (10YR 6/1) mottles; moderate medium subangular blocky structure; friable; very strongly acid; clear wavy boundary.

Btg—40 to 65 inches; mottled light gray (10YR 7/1) and brownish yellow (10YR 6/8) sandy clay loam; moderate medium subangular blocky structure; friable; very strongly acid.

The thickness of the solum is 60 inches or more. Reaction is strongly acid or very strongly acid throughout the profile, except for the surface layer in areas that have been limed.

The sandy epipedon is 21 to 35 inches thick. The A horizon is 5 to 10 inches thick. It has hue of 10YR, value of 3 or 4, and chroma of 1 or 2. The E horizon has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 2 to 4. In some pedons it has few fine brown mottles in the lower part.

The Bt1 horizon has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 4 to 8. It has few or common mottles in shades of red, brown, and gray. It is sandy loam or sandy clay loam.

The Bt2 horizon has hue of 10YR, value of 5 to 7, and chroma of 4 to 6. It has mottles in shades of red, brown, and gray.

The Btg horizon has the same colors as the Bt2 horizon, or it is mottled in shades of gray, brown, or red. It is sandy clay loam or sandy loam.

Orangeburg Series

The Orangeburg series consists of well drained soils that formed dominantly in loamy marine sediments on uplands. Permeability is moderate. These soils are mainly on the Southern Coastal Plain. Slopes range from 0 to 15 percent. The soils are fine-loamy, siliceous, thermic Typic Kandiudults.

Orangeburg soils are geographically associated with Dothan, Faceville, Greenville, Lucy, and Troup soils. These associated soils are in landscape positions similar to those of the Orangeburg soils. Dothan soils have a predominantly yellowish brown subsoil that contains 5 percent or more plinthite in the lower part. Faceville and Greenville soils are clayey. Greenville

soils have a dark red subsoil. Lucy and Troup soils are loamy. Lucy soils have an arenic epipedon, and Troup soils have a grossarenic epipedon.

Typical pedon of Orangeburg loamy sand, 2 to 5 percent slopes, 0.2 mile south on Georgia Highway 171 from the Glascock County line; 125 feet west of the highway; in Jefferson County:

Ap—0 to 9 inches; dark brown (10YR 4/3) loamy sand; weak fine granular structure; very friable; many fine roots; strongly acid; clear smooth boundary.
Bt1—9 to 17 inches; strong brown (7.5YR 5/6) sandy loam; weak fine granular structure; very friable; common fine roots; strongly acid; gradual wavy boundary.
Bt2—17 to 32 inches; yellowish red (5YR 5/8) sandy clay loam; weak medium subangular blocky structure; slightly hard, friable, slightly sticky; common fine roots; few distinct clay films on faces of peds; strongly acid; gradual wavy boundary.
Bt3—32 to 64 inches; red (2.5YR 4/8) sandy clay loam; common fine prominent yellowish brown (10YR 5/8) mottles; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky; common distinct clay films on faces of peds; strongly acid.

The thickness of the solum is 72 inches or more. Reaction is very strongly acid or strongly acid throughout the profile, except for the surface layer in areas that have been limed.

The A horizon is 4 to 10 inches thick. It has hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 2 to 4. It is loamy sand or sandy clay loam.

The E horizon, if it occurs, has hue of 10YR, value of 5 or 6, and chroma of 3 to 6. It is loamy sand or sand.

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 loamy sand or sandy loam.

The Bt1 horizon has hue of 10YR to 5YR, value of 4 or 5, and chroma of 4 to 8. It is sandy loam or sandy clay loam. The Bt2 and Bt3 horizons have hue of 5YR or 2.5YR, value of 4 or 5, and chroma of 6 to 8. In some pedons the Bt3 horizon has few or common mottles in shades of brown.

Osier Series

The Osier series consists of poorly drained soils that formed in sandy sediments on flood plains. Permeability is rapid. These soils are mainly on the Southern Coastal Plain. Slopes are 0 to 2 percent. The soils are siliceous, thermic Typic Psammaquents.

Osier soils are geographically associated with Bibb, Ocilla, and Rains soils. Bibb soils are in landscape positions similar to those of the Osier soils. The somewhat poorly drained Ocilla soils are in broad, smooth, even areas on uplands and on stream terraces. Rains soils are in slight depressions on flood plains, at the head of streams, and on stream terraces. Bibb soils are coarse-loamy, Ocilla soils are loamy, and Rains soils are fine-loamy.

Typical pedon of Osier loamy sand, in an area of Bibb and Osier soils, frequently flooded; 3.1 miles east on a paved county road to Dry Creek from the junction with Georgia Highway 17 at Eden Church; 200 feet northeast of a bridge; in Jefferson County:

A—0 to 12 inches; dark gray (10YR 4/1) loamy sand; weak fine granular structure; very friable; many fine and very fine roots; strongly acid; clear smooth boundary.
Cg1—12 to 20 inches; gray (10YR 6/1) sand; common medium faint light gray (10YR 7/2) mottles; single grained; loose; common fine and very fine roots; strongly acid; gradual wavy boundary.
Cg2—20 to 40 inches; light gray (10YR 6/1) sand; common medium faint gray (10YR 5/1) mottles; single grained; loose; few fine and very fine roots; strongly acid; clear wavy boundary.
Cg3—40 to 62 inches; light gray (10YR 7/1) coarse sand; single grained; loose; strongly acid.

The thickness of the sandy sediments is 60 inches or more. Reaction is very strongly acid or strongly acid throughout the profile. Thin strata of fine sandy loam are in some pedons.

The A horizon is 4 to 12 inches thick. It has hue of 10YR, value of 3 to 5, and chroma of 1 or 2. Where value is 3, the A horizon is less than 7 inches thick.

The Cg horizon has hue of 10YR, value of 4 to 7, and chroma of 1 or 2. It has few or common mottles in shades of gray, yellow, or brown. The upper part is sand or loamy sand, and the lower part is coarse sand or sand.

Rains Series

The Rains series consists of poorly drained soils that formed in loamy sediments. These soils are in slight depressions on flood plains, at the head of streams, and on stream terraces, mainly on the Southern Coastal Plain. Permeability is moderate. Slopes are 0 to 2 percent. The soils are fine-loamy, siliceous, thermic Typic Paleaquults.

Rains soils are geographically associated with Bibb, Clarendon, and Osier soils. Bibb and Osier soils are on flood plains. The moderately well drained Clarendon soils are in smooth areas on uplands. Bibb soils are coarse-loamy, and Osier soils are sandy throughout.

Typical pedon of Rains sandy loam, occasionally flooded, 1.3 miles south on U.S. Highway 1 from the railroad crossing in Wadley; 0.8 mile south on a dirt road; 1.9 miles east on a dirt road; 0.7 mile south and 150 feet west of the dirt road; in Jefferson County:

A—0 to 7 inches; dark gray (10YR 4/1) sandy loam; weak fine granular structure; very friable; many very fine and fine roots; very strongly acid; clear smooth boundary.

E—7 to 12 inches; gray (10YR 5/1) loamy sand; weak fine granular structure; very friable; common fine and medium roots; very strongly acid; clear wavy boundary.

Btg1—12 to 21 inches; gray (10YR 6/1) sandy loam; few medium prominent yellowish brown (10YR 5/6) mottles; weak medium subangular blocky structure; friable; few medium roots; very strongly acid; gradual wavy boundary.

Btg2—21 to 36 inches; gray (10YR 6/1) sandy clay loam; few medium prominent yellowish brown (10YR 5/6) mottles; moderate medium subangular blocky structure; friable; few faint clay films on faces of peds; few medium roots; very strongly acid; gradual wavy boundary.

Btg3—36 to 63 inches; gray (10YR 6/1) sandy clay loam; common medium prominent yellowish brown (10YR 5/8) mottles; moderate medium subangular blocky structure; friable; few distinct clay films on faces of peds; very strongly acid.

The thickness of the solum is 60 inches or more. Reaction is strongly acid or very strongly acid throughout the profile, except for the surface layer in areas that have been limed.

The combined thickness of the A and E horizons ranges from 8 to 18 inches. The A horizon has hue of 10YR, value of 3 or 4, and chroma of 1. The E horizon has hue of 10YR, value of 5 or 6, and chroma of 1 or 2.

The BEg horizon, if it occurs, has hue of 10YR, value of 5 to 7, and chroma of 1. The Btg horizon has hue of 10YR, value of 5 to 7, and chroma of 1, or it is neutral in hue and has value of 5 to 7. It has few or common yellowish brown, strong brown, or brownish yellow mottles. The Btg1 horizon is sandy loam or sandy clay loam, and the Btg3 horizon is sandy clay loam or sandy clay.

Rembert Series

The Rembert series consists of poorly drained soils that formed predominantly in clayey marine sediments on uplands. Permeability is slow. These soils are on the Southern Coastal Plain. Slopes are 0 to 2 percent. The soils are clayey, kaolinitic, thermic Typic Ochraquults.

Rembert soils are geographically associated with Dothan, Faceville, Grady, Orangeburg, Rains, and Tifton soils. The well drained Dothan, Faceville, Orangeburg, and Tifton soils are on uplands. The poorly drained Grady soils are in depressions on uplands. The poorly drained Rains soils are in slight depressions on flood plains, at the head of streams, and on stream terraces. Dothan, Rains, and Tifton soils are fine-loamy. Dothan and Tifton soils have 5 percent or more plinthite within a depth of 60 inches. Grady soils have a thicker solum than the Rembert soils.

Typical pedon of Rembert loam, in an area of Grady and Rembert loams, ponded; 1.5 miles east on Georgia Highway 78 from the intersection with U.S. Highway 221 in Bartow; 600 feet south of Georgia Highway 78; in Jefferson County:

A—0 to 5 inches; dark gray (10YR 4/1) loam; weak fine granular structure; very friable; common very fine and fine roots; strongly acid; clear smooth boundary.

Btg1—5 to 28 inches; gray (10YR 5/1) clay; few medium prominent red (2.5YR 4/6) mottles; moderate medium subangular blocky structure; firm; few very fine and fine roots between peds; common prominent clay films on faces of peds; very strongly acid; gradual wavy boundary.

Btg2—28 to 54 inches; gray (10YR 6/1) clay; common medium prominent strong brown (7.5YR 5/6) and brownish yellow (10YR 6/8) mottles; moderate medium subangular blocky structure; firm; common prominent clay films on faces of peds; very strongly acid; gradual wavy boundary.

Btg3—54 to 59 inches; gray (10YR 6/1) sandy clay loam; common medium prominent strong brown (7.5YR 5/6) and brownish yellow (10YR 6/6) mottles; weak medium subangular blocky structure; friable; very strongly acid; clear wavy boundary.

BC—59 to 63 inches; light gray (10YR 7/1) sandy loam; common medium prominent brownish yellow (10YR 6/6) mottles; massive; friable; very strongly acid.

The thickness of the solum is 60 inches or more. Reaction is very strongly acid or strongly acid throughout the profile, except for the surface layer in areas that have been limed.

The A horizon is 3 to 8 inches thick. It has hue of 10YR, value of 3 or 4, and chroma of 1 or 2.

The E horizon, if it occurs, has hue of 10YR, value of 5 or 6, and chroma of 1 or 2. In some pedons it has brown mottles. It is loam, sandy loam, or loamy sand.

The Bt horizon has hue of 10YR, value of 4 to 6, and chroma of 1. In some pedons it has few to many mottles in shades of brown, yellow, and red. The upper part of the Btg1 horizon is sandy clay loam, sandy clay,

or clay, and the Btg2 horizon is sandy clay or clay. The BC horizon is sandy clay loam or sandy loam.

The C horizon, if it occurs, has the same colors as the Btg horizon or is mottled in shades of gray, brown, or red. It is sandy loam or sandy clay loam.

Tifton Series

The Tifton series consists of well drained soils that formed predominantly in loamy marine sediments on uplands. Permeability is moderate in the upper part of the subsoil and moderately slow in the lower part. These soils are mainly on the Southern Coastal Plain. Slopes range from 0 to 8 percent. The soils are fine-loamy, siliceous, thermic Plinthic Kandiudults.

Tifton soils are geographically associated with Carnegie, Clarendon, and Dothan soils. Carnegie and Dothan soils and the moderately well drained Clarendon soils are in landscape positions similar to those of the Tifton soils. Carnegie soils are clayey. They contain 5 percent or more plinthite at a depth of 16 to 22 inches. Clarendon and Dothan soils contain fewer nodules of ironstone than the Tifton soils.

Typical pedon of Tifton loamy sand, 2 to 5 percent slopes, 0.35 mile west on Old Quaker Road from U.S. Highway 1 in Wrens; 50 feet south of the road; in Jefferson County:

Apc—0 to 8 inches; dark grayish brown (10YR 4/2) loamy sand; weak fine granular structure; very friable; many fine roots; about 10 percent hard nodules of ironstone 0.12 to 0.5 inch in diameter; strongly acid; abrupt smooth boundary.

Btc1—8 to 32 inches; yellowish brown (10YR 5/8) sandy clay loam; moderate medium subangular blocky structure; friable; sand grains coated and bridged with clay; few faint clay films on faces of peds; about 7 percent hard nodules of ironstone; very strongly acid; gradual wavy boundary.

Btc2—32 to 42 inches; yellowish brown (10YR 5/8) sandy clay loam; few medium prominent yellowish red (5YR 4/6) mottles; moderate medium subangular blocky structure; friable; about 3 percent nodular plinthite; few faint clay films on faces of peds; about 5 percent hard nodules of ironstone; very strongly acid; gradual wavy boundary.

Btv1—42 to 49 inches; yellowish brown (10YR 5/8) sandy clay loam; common medium prominent yellowish red (5YR 4/6) and few medium prominent pale brown (10YR 6/3) mottles; moderate medium subangular blocky structure; friable; about 8 percent nodular plinthite; common distinct clay films on faces of peds; about 3 percent nodules of ironstone; very strongly acid; gradual smooth boundary.

Btv2—49 to 65 inches; mottled yellowish brown (10YR 6/8), red (2.5YR 4/6), strong brown (7.5YR 5/8), and light gray (10YR 7/2) sandy clay loam; weak medium subangular blocky structure; friable; about 12 percent plinthite that is mainly nodular; common faint clay films on faces of peds; very strongly acid.

The thickness of the solum is 60 inches or more. Reaction is very strongly acid or strongly acid throughout the profile, except for the surface layer in areas that have been limed. The depth to horizons containing 5 to 15 percent plinthite is 28 to 48 inches.

The A horizon is 4 to 10 inches thick. The Apc horizon has hue of 10YR, value of 4 or 5, and chroma of 2 or 3. It is loamy sand or sandy loam. Some pedons have an E horizon, which has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 4 to 6. The content of ironstone nodules is 5 to 15 percent, by volume, in the A and E horizons.

The Btc and Btv1 horizons have hue of 10YR or 7.5YR, value of 5, and chroma of 4 to 8. The Btv1 horizon has few or common mottles in shades of red and brown. In some pedons it has few or common gray mottles. The Btv2 horizon is mottled in shades of yellow, red, brown, and gray, or it has hue of 10YR or 7.5YR, value of 5 or 6, and chroma of 4 to 8. The content of ironstone nodules is 5 to 20 percent in the Btc horizon. In some pedons the Btv horizon has 1 to 10 percent nodules of ironstone. The Bt horizon is sandy loam or sandy clay loam that has a weighted average of more than 18 percent clay in the upper 20 inches.

Troup Series

The Troup series consists of well drained soils that formed in thick sandy and loamy marine sediments on uplands. Permeability is rapid in the sandy epipedon and moderate in the subsoil. These soils are in the Carolina and Georgia Sand Hills and on the Southern Coastal Plain. Slopes range from 1 to 25 percent. The soils are loamy, siliceous, thermic Grossarenic Kandiudults.

Troup soils are geographically associated with Eustis, Lakeland, Lucy, and Orangeburg soils. These associated soils are in landscape positions similar to those of the Troup soils. Eustis soils are sandy and are somewhat excessively drained. Lakeland soils are sandy throughout and are excessively drained. Lucy soils have an arenic epipedon. Orangeburg soils have an epipedon that is less than 20 inches thick. They are fine-loamy.

Typical pedon of Troup fine sand, 1 to 5 percent slopes, 5.3 miles northeast on the paved county road from the junction with U.S. Highway 1 bypass in

Louisville; 0.2 mile west on a private dirt road; 100 feet south of the road; in Jefferson County:

Ap—0 to 7 inches; brown (10YR 5/3) fine sand; weak fine granular structure; very friable; common very fine roots; strongly acid; clear smooth boundary.
E1—7 to 36 inches; strong brown (7.5YR 5/8) fine sand; single grained; loose; common very fine roots; strongly acid; gradual wavy boundary.
E2—36 to 68 inches; yellowish red (5YR 5/8) fine sand; single grained; loose; common very fine roots; strongly acid; gradual wavy boundary.
Bt1—68 to 74 inches; red (2.5YR 4/8) sandy loam; weak medium subangular blocky structure; very friable; strongly acid; clear smooth boundary.
Bt2—74 to 90 inches; red (2.5YR 4/8) sandy clay loam; moderate medium subangular blocky structure; friable; very strongly acid.

The thickness of the solum is 65 inches or more. Reaction is strongly acid or very strongly acid throughout the profile, except for the surface layer in areas that have been limed.

The sandy epipedon is 42 to 79 inches thick. The A horizon has hue of 10YR or 7.5YR, value of 3 to 6, and chroma of 2 to 4. The E horizon has hue of 10YR to 5YR, value of 4 to 6, and chroma of 4 to 8.

The BE horizon, if it occurs, has hue of 10YR to 2.5YR, value of 4 to 6, and chroma of 6 to 8. It is sandy loam or fine sandy loam. In some pedons it has few or common fine and medium yellowish red or red mottles.

The Bt horizon has hue of 5YR or 7.5YR, value of 4 to 6, and chroma of 6 to 8. In some pedons it has few to many fine or medium mottles in shades of red and brown. It is sandy loam or sandy clay loam.

Wahee Series

The Wahee series consists of somewhat poorly drained soils that formed in loamy and clayey sediments on low stream terraces. Permeability is slow. These soils are mainly on the Southern Coastal Plain. Slopes are 0 to 2 percent. The soils are clayey, mixed, thermic Aeric Ochraquults.

Wahee soils are geographically associated with Bibb, Herod, Osier, and Muckalee soils. These associated soils are poorly drained and are on flood plains. They do not have an argillic horizon.

Typical pedon of Wahee fine sandy loam, frequently flooded, 0.9 mile north of Dry Creek on Georgia Highway 17; 1.4 miles west on a dirt road; 1,100 feet north of the dirt road; in Jefferson County:

Ap—0 to 4 inches; brown (10YR 5/3) fine sandy loam; weak medium granular structure; friable; many fine and medium roots; strongly acid; abrupt smooth boundary.
Bt—4 to 13 inches; yellowish brown (10YR 5/4) sandy clay; common fine prominent strong brown (7.5YR 5/6) and light brownish gray (10YR 6/2) mottles; moderate medium subangular blocky structure; firm; very strongly acid; gradual wavy boundary.
Btg—13 to 35 inches; light gray (10YR 6/1) clay; common medium prominent brownish yellow (10YR 6/6) and strong brown (7.5YR 5/8) mottles; weak coarse prismatic structure parting to strong medium subangular blocky; firm, plastic; few medium roots; common prominent clay films on faces of peds; very strongly acid; clear wavy boundary.
BCg—35 to 50 inches; light gray (10YR 6/1) sandy clay loam; common medium prominent brownish yellow (10YR 5/8) and strong brown (7.5YR 5/8) mottles; weak medium subangular blocky structure; friable; very strongly acid; gradual wavy boundary.
Cg—50 to 65 inches; light gray (10YR 7/1) and yellowish brown (10YR 5/6) loamy sand; massive; very friable; very strongly acid.

The thickness of the solum ranges from 40 to more than 65 inches. Reaction is very strongly acid or strongly acid throughout the profile, except for the surface layer in areas that have been limed.

The A horizon is 3 to 8 inches thick. The A or Ap horizon has hue of 10YR, value of 3 to 5, and chroma of 1 to 3. The E horizon, if it occurs, has hue of 10YR, value of 5 or 6, and chroma of 3 or 4. It is fine sandy loam or sandy loam.

The Bt horizon has hue of 10YR, value of 5 or 6, and chroma of 4 to 6. It has few or common mottles in shades of gray. It is sandy clay loam or sandy clay. The Btg horizon has hue of 10YR, value of 5 or 6, and chroma of 1 or 2. It is sandy clay or clay. In some pedons it has common or many mottles in shades of yellow, gray, brown, and red.

The BC horizon has mottles in shades of gray, brown, yellow, and red, or it has hue of 10YR or 5Y, value of 6 or 7, and chroma of 1 and has mottles in shades of yellow, brown, or red. It is sandy clay loam or sandy loam.

The C horizon, if it occurs, has hue of 10YR, value of 4 to 7, and chroma of 1 or 2. In some pedons it has mottles in shades of yellow or brown. It is sandy loam or loamy sand.

Wedowee Series

The Wedowee series consists of well drained soils that formed in material weathered from granite, gneiss, or coarse grained schist on uplands. Permeability is moderate. These soils are in the Carolina and Georgia

Sand Hills. Slopes range from 6 to 25 percent but are mainly 6 to 10 percent. The soils are clayey, kaolinitic, thermic Typic Hapludults.

Wedowee soils are geographically associated with Ailey, Cecil, and Cowarts soils. These associated soils are in landscape positions similar to those of the Wedowee soils. Ailey soils have an arenic epipedon. They are loamy. Cecil soils have a thicker solum than the Wedowee soils. Cowarts soils are fine-loamy.

Typical pedon of Wedowee sandy loam, 6 to 10 percent slopes, about 1.4 miles east on County Line Road from the intersection of Georgia Highway 80; about 0.4 mile south from County Line Road; in Glascock County:

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

Bt1—5 to 10 inches; strong brown (7.5YR 5/8) sandy clay loam; weak medium subangular blocky structure; friable; common fine and very fine roots; few fine and very fine pores; few distinct clay films on faces of peds; strongly acid; clear smooth boundary.

Bt2—10 to 26 inches; strong brown (7.5YR 5/6) clay; moderate medium subangular blocky structure; firm; common fine and very fine roots; few fine pores; many prominent clay films on faces of peds; strongly acid; gradual wavy boundary.

Bt3—26 to 35 inches; strong brown (7.5YR 5/8) clay loam; common medium prominent yellowish brown (10YR 5/6) mottles; weak medium subangular blocky structure; firm; few fine roots; few faint clay films on faces of peds; very strongly acid; gradual smooth boundary.

C—35 to 62 inches; brownish yellow (10YR 6/6) saprolite that crushes to sandy loam; common medium prominent pale brown (10YR 6/3), white (10YR 6/1), and brown (10YR 4/3) mottles; rocklike structure; friable; very strongly acid.

The thickness of the solum ranges from 24 to 40 inches. Hard bedrock is at a depth of 60 inches or more. Reaction is very strongly acid or strongly acid throughout the profile, except for the surface layer in areas that have been limed.

The A horizon is 2 to 5 inches thick. It 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 and value and chroma of 4 to 6. The BE horizon, if it occurs, has hue of 5YR or 7.5YR, value of 5 or 6, and chroma of 6 to 8.

The Bt horizon has hue of 5YR to 10YR, value of 5 or 6, and chroma of 6 to 8. Mottles, if they occur, have hue of 2.5YR to 10YR, value of 4 to 6, and chroma of 6 to 8. The upper part of the Bt horizon is sandy clay loam or sandy clay. The rest of the horizon is clay loam, sandy clay, or clay.

The BC horizon, if it occurs, has hue of 5YR to 10YR, value of 5 or 6, and chroma of 6 to 8. It has mottles mainly in shades of red, brown, and gray. It is sandy clay loam or clay loam.

The C horizon is weathered granite, granite gneiss, or schist. If crushed, it is sandy loam, sandy clay loam, clay loam, or sandy clay.

Formation of the Soils

Soil characteristics are determined by the physical and mineralogical composition of the parent material; the plant and animal life on and in the soil; the climate under which the parent material accumulated and has existed since accumulation; the relief, or lay of the land; and the length of time that the forces of soil formation have acted on the soil material *(6)*. All of these factors influence every soil, but the significance of each factor varies from place to place. In one area, one factor may dominate soil formation; in another area, a different factor may be dominant.

The interrelationships among these five factors are complex, and the effects of any one factor cannot be isolated and completely evaluated. It is convenient, however, to describe each factor separately and to indicate the probable effects of each.

Parent Material

Parent material is the unconsolidated mass in which soil forms. The chemical and mineralogical composition of the soil is derived largely from the parent material. The soils of Glascock and Jefferson Counties formed primarily in sandy to clayey marine sediments overlying crystalline bedrock.

The Irwinton Sand Member of the Dry Branch Formation is throughout most of Glascock County and the northern part of Jefferson County. The well drained Bonifay and Troup soils and the excessively drained Lakeland soils on uplands are some of the soils that formed in material derived from this formation. Bonifay and Troup soils have a sandy surface layer and subsurface layer and a loamy subsoil. Also, Bonifay soils contain plinthite in the subsoil. Lakeland soils are sandy throughout.

The Twiggs Clay Member of the Dry Branch Formation commonly is on hillsides near rivers and creeks throughout the survey area. The well drained Lucy and Orangeburg soils on uplands formed in material derived from this formation. Orangeburg soils have a sandy or loamy surface layer and a loamy subsoil, and Lucy soils have a sandy surface layer and subsurface layer and a loamy subsoil.

Lower Tertiary-Cretaceous sediments lie adjacent to the Twiggs Clay, mainly in the southwestern part of Glascock County and the northwestern part of Jefferson County. The well drained Dothan, Fuquay, and Tifton soils on uplands formed in this material. Dothan and Tifton soils have a sandy or loamy surface layer and a loamy subsoil. Dothan soils have fewer nodules of ironstone on the surface and in the soil than Tifton soils. Fuquay soils have a sandy surface layer and subsurface layer and a loamy subsoil.

The Neogene Undifferentiated material, which includes principally the Hawthorn Formation, lies in the southern part of Jefferson County. The well drained Cowarts and Nankin soils on uplands formed in material derived from this formation. Cowarts soils have a sandy or loamy surface layer and a loamy subsoil. Nankin soils have a sandy or loamy surface layer and a predominantly clayey subsoil.

Granite underlies the northern part of Glascock County. The well drained Wedowee soils on uplands formed in material derived from this formation. They have a loamy surface layer and a predominantly clayey subsoil.

Stream alluvium is adjacent to all of the streams in the survey area, but it is most extensive on the flood plains along Rocky Comfort Creek, Williamson Swamp Creek, and the Ogeechee River. The soils on flood plains formed in more recent sediment than the soils on uplands. The poorly drained Bibb, Chastain, Herod, Meggett, Muckalee, and Osier soils are examples of soils that formed on flood plains. Bibb and Herod soils are loamy throughout; Osier soils are sandy throughout. Chastain and Meggett soils are loamy in the upper few inches and are clayey in the rest of the profile. Muckalee soils have a loamy surface layer and sandy and loamy underlying layers.

Some soils formed in more than one kind of parent material. Cowarts, Dothan, Fuquay, Lucy, Orangeburg, Tifton, and Troup soils are examples.

Plants and Animals

The effects of plants, animals, and other organisms on soil formation are significant. Plants and animals increase the content of organic matter and nitrogen in

the soil, increase or decrease the content of plant nutrients, and change soil structure and porosity.

Plants recycle nutrients, add organic matter, and provide food and cover for animals. They stabilize the surface layer so that soil-forming processes can continue. They also provide a more stable environment for the soil-forming processes by protecting the soils from extremes in temperature.

The soils in the survey area formed under a succession of briers, brambles, and woody plants that yielded to pine and hardwoods. Later, the hardwoods suppressed most other plants and became the climax vegetation.

Animals rearrange soil material by roughening the surface, forming and filling channels, and shaping the peds and voids. The soil is mixed by ants, wasps, worms, and spiders, which make channels; by crustacea, such as crabs and crayfish; and by turtles and foxes, which dig burrows. Humans affect the soil-forming process by tilling the crops, removing natural vegetation and establishing different plants, and reducing or increasing the level of fertility.

Bacteria, fungi, and other micro-organisms hasten the decomposition of organic matter and increase the rate at which minerals are released for plant growth. The net gains and losses caused by plants and animals in the soil-forming process are important in the survey area. The relationships among plants and animals, climate, and parent material, however, are very close; therefore, the soils do not differ significantly because of plants and animals.

Climate

The present climate of the survey area is thought to be similar to the climate that existed as the soils formed. The relatively high rainfall and warm temperature contribute to rapid soil formation and are the two most important climatic features that relate to soil properties.

Water from precipitation is essential in the formation of soil. Water dissolves soluble materials and is used by plants and animals. It transports material from one part of the soil to another part and from one area to another.

The soils in the survey area formed under a thermic temperature regime; that is, the mean soil temperature at a depth of about 20 inches is 59 to 72 degrees F. Based on the mean annual air temperature, the estimated soil temperature in the survey area is about 67 degrees. The rate of chemical reactions and other processes in the soil depends to some extent on temperature. In addition, temperature affects the type and quantity of vegetation, the amount and kind of organic matter, and the rate at which the organic matter decomposes.

Relief

Relief is the elevations, or inequalities, of the land surface considered collectively. The color of the soil, the degree of wetness, the thickness of the A horizon, the content of organic matter, and the plant cover are commonly related to relief. In Glascock and Jefferson Counties, the most obvious effects of relief are those that relate to the color of the soil and the degree of wetness.

Dothan and Tifton soils mainly have a yellowish brown subsoil, but Grady and Rains soils are primarily gray throughout the subsoil. This difference in color results from a difference in relief and a corresponding difference in internal drainage. Dothan and Tifton soils are in the higher positions on the landscape and are better drained than the other soils; therefore, the soil material is better oxidized and the subsoil is browner.

The movement of water across the surface and through the soil is controlled mostly by relief. Water flowing across the surface commonly carries solid particles and causes erosion or deposition, depending on the kind of relief. More water runs off the sloping areas; therefore, the soils are drier because less water penetrates the surface. The soils in the lower lying areas are commonly wetter because they receive the water that flows off and through the soils in the higher positions on the landscape.

Time

The length of time that the soil-forming factors act on the parent material helps to determine the characteristics of the soil. Determinations of when soil formation began in the survey area are not exact. Most of the soils are considered mature. Mature soils are in equilibrium with the environment. They are characterized by readily recognizable pedogenic horizons and a regular decrease in content of carbon with increasing depth. Some areas of Dothan and Tifton soils are on rather broad, stable landscapes where the soil-forming processes have been active for thousands of years. These mature soils have a thick solum and a well expressed zone of illuviation.

Herod and Muckalee soils receive sediment annually from floodwater. These young soils are stratified and are not old enough to have a zone of illuviation. They do not have pedogenic horizons. They are characterized by an irregular decrease in content of carbon with increasing depth.

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Glossary

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

Association, soil. A group of soils geographically associated in a characteristic repeating pattern and defined and delineated as a single map unit.

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

Base saturation. The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, K), expressed as a percentage of the total cation-exchange capacity.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

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.

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 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.

Climax vegetation. The stabilized plant community on a particular site. The plant cover reproduces itself and does not change so long as the environment remains the same.

Complex, soil. A map unit of two or more kinds of soil 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 are somewhat similar in all areas.

Concretions. Grains, pellets, or nodules of various sizes, shapes, and colors consisting of concentrated compounds or cemented soil grains. The composition of most concretions is unlike that of the surrounding soil. Calcium carbonate and iron oxide are common compounds in concretions.

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. The feel of the soil and the ease with which a lump can be crushed by the fingers. Terms commonly used to describe consistence are:

Loose.—Noncoherent when dry or moist; does not hold together in a mass.

Friable.—When moist, crushes easily under gentle pressure between thumb and forefinger and can be pressed together into a lump.

Firm.—When moist, crushes under moderate pressure between thumb and forefinger, but resistance is distinctly noticeable.

Plastic.—When wet, readily deformed by moderate pressure but can be pressed into a lump; will form a "wire" when rolled between thumb and forefinger.

Sticky.—When wet, adheres to other material and tends to stretch somewhat and pull apart rather than to pull free from other material.

Hard.—When dry, moderately resistant to

pressure; can be broken with difficulty between thumb and forefinger.
Soft.—When dry, breaks into powder or individual grains under very slight pressure.
Cemented.—Hard; little affected by moistening.

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.

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.

Cutbanks cave (in tables). The walls of excavations tend to cave in or slough.

Dense layer (in tables). A very firm, massive layer that has a bulk density of more than 1.8 grams per cubic centimeter. Such a layer affects the ease of digging and can affect filling and compacting.

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 periods of saturation or partial saturation during soil formation, as opposed to altered drainage, which is commonly the result of artificial drainage or irrigation but may be caused by the sudden deepening of channels or the blocking of drainage outlets. Seven classes of natural soil drainage are recognized:
Excessively drained.—Water is removed from the soil very rapidly. Excessively drained soils are commonly very coarse textured, rocky, or shallow. Some are steep. All are free of the mottling related to wetness.
Somewhat excessively drained.—Water is removed from the soil rapidly. Many somewhat excessively drained soils are sandy and rapidly pervious. Some are shallow. Some are so steep that much of the water they receive is lost as runoff. All are free of the mottling related to wetness.
Well drained.—Water is removed from the soil readily, but not rapidly. It is available to plants throughout most of the growing season, and wetness does not inhibit growth of roots for significant periods during most growing seasons. Well drained soils are commonly medium textured. They are mainly free of mottling.
Moderately well drained.—Water is removed from the soil somewhat slowly during some periods. Moderately well drained soils are wet for only a short time during the growing season, but periodically they are wet long enough that most mesophytic crops are affected. They commonly have a slowly pervious layer within or directly below the solum or periodically receive high rainfall, or both.
Somewhat poorly drained.—Water is removed slowly enough that the soil is wet for significant periods during the growing season. Wetness markedly restricts the growth of mesophytic crops unless artificial drainage is provided. Somewhat poorly drained soils commonly have a slowly pervious layer, a high water table, additional water from seepage, nearly continuous rainfall, or a combination of these.
Poorly drained.—Water is removed so slowly that the soil is saturated periodically during the growing season or remains wet for long periods. Free water is commonly at or near the surface for long enough during the growing season that most mesophytic crops cannot be grown unless the soil is artificially drained. The soil is not continuously saturated in layers directly below plow depth. Poor drainage results from a high water table, a slowly pervious layer within the profile, seepage, nearly continuous rainfall, or a combination of these.
Very poorly drained.—Water is removed from the soil so slowly that free water remains at or on the surface during most of the growing season. Unless the soil is artificially drained, most mesophytic crops cannot be grown. Very poorly drained soils are commonly level or depressed and are frequently ponded. Yet, where rainfall is high and nearly continuous, they can have moderate or high slope gradients.

Drainage, surface. Runoff, or surface flow of water, from an area.

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 fire, that exposes the surface.

Excess fines (in tables). Excess silt and clay in the soil. The soil is not a source of gravel or sand for construction purposes.

Fast intake (in tables). The movement of water into the soil is rapid.

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.

Flood plain. A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

Forb. Any herbaceous plant that is not a grass or a sedge.

Fuller's earth. A very fine grained substance that is very high in montmorillonite. It has a high adsorption capacity and consists largely of hydrated aluminum silicates. The color of fuller's earth ranges from light brown through yellow and white to light green and dark green. Fuller's earth differs from ordinary clay because it has a higher percentage of water and very little plasticity.

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 up to 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.

Ground water (geology). 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.

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 at the surface of a mineral soil.

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 O, A, or E horizon. The B horizon is, in part, a layer of transition from the overlying horizon to the underlying C horizon. The B horizon also has distinctive characteristics, such as accumulation of clay, sesquioxides, humus, or a combination of these; prismatic or blocky structure; redder or browner colors than those in the A horizon; or a combination of these. The combined A and B horizons are generally called the solum, or true soil. If a soil does not have a B horizon, the A horizon alone is the solum.

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 A or B horizon. 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, the Arabic numeral 2 precedes the letter C.

Cr horizon.—Soft, consolidated bedrock beneath the soil.

R layer.—Consolidated rock (unweathered bedrock) beneath the soil. The bedrock commonly underlies a C horizon but can be directly below an A or a B horizon.

Hydrologic soil groups. Refers to soils grouped according to their runoff-producing characteristics. The chief consideration is the inherent capacity of soil bare of vegetation to permit infiltration. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff. Soils are assigned to four groups. In group A are soils having a high infiltration rate when thoroughly wet and having a low runoff potential. They are mainly deep, well drained, and sandy or gravelly. In group D, at the other extreme, are soils having a very slow infiltration rate and thus a high runoff potential. They have a claypan or clay layer at or near the surface, have a permanent high water table, or are shallow over nearly impervious bedrock or other material. A soil is assigned to two hydrologic groups if part of the acreage is artificially drained and part is undrained.

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.

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.

Intake rate. The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net irrigation application. The rate of water intake, in inches per hour, is expressed as follows:

Less than 0.2	very low
0.2 to 0.4	low
0.4 to 0.75	moderately low
0.75 to 1.25	moderate
1.25 to 1.75	moderately high
1.75 to 2.5	high
More than 2.5	very high

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.

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 strength. The soil is not strong enough to support loads.

Miscellaneous area. An area that has little or no natural soil and supports little or no vegetation.

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. Mottling generally indicates poor aeration and impeded drainage. Descriptive terms are as follows: abundance—*few, common,* and *many*; size—*fine, medium,* and *coarse*; and contrast—*faint, distinct,* and *prominent.* The size measurements are 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).

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.

Neutral soil. A soil having a pH value between 6.6 and 7.3. (See Reaction, soil.)

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.

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.

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 to move through the profile. Permeability is measured as the number of inches per hour that water moves through the saturated soil. Terms describing permeability are:

Very slow	less than 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. For example, slope, stoniness, and thickness.

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Piping (in tables). Subsurface tunnels or pipelike cavities are formed 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.

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.

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 permeability, the soil may not adequately filter effluent from a waste disposal system.

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.

Reaction, soil. A measure of the 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:

Extremely acid	below 4.5
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Medium acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Mildly 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

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

Rill. A steep-sided channel resulting from accelerated erosion. A rill is generally a few inches deep and not wide enough to be an obstacle to farm machinery.

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.

Saprolite (soil science). Unconsolidated, residual material underlying the soil and grading to hard bedrock below.

Seepage (in tables). The movement of water through the soil adversely affects the specified use.

Series, soil. A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer or of the underlying material. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Shrink-swell. 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.

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.

Site index. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75 feet.

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.

Slope (in tables). Slope is great enough that special practices are required to ensure satisfactory performance of the soil for a specific use.

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.

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.

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 underlying material. The living roots and plant and animal activities are largely confined to the solum.

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.

Substratum. The part of the soil below the solum.

Subsurface layer. Technically, the A2 horizon. Generally refers to a leached horizon lighter in color and lower in organic matter content than the overlying 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."

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.

Terrace. An embankment, or ridge, constructed on the contour or at a slight angle to the contour across sloping soils. The terrace intercepts surface runoff, so that water soaks into the soil or flows slowly to a prepared outlet.

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). An 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.

Toe slope. The outermost inclined surface at the base of a hill; part of a foot slope.

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.

Upland (geology). Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

Weathering. All physical and chemical changes produced by atmospheric agents in rocks or other deposits at or near the earth's surface. These changes result in disintegration and decomposition of the material.

Tables

TABLE 1.--TEMPERATURE AND PRECIPITATION

(Recorded in the period 1951-87 at Louisville, Georgia)

Month	Temperature						Precipitation				
				2 years in 10 will have--				2 years in 10 will have--			
	Average daily maximum	Average daily minimum	Average daily	Maximum temperature higher than--	Minimum temperature lower than--	Average number of growing degree days*	Average	Less than--	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	58.1	35.2	46.7	78	11	105	4.10	2.07	5.82	7	0.1
February	62.4	37.5	50.0	80	16	114	4.32	2.14	5.89	7	.6
March	69.7	43.9	56.8	86	24	241	4.66	2.38	6.52	7	.0
April	78.5	51.5	65.0	92	32	450	3.39	1.46	4.90	6	.0
May	85.2	59.4	72.3	96	42	691	3.66	1.64	5.20	5	.0
June	90.0	66.6	78.3	101	52	849	3.93	1.89	5.55	6	.0
July	92.2	69.7	81.0	103	59	961	4.56	2.15	6.58	8	.0
August	91.4	68.9	80.2	101	59	936	4.30	1.84	6.28	7	.0
September	86.4	64.2	75.3	98	47	759	3.22	.89	4.91	5	.0
October	77.7	52.7	65.2	92	31	471	2.24	.30	3.58	4	.0
November	69.0	43.2	56.1	85	22	210	2.47	.94	3.71	4	.0
December	60.8	37.1	49.0	79	15	115	3.63	1.64	5.23	6	.0
Yearly:											
Average	76.8	52.5	64.7	---	---	---	---	---	---	---	---
Extreme	---	---	---	104	9	---	---	---	---	---	---
Total	---	---	---	---	---	5,902	44.48	37.29	52.26	72	.7

* 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 1951-87 at Louisville, Georgia)

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. 16	Mar. 28	Apr. 11
2 years in 10 later than--	Mar. 4	Mar. 20	Apr. 4
5 years in 10 later than--	Feb. 11	Mar. 5	Mar. 23
First freezing temperature in fall:			
1 year in 10 earlier than--	Nov. 16	Nov. 3	Oct. 27
2 years in 10 earlier than--	Nov. 23	Nov. 8	Oct. 30
5 years in 10 earlier than--	Dec. 7	Nov. 17	Nov. 6

TABLE 3.--GROWING SEASON

(Recorded in the period 1951-87 at Louisville, Georgia)

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	262	229	206
8 years in 10	274	239	213
5 years in 10	299	256	227
2 years in 10	323	274	241
1 year in 10	336	283	248

TABLE 4.--ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS

Map symbol	Soil name	Glascock County	Jefferson County	Total-- Area	Extent
		Acres	Acres	Acres	Pct
AeB	Ailey sand, 1 to 5 percent slopes	1,479	645	2,124	0.5
AeC	Ailey sand, 5 to 8 percent slopes	3,093	554	3,647	0.8
AeD	Ailey sand, 8 to 15 percent slopes	3,005	145	3,150	0.7
AeE	Ailey sand, 15 to 25 percent slopes	346	64	410	0.1
ArB	Arundel loamy sand, 2 to 5 percent slopes	30	444	474	0.1
BB	Bibb and Osier soils, frequently flooded	9,299	26,700	35,999	8.3
BnB	Blanton sand, 0 to 5 percent slopes	139	1,006	1,145	0.3
BoB	Bonifay fine sand, 1 to 5 percent slopes	5,047	6,030	11,077	2.6
BoC	Bonifay fine sand, 5 to 8 percent slopes	4,167	1,768	5,935	1.4
CaB2	Carnegie sandy loam, 3 to 5 percent slopes, eroded	195	656	851	0.2
CaC2	Carnegie sandy loam, 5 to 8 percent slopes, eroded	451	745	1,196	0.3
CeB	Cecil sandy loam, 2 to 6 percent slopes	104	0	104	*
CfC2	Cecil sandy clay loam, 6 to 10 percent slopes, eroded	150	0	150	*
Ch	Chastain silty clay loam, frequently flooded	2,475	1,265	3,740	0.9
Ck	Chewacla sandy loam, occasionally flooded	619	0	619	0.1
CmA	Chipley sand, 0 to 2 percent slopes	70	677	747	0.2
CnA	Clarendon loamy sand, 0 to 2 percent slopes	135	2,903	3,038	0.7
CoB	Cowarts loamy sand, 2 to 5 percent slopes	1,672	4,515	6,187	1.4
CtC2	Cowarts sandy loam, 5 to 8 percent slopes, eroded	3,650	3,080	6,730	1.6
CtD2	Cowarts sandy loam, 8 to 15 percent slopes, eroded	3,694	1,389	5,083	1.2
DgA	Dogue sandy loam, 0 to 2 percent slopes	189	1,170	1,359	0.3
DoA	Dothan loamy sand, 0 to 2 percent slopes	618	9,059	9,677	2.2
DoB	Dothan loamy sand, 2 to 5 percent slopes	2,803	44,982	47,785	11.2
DtC2	Dothan sandy loam, 5 to 8 percent slopes, eroded	176	1,242	1,418	0.3
EuB	Eustis sand, 0 to 5 percent slopes	323	341	664	0.2
EuC	Eustis sand, 5 to 8 percent slopes	115	183	298	0.1
FaA	Faceville loamy sand, 0 to 2 percent slopes	29	2,922	2,951	0.7
FbB	Faceville sandy loam, 2 to 5 percent slopes	350	26,079	26,429	6.1
FcC2	Faceville sandy clay loam, 5 to 8 percent slopes, eroded	197	12,164	12,361	2.9
FcD2	Faceville sandy clay loam, 8 to 12 percent slopes, eroded	131	3,101	3,232	0.7
FuB	Fuquay loamy sand, 1 to 5 percent slopes	8,493	15,439	23,932	5.5
FuC	Fuquay loamy sand, 5 to 8 percent slopes	2,755	755	3,510	0.8
GR	Grady and Rembert loams, ponded	146	6,294	6,440	1.5
GsB	Greenville sandy loam, 2 to 5 percent slopes	0	1,517	1,517	0.4
GtA	Greenville sandy clay loam, 0 to 2 percent slopes	0	1,150	1,150	0.3
GtC2	Greenville sandy clay loam, 5 to 8 percent slopes, eroded	70	585	655	0.2
HM	Herod and Muckalee loams, frequently flooded	0	9,984	9,984	2.3
LaB	Lakeland sand, 1 to 5 percent slopes	585	3,149	3,734	0.9
LaD	Lakeland sand, 5 to 12 percent slopes	504	1,542	2,046	0.5
LaE	Lakeland sand, 12 to 30 percent slopes	71	618	689	0.2
LmB	Lucy loamy sand, 1 to 5 percent slopes	1,446	12,306	13,752	3.2
LmC	Lucy loamy sand, 5 to 8 percent slopes	1,354	7,041	8,395	1.9
LmD	Lucy loamy sand, 8 to 12 percent slopes	830	3,629	4,459	1.0
LmE	Lucy loamy sand, 12 to 30 percent slopes	723	1,195	1,918	0.4
Me	Meggett loam, frequently flooded	0	2,363	2,363	0.5
NaB	Nankin loamy sand, 2 to 5 percent slopes	734	6,570	7,304	1.7
NkB2	Nankin sandy loam, 2 to 5 percent slopes, eroded	74	1,401	1,475	0.3
NkC2	Nankin sandy loam, 5 to 8 percent slopes, eroded	578	3,466	4,044	0.9
OcA	Ocilla loamy sand, 0 to 2 percent slopes	315	3,288	3,603	0.8
OoA	Ocilla loamy sand, 0 to 2 percent slopes, occasionally flooded	0	130	130	*
OrA	Orangeburg loamy sand, 0 to 2 percent slopes	262	3,687	3,949	0.9
OrB	Orangeburg loamy sand, 2 to 5 percent slopes	2,675	31,641	34,316	7.9
OsC2	Orangeburg sandy clay loam, 5 to 8 percent slopes, eroded	2,010	15,913	17,923	4.1
OsD2	Orangeburg sandy clay loam, 8 to 15 percent slopes, eroded	591	6,096	6,687	1.5
PuB	Pits-Udorthents complex, gently sloping	125	411	536	0.1
Ra	Rains sandy loam, occasionally flooded	498	12,506	13,004	3.0
TfA	Tifton loamy sand, 0 to 2 percent slopes	169	791	960	0.2

See footnote at end of table.

TABLE 4.--ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS--Continued

Map symbol	Soil name	Glascock County	Jefferson County	Total-- Area	Extent
		Acres	Acres	Acres	Pct
TfB	Tifton loamy sand, 2 to 5 percent slopes	974	6,533	7,507	1.7
TnC2	Tifton sandy loam, 5 to 8 percent slopes, eroded	113	566	679	0.2
TrB	Troup fine sand, 1 to 5 percent slopes	3,769	10,479	14,248	3.3
TrC	Troup fine sand, 5 to 8 percent slopes	5,536	8,567	14,103	3.3
TrD	Troup fine sand, 8 to 12 percent slopes	6,779	3,971	10,750	2.5
TrE	Troup fine sand, 12 to 25 percent slopes	1,633	1,883	3,516	0.8
Wa	Wahee fine sandy loam, frequently flooded	60	641	701	0.2
WeB	Wedowee sandy loam, 2 to 6 percent slopes	418	0	418	0.1
WeC	Wedowee sandy loam, 6 to 10 percent slopes	2,225	0	2,225	0.5
WeD	Wedowee sandy loam, 10 to 15 percent slopes	705	0	705	0.2
WeE	Wedowee sandy loam, 15 to 25 percent slopes	406	0	406	0.1
	Total	92,377	339,936	432,313	100.0

* Less than 0.1 percent.

TABLE 5.--IMPORTANT FARMLAND

(The acreage is as of the date when fieldwork was completed. Soils not listed do not qualify as prime farmland or as additional farmland of statewide importance)

Soil name and map symbol	Prime farmland acreage	Additional farmland acreage of statewide importance
AeB---- Ailey	---	2,124
AeC---- Ailey	---	3,647
ArB---- Arundel	---	474
BnB---- Blanton	---	1,145
BoB---- Bonifay	---	11,077
BoC---- Bonifay	---	5,935
CaB2---- Carnegie	851	---
CaC2---- Carnegie	---	1,196
CeB---- Cecil	104	---
Ck---- Chewacla	---	619
CmA---- Chipley	---	747
CnA---- Clarendon	3,038	---
CoB---- Cowarts	6,187	---
CtC2---- Cowarts	---	6,730
DgA---- Dogue	1,359	---
DoA---- Dothan	9,677	---
DoB---- Dothan	47,786	---
DtC2---- Dothan	1,418	---
EuB---- Eustis	---	664
EuC---- Eustis	---	298

TABLE 5.--IMPORTANT FARMLAND--Continued

Soil name and map symbol	Prime farmland acreage	Additional farmland acreage of statewide importance
FaA---------- Faceville	2,951	---
FbB---------- Faceville	26,429	---
FcC2---------- Faceville	---	12,361
FuB---------- Fuquay	---	23,932
FuC---------- Fuquay	---	3,510
GsB---------- Greenville	1,517	---
GtA---------- Greenville	1,150	---
GtC2---------- Greenville	---	655
LmB---------- Lucy	---	13,752
LmC---------- Lucy	---	8,395
NaB---------- Nankin	7,304	---
NkB2---------- Nankin	1,475	---
NkC2---------- Nankin	---	4,044
OcA---------- Ocilla	---	3,603
OrA---------- Orangeburg	3,949	---
OrB---------- Orangeburg	34,316	---
OrC2---------- Orangeburg	---	17,922
TfA---------- Tifton	960	---
TfB---------- Tifton	7,507	---
TnC2---------- Tifton	679	---
TrB---------- Troup	---	14,248

TABLE 5.--IMPORTANT FARMLAND--Continued

Soil name and map symbol	Prime farmland acreage	Additional farmland acreage of statewide importance
TrC---------- Troup	---	14,103
WeB---------- Wedowee	418	---
WeC---------- Wedowee	---	2,225
Total----------	159,075	153,406

TABLE 6.--LAND CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE

(Yields in the N columns are for nonirrigated soils; those in the I columns are for irrigated soils. 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		Corn		Soybeans		Wheat		Peanuts		Cotton		Improved bermudagrass		Bahiagrass
	N	I	N	I	N	I	N	I	N	I	N	I	N	I	N
			Bu	Bu	Bu	Bu	Bu	Bu	Lbs	Lbs	Lbs	Lbs	AUM*	AUM*	AUM*
AeB---- Ailey	IIIs	---	50	80	20	24	25	30	2,300	3,450	400	500	6.0	7.0	6.0
AeC---- Ailey	IVs	---	45	70	18	22	23	28	2,000	3,000	350	400	5.0	6.0	5.0
AeD---- Ailey	VIs	---	---	---	---	---	---	---	---	---	---	---	5.0	6.0	5.0
AeE---- Ailey	VIIe	---	---	---	---	---	---	---	---	---	---	---	4.5	---	4.5
ArB---- Arundel	IIIe	---	---	---	---	---	---	---	---	---	---	---	5.5	6.5	6.0
BB---- Bibb and Osier	Vw	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BnB---- Blanton	IIIs	---	60	180	25	40	31	50	2,200	3,650	500	800	8	10.5	7.5
BoB---- Bonifay	IIIs	---	60	180	25	40	31	50	1,600	2,650	500	800	7.5	10.0	7.2
BoC---- Bonifay	IVs	---	55	165	22	35	27	45	1,400	2,300	450	700	7.5	10.0	7.2
CaB2---- Carnegie	IIIe	---	65	105	30	35	38	46	3,200	4,300	500	600	6.5	8.5	7.0
CaC2---- Carnegie	IVe	---	55	90	25	30	31	37	2,200	3,000	400	500	6.0	7.5	6.5
CeB---- Cecil	IIe	---	95	150	35	42	45	54	---	---	750	900	8.0	10.5	7.0
CfC2---- Cecil	IVe	---	60	---	22	---	28	---	---	---	---	---	7.0	---	6.5

See footnote at end of table.

TABLE 6.--LAND CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE--Continued

Soil name and map symbol	Land capability		Corn		Soybeans		Wheat		Peanuts		Cotton		Improved bermudagrass		Bahiagrass
	N	I	N	I	N	I	N	I	N	I	N	I	N	I	N
			Bu	Bu	Bu	Bu	Bu	Bu	Lbs	Lbs	Lbs	Lbs	AUM*	AUM*	AUM*
Ch---------- Chastain	VIw	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Ck---------- Chewacla	IIIw	---	100	---	35	---	50	---	---	---	---	---	8.0	---	7.5
CmA---------- Chipley	IIIs	---	60	180	25	40	31	50	---	---	---	---	8.0	10.5	7.5
CnA---------- Clarendon	IIw	---	125	200	45	54	56	67	---	---	---	---	10.5	13.0	10.0
CoB---------- Cowarts	IIe	---	80	130	35	42	44	53	2,400	3,250	650	800	8.0	10.5	7.5
CtC2---------- Cowarts	IVe	---	60	95	20	24	25	30	1,600	2,150	500	600	7.0	9.0	7.0
CtD2---------- Cowarts	VIe	---	---	---	---	---	---	---	---	---	---	---	6.5	8.0	6.5
DgA---------- Dogue	IIw	---	125	200	45	55	60	70	---	---	---	---	10.5	13.0	10.0
DoA---------- Dothan	I	---	120	190	40	48	50	60	3,800	5,150	900	1,100	10.5	14.0	9
DoB---------- Dothan	IIe	---	120	190	35	42	44	53	3,600	4,850	900	1,100	10.5	14.0	9
DtC2---------- Dothan	IVe	---	90	145	25	30	31	37	3,000	4,050	700	850	9.5	12.0	7
EuB---------- Eustis	IIIs	---	60	180	25	40	30	48	2,400	3,950	500	800	7.0	9.5	6.5
EuC---------- Eustis	IVs	---	55	165	22	35	27	43	2,200	3,650	450	700	6.5	8.5	6.0
FaA---------- Faceville	I	---	115	185	45	54	56	67	4,000	5,400	875	1,050	10.0	13.5	7.0
FbB---------- Faceville	IIe	---	115	185	45	54	56	67	4,000	5,400	875	1,050	10.0	13.5	7.0

See footnote at end of table.

TABLE 6.--LAND CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE--Continued

Soil name and map symbol	Land capability		Corn		Soybeans		Wheat		Peanuts		Cotton		Improved bermudagrass		Bahiagrass
	N	I	N	I	N	I	N	I	N	I	N	I	N	I	N
			Bu	Bu	Bu	Bu	Bu	Bu	Lbs	Lbs	Lbs	Lbs	AUM*	AUM*	AUM*
FcC2---- Faceville	IVe	---	75	120	20	24	25	30	2,600	3,500	500	600	8.0	10.0	5.0
FcD2---- Faceville	VIe	---	---	---	---	---	---	---	---	---	---	---	6.0	7.5	4.0
FuB---- Fuquay	IIs	---	85	160	30	40	38	51	2,900	4,350	650	850	7.5	10.0	8.5
FuC---- Fuquay	IIIs	---	75	140	25	33	31	41	2,600	3,900	600	800	7.0	9.5	8.5
GR:															
Grady----	Vw	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Rembert----	VIw	---	---	---	---	---	---	---	---	---	---	---	---	---	---
GsB---- Greenville	IIe	---	115	185	45	54	56	67	4,000	5,400	875	1,050	10	13.5	7.0
GtA---- Greenville	I	---	115	185	45	54	56	67	4,000	5,400	875	1,050	10	13.5	7.0
GtC2---- Greenville	IVe	---	75	120	20	24	25	30	2,600	3,500	500	600	8.0	10.0	5.0
HM---- Herod and Muckalee	Vw	---	---	---	---	---	---	---	---	---	---	---	---	---	---
LaB---- Lakeland	IVs	---	55	165	20	32	25	40	2,000	3,300	450	700	7.0	9.5	7.0
LaD---- Lakeland	VIs	---	---	---	---	---	---	---	---	---	---	---	6.5	8.5	6.5
LaE---- Lakeland	VIIs	---	---	---	---	---	---	---	---	---	---	---	6.0	---	6.0
LmB---- Lucy	IIs	---	80	150	33	44	41	55	3,000	4,650	650	850	8.0	10.5	8.5
LmC---- Lucy	IIIs	---	70	130	25	33	31	41	2,500	3,750	600	800	7.5	10.0	8.5
LmD---- Lucy	IVs	---	60	---	20	---	21	---	2,000	---	550	---	7.5	---	7.5

See footnote at end of table.

TABLE 6.--LAND CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE--Continued

Soil name and map symbol	Land capability		Corn		Soybeans		Wheat		Peanuts		Cotton		Improved bermudagrass		Bahiagrass
	N	I	N	I	N	I	N	I	N	I	N	I	N	I	N
			Bu	Bu	Bu	Bu	Bu	Bu	Lbs	Lbs	Lbs	Lbs	AUM*	AUM*	AUM*
LmE---- Lucy	VIe	---	---	---	---	---	---	---	---	---	---	---	7.0	---	7.0
Me---- Meggett	VIw	---	---	---	---	---	---	---	---	---	---	---	---	---	---
NaB---- Nankin	IIe	---	75	120	30	36	38	46	2,200	3,000	600	700	9.0	12.0	7.0
NkB2---- Nankin	IIIe	---	60	95	20	24	25	30	1,600	2,150	500	600	7.0	9.5	6.0
NkC2---- Nankin	IVe	---	50	80	20	24	25	30	1,400	1,900	450	550	6.0	8.0	6.0
OcA---- Ocilla	IIIw	---	75	140	35	47	44	59	---	---	---	---	8.5	11.5	7.5
OoA---- Ocilla	IVw	---	65	120	30	40	38	51	---	---	---	---	8.5	11.5	8.0
OrA---- Orangeburg	I	---	120	190	45	54	56	67	4,000	5,400	900	1,100	10.5	14.0	8.5
OrB---- Orangeburg	IIe	---	120	190	45	54	56	67	4,000	5,400	900	1,100	10.5	14.0	8.5
OsC2---- Orangeburg	IIIe	---	85	135	35	42	44	53	2,800	3,800	700	850	10.0	12.5	8.0
OsD2---- Orangeburg	IVe	---	75	---	30	---	32	---	2,600	---	600	---	9.0	---	7.0
PuB. Pits-Udorthents															
Ra---- Rains	IVw	---	---	---	---	---	---	---	---	---	---	---	---	---	6.0
TfA---- Tifton	I	---	115	185	46	55	58	70	3,800	5,150	950	1,150	10.5	14.0	8.5
TfB---- Tifton	IIe	---	115	185	46	55	58	70	3,800	5,150	950	1,150	10.5	14.0	8.5

See footnote at end of table.

TABLE 6.--LAND CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE--Continued

Soil name and map symbol	Land capability		Corn		Soybeans		Wheat		Peanuts		Cotton		Improved bermudagrass		Bahiagrass
	N	I	N	I	N	I	N	I	N	I	N	I	N	I	N
			Bu	Bu	Bu	Bu	Bu	Bu	Lbs	Lbs	Lbs	Lbs	AUM*	AUM*	AUM*
TnC2---------- Tifton	IIIe	---	80	130	34	41	43	52	3,000	4,050	650	800	9.0	11.5	7.0
TrB---------- Troup	IIIs	---	60	180	25	40	31	50	2,200	3,650	500	800	7.5	10.0	7.2
TrC---------- Troup	IVs	---	55	165	22	35	28	45	1,800	3,000	450	700	7.3	9.5	7.0
TrD---------- Troup	VIs	---	---	---	---	---	---	---	---	---	---	---	6.5	---	5.0
TrE---------- Troup	VIIe	---	---	---	---	---	---	---	---	---	---	---	6.0	---	5.0
Wa---------- Wahee	IVw	---	---	---	---	---	---	---	---	---	---	---	9.0	11.0	8.0
WeB---------- Wedowee	IIe	---	80	130	30	36	38	45	---	---	525	650	7.0	9.5	6.5
WeC---------- Wedowee	IIIe	---	75	120	25	30	31	37	---	---	450	550	6.5	8.5	6.0
WeD---------- Wedowee	IVe	---	---	---	---	---	---	---	---	---	---	---	6.0	---	---
WeE---------- Wedowee	VIe	---	---	---	---	---	---	---	---	---	---	---	5.5	---	---

* 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 7.--CAPABILITY CLASSES AND SUBCLASSES

(Miscellaneous areas are excluded. Dashes indicate no acreage)

Class	Total acreage	Major management concerns (Subclass)		
		Erosion (e)	Wetness (w)	Soil problem (s)
		Acres	Acres	Acres
I:				
Glascock County	1,078	---	---	---
Jefferson County	17,609	---	---	---
II:				
Glascock County	19,993	9,730	324	9,939
Jefferson County	153,655	121,837	4,073	27,745
III:				
Glascock County	20,517	4,647	934	14,936
Jefferson County	49,242	18,980	3,288	26,974
IV:				
Glascock County	21,452	6,568	558	14,326
Jefferson County	58,505	27,378	13,277	17,850
V:				
Glascock County	9,394	---	9,394	---
Jefferson County	40,775	---	40,775	---
VI:				
Glascock County	17,768	4,231	2,526	11,011
Jefferson County	17,174	4,490	5,831	6,853
VII:				
Glascock County	2,050	346	---	1,704
Jefferson County	2,565	64	---	2,501
VIII:				
Glascock County	---	---	---	---
Jefferson County	---	---	---	---

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			Potential productivity			Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Common trees	Site index	Productivity class*	
AeB, AeC, AeD, AeE-Ailey	8S	Slight	Moderate	Moderate	Slash pine	70	8	Slash pine, longleaf pine.
					Longleaf pine	60	4	
ArB-Arundel	6C	Slight	Moderate	Slight	Loblolly pine	70	6	Loblolly pine, shortleaf pine.
					Shortleaf pine	60	6	
BB**:								
Bibb	9W	Slight	Severe	Severe	Loblolly pine	90	9	Eastern cottonwood, loblolly pine, sweetgum, yellow-poplar.
					Sweetgum	90	7	
					Water oak	90	6	
					Blackgum	---	---	
					Yellow-poplar	---	---	
Osier	11W	Slight	Severe	Severe	Slash pine	85	11	Slash pine, loblolly pine.
					Loblolly pine	87	9	
					Longleaf pine	69	5	
BnB-Blanton	11S	Slight	Moderate	Moderate	Slash pine	90	11	Slash pine, loblolly pine, longleaf pine.
					Loblolly pine	80	8	
					Longleaf pine	70	6	
					Turkey oak	---	---	
					Southern red oak	---	---	
BoB, BoC-Bonifay	10S	Slight	Moderate	Moderate	Slash pine	80	10	Slash pine, loblolly pine, longleaf pine.
					Longleaf pine	65	5	
					Loblolly pine	80	8	
					Post oak	---	---	
					Blackjack oak	---	---	
					Turkey oak	---	---	
CaB2, CaC2-Carnegie	9A	Slight	Slight	Slight	Loblolly pine	86	9	Loblolly pine, slash pine.
					Slash pine	86	11	
					Longleaf pine	72	6	
CeB-Cecil	8A	Slight	Slight	Slight	Loblolly pine	83	8	Loblolly pine, shortleaf pine.
					Shortleaf pine	69	8	
					White oak	19	4	
					Southern red oak	79	4	
					Post oak	72	4	
					Scarlet oak	81	4	
					Sweetgum	76	5	
					Yellow-poplar	92	6	
CfC2-Cecil	7C	Moderate	Moderate	Moderate	Loblolly pine	72	7	Loblolly pine, shortleaf pine.
					Shortleaf pine	63	7	
					White oak	64	3	
Ch-Chastain	8W	Slight	Severe	Severe	Sweetgum	95	8	Sweetgum.
					Baldcypress	---	---	
					Water tupelo	---	---	
					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	Management concerns: Equipment limitation	Management concerns: Seedling mortality	Potential productivity: Common trees	Potential productivity: Site index	Potential productivity: Productivity class*	Trees to plant
Ck---- Chewacla	10W	Slight	Moderate	Slight	Loblolly pine	95	10	Loblolly pine, sweetgum, American sycamore, yellow-poplar.
					Sweetgum	97	9	
					Yellow-poplar	95	7	
					Water oak	80	4	
					Eastern cottonwood	---	---	
					Green ash	---	---	
					Southern red oak	---	---	
					Blackgum	---	---	
					Red maple	---	---	
					Willow oak	---	---	
					American beech	---	---	
					American sycamore	---	---	
CmA---- Chipley	11S	Slight	Moderate	Slight	Slash pine	90	11	Slash pine, loblolly pine.
					Loblolly pine	90	9	
					Longleaf pine	80	7	
					Post oak	---	---	
					Turkey oak	---	---	
					Blackjack oak	---	---	
CnA---- Clarendon	9W	Slight	Moderate	Slight	Loblolly pine	90	9	Loblolly pine, slash pine, American sycamore, yellow-poplar, sweetgum.
					Slash pine	90	11	
					Sweetgum	85	6	
CoB, CtC2, CtD2---- Cowarts	9A	Slight	Slight	Slight	Loblolly pine	86	9	Loblolly pine, longleaf pine, slash pine.
					Slash pine	86	11	
					Longleaf pine	67	5	
DgA---- Dogue	9W	Slight	Moderate	Slight	Loblolly pine	90	9	Loblolly pine.
					Southern red oak	80	4	
					Sweetgum	90	7	
					Yellow-poplar	93	7	
					White oak	80	4	
DoA, DoB, DtC2---- Dothan	12A	Slight	Slight	Slight	Slash pine	92	12	Slash pine, loblolly pine, longleaf pine.
					Longleaf pine	84	8	
					Loblolly pine	88	9	
EuB, EuC---- Eustis	10S	Slight	Moderate	Moderate	Slash pine	80	10	Slash pine, loblolly pine.
					Loblolly pine	80	8	
					Longleaf pine	65	5	
FaA, FbB, FcC2, FcD2---- Faceville	8A	Slight	Slight	Slight	Loblolly pine	82	8	Loblolly pine, slash pine.
					Slash pine	80	10	
					Longleaf pine	65	5	
FuB, FuC---- Fuquay	8S	Slight	Moderate	Moderate	Loblolly pine	85	8	Loblolly pine, longleaf pine.
					Longleaf pine	77	7	
					Slash pine	93	12	
GR**: Grady----	6W	Slight	Severe	Severe	Water tupelo	68	6	American sycamore, water tupelo.
					Baldcypress	65	3	
					Water oak	65	4	

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	Potential productivity: Common trees	Site index	Productivity class*	Trees to plant
GR**:								
Rembert	7W	Slight	Severe	Severe	Sweetgum	90	7	Eastern cottonwood,
					Baldcypress	---	---	baldcypress, water
					Water tupelo	---	---	tupelo.
GsB	8A	Slight	Slight	Slight	Loblolly pine	82	8	Loblolly pine,
Greenville					Longleaf pine	70	6	longleaf pine, slash
					Slash pine	82	10	pine.
GtA, GtC2	8A	Slight	Slight	Slight	Loblolly pine	82	8	Loblolly pine,
Greenville					Longleaf pine	70	6	longleaf pine, slash
					Slash pine	82	10	pine.
HM**:								
Herod	9W	Slight	Severe	Severe	Loblolly pine	100	9	Loblolly pine, slash
					Sweetgum	95	8	pine, sweetgum,
					Water oak	90	---	eastern cottonwood.
					Eastern cottonwood	100	---	
Muckalee	7W	Slight	Severe	Severe	Sweetgum	90	7	Sweetgum, loblolly
					Loblolly pine	90	9	pine, American
					Slash pine	90	11	sycamore, eastern
					Water oak	90	6	cottonwood.
					Green ash	85	4	
					Eastern cottonwood	100	9	
LaB, LaD, LaE	9S	Slight	Moderate	Moderate	Slash pine	75	9	Slash pine, loblolly
Lakeland					Loblolly pine	75	7	pine.
					Longleaf pine	60	4	
					Turkey oak	---	---	
					Blackjack oak	---	---	
					Post oak	---	---	
LmB, LmC, LmD	8S	Slight	Moderate	Moderate	Loblolly pine	80	8	Slash pine, longleaf
Lucy					Longleaf pine	70	6	pine, loblolly pine.
LmE	8R	Moderate	Moderate	Severe	Loblolly pine	84	8	Longleaf pine,
Lucy					Longleaf pine	71	6	loblolly pine.
Me	13W	Slight	Severe	Severe	Slash pine	100	13	Slash pine, loblolly
Meggett					Loblolly pine	100	11	pine.
					Pond pine	75	---	
NaB, NkB2, NkC2	8A	Slight	Slight	Slight	Loblolly pine	80	8	Loblolly pine, slash
Nankin					Slash pine	80	10	pine.
					Longleaf pine	70	6	
OcA, OoA	8W	Slight	Moderate	Moderate	Loblolly pine	85	8	Loblolly pine, slash
Ocilla					Slash pine	90	11	pine.
					Longleaf pine	77	7	
OrA, OrB, OsC2, OsD2	8A	Slight	Slight	Slight	Loblolly pine	80	8	Slash pine, loblolly
Orangeburg					Slash pine	86	11	pine.
					Longleaf pine	77	7	
Ra	9W	Slight	Moderate	Moderate	Loblolly pine	94	9	Loblolly pine, slash
Rains					Slash pine	91	12	pine, sweetgum,
					Sweetgum	90	7	American sycamore.

See footnotes at end of table.

TABLE 8.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Ordination symbol	Management concerns			Potential productivity			Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Common trees	Site index	Productivity class*	
TfA, TfB, TnC2----- Tifton	9A	Slight	Slight	Slight	Loblolly pine	86	9	Loblolly pine, slash pine.
					Slash pine	86	11	
					Longleaf pine	72	6	
TrB, TrC, TrD------ Troup	8S	Slight	Slight	Moderate	Loblolly pine	82	8	Loblolly pine, longleaf pine.
					Longleaf pine	74	6	
TrE---------- Troup	8R	Moderate	Moderate	Moderate	Slash pine	84	8	Slash pine.
Wa---------- Wahee	9W	Slight	Moderate	Moderate	Loblolly pine	86	9	Loblolly pine, slash pine, sweetgum, American sycamore, water oak.
					Slash pine	86	11	
					Sweetgum	90	7	
					Blackgum	---	---	
					Water oak	---	---	
					Swamp chestnut oak	---	---	
					Willow oak	---	---	
					Southern red oak	---	---	
WeB, WeC, WeD------ Wedowee	8A	Slight	Slight	Slight	Loblolly pine	80	8	Loblolly pine, shortleaf pine, yellow-poplar.
					Shortleaf pine	69	8	
					Southern red oak	70	4	
					White oak	65	3	
WeE---------- Wedowee	8R	Moderate	Moderate	Slight	Loblolly pine	80	8	Loblolly pine, shortleaf pine, yellow-poplar.
					Shortleaf pine	69	8	
					Southern red oak	70	4	
					White oak	65	3	

* Productivity class is the yield in cubic meters per hectare per year calculated at the age of culmination of mean annual increment for fully stocked natural stands.

** See description of the map unit for composition and behavior characteristics of the map unit.

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
AeB Ailey	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: droughty.
AeC Ailey	Severe: too sandy.	Severe: too sandy.	Severe: slope, too sandy.	Severe: too sandy.	Moderate: droughty.
AeD Ailey	Severe: too sandy.	Severe: too sandy.	Severe: slope, too sandy.	Severe: too sandy.	Moderate: slope, droughty.
AeE Ailey	Severe: slope, too sandy.	Severe: slope, too sandy.	Severe: slope, too sandy.	Severe: too sandy.	Severe: slope.
ArB Arundel	Severe: percs slowly.	Severe: percs slowly.	Severe: percs slowly.	Slight	Moderate: depth to rock.
BB*: Bibb	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding, too sandy.	Severe: wetness.	Severe: wetness, flooding.
Osier	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.	Severe: wetness, flooding.
BnB Blanton	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: droughty.
BoB Bonifay	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: droughty.
BoC Bonifay	Severe: too sandy.	Severe: too sandy.	Severe: slope, too sandy.	Severe: too sandy.	Severe: droughty.
CaB2 Carnegie	Moderate: percs slowly.	Moderate: percs slowly.	Moderate: slope, percs slowly, small stones.	Slight	Slight.
CaC2 Carnegie	Moderate: percs slowly.	Moderate: percs slowly.	Severe: slope.	Slight	Slight.
CeB Cecil	Slight	Slight	Moderate: slope.	Slight	Slight.
CfC2 Cecil	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight	Moderate: slope.
Ch Chastain	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.	Severe: wetness, flooding.

See footnote at end of table.

TABLE 9.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
Ck Chewacla	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
CmA Chipley	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: droughty.
CnA Clarendon	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.	Slight	Slight.
CoB Cowarts	Moderate: percs slowly.	Moderate: percs slowly.	Moderate: slope, percs slowly.	Slight	Slight.
CtC2 Cowarts	Moderate: percs slowly.	Moderate: percs slowly.	Severe: slope.	Slight	Slight.
CtD2 Cowarts	Moderate: slope, percs slowly.	Moderate: slope, percs slowly.	Severe: slope.	Slight	Moderate: slope.
DgA Dogue	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.
DoA Dothan	Slight	Slight	Slight	Slight	Slight.
DoB Dothan	Slight	Slight	Moderate: slope.	Slight	Slight.
DtC2 Dothan	Slight	Slight	Severe: slope.	Slight	Slight.
EuB Eustis	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: droughty, too sandy.
EuC Eustis	Severe: too sandy.	Severe: too sandy.	Severe: slope, too sandy.	Severe: too sandy.	Moderate: droughty, too sandy.
FaA Faceville	Slight	Slight	Slight	Slight	Slight.
FbB Faceville	Slight	Slight	Moderate: slope.	Slight	Slight.
FcC2 Faceville	Slight	Slight	Severe: slope.	Slight	Slight.
FcD2 Faceville	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight	Moderate: slope.
FuB Fuquay	Moderate: too sandy.	Moderate: too sandy.	Moderate: slope, too sandy.	Moderate: too sandy.	Moderate: droughty.
FuC Fuquay	Moderate: too sandy.	Moderate: too sandy.	Severe: slope.	Moderate: too sandy.	Moderate: droughty.

See footnote at end of table.

TABLE 9.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
GR*:					
Grady	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
Rembert	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
GsB Greenville	Slight	Slight	Moderate: slope.	Slight	Slight.
GtA Greenville	Slight	Slight	Slight	Slight	Slight.
GtC2 Greenville	Slight	Slight	Severe: slope.	Slight	Slight.
HM*:					
Herod	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.	Severe: wetness, flooding.
Muckalee	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.	Severe: wetness, flooding.
LaB Lakeland	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: droughty, too sandy.
LaD Lakeland	Severe: too sandy.	Severe: too sandy.	Severe: slope, too sandy.	Severe: too sandy.	Moderate: droughty, slope, too sandy.
LaE Lakeland	Severe: slope, too sandy.	Severe: slope, too sandy.	Severe: slope, too sandy.	Severe: too sandy.	Severe: slope.
LmB Lucy	Moderate: too sandy.	Moderate: too sandy.	Moderate: slope, too sandy.	Moderate: too sandy.	Moderate: droughty.
LmC Lucy	Moderate: too sandy.	Moderate: too sandy.	Severe: slope.	Moderate: too sandy.	Moderate: droughty.
LmD Lucy	Moderate: slope, too sandy.	Moderate: slope, too sandy.	Severe: slope.	Moderate: too sandy.	Moderate: droughty, slope.
LmE Lucy	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
Me Meggett	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.	Severe: wetness, flooding.
NaB, NkB2 Nankin	Moderate: percs slowly.	Moderate: percs slowly.	Moderate: slope, percs slowly.	Slight	Slight.
NkC2 Nankin	Moderate: percs slowly.	Moderate: percs slowly.	Severe: slope.	Slight	Slight.

See footnote at end of table.

TABLE 9.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
OcA---- Ocilla	Moderate: wetness, too sandy.	Moderate: wetness, too sandy.	Moderate: wetness, too sandy.	Moderate: wetness, too sandy.	Moderate: wetness, droughty.
OoA---- Ocilla	Severe: flooding.	Moderate: wetness, too sandy.	Moderate: wetness, too sandy, flooding.	Moderate: wetness, too sandy.	Moderate: wetness, droughty, flooding.
OrA---- Orangeburg	Slight----------	Slight----------	Slight----------	Slight----------	Slight.
OrB---- Orangeburg	Slight----------	Slight----------	Moderate: slope.	Slight----------	Slight.
OsC2---- Orangeburg	Slight----------	Slight----------	Severe: slope.	Slight----------	Slight.
OsD2---- Orangeburg	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight----------	Moderate: slope.
PuB*: Pits.					
Udorthents.					
Ra---- Rains	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
TfA---- Tifton	Slight----------	Slight----------	Moderate: small stones.	Slight----------	Slight.
TfB---- Tifton	Slight----------	Slight----------	Moderate: slope, small stones.	Slight----------	Slight.
TnC2---- Tifton	Slight----------	Slight----------	Severe: slope.	Slight----------	Slight.
TrB---- Troup	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: droughty.
TrC---- Troup	Severe: too sandy.	Severe: too sandy.	Severe: slope, too sandy.	Severe: too sandy.	Moderate: droughty.
TrD---- Troup	Severe: too sandy.	Severe: too sandy.	Severe: slope, too sandy.	Severe: too sandy.	Moderate: droughty, slope.
TrE---- Troup	Severe: slope, too sandy.	Severe: slope, too sandy.	Severe: slope, too sandy.	Severe: too sandy.	Severe: slope.
Wa---- Wahee	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.	Severe: wetness, flooding.
WeB---- Wedowee	Slight----------	Slight----------	Moderate: slope.	Slight----------	Slight.

See footnote at end of table.

TABLE 9.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
WeC, WeD---------- Wedowee	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight----------	Moderate: slope.
WeE---------- Wedowee	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.

* See description of the map unit for composition and behavior characteristics of the map unit.

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 herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
AeB---- Ailey	Poor	Fair	Fair	Poor	Poor	Poor	Very poor.	Fair	Poor	Very poor.
AeC---- Ailey	Poor	Poor	Fair	Poor	Poor	Poor	Very poor.	Fair	Poor	Very poor.
AeD---- Ailey	Poor	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Fair	Poor	Very poor.
AeE---- Ailey	Poor	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
ArB---- Arundel	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
BB*:										
Bibb----	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
Osier----	Very poor.	Poor	Fair	Fair	Fair	Fair	Good	Poor	Fair	Fair.
BnB---- Blanton	Poor	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
BoB, BoC---- Bonifay	Poor	Fair	Fair	Poor	Fair	Very poor.	Very poor.	Poor	Fair	Very poor.
CaB2---- Carnegie	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
CaC2---- Carnegie	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
CeB---- Cecil	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
CfC2---- Cecil	Poor	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
Ch---- Chastain	Very poor.	Poor	Poor	Fair	Poor	Good	Good	Poor	Fair	Good.
Ck---- Chewacla	Poor	Fair	Fair	Good	Good	Poor	Very poor.	Fair	Good	Very poor.
CmA---- Chipley	Poor	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
CnA---- Clarendon	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
CoB---- Cowarts	Poor	Fair	Good	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
CtC2, CtD2---- Cowarts	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.

See footnote at end of table.

TABLE 10.--WILDLIFE HABITAT--Continued

Soil name and map symbol	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
DgA---- Dogue	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
DoA, DoB, DtC2---- Dothan	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
EuB, EuC---- Eustis	Poor	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
FaA---- Faceville	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
FbB---- Faceville	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
FcC2, FcD2---- Faceville	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
FuB---- Fuquay	Fair	Fair	Good	Fair	Fair	Poor	Very poor.	Good	Fair	Very poor.
FuC---- Fuquay	Poor	Fair	Good	Fair	Fair	Poor	Very poor.	Good	Fair	Very poor.
GR*:										
Grady----	Very poor.	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good.
Rembert----	Very poor.	Poor	Very poor.	Poor	Very poor.	Good	Good	Very poor.	Poor	Good.
GsB, GtA---- Greenville	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
GtC2---- Greenville	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
HM*:										
Herod----	Poor	Poor	Fair	Fair	Fair	Good	Fair	Poor	Fair	Fair.
Muckalee----	Poor	Poor	Fair	Fair	Fair	Good	Fair	Poor	Fair	Fair.
LaB, LaD, LaE---- Lakeland	Poor	Fair	Fair	Poor	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
LmB, LmC---- Lucy	Poor	Fair	Good	Good	Good	Poor	Very poor.	Fair	Good	Very poor.
LmD---- Lucy	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
LmE---- Lucy	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
Me---- Meggett	Poor	Fair	Fair	Fair	Good	Good	Good	Fair	Good	Good.
NaB, NkB2---- Nankin	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.

See footnote at end of table.

TABLE 10.--WILDLIFE HABITAT--Continued

Soil name and map symbol	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
NkC2---------- Nankin	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
OcA---------- Ocilla	Fair	Fair	Good	Fair	Good	Fair	Fair	Fair	Good	Fair.
OoA---------- Ocilla	Poor	Fair	Fair	Fair	Good	Fair	Fair	Fair	Good	Fair.
OrA, OrB---------- Orangeburg	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
OsC2, OsD2--------- Orangeburg	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
PuB*: Pits.										
Udorthents.										
Ra---------- Rains	Fair	Fair	Poor	Fair	Fair	Good	Fair	Fair	Fair	Fair.
TfA---------- Tifton	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
TfB---------- Tifton	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
TnC2---------- Tifton	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
TrB, TrC, TrD, TrE- Troup	Poor	Fair	Fair	Poor	Poor	Very poor.	Very poor.	Fair	Poor	Very poor.
Wa---------- Wahee	Poor	Fair	Fair	Fair	Good	Fair	Fair	Fair	Good	Fair.
WeB---------- Wedowee	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
WeC, WeD---------- Wedowee	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
WeE---------- Wedowee	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.

* See description of the map unit for composition and behavior characteristics of the map unit.

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
AeB---- Ailey	Moderate: cutbanks cave.	Slight	Slight	Slight	Slight	Moderate: droughty.
AeC---- Ailey	Moderate: cutbanks cave.	Slight	Slight	Moderate: slope.	Slight	Moderate: droughty.
AeD---- Ailey	Moderate: cutbanks cave.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: slope, droughty.
AeE---- Ailey	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
ArB---- Arundel	Moderate: depth to rock, too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Moderate: depth to rock.
BB*:						
Bibb----	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.	Severe: wetness, flooding.
Osier----	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.
BnB---- Blanton	Severe: cutbanks cave.	Slight	Moderate: wetness.	Slight	Slight	Severe: droughty.
BoB---- Bonifay	Severe: cutbanks cave.	Slight	Moderate: wetness.	Slight	Slight	Severe: droughty.
BoC---- Bonifay	Severe: cutbanks cave.	Slight	Moderate: wetness.	Moderate: slope.	Slight	Severe: droughty.
CaB2, CaC2---- Carnegie	Moderate: too clayey, dense layer.	Slight	Slight	Moderate: slope.	Moderate: low strength.	Slight.
CeB---- Cecil	Moderate: too clayey.	Slight	Slight	Moderate: slope.	Moderate: low strength.	Slight.
CfC2---- Cecil	Moderate: too clayey, slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope, low strength.	Moderate: slope.
Ch---- Chastain	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, wetness, flooding.	Severe: wetness, flooding.

See footnote at end of table.

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
Ck Chewacla	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, wetness, flooding.	Severe: wetness.
CmA Chipley	Severe: cutbanks cave, wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.	Severe: droughty.
CnA Clarendon	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.
CoB Cowarts	Slight	Slight	Slight	Slight	Slight	Slight.
CtC2 Cowarts	Slight	Slight	Slight	Moderate: slope.	Slight	Slight.
CtD2 Cowarts	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: slope.
DgA Dogue	Severe: wetness.	Moderate: wetness, shrink-swell.	Severe: wetness.	Moderate: wetness, shrink-swell.	Severe: low strength.	Moderate: wetness.
DoA, DoB Dothan	Moderate: wetness.	Slight	Moderate: wetness.	Slight	Slight	Slight.
DtC2 Dothan	Moderate: wetness.	Slight	Moderate: wetness.	Moderate: slope.	Slight	Slight.
EuB Eustis	Severe: cutbanks cave.	Slight	Slight	Slight	Slight	Moderate: droughty, too sandy.
EuC Eustis	Severe: cutbanks cave.	Slight	Slight	Moderate: slope.	Slight	Moderate: droughty, too sandy.
FaA, FbB Faceville	Moderate: too clayey.	Slight	Slight	Slight	Moderate: low strength.	Slight.
FcC2 Faceville	Moderate: too clayey.	Slight	Slight	Moderate: slope.	Moderate: low strength.	Slight.
FcD2 Faceville	Moderate: too clayey, slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: low strength, slope.	Moderate: slope.
FuB Fuquay	Moderate: cutbanks cave.	Slight	Moderate: wetness.	Slight	Slight	Moderate: droughty.
FuC Fuquay	Moderate: cutbanks cave.	Slight	Moderate: wetness.	Moderate: slope.	Slight	Moderate: droughty.
GR*: Grady	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.

See footnote at end of table.

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
GR*:						
Rembert	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
GsB, GtA Greenville	Moderate: too clayey.	Slight	Slight	Slight	Moderate: low strength.	Slight.
GtC2 Greenville	Moderate: too clayey.	Slight	Slight	Moderate: slope.	Moderate: low strength.	Slight.
HM*:						
Herod	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.	Severe: wetness, flooding.
Muckalee	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.	Severe: wetness, flooding.
LaB Lakeland	Severe: cutbanks cave.	Slight	Slight	Slight	Slight	Moderate: droughty, too sandy.
LaD Lakeland	Severe: cutbanks cave.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: droughty, slope, too sandy.
LaE Lakeland	Severe: cutbanks cave, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
LmB Lucy	Moderate: cutbanks cave.	Slight	Slight	Slight	Slight	Moderate: droughty.
LmC Lucy	Moderate: cutbanks cave.	Slight	Slight	Moderate: slope.	Slight	Moderate: droughty.
LmD Lucy	Moderate: cutbanks cave, slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: droughty, slope.
LmE Lucy	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Me Meggett	Severe: wetness.	Severe: flooding, wetness, shrink-swell.	Severe: flooding, wetness, shrink-swell.	Severe: flooding, wetness, shrink-swell.	Severe: shrink-swell, wetness, flooding.	Severe: wetness, flooding.
NaB, NkB2 Nankin	Moderate: too clayey.	Slight	Slight	Slight	Slight	Slight.
NkC2 Nankin	Moderate: too clayey.	Slight	Slight	Moderate: slope.	Slight	Slight.
OcA Ocilla	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness, droughty.

See footnote at end of table.

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
OoA---------- Ocilla	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding.	Severe: flooding.	Moderate: wetness, droughty, flooding.
OrA, OrB---------- Orangeburg	Slight---------	Slight---------	Slight---------	Slight---------	Slight---------	Slight.
OsC2---------- Orangeburg	Slight---------	Slight---------	Slight---------	Moderate: slope.	Slight---------	Slight.
OsD2---------- Orangeburg	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: slope.
PuB*: Pits.						
Udorthents.						
Ra---------- Rains	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.	Severe: wetness.
TfA, TfB---------- Tifton	Moderate: wetness.	Slight---------	Moderate: wetness.	Slight---------	Slight---------	Slight.
TnC2---------- Tifton	Moderate: wetness.	Slight---------	Moderate: wetness.	Moderate: slope.	Slight---------	Slight.
TrB---------- Troup	Severe: cutbanks cave.	Slight---------	Slight---------	Slight---------	Slight---------	Moderate: droughty.
TrC---------- Troup	Severe: cutbanks cave.	Slight---------	Slight---------	Moderate: slope.	Slight---------	Moderate: droughty.
TrD---------- Troup	Severe: cutbanks cave.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: droughty, slope.
TrE---------- Troup	Severe: cutbanks cave, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Wa---------- Wahee	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, wetness, flooding.	Severe: wetness, flooding.
WeB---------- Wedowee	Moderate: too clayey.	Slight---------	Slight---------	Moderate: slope.	Moderate: low strength.	Slight.
WeC, WeD---------- Wedowee	Moderate: too clayey, slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: low strength, slope.	Moderate: slope.
WeE---------- Wedowee	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.

* See description of the map unit for composition and behavior characteristics of the map unit.

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
AeB, AeC---------- Ailey	Severe: percs slowly.	Severe: seepage.	Slight----------	Severe: seepage.	Good.
AeD---------- Ailey	Severe: percs slowly.	Severe: seepage, slope.	Moderate: slope.	Severe: seepage.	Fair: slope.
AeE---------- Ailey	Severe: percs slowly, slope.	Severe: seepage, slope.	Severe: slope.	Severe: seepage, slope.	Poor: slope.
ArB---------- 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.
BB*:					
Bibb----------	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
Osier----------	Severe: flooding, wetness, poor filter.	Severe: seepage, flooding, wetness.	Severe: flooding, wetness, seepage.	Severe: flooding, seepage, wetness.	Poor: seepage, too sandy, wetness.
BnB---------- Blanton	Severe: poor filter.	Severe: seepage.	Severe: too sandy.	Severe: seepage.	Poor: too sandy.
BoB, BoC---------- Bonifay	Severe: poor filter.	Severe: seepage.	Severe: too sandy.	Severe: seepage.	Poor: too sandy.
CaB2, CaC2---------- Carnegie	Severe: percs slowly.	Moderate: slope.	Moderate: too clayey.	Slight----------	Fair: too clayey.
CeB---------- Cecil	Moderate: percs slowly.	Moderate: seepage, slope.	Moderate: too clayey.	Slight----------	Fair: too clayey, hard to pack.
CfC2---------- Cecil	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope, too clayey.	Moderate: slope.	Fair: too clayey, slope, hard to pack.
Ch---------- Chastain	Severe: flooding, wetness, percs slowly.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness, too clayey, hard to pack.
Ck---------- Chewacla	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.

See footnote at end of table.

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
CmA---- Chipley	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: seepage, wetness, too sandy.	Severe: seepage, wetness.	Poor: too sandy, seepage.
CnA---- Clarendon	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Fair: wetness.
CoB, CtC2---- Cowarts	Severe: percs slowly.	Moderate: slope.	Slight----	Slight----	Good.
CtD2---- Cowarts	Severe: percs slowly.	Severe: slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
DgA---- Dogue	Severe: wetness, percs slowly.	Severe: seepage, wetness.	Severe: seepage, wetness, too clayey.	Severe: wetness.	Poor: too clayey, hard to pack.
DoA---- Dothan	Moderate: wetness, percs slowly.	Moderate: seepage.	Slight----	Slight----	Good.
DoB, DtC2---- Dothan	Moderate: wetness, percs slowly.	Moderate: seepage, slope.	Slight----	Slight----	Good.
EuB, EuC---- Eustis	Slight----	Severe: seepage.	Severe: seepage.	Severe: seepage.	Fair: too sandy.
FaA---- Faceville	Slight----	Moderate: seepage.	Moderate: too clayey.	Slight----	Fair: too clayey.
FbB, FcC2---- Faceville	Slight----	Moderate: seepage, slope.	Moderate: too clayey.	Slight----	Fair: too clayey.
FcD2---- Faceville	Moderate: slope.	Severe: slope.	Moderate: slope, too clayey.	Moderate: slope.	Fair: too clayey, slope.
FuB, FuC---- Fuquay	Moderate: percs slowly.	Moderate: slope.	Slight----	Slight----	Fair: too sandy.
GR*: Grady----	Severe: ponding, percs slowly.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Poor: ponding.
Rembert----	Severe: ponding, percs slowly.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Poor: ponding.
GsB---- Greenville	Slight----	Moderate: seepage, slope.	Moderate: too clayey.	Slight----	Fair: too clayey.

See footnote at end of table.

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
GtA Greenville	Slight	Moderate: seepage.	Moderate: too clayey.	Slight	Fair: too clayey.
GtC2 Greenville	Slight	Moderate: seepage, slope.	Moderate: too clayey.	Slight	Fair: too clayey.
HM*:					
Herod	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
Muckalee	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
LaB Lakeland	Severe: poor filter.	Severe: seepage.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
LaD Lakeland	Severe: poor filter.	Severe: seepage, slope.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
LaE Lakeland	Severe: slope, poor filter.	Severe: seepage, slope.	Severe: seepage, slope, too sandy.	Severe: seepage, slope.	Poor: seepage, too sandy, slope.
LmB, LmC Lucy	Slight	Moderate: seepage.	Slight	Slight	Good.
LmD Lucy	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
LmE Lucy	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
Me Meggett	Severe: flooding, wetness, percs slowly.	Severe: flooding, wetness.	Severe: flooding, wetness, too clayey.	Severe: flooding, wetness.	Poor: too clayey, hard to pack, wetness.
NaB, NkB2, NkC2 Nankin	Severe: percs slowly.	Moderate: slope.	Moderate: too clayey.	Slight	Fair: too clayey.
OcA Ocilla	Severe: wetness.	Severe: seepage, wetness.	Severe: wetness.	Severe: seepage, wetness.	Fair: wetness.
OoA Ocilla	Severe: flooding, wetness.	Severe: seepage, flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, seepage, wetness.	Fair: wetness.
OrA Orangeburg	Slight	Moderate: seepage.	Slight	Slight	Good.

See footnote at end of table.

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
OrB, OsC2 Orangeburg	Slight	Moderate: seepage, slope.	Slight	Slight	Good.
OsD2 Orangeburg	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
PuB*: Pits.					
Udorthents.					
Ra Rains	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
TfA Tifton	Moderate: percs slowly, wetness.	Moderate: seepage.	Slight	Slight	Fair: small stones.
TfB, TnC2 Tifton	Moderate: percs slowly, wetness.	Moderate: slope, seepage.	Slight	Slight	Fair: small stones.
TrB, TrC Troup	Slight	Severe: seepage.	Severe: too sandy.	Severe: seepage.	Poor: too sandy.
TrD Troup	Moderate: slope.	Severe: seepage, slope.	Severe: too sandy.	Severe: seepage.	Poor: seepage, too sandy.
TrE Troup	Severe: slope.	Severe: seepage, slope.	Severe: slope, too sandy.	Severe: seepage, slope.	Poor: too sandy, slope.
Wa Wahee	Severe: flooding, wetness, percs slowly.	Severe: flooding.	Severe: flooding, wetness, too clayey.	Severe: flooding, wetness.	Poor: too clayey, hard to pack, wetness.
WeB Wedowee	Moderate: percs slowly.	Moderate: slope, seepage.	Moderate: too clayey.	Slight	Fair: too clayey.
WeC, WeD Wedowee	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope, too clayey.	Moderate: slope.	Fair: too clayey, slope.
WeE Wedowee	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.

* See description of the map unit for composition and behavior characteristics of the map unit.

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
AeB, AeC, AeD Ailey	Good	Improbable: excess fines.	Improbable: excess fines.	Poor: too sandy.
AeE Ailey	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope, too sandy.
ArB Arundel	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
BB*:				
Bibb	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
Osier	Poor: wetness.	Probable	Improbable: too sandy.	Poor: wetness.
BnB Blanton	Good	Probable	Improbable: too sandy.	Poor: too sandy.
BoB, BoC Bonifay	Good	Probable	Improbable: too sandy.	Poor: too sandy.
CaB2, CaC2 Carnegie	Moderate: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
CeB, CfC2 Cecil	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
Ch Chastain	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.
Ck Chewacla	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
CmA Chipley	Fair: wetness.	Probable	Improbable: too sandy.	Poor: too sandy.
CnA Clarendon	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
CoB, CtC2 Cowarts	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
CtD2 Cowarts	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: slope, too clayey.
DgA Dogue	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.

See footnote at end of table.

TABLE 13.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
DoA, DoB, DtC2-------- Dothan	Good----------	Improbable: excess fines.	Improbable: excess fines.	Fair: too sandy, thin layer.
EuB, EuC---------- Eustis	Good----------	Probable----------	Improbable: too sandy.	Poor: too sandy.
FaA, FbB, FcC2, FcD2-- Faceville	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
FuB, FuC---------- Fuquay	Good----------	Improbable: excess fines.	Improbable: excess fines.	Fair: too sandy.
GR*: Grady----------	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness, too clayey.
Rembert----------	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.
GsB, GtA, GtC2-------- Greenville	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
HM*: Herod----------	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
Muckalee----------	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
LaB, LaD---------- Lakeland	Good----------	Probable----------	Improbable: too sandy.	Poor: too sandy.
LaE---------- Lakeland	Fair: slope.	Probable----------	Improbable: too sandy.	Poor: too sandy, slope.
LmB, LmC---------- Lucy	Good----------	Improbable: excess fines.	Improbable: excess fines.	Fair: too sandy.
LmD---------- Lucy	Good----------	Improbable: excess fines.	Improbable: excess fines.	Fair: too sandy,
LmE---------- Lucy	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Me---------- Meggett	Poor: wetness, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.
NaB, NkB2, NkC2------- Nankin	Good----------	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
OcA, OoA---------- Ocilla	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: too sandy.
OrA, OrB, OsC2-------- Orangeburg	Good----------	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.

See footnote at end of table.

TABLE 13.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
OsD2 Orangeburg	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: slope, too clayey.
PuB*: Pits.				
Udorthents.				
Ra Rains	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
TfA, TfB, TnC2 Tifton	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones.
TrB, TrC, TrD Troup	Good	Probable	Improbable: too sandy.	Poor: too sandy.
TrE Troup	Fair: slope.	Probable	Improbable: too sandy.	Poor: too sandy, slope.
Wa Wahee	Poor: wetness, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.
WeB, WeC, WeD Wedowee	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
WeE Wedowee	Fair: slope, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, slope.

* See description of the map unit for composition and behavior characteristics of the map unit.

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
AeB, AeC---------- Ailey	Moderate: seepage.	Moderate: piping.	Deep to water	Droughty, percs slowly, slope.	Too sandy, percs slowly.	Droughty, rooting depth.
AeD, AeE---------- Ailey	Moderate: seepage.	Moderate: piping.	Deep to water	Droughty, percs slowly, slope.	Slope, too sandy, percs slowly.	Slope, droughty, rooting depth.
ArB---------- Arundel	Moderate: depth to rock.	Severe: hard to pack.	Deep to water	Slope, percs slowly.	Depth to rock	Depth to rock.
BB*:						
Bibb----------	Moderate: seepage.	Severe: piping, wetness.	Flooding-------	Wetness, flooding.	Wetness--------	Wetness.
Osier----------	Severe: seepage.	Severe: seepage, piping, wetness.	Flooding, cutbanks cave.	Wetness, droughty, flooding.	Wetness, too sandy.	Wetness, droughty.
BnB---------- Blanton	Severe: seepage.	Severe: seepage, piping.	Deep to water	Droughty-------	Too sandy------	Droughty.
BoB, BoC---------- Bonifay	Severe: seepage.	Severe: seepage.	Deep to water	Slope, droughty.	Too sandy------	Droughty.
CaB2, CaC2-------- Carnegie	Slight---------	Slight---------	Deep to water	Slope----------	Favorable------	Favorable.
CeB---------- Cecil	Moderate: seepage.	Severe: piping, hard to pack.	Deep to water	Slope----------	Favorable------	Favorable.
CfC2---------- Cecil	Moderate: seepage.	Severe: piping, hard to pack.	Deep to water	Slope----------	Slope----------	Slope.
Ch---------- Chastain	Slight---------	Severe: hard to pack, wetness.	Percs slowly, flooding.	Wetness, percs slowly.	Wetness, percs slowly.	Wetness, percs slowly.
Ck---------- Chewacla	Moderate: seepage.	Severe: piping, wetness.	Flooding-------	Wetness, flooding.	Wetness--------	Wetness.
CmA---------- Chipley	Severe: seepage.	Severe: seepage.	Cutbanks cave	Wetness, droughty.	Wetness, too sandy.	Droughty.
CnA---------- Clarendon	Moderate: seepage.	Moderate: piping, wetness.	Favorable------	Wetness--------	Wetness--------	Favorable.

See footnote at end of table.

TABLE 14.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--		Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Drainage	Irrigation	Terraces and diversions	Grassed waterways
CoB, CtC2 Cowarts	Moderate: slope, seepage.	Severe: piping.	Deep to water	Fast intake, percs slowly, slope.	Percs slowly	Percs slowly, rooting depth.
CtD2 Cowarts	Slight	Severe: piping.	Deep to water	Percs slowly, slope.	Slope, percs slowly.	Slope, percs slowly, rooting depth.
DgA Dogue	Slight	Moderate: wetness.	Favorable	Wetness	Wetness	Favorable.
DoA Dothan	Moderate: seepage.	Moderate: piping.	Deep to water	Favorable	Favorable	Favorable.
DoB, DtC2 Dothan	Moderate: seepage, slope.	Moderate: piping.	Deep to water	Fast intake, slope, droughty.	Favorable	Favorable.
EuB, EuC Eustis	Severe: seepage.	Severe: piping.	Deep to water	Droughty	Too sandy	Droughty.
FaA Faceville	Moderate: seepage.	Slight	Deep to water	Favorable	Favorable	Favorable.
FbB, FcC2 Faceville	Moderate: seepage.	Slight	Deep to water	Slope	Favorable	Favorable.
FcD2 Faceville	Moderate: seepage.	Moderate: piping.	Deep to water	Slope	Slope	Slope.
FuB, FuC Fuquay	Moderate: seepage.	Moderate: piping.	Deep to water	Droughty, slope.	Too sandy	Droughty.
GR*: Grady	Slight	Severe: ponding.	Ponding, percs slowly.	Ponding, percs slowly.	Ponding, percs slowly.	Wetness, percs slowly.
Rembert	Moderate: seepage.	Severe: ponding.	Ponding, percs slowly.	Ponding, percs slowly.	Ponding, percs slowly.	Wetness, percs slowly.
GsB Greenville	Moderate: seepage.	Slight	Deep to water	Slope	Favorable	Favorable.
GtA Greenville	Moderate: seepage.	Slight	Deep to water	Favorable	Favorable	Favorable.
GtC2 Greenville	Moderate: seepage.	Slight	Deep to water	Slope	Favorable	Favorable.
HM*: Herod	Moderate: seepage.	Severe: wetness.	Flooding	Wetness, flooding.	Wetness	Wetness.
Muckalee	Moderate: seepage.	Severe: piping, wetness.	Flooding, cutbanks cave.	Wetness, droughty, flooding.	Wetness, too sandy.	Wetness, droughty.

See footnote at end of table.

TABLE 14.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--		Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Drainage	Irrigation	Terraces and diversions	Grassed waterways
LaB---------- Lakeland	Severe: seepage.	Severe: seepage.	Deep to water	Droughty-------	Too sandy------	Droughty.
LaD, LaE---------- Lakeland	Severe: seepage.	Severe: seepage.	Deep to water	Droughty-------	Slope, too sandy,	Slope, droughty.
LmB, LmC---------- Lucy	Moderate: seepage.	Moderate: piping.	Deep to water	Droughty, slope.	Too sandy------	Droughty.
LmD---------- Lucy	Moderate: seepage.	Moderate: piping.	Deep to water	Droughty, slope.	Too sandy, slope.	Slope, droughty.
LmE---------- Lucy	Severe: slope.	Moderate: piping.	Deep to water	Droughty, slope.	Too sandy, slope.	Slope, droughty.
Me---------- Meggett	Moderate: seepage.	Severe: hard to pack, wetness.	Percs slowly, flooding.	Wetness, percs slowly.	Wetness, percs slowly.	Wetness, percs slowly.
NaB, NkB2, NkC2--- Nankin	Moderate: seepage.	Slight---------	Deep to water	Slope----------	Favorable------	Favorable.
OcA---------- Ocilla	Severe: seepage.	Severe: piping, wetness.	Favorable------	Wetness, droughty.	Wetness--------	Droughty.
OoA---------- Ocilla	Severe: seepage.	Severe: piping, wetness.	Flooding-------	Wetness, droughty.	Wetness--------	Droughty.
OrA---------- Orangeburg	Moderate: seepage.	Moderate: piping.	Deep to water	Favorable------	Favorable------	Favorable.
OrB, OsC2--------- Orangeburg	Moderate: seepage.	Moderate: piping.	Deep to water	Slope----------	Favorable------	Favorable.
OsD2---------- Orangeburg	Severe: slope.	Moderate: piping.	Deep to water	Slope----------	Slope----------	Slope.
PuB*: Pits.						
Udorthents.						
Ra---------- Rains	Moderate: seepage.	Severe: piping, wetness.	Flooding-------	Wetness, flooding.	Wetness--------	Wetness.
TfA---------- Tifton	Moderate: seepage.	Slight---------	Deep to water	Favorable------	Favorable------	Favorable.
TfB, TnC2--------- Tifton	Moderate: seepage.	Slight---------	Deep to water	Slope----------	Favorable------	Favorable.
TrB, TrC---------- Troup	Severe: seepage.	Severe: seepage, piping.	Deep to water	Droughty, slope.	Too sandy------	Droughty.

See footnote at end of table.

TABLE 14.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--		Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Drainage	Irrigation	Terraces and diversions	Grassed waterways
TrD, TrE---------- Troup	Severe: seepage.	Severe: seepage, piping.	Deep to water	Droughty, slope.	Slope, too sandy.	Slope, droughty.
Wa---------- Wahee	Slight---------	Severe: wetness, hard to pack.	Percs slowly, flooding.	Wetness--------	Wetness, percs slowly.	Wetness, percs slowly.
WeB---------- Wedowee	Moderate: seepage.	Severe: piping.	Deep to water	Slope----------	Favorable------	Favorable.
WeC, WeD, WeE----- Wedowee	Moderate: seepage.	Severe: piping.	Deep to water	Slope----------	Slope----------	Slope.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 15.--ENGINEERING INDEX PROPERTIES

(The symbol < means less than; > means more than. 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	Plasticity index
			Unified	AASHTO	4	10	40	200		
	In								Pct	
AeB, AeC, AeD, AeE----------	0-25	Sand----------	SP-SM	A-2, A-3	85-100	75-95	50-75	5-12	---	NP
Ailey	25-40	Sandy loam, sandy clay loam.	SM, SC, SM-SC	A-2, A-4, A-6	90-100	75-100	60-90	30-40	20-40	3-16
	40-80	Coarse sandy loam, sandy loam, sandy clay loam.	SM, SC, SM-SC	A-2, A-4, A-6	85-100	75-100	50-85	15-40	<40	NP-14
ArB----------	0-6	Loamy sand-------	SM	A-2, A-4	85-100	80-95	60-90	19-45	---	NP
Arundel	6-38	Silty clay loam, silty clay, clay.	CL, CH	A-7	85-100	80-100	80-100	65-90	44-70	22-41
	38-60	Weathered bedrock	---	---	---	---	---	---	---	---
BB*:										
Bibb----------	0-12	Loam----------	ML, CL-ML	A-4	95-100	90-100	80-90	50-80	<25	NP-7
	12-62	Sandy loam, loam, silt loam.	SM, SM-SC, ML, CL-ML	A-2, A-4	60-100	50-100	40-100	30-90	<30	NP-7
Osier----------	0-12	Loamy sand-------	SP-SM	A-2, A-3	100	98-100	60-85	5-12	---	NP
	12-40	Sand, loamy sand, loamy fine sand.	SP-SM, SM	A-2, A-3	100	95-100	65-96	5-20	---	NP
	40-62	Coarse sand, sand, fine sand.	SP, SP-SM	A-1, A-3, A-2-4	100	90-100	40-60	2-10	---	NP
BnB----------	0-48	Sand----------	SP-SM, SM	A-3, A-2-4	100	90-100	65-100	5-20	---	NP
Blanton	48-55	Sandy loam, loamy sand, loamy coarse sand.	SM	A-2-4	100	95-100	65-96	13-30	<25	NP-3
	55-75	Sandy clay loam, sandy loam, sandy clay.	SC, SM-SC, SM	A-4, A-2-4, A-2-6, A-6	100	95-100	69-100	25-50	12-45	3-22
BoB, BoC----------	0-54	Fine sand--------	SP-SM	A-3, A-2-4	98-100	98-100	60-95	5-12	---	NP
Bonifay	54-60	Sandy loam, sandy clay loam, fine sandy loam.	SM-SC, SC, SM	A-2-4, A-4, A-2-6, A-6	95-100	90-100	63-95	23-50	<30	NP-12
	60-70	Sandy clay loam, sandy clay.	SM-SC, SC	A-2, A-4, A-6, A-7	95-100	90-100	60-95	30-50	25-45	5-22
CaB2, CaC2-------	0-4	Sandy loam-------	SM, SM-SC	A-2	85-100	75-95	51-75	13-30	<25	NP-5
Carnegie	4-16	Sandy clay, sandy clay loam.	CL	A-6, A-7	95-100	90-99	90-95	65-70	36-49	13-25
	16-40	Sandy clay, clay	CL	A-6, A-7	92-100	90-98	89-98	63-76	36-49	13-25
	40-62	Sandy clay, clay	CL	A-7, A-6	99-100	98-100	90-98	68-79	36-49	13-25
CeB----------	0-3	Sandy loam-------	SM, SM-SC	A-2, A-4	84-100	80-100	67-90	26-42	<30	NP-7
Cecil	3-6	Sandy clay loam, clay loam.	SM, SC, ML, CL	A-4, A-6	75-100	75-100	68-95	38-81	21-35	3-15
	6-46	Clay, clay loam	MH, ML	A-7, A-5	97-100	92-100	72-99	55-95	41-80	9-37
	46-60	Variable---------	---	---	---	---	---	---	---	---

See footnote at end of table.

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	4	10	40	200		
	In								Pct	
CfC2---------- Cecil	0-3	Sandy clay loam	SM, SC, CL, ML	A-4, A-6	75-100	75-100	68-95	38-81	21-35	3-15
	3-57	Clay, clay loam	MH, ML	A-7, A-5	97-100	92-100	72-99	55-95	41-80	9-37
	57-60	Variable---------	---	---	---	---	---	---	---	---
Ch---------- Chastain	0-9	Silty clay loam	ML, CL, CL-ML	A-4, A-6, A-7	100	100	90-100	70-95	23-45	3-18
	9-60	Silty clay loam, silty clay, clay.	CL, CH, ML, MH	A-6, A-7	100	100	95-100	85-98	35-75	12-40
Ck---------- Chewacla	0-5	Sandy loam-------	SM, SM-SC	A-2, A-4	98-100	95-100	60-90	30-50	<30	NP-7
	5-65	Sandy clay loam, loam, sandy loam.	SM, SM-SC, ML, CL	A-4, A-7-6, A-6	96-100	95-100	60-100	36-70	20-45	2-15
CmA---------- Chipley	0-7	Sand----------	SP-SM	A-3, A-2-4	100	100	80-100	6-12	---	NP
	7-80	Sand, fine sand	SP-SM	A-3, A-2-4	100	100	80-100	6-12	---	NP
CnA---------- Clarendon	0-12	Loamy sand-------	SM, SP-SM	A-2	98-100	85-100	65-90	10-30	<20	NP-3
	12-42	Sandy clay loam	SC, CL, SM-SC, CL-ML	A-4, A-6	98-100	85-100	75-95	36-55	20-40	5-15
	42-62	Sandy clay loam, sandy loam, sandy clay.	SC, CL, SM-SC, CL-ML	A-2, A-4, A-6	99-100	96-100	80-95	25-55	<40	NP-15
CoB---------- Cowarts	0-7	Loamy sand-------	SM	A-2	90-100	85-100	50-80	13-30	---	NP
	7-13	Fine sandy loam, sandy loam, sandy clay loam.	SM-SC, SC, SM	A-2, A-4, A-6	95-100	90-100	60-95	23-45	20-40	NP-15
	13-30	Sandy clay loam, sandy clay, clay loam.	SM, SC	A-6, A-7, A-2-6, A-2-7	95-100	90-100	60-95	25-50	30-54	11-25
	30-62	Sandy loam, sandy clay loam, clay loam.	SM-SC, SC, CL-ML, CL	A-2, A-4, A-6, A-7	85-100	80-100	60-95	25-58	25-53	5-20
CtC2, CtD2------- Cowarts	0-5	Sandy loam-------	SM, SM-SC	A-2, A-4	95-100	90-100	75-90	20-40	<20	NP-5
	5-18	Fine sandy loam, sandy loam, sandy clay loam.	SM-SC, SC, SM	A-2, A-4, A-6	95-100	90-100	60-95	23-45	20-40	NP-15
	18-31	Sandy clay loam, sandy clay, clay loam.	SM, SC	A-6, A-7, A-2-6, A-2-7	95-100	90-100	60-95	25-50	30-54	11-25
	31-72	Sandy loam, sandy clay loam, clay loam.	SM-SC, SC, CL-ML, CL	A-2, A-4, A-6, A-7	85-100	80-100	60-95	25-58	25-53	5-20
DgA---------- Dogue	0-11	Sandy loam-------	SM, SC, SM-SC	A-2, A-4	95-100	75-100	50-100	20-50	<25	NP-10
	11-59	Clay loam, clay, sandy clay loam.	CL, CH, SC	A-6, A-7	95-100	75-100	65-100	40-90	35-60	16-40
	59-64	Stratified sand to sandy clay loam.	SM, SC, SP-SM, SM-SC	A-2, A-4, A-1	80-100	60-100	35-100	10-40	<30	NP-10

See footnote at end of table.

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	4	10	40	200		
	In								Pct	
DoA, DoB--------- Dothan	0-7 7-50	Loamy sand------- Sandy clay loam, sandy loam, fine sandy loam.	SM SM-SC, SC, SM	A-2 A-2, A-4, A-6	95-100 95-100	92-100 92-100	60-80 68-90	13-30 23-49	--- <40	NP NP-16
	50-64	Sandy clay loam, sandy clay.	SM-SC, SC, CL-ML, CL	A-2, A-4, A-6, A-7	95-100	92-100	70-95	30-53	25-45	4-23
DtC2------------- Dothan	0-5 5-32	Sandy loam------- Sandy clay loam, sandy loam, fine sandy loam.	SM, SP-SM SM-SC, SC, SM	A-2, A-4 A-2, A-4, A-6	95-100 95-100	92-100 92-100	75-90 68-90	20-40 23-49	<25 <40	NP-5 NP-16
	32-64	Sandy clay loam, sandy clay.	SM-SC, SC, CL-ML, CL	A-2, A-4, A-6, A-7	95-100	92-100	70-95	30-53	25-45	4-23
EuB, EuC--------- Eustis	0-9 9-90	Sand------------- Loamy fine sand, loamy sand.	SP-SM, SM SM	A-3, A-2-4 A-2-4	100 100	100 100	90-100 90-100	5-16 15-25	--- ---	NP NP
FaA-------------- Faceville	0-8 8-64	Loamy sand------- Sandy clay, clay, clay loam.	SM CL, SC, CH, ML	A-2 A-6, A-7	90-100 98-100	85-100 95-100	72-97 75-99	13-25 45-72	--- 25-52	NP 11-25
FbB-------------- Faceville	0-6 6-9 9-64	Sandy loam------- Sandy clay loam, sandy clay. Sandy clay, clay, clay loam.	SM, SM-SC SC, ML, CL, SM CL, SC, CH, ML	A-2, A-4 A-4, A-6 A-6, A-7	90-100 98-100 98-100	85-100 90-100 95-100	72-97 85-98 75-99	17-38 46-66 45-72	<25 <35 25-52	NP-7 NP-13 11-25
FcC2, FcD2------- Faceville	0-4 4-7 7-64	Sandy clay loam Sandy clay loam, sandy clay. Sandy clay, clay, clay loam.	SM, CL-ML, ML, SM-SC SC, ML, CL, SM CL, SC, CH, ML	A-4 A-4, A-6 A-6, A-7	90-100 98-100 98-100	90-100 90-100 95-100	63-97 85-98 75-99	40-58 46-66 45-72	<25 <35 25-52	NP-7 NP-13 11-25
FuB, FuC--------- Fuquay	0-28 28-41 41-63	Loamy sand------- Sandy loam, fine sandy loam, sandy clay loam. Sandy clay loam	SP-SM, SM SM, SC, SM-SC SC, SM-SC, CL-ML	A-2, A-3 A-2, A-4, A-6 A-2, A-4, A-6, A-7-6	95-100 85-100 95-100	90-100 85-100 90-100	50-83 70-90 58-90	5-35 23-45 28-49	--- <25 20-49	NP NP-13 4-12
GR*: Grady-----------	0-4 4-10 10-65	Loam------------- Clay loam, sandy clay loam, loam. Clay, sandy clay	ML, CL-ML, CL CL CL, CH, MH	A-4, A-6 A-6 A-6, A-7	100 100 100	99-100 100 100	85-100 90-100 90-100	50-75 51-80 55-90	<30 25-40 30-51	NP-15 11-20 12-24
Rembert----------	0-5 5-28 28-59 59-63	Loam------------- Clay, sandy clay, clay loam. Sandy clay loam, clay loam, sandy clay. Sandy clay loam, sandy loam, loamy sand.	CL, CL-ML CL SC, SM-SC, CL, CL-ML SC, SM, SM-SC	A-4, A-6 A-6, A-7 A-2, A-4, A-6 A-2, A-4	100 100 100 100	95-100 98-100 95-100 98-100	70-98 85-98 80-98 60-90	51-80 55-85 30-60 20-50	20-40 35-50 15-35 <30	5-15 15-25 4-15 NP-10

See footnote at end of table.

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	4	10	40	200		
	In								Pct	
GsB--- Greenville	0-10	Sandy loam---	SM, SC, SM-SC, CL-ML	A-2, A-4	95-100	90-100	65-85	25-55	10-25	NP-10
	10-65	Clay loam, sandy clay, clay.	CL, SC, ML	A-6, A-7, A-4	98-100	95-100	80-95	40-80	28-50	7-25
GtA--- Greenville	0-10	Sandy clay loam	CL, SC, CL-ML, SM-SC	A-4, A-6	95-100	95-100	75-95	45-75	20-35	6-15
	10-65	Clay loam, sandy clay, clay.	CL, SC, ML	A-6, A-7, A-4	98-100	95-100	80-95	40-80	28-50	7-25
GtC2--- Greenville	0-6	Sandy clay loam	CL, SC, CL-ML, SM-SC	A-4, A-6	95-100	95-100	75-95	45-75	20-35	6-15
	6-65	Clay loam, sandy clay, clay.	CL, SC, ML	A-6, A-7, A-4	98-100	95-100	80-95	40-80	28-50	7-25
HM*:										
Herod---	0-8	Loam---	ML, CL-ML	A-4	100	95-100	80-95	50-75	20-30	2-7
	8-45	Clay loam, sandy clay loam, loam.	CL, SC	A-6, A-4	100	95-100	80-100	45-85	25-40	8-20
	45-60	Sandy loam, sandy clay loam.	CL, SM, ML, SC	A-4, A-6	100	95-100	70-90	36-60	<30	NP-15
Muckalee---	0-6	Loam---	ML, CL, CL-ML	A-4, A-6	95-100	90-100	60-95	50-95	17-35	4-15
	6-60	Sandy loam, loamy sand.	SM	A-2, A-4	95-100	80-100	60-90	20-40	<20	NP-4
LaB, LaD, LaE--- Lakeland	0-77	Sand---	SP-SM	A-3, A-2-4	90-100	90-100	60-100	5-12	---	NP
	77-99	Sand, fine sand	SP, SP-SM	A-3, A-2-4	90-100	90-100	50-100	1-12	---	NP
LmB, LmC, LmD, LmE--- Lucy	0-27	Loamy sand---	SM, SP-SM	A-2	98-100	95-100	50-90	10-40	---	NP
	27-29	Sandy loam, fine sandy loam, sandy clay loam.	SM, SC, SM-SC	A-2, A-4, A-6	97-100	95-100	55-95	15-50	10-30	NP-15
	29-65	Sandy clay loam, clay loam, sandy clay.	SC, SM-SC, SM	A-2, A-6, A-4	100	95-100	60-95	20-50	20-40	3-20
Me--- Meggett	0-3	Loam---	ML, CL-ML, CL	A-4, A-6	100	95-100	85-100	55-80	20-40	5-15
	3-12	Clay, sandy clay, clay loam.	CH, MH, CL	A-6, A-7	100	90-100	75-100	51-90	30-60	11-30
	12-41	Clay, sandy clay, clay loam.	CH, MH, CL	A-6, A-7	100	90-100	75-100	51-90	35-65	11-30
	41-62	Sandy clay, sandy clay loam, clay.	SC, SM, ML, MH	A-4, A-6, A-7	90-100	65-100	50-100	36-90	30-60	7-25
NaB--- Nankin	0-8	Loamy sand---	SM, SP-SM	A-2	85-100	85-100	50-85	10-35	---	NP
	8-31	Sandy clay, clay, sandy clay loam.	SC, CL, ML, CL-ML	A-4, A-6, A-7	98-100	95-100	75-95	40-70	25-45	7-20
	31-63	Sandy clay loam, sandy loam.	SC, SM-SC, CL, CL-ML	A-2, A-4, A-6	98-100	95-100	70-85	25-55	20-40	4-16

See footnote at end of table.

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	4	10	40	200		
	In								Pct	
NkB2, NkC2------- Nankin	0-4	Sandy loam------- Sandy clay, clay, sandy clay loam.	SM, SM-SC SC, CL, ML, CL-ML	A-2, A-4 A-4, A-6, A-7	85-100 98-100	85-100 95-100	70-90 75-95	25-45 40-70	<25 25-45	NP-4 7-20
	43-63	Sandy clay loam, sandy loam.	SC, SM-SC, CL, CL-ML	A-2, A-4, A-6	98-100	95-100	70-85	25-55	20-40	4-16
OcA, OoA--------- Ocilla	0-24 24-28	Loamy sand------- Sandy loam, sandy clay loam, fine sandy loam.	SM, SP-SM SM, CL, SC, ML	A-2, A-3 A-2, A-4, A-6	100 100	95-100 95-100	75-100 80-100	8-35 20-55	--- 20-40	NP NP-18
	28-65	Sandy clay loam, sandy clay, sandy loam.	SC, CL	A-4, A-6, A-7	100	95-100	80-100	36-60	20-45	7-20
OrA, OrB--------- Orangeburg	0-9 9-17	Loamy sand------- Sandy loam------- Sandy clay loam, sandy loam.	SM SM SC, CL, SM, SM-SC	A-2 A-2 A-6, A-4	98-100 98-100 98-100	95-100 95-100 95-100	60-87 70-96 71-96	14-28 25-35 38-58	--- <30 22-40	NP NP-4 3-19
OsC2, OsD2------- Orangeburg	0-4	Sandy clay loam	SM, SM-SC, SC	A-4, A-6	98-100	95-100	70-96	35-50	22-38	3-16
	4-65	Sandy clay loam, sandy loam.	SC, CL, SM, SM-SC	A-6, A-4	98-100	95-100	71-96	38-58	22-40	3-19
PuB*: Pits.										
Udorthents.										
Ra--------------- Rains	0-7	Sandy loam------- Loamy sand------- Sandy clay loam, clay loam.	SM, ML, SC, CL SM SC, SM-SC, CL, CL-ML	A-2-4, A-4 A-2 A-2, A-4, A-6	95-100 100 98-100	92-100 95-100 95-100	50-95 55-98 55-98	30-60 15-35 30-70	<30 <30 18-40	NP-10 NP-4 4-20
	21-36	Sandy clay loam	SC, SM-SC,	A-4, A-6,	98-100	95-100	60-98	36-72	18-45	4-28
	36-63	Sandy loam, sandy clay loam, sandy clay.	SM, SC, ML, CL	A-2, A-4, A-6	98-100	95-100	60-95	30-60	15-40	3-18
TfA, TfB--------- Tifton	0-8 8-32	Loamy sand------- Sandy clay loam, gravelly sandy clay loam.	SM, SP-SM SC, CL	A-2 A-2, A-6, A-4	70-97 70-98	62-94 65-94	53-85 60-89	11-27 22-53	--- 22-40	NP 8-22
	32-42	Sandy clay loam, sandy clay.	SC, CL	A-2, A-6, A-7, A-4	87-100	80-99	50-94	34-55	24-45	8-23
	42-65	Sandy clay loam, sandy clay.	SC, CL	A-4, A-6, A-7	80-98	75-98	50-94	35-55	24-50	8-23
TnC2------------- Tifton	0-5 5-29	Sandy loam------- Sandy clay loam, gravelly sandy clay loam.	SM, SM-SC SC, CL	A-2 A-2, A-6, A-4	70-95 70-98	60-89 65-94	55-89 60-89	15-30 22-53	<20 22-40	NP-6 8-22
	29-39	Sandy clay loam, sandy clay.	SC, CL	A-2, A-6, A-7, A-4	87-100	80-99	50-94	34-55	24-45	8-23
	39-65	Sandy clay loam, sandy clay.	SC, CL	A-4, A-6, A-7	80-98	75-98	50-94	35-55	24-50	8-23

See footnote at end of table.

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	4	10	40	200		
	In								Pct	
TrB, TrC, TrD, TrE---------- Troup	0-68	Fine sand--------	SM, SP-SM	A-2	95-100	90-100	50-75	10-30	---	NP
	68-90	Sandy clay loam, sandy loam, fine sandy loam.	SC, SM-SC, CL-ML, CL	A-4, A-2, A-6	95-100	90-100	60-90	24-55	19-40	4-20
Wa---------- Wahee	0-4	Fine sandy loam	SM, SM-SC	A-2, A-4	100	95-100	50-98	30-50	<28	NP-7
	4-50	Clay, clay loam, silty clay.	CL, CH	A-6, A-7	100	100	85-100	51-92	38-81	16-54
	50-65	Variable---------	---	---	---	---	---	---	---	---
WeB, WeC, WeD, WeE---------- Wedowee	0-5	Sandy loam-------	SM, SM-SC	A-4, A-2-4	95-100	90-100	60-99	23-50	<30	NP-6
	5-10	Loam, sandy clay loam.	SM, SC, CL, ML	A-4, A-6	90-100	90-100	80-97	40-75	<32	NP-15
	10-35	Sandy clay, clay loam, clay.	SC, ML, CL, MH	A-6, A-7	95-100	95-100	65-97	45-75	30-58	10-25
	35-62	Sandy clay loam, clay loam, sandy loam.	SC, SM-SC, CL, CL-ML	A-2, A-4, A-6	80-100	70-100	60-80	30-60	20-35	5-15

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 16.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS

(The symbol < means less than; > means more than. 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		Organic matter
								K	T	
	In	Pct	g/cc	In/hr	In/in	pH				Pct
AeB, AeC, AeD, AeE----------	0-25	3-8	1.40-1.55	6.0-20	0.03-0.05	4.5-5.5	Low----------	0.10	4	<1
Ailey	25-40	15-35	1.55-1.70	0.6-2.0	0.09-0.12	4.5-5.5	Low----------	0.24		
	40-80	15-30	1.80-1.95	0.06-0.2	0.04-0.08	4.5-5.5	Low----------	0.15		
ArB----------	0-6	2-12	1.40-1.70	2.0-6.0	0.06-0.12	4.5-5.5	Low----------	0.28	2	.5-1
Arundel	6-38	35-78	1.55-1.65	<0.06	0.12-0.18	4.5-5.5	High----------	0.32		
	38-60	---	---	---	---	---	----------	----		
BB*:										
Bibb----------	0-12	2-18	1.20-1.55	0.6-2.0	0.15-0.20	4.5-5.5	Low----------	0.28	5	.5-2
	12-62	2-18	1.30-1.60	0.6-2.0	0.12-0.20	4.5-5.5	Low----------	0.37		
Osier----------	0-12	1-10	1.35-1.60	6.0-20	0.03-0.10	4.5-5.5	Low----------	0.10	5	2-5
	12-40	1-10	1.40-1.60	6.0-20	0.03-0.10	4.5-5.5	Low----------	0.10		
	40-62	2-5	1.40-1.60	>20	0.02-0.05	4.5-5.5	Low----------	0.05		
BnB----------	0-48	1-7	1.30-1.60	6.0-20	0.03-0.07	4.5-5.5	Low----------	0.10	5	.5-1
Blanton	48-55	10-18	1.53-1.65	2.0-6.0	0.10-0.15	4.5-5.5	Low----------	0.15		
	55-75	12-40	1.60-1.70	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.20		
BoB, BoC----------	0-54	3-9	1.35-1.60	6.0-20	0.03-0.08	4.5-5.5	Low----------	0.10	5	1-3
Bonifay	54-60	15-35	1.60-1.70	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.24		
	60-70	20-45	1.60-1.70	0.2-0.6	0.10-0.15	4.5-5.5	Low----------	0.24		
CaB2, CaC2----------	0-4	3-8	1.45-1.65	2.0-6.0	0.05-0.10	4.5-5.0	Low----------	0.28	3	1-2
Carnegie	4-16	36-43	1.40-1.65	0.2-0.6	0.10-0.16	4.5-5.5	Low----------	0.32		
	16-40	36-51	1.40-1.65	0.2-0.6	0.10-0.14	4.5-5.5	Low----------	0.28		
	40-62	36-55	1.40-1.65	0.2-0.6	0.10-0.14	4.5-5.5	Low----------	0.28		
CeB----------	0-3	5-20	1.30-1.50	2.0-6.0	0.12-0.14	4.5-5.5	Low----------	0.28	4	.5-2
Cecil	3-6	20-35	1.30-1.50	0.6-2.0	0.13-0.15	4.5-5.5	Low----------	0.28		
	6-46	35-70	1.30-1.50	0.6-2.0	0.13-0.15	4.5-5.5	Low----------	0.28		
	46-60	---	---	---	---	---	----------	----		
CfC2----------	0-3	20-35	1.30-1.50	0.6-2.0	0.13-0.15	4.5-5.5	Low----------	0.28	3	.5-1
Cecil	3-57	35-70	1.30-1.50	0.6-2.0	0.13-0.15	4.5-5.5	Low----------	0.28		
	57-60	---	---	---	---	---	----------	----		
Ch----------	0-9	15-35	1.20-1.40	0.2-0.6	0.12-0.18	4.5-6.0	Moderate-----	0.32	5	2-6
Chastain	9-60	35-60	1.30-1.50	0.06-0.2	0.12-0.16	4.5-6.0	Moderate-----	0.37		
Ck----------	0-5	5-20	1.30-1.60	0.6-2.0	0.10-0.15	4.5-6.5	Low----------	0.24	5	1-4
Chewacla	5-65	18-35	1.30-1.60	0.6-2.0	0.12-0.20	4.5-6.5	Low----------	0.28		
CmA----------	0-7	1-5	1.35-1.45	6.0-20	0.05-0.10	4.5-5.5	Low----------	0.10	5	2-5
Chipley	7-80	1-7	1.45-1.60	6.0-20	0.03-0.08	4.5-5.5	Low----------	0.10		
CnA----------	0-12	2-10	1.40-1.60	2.0-6.0	0.08-0.12	4.5-5.5	Low----------	0.15	5	.5-3
Clarendon	12-42	18-35	1.40-1.60	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.20		
	42-62	15-40	1.40-1.70	0.2-0.6	0.08-0.12	4.5-5.5	Low----------	0.15		

See footnote at end of table.

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		Organic matter
								K	T	
	In	Pct	g/cc	In/hr	In/in	pH				Pct
CoB---------------	0-7	3-10	1.30-1.70	2.0-6.0	0.06-0.10	4.5-5.5	Low----------	0.15	4	<1
Cowarts	7-13	10-30	1.30-1.50	0.6-2.0	0.10-0.16	4.5-5.5	Low----------	0.28		
	13-30	25-40	1.30-1.50	0.6-2.0	0.10-0.16	4.5-5.5	Low----------	0.28		
	30-62	18-35	1.45-1.75	0.06-0.6	0.10-0.14	4.5-5.5	Low----------	0.24		
CtC2, CtD2-------	0-5	5-20	1.30-1.65	2.0-6.0	0.08-0.13	4.5-5.5	Low----------	0.24	4	<1
Cowarts	5-18	10-30	1.30-1.50	0.6-2.0	0.10-0.16	4.5-5.5	Low----------	0.28		
	18-31	25-40	1.30-1.50	0.2-2.0	0.10-0.16	4.5-5.5	Low----------	0.28		
	31-72	18-35	1.45-1.75	0.06-0.6	0.10-0.14	4.5-5.5	Low----------	0.24		
DgA---------------	0-11	5-10	1.35-1.50	2.0-6.0	0.08-0.15	4.5-5.5	Low----------	0.28	4	.5-1
Dogue	11-59	35-50	1.45-1.60	0.2-0.6	0.12-0.19	4.5-5.5	Moderate-----	0.28		
	59-64	5-30	1.30-1.50	0.6-6.0	0.05-0.14	4.5-5.5	Low----------	0.17		
DoA, DoB----------	0-7	5-15	1.30-1.60	2.0-6.0	0.06-0.10	4.5-6.0	Very low-----	0.15	5	<.5
Dothan	7-50	18-35	1.40-1.60	0.6-2.0	0.12-0.16	4.5-6.0	Low----------	0.28		
	50-64	18-40	1.45-1.70	0.2-0.6	0.08-0.12	4.5-6.0	Low----------	0.28		
DtC2--------------	0-5	10-18	1.30-1.70	2.0-6.0	0.08-0.13	4.5-6.0	Very low-----	0.24	5	.5-1
Dothan	5-32	18-35	1.40-1.60	0.6-2.0	0.12-0.16	4.5-6.0	Low----------	0.28		
	32-64	18-40	1.45-1.70	0.2-0.6	0.08-0.12	4.5-6.0	Low----------	0.28		
EuB, EuC----------	0-9	2-10	1.35-1.60	6.0-20	0.08-0.10	4.5-5.5	Low----------	0.10	5	.5-2
Eustis	9-90	6-14	1.40-1.60	6.0-20	0.07-0.11	4.5-5.5	Low----------	0.17		
FaA---------------	0-8	2-10	1.45-1.65	6.0-20	0.06-0.09	4.5-5.5	Low----------	0.17	5	.5-1
Faceville	8-64	35-55	1.25-1.60	0.6-2.0	0.12-0.18	4.5-5.5	Low----------	0.37		
FbB---------------	0-6	5-20	1.40-1.65	6.0-20	0.06-0.09	4.5-5.5	Low----------	0.28	5	.5-2
Faceville	6-9	20-36	1.35-1.60	0.6-2.0	0.12-0.15	4.5-5.5	Low----------	0.37		
	9-64	35-55	1.25-1.60	0.6-2.0	0.12-0.18	4.5-5.5	Low----------	0.37		
FcC2, FcD2-------	0-4	20-28	1.40-1.60	0.6-2.0	0.10-0.13	4.5-5.5	Low----------	0.32	5	.5-1
Faceville	4-7	20-36	1.35-1.60	0.6-2.0	0.12-0.15	4.5-5.5	Low----------	0.37		
	7-64	35-55	1.25-1.60	0.6-2.0	0.12-0.18	4.5-5.5	Low----------	0.37		
FuB, FuC----------	0-28	2-10	1.60-1.70	>6.0	0.04-0.09	4.5-5.5	Low----------	0.15	5	.5-2
Fuquay	28-41	10-35	1.40-1.60	0.6-2.0	0.12-0.15	4.5-5.5	Low----------	0.20		
	41-63	20-35	1.40-1.60	0.06-0.2	0.10-0.13	4.5-5.5	Low----------	0.20		
GR*:										
Grady------------	0-4	20-30	1.20-1.45	0.6-2.0	0.10-0.18	4.5-5.5	Low----------	0.24	5	1-4
	4-10	20-35	1.40-1.55	0.2-0.6	0.10-0.15	4.5-5.5	Low----------	0.10		
	10-65	45-65	1.50-1.60	0.06-0.2	0.12-0.16	4.5-5.5	Moderate-----	0.10		
Rembert----------	0-5	10-35	1.30-1.50	0.6-2.0	0.12-0.17	4.5-5.5	Low----------	0.24	5	1-5
	5-28	35-60	1.20-1.50	0.06-0.2	0.12-0.16	4.5-5.5	Low----------	0.20		
	28-59	22-45	1.30-1.50	0.06-0.2	0.12-0.15	4.5-5.5	Low----------	0.17		
	59-63	8-25	1.30-1.60	0.6-6.0	0.07-0.12	4.5-5.5	Low----------	0.17		
GsB---------------	0-10	5-20	1.30-1.65	0.6-6.0	0.07-0.14	4.5-5.5	Low----------	0.24	5	.5-1
Greenville	10-65	35-55	1.35-1.55	0.6-2.0	0.14-0.18	4.5-5.5	Low----------	0.17		
GtA---------------	0-10	15-30	1.30-1.65	0.6-2.0	0.12-0.18	4.5-5.5	Low----------	0.24	5	.5-1
Greenville	10-65	35-55	1.35-1.55	0.6-2.0	0.14-0.18	4.5-5.5	Low----------	0.17		

See footnote at end of table.

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		Organic matter
								K	T	
	In	Pct	g/cc	In/hr	In/in	pH				Pct
GtC2----------	0-6	15-30	1.30-1.65	0.6-2.0	0.12-0.18	4.5-5.5	Low----------	0.24	5	.5-1
Greenville	6-65	35-55	1.35-1.55	0.6-2.0	0.14-0.18	4.5-5.5	Low----------	0.17		
HM*:										
Herod----------	0-8	15-25	1.25-1.55	0.6-2.0	0.12-0.20	5.1-6.0	Low----------	0.24	5	2-6
	8-45	20-35	1.30-1.50	0.6-2.0	0.14-0.20	5.6-7.3	Low----------	0.20		
	45-60	10-30	1.30-1.50	0.6-2.0	0.12-0.16	5.6-7.3	Low----------	0.20		
Muckalee--------	0-6	10-25	1.30-1.45	0.6-2.0	0.09-0.15	5.1-6.0	Low----------	0.20	5	---
	6-60	5-20	1.35-1.50	0.6-2.0	0.08-0.12	5.6-7.3	Low----------	0.20		
LaB, LaD, LaE----	0-77	2-8	1.35-1.65	6.0-20	0.05-0.09	4.5-5.5	Low----------	0.10	5	<1
Lakeland	77-99	1-6	1.50-1.60	6.0-20	0.02-0.08	4.5-5.5	Low----------	0.10		
LmB, LmC, LmD, LmE----------	0-27	1-12	1.30-1.70	6.0-20	0.08-0.12	4.5-5.5	Low----------	0.10	5	.5-1
Lucy	27-29	10-30	1.40-1.60	2.0-6.0	0.10-0.12	4.5-5.5	Low----------	0.24		
	29-65	15-45	1.40-1.60	0.6-2.0	0.12-0.14	4.5-5.5	Low----------	0.28		
Me----------	0-3	15-25	1.20-1.40	0.6-2.0	0.15-0.20	5.1-6.0	Low----------	0.28	5	2-8
Meggett	3-12	30-60	1.45-1.60	0.06-0.2	0.13-0.18	5.6-7.8	High---------	0.32		
	12-41	35-60	1.50-1.75	0.06-0.2	0.13-0.18	5.6-7.8	High---------	0.32		
	41-62	25-50	1.40-1.60	0.06-0.2	0.12-0.18	6.6-7.8	Moderate-----	0.28		
NaB----------	0-8	5-12	1.45-1.65	2.0-6.0	0.05-0.10	4.5-5.5	Low----------	0.17	3	.5-1
Nankin	8-31	35-50	1.30-1.70	0.2-0.6	0.11-0.16	4.5-5.5	Low----------	0.24		
	31-63	15-35	1.60-1.70	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.24		
NkB2, NkC2-------	0-4	7-20	1.45-1.55	2.0-6.0	0.08-0.12	4.5-5.5	Low----------	0.28	3	.5-1
Nankin	4-43	35-50	1.30-1.70	0.2-0.6	0.11-0.16	4.5-5.5	Low----------	0.24		
	43-63	15-35	1.60-1.70	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.24		
OcA, OoA---------	0-24	4-10	1.45-1.65	2.0-20	0.05-0.08	4.5-5.5	Low----------	0.10	5	1-2
Ocilla	24-28	15-35	1.55-1.70	0.6-2.0	0.09-0.12	4.5-5.5	Low----------	0.24		
	28-65	15-40	1.55-1.70	0.6-2.0	0.09-0.17	4.5-5.5	Low----------	0.24		
OrA, OrB---------	0-9	4-10	1.35-1.55	2.0-6.0	0.06-0.09	4.5-5.5	Low----------	0.10	5	.5-1
Orangeburg	9-17	7-18	1.50-1.65	2.0-6.0	0.09-0.12	4.5-5.5	Low----------	0.20		
	17-64	18-35	1.60-1.75	0.6-2.0	0.11-0.14	4.5-5.5	Low----------	0.24		
OsC2, OsD2-------	0-4	20-28	1.40-1.55	0.6-2.0	0.09-0.13	4.5-5.5	Low----------	0.24	4	<.5
Orangeburg	4-65	18-35	1.60-1.75	0.6-2.0	0.11-0.14	4.5-5.5	Low----------	0.24		
PuB*:										
Pits.										
Udorthents.										
Ra----------	0-7	5-20	1.30-1.60	2.0-6.0	0.08-0.12	4.5-5.5	Low----------	0.24	5	1-6
Rains	7-12	2-10	1.40-1.70	6.0-20	0.07-0.10	4.5-5.5	Low----------	0.15		
	12-21	18-35	1.30-1.50	0.6-2.0	0.12-0.16	4.5-5.5	Low----------	0.24		
	21-36	18-40	1.30-1.50	0.6-2.0	0.12-0.16	4.5-5.5	Low----------	0.28		
	36-63	15-45	1.30-1.60	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.28		
TfA, TfB---------	0-8	3-8	1.30-1.55	6.0-20	0.03-0.08	4.5-5.5	Low----------	0.10	4	<1
Tifton	8-32	20-35	1.50-1.70	0.6-2.0	0.12-0.16	4.5-5.5	Low----------	0.24		
	32-42	25-40	1.55-1.80	0.2-0.6	0.10-0.13	4.5-5.5	Low----------	0.17		
	42-65	25-45	1.60-1.85	0.2-0.6	0.10-0.12	4.5-5.5	Low----------	0.17		

See footnote at end of table.

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		Organic matter
								K	T	
	In	Pct	g/cc	In/hr	In/in	pH				Pct
TnC2	0-5	10-20	1.30-1.50	6.0-20	0.06-0.10	4.5-5.5	Low	0.17	4	1-2
Tifton	5-29	20-35	1.50-1.70	0.6-2.0	0.12-0.16	4.5-5.5	Low	0.24		
	29-39	25-40	1.55-1.80	0.2-0.6	0.10-0.13	4.5-5.5	Low	0.17		
	39-65	25-45	1.60-1.85	0.2-0.6	0.10-0.12	4.5-5.5	Low	0.17		
TrB, TrC, TrD, TrE	0-68	1-10	1.30-1.70	6.0-20	0.05-0.10	4.5-5.5	Very low	0.10	5	<1
Troup	68-90	15-35	1.40-1.60	0.6-2.0	0.10-0.13	4.5-5.5	Low	0.20		
Wa	0-4	5-20	1.30-1.60	0.6-2.0	0.10-0.15	4.5-5.5	Low	0.24	5	.5-5
Wahee	4-50	35-60	1.40-1.60	0.06-0.2	0.12-0.20	4.5-5.5	Moderate	0.28		
	50-65	---	---	---	---	---		----		
WeB, WeC, WeD, WeE	0-5	6-20	1.25-1.60	2.0-6.0	0.10-0.18	4.5-5.5	Low	0.24	3	<1
Wedowee	5-10	14-30	1.30-1.55	0.6-2.0	0.12-0.18	4.5-5.5	Low	0.28		
	10-35	35-45	1.30-1.50	0.6-2.0	0.12-0.18	4.5-5.5	Moderate	0.28		
	35-62	15-30	1.20-1.50	0.6-2.0	0.08-0.15	4.5-5.5	Low	0.28		

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 17.--SOIL AND WATER FEATURES

("Flooding" and "water table" and terms such as "frequent," "brief," "apparent," and "perched" are explained in the text. The symbol < means less than; > means more than. Absence of an entry indicates that the feature is not a concern or that data were not estimated)

Soil name and map symbol	Hydrologic group	Flooding			High water table			Bedrock		Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness	Uncoated steel	Concrete
					Ft			In			
AeB, AeC, AeD, AeE---Ailey	B	None	---	---	>6.0	---	---	>60	---	Moderate	Moderate.
ArB---Arundel	C	None	---	---	>6.0	---	---	20-40	Soft or hard.	High	High.
BB*:											
Bibb	D	Frequent	Brief to long.	Dec-May	0.5-1.5	Apparent	Dec-Apr	>60	---	High	Moderate.
Osier	A/D	Frequent	Brief	Dec-Apr	0-1.0	Apparent	Nov-Mar	>60	---	High	High.
BnB---Blanton	A	None	---	---	4.0-6.0	Perched	Dec-Mar	>60	---	High	High.
BoB, BoC---Bonifay	A	None	---	---	4.0-5.0	Perched	Jan-Feb	>60	---	Low	High.
CaB2, CaC2---Carnegie	C	None	---	---	>6.0	---	---	>60	---	Low	Moderate.
CeB, CfC2---Cecil	B	None	---	---	>6.0	---	---	>60	---	Moderate	Moderate.
Ch---Chastain	D	Frequent	Very long	Dec-Apr	0-1.0	Apparent	Nov-May	>60	---	High	High.
Ck---Chewacla	C	Occasional	Brief	Nov-Apr	0.5-1.5	Apparent	Nov-Apr	>60	---	High	Moderate.
CmA---Chipley	C	None	---	---	2.0-3.0	Apparent	Dec-Apr	>60	---	Low	High.
CnA---Clarendon	C	None	---	---	2.0-3.0	Apparent	Dec-Mar	>60	---	Moderate	High.
CoB, CtC2, CtD2---Cowarts	C	None	---	---	>6.0	---	---	>60	---	Moderate	Moderate.
DgA---Dogue	C	None	---	---	1.5-3.0	Apparent	Jan-Mar	>60	---	High	High.
DoA, DoB, DtC2---Dothan	B	None	---	---	3.0-5.0	Perched	Jan-Apr	>60	---	Moderate	Moderate.
EuB, EuC---Eustis	A	None	---	---	>6.0	---	---	>60	---	Low	High.
FaA, FbB, FcC2, FcD2---Faceville	B	None	---	---	>6.0	---	---	>60	---	Low	Moderate.
FuB, FuC---Fuquay	B	None	---	---	4.0-6.0	Perched	Jan-Mar	>60	---	Low	High.

See footnote at end of table.

TABLE 17.--SOIL AND WATER FEATURES--Continued

Soil name and map symbol	Hydrologic group	Flooding			High water table			Bedrock		Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness	Uncoated steel	Concrete
					Ft			In			
GR*:											
Grady	D	None	---	---	+2-1.0	Apparent	Dec-Jun	>60	---	High	High.
Rembert	D	None	---	---	+1-1.0	Apparent	Nov-Apr	>60	---	High	High.
GsB, GtA, GtC2---- Greenville	B	None	---	---	>6.0	---	---	>60	---	Moderate	High.
HM*:											
Herod	D	Frequent	Brief	Nov-Apr	0.5-1.5	Apparent	Dec-Mar	>60	---	High	Moderate.
Muckalee	D	Frequent	Brief	Nov-Apr	0.5-1.5	Apparent	Dec-Mar	>60	---	High	Moderate.
LaB, LaD, LaE----- Lakeland	A	None	---	---	>6.0	---	---	>60	---	Low	Moderate.
LmB, LmC, LmD, LmE---- Lucy	A	None	---	---	>6.0	---	---	>60	---	Low	High.
Me---- Meggett	D	Frequent	Long	Dec-Apr	0-1.0	Apparent	Nov-Apr	>60	---	High	Moderate.
NaB, NkB2, NkC2--- Nankin	C	None	---	---	>6.0	---	---	>60	---	High	High.
OcA---- Ocilla	C	None	---	---	1.0-2.5	Apparent	Dec-Apr	>60	---	High	Moderate.
OoA---- Ocilla	C	Occasional	Brief	Dec-Apr	1.0-2.5	Apparent	Dec-Apr	>60	---	High	Moderate.
OrA, OrB, OsC2, OsD2---- Orangeburg	B	None	---	---	>6.0	---	---	>60	---	Moderate	Moderate.
PuB*:											
Pits.											
Udorthents.											
Ra---- Rains	D	Occasional	Brief	Nov-Apr	0-1.0	Apparent	Nov-Apr	>60	---	High	High.
TfA, TfB, TnC2---- Tifton	B	None	---	---	3.5-6.0	Perched	Jan-Feb	>60	---	Low	Moderate.
TrB, TrC, TrD, TrE---- Troup	A	None	---	---	>6.0	---	---	>60	---	Low	Moderate.
Wa---- Wahee	D	Frequent	Very brief to brief.	Dec-Apr	0.5-1.5	Apparent	Dec-Mar	>60	---	High	High.
WeB, WeC, WeD, WeE---- Wedowee	B	None	---	---	>6.0	---	---	>60	---	Moderate	High.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 18.--PARTICLE-SIZE ANALYSIS

(Data were analyzed by the Soil Survey Laboratory, Soil Conservation Service, Lincoln, Nebraska. The pedons are typical of the series in the survey area. For the location of the pedons, see the section "Soil Series and Their Morphology." Absence of an entry indicates that the information was not available. TR means trace)

Soil name, report number, horizon, and depth in inches	Total			Clay	Silt		Sand					Coarse fractions (mm)				
												Weight				>2 mm weight
	Clay (<.002)	Silt (.002 -.05)	Sand (.05 -2)	Fine (<.0002)	Fine (.002 -.02)	Coarse (.02 -.05)	Very fine (.05 -.10)	Fine (.10 -.25	Medium (.25 -.50)	Coarse (.5-1)	Very coarse (1-2)	(2 -5)	(5 -20)	(20 -75)	(.1 -2)	percent of whole soil
	Pct of < 2 mm											Pct of < 75 mm				
Ailey:																
(S85GA-125-002)																
A---------0 to 4	1.6*	4.8	93.6	1.0	2.8	2.0	5.9	39.7	29.2	14.6	4.2	1	1		88	2
E1--------4 to 9	2.7*	6.1	91.2	1.2	3.8	2.3	6.5	40.0	27.7	13.9	3.1	1	2		85	3
E2--------9 to 25	2.8*	8.3	88.9	1.5	5.6	2.7	5.8	37.3	27.1	15.2	3.5	1	1		83	2
Bt1------25 to 30	19.4	5.7	74.9	8.9	3.3	2.4	4.8	35.2	19.0	12.3	3.6	1	2		71	3
Bt2------30 to 40	27.3	4.5	68.2	13.2	2.5	2.0	4.3	34.9	15.1	10.5	3.5	1	TR		64	1
2Btx-----40 to 60	16.6	3.2	80.2	6.7	1.3	1.9	2.4	17.8	22.8	26.6	10.6	3			78	3
3Cd------60 to 80	23.8	2.6	73.6	9.9	0.9	1.7	4.9	50.1	12.7	5.0	0.9	TR			69	TR
Eustis:																
(S85GA-163-004)																
Ap------- 0 to 9	6.8	6.4	86.8				3.03	26.17	43.60	12.85	1.20					TR
EB------- 9 to 34	11.2*	3.3	85.5				2.43	24.60	44.05	13.11	1.35					TR
Bt2------34 to 90	13.6	3.4	83.0				2.26	24.79	38.55	14.80	2.64					TR

* This measurement is slightly lower than is defined for the series, but this difference is within the range of normal laboratory error.

TABLE 19.--PHYSICAL TEST DATA

(Data were analyzed by the Soil Survey Laboratory, Soil Conservation Service, Lincoln, Nebraska. The pedon is typical of the series in the survey area. For the location of the pedon, see the section "Soil Series and Their Morphology." Absence of an entry indicates that the information was not available. NP means nonplastic)

Soil name, report number, horizon, and depth in inches	Atterberg limits		Ratio to total clay		Bulk density		COLE* (whole soil)	Water content		Water retention difference (whole soil)
	Liquid limit	Plas-ticity index	Cation-exchange capacity	15-bar water	1/3 bar	Oven-dry		1/3 bar	15 bar	
	Pct <0.4 mm				-----g/cc-----		Cm/cm	Pct of <2 mm		Cm/cm
Ailey:										
(S85GA-125-002)										
A------0 to 4			2.63	4.13	1.70**				6.6	
E1-----4 to 9			0.59	0.63	1.70**				1.7	
E2-----9 to 25		NP	0.25	0.46	1.70**				1.3	
Bt1---25 to 30			0.10	0.36	1.69	1.72	0.006		6.9	
Bt2---30 to 40	32	17**	0.09	0.35	1.69**	1.71	0.004	12.2	9.5	0.05
2Btx--40 to 60			0.05	0.39	1.81	1.86	0.007	8.4	6.4	0.04
3Cd---60 to 80	31	17**	0.08	0.40	1.77**	1.80	0.006	13.2	9.5	0.07

* COLE means coefficient of linear extensibility. It is a quantitative method of determining the shrink-swell behavior of the soil. It is an estimate of the vertical component of swelling of a natural solid clod. COLE is expressed as low (less than 0.03), moderate (0.03-0.06), and high (more than 0.06).

** This measurement is slightly lower than is defined for the series, but this difference is within the range of normal laboratory error.

TABLE 20.--MINERALOGY

(Data were analyzed by the Soil Survey Laboratory, Soil Conservation Service, Lincoln, Nebraska. The pedon is typical of the series in the survey area. For the location of the pedon, see the section "Soil Series and Their Morphology." DTA means differential thermal analysis)

Soil name, report number, horizon, and depth in inches	Clay (< 2 microns)					
	X-ray				DTA	
	Kaolinite	Vermiculite	Goethite	Goethite	Kaolinite	Gibbsite
	Relative amounts*				Pct	
Ailey:						
(S85GA-125-002)						
Bt1----25 to 30	5	2	2	1	31	3
Bt2----30 to 40	5	2	2	1	40	4
3Cd----60 to 80	5	1	1	2	41	1

* Relative amounts: 5, dominant; 2, small; 1, trace.

TABLE 21.--CHEMICAL TEST DATA

(Data were analyzed by the Soil Survey Laboratory, Soil Conservation Service, Lincoln, Nebraska. The pedon is typical of the series in the survey area. For the location of the pedon, see the section "Soil Series and Their Morphology." Absence of an entry indicates that the information was not available. TR means trace)

Soil name, report number, horizon, and depth in inches	Organic carbon	Total nitrogen	Dithionate citrate extractable		Ammonium acetate extractable bases					Extractable acidity	Extractable aluminum	Cation-exchange capacity			Aluminum saturation	Base saturation		pH		
			Fe	Al	Ca	Mg	Na	K	Sum bases			Sum of cations	Ammonium acetate	Bases plus aluminum		Sum of cations	Ammonium acetate	KCl	$CaCl_2$ (1:2)	H_2O (1:1)
	Pct	Pct	Pct	Pct	----------Milliequivalents per 100 grams of soil-------										Pct	Pct	Pct			
Ailey:																				
(S85GA-125-002)																				
A------- 0 to 4	2.66	0.157	0.5	0.1	1.9	0.5	TR	0.2	2.6	5.5	0.3	8.1	4.2	2.9	10	32	62	4.0	4.2	4.4*
E1------ 4 to 9	0.63	0.037	0.4	0.1	0.6	0.1	TR	TR	0.7	2.3	0.3	3.0	1.6	1.0	30	23	44	4.3	4.6	5.1
E2------ 9 to 25	0.21	0.006	0.4	0.1	0.3	TR	TR		0.3	0.8	0.1	1.1	0.7	0.4	25	27	43	4.4	4.8	5.4
Bt1-----25 to 30	0.27	0.013	1.6	0.3	0.5	0.1	0.1	0.1	0.8	2.9	0.4	3.7	1.9	1.2	33	22	42	4.0	4.3	4.8
Bt2-----30 to 40	0.24		2.1	0.4	0.7	0.2	TR	0.1	1.0	3.2	0.4	4.2	2.4	1.4	29	24	42	4.0	4.4	4.9
2Btx----40 to 60	0.10		1.0	0.1	0.3	0.1	TR		0.4	1.5	0.4	1.9	0.9	0.8	50	21	44	3.8	4.2	4.7
3Cd-----60 to 80	0.12		2.0	0.2	0.2	0.1	0.1		0.4	2.2	0.6	2.6	1.8	1.0	60	15	22	3.9	4.2	4.7

* This measurement is slightly lower than is defined for the series, but this difference is within the range of normal laboratory error.

TABLE 22.--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
Ailey	Loamy, siliceous, thermic Arenic Kanhapludults
*Arundel	Clayey, montmorillonitic, thermic Typic Hapludults
Bibb	Coarse-loamy, siliceous, acid, thermic Typic Fluvaquents
Blanton	Loamy, siliceous, thermic Grossarenic Paleudults
Bonifay	Loamy, siliceous, thermic Grossarenic Plinthic Paleudults
Carnegie	Clayey, kaolinitic, thermic Plinthic Kandiudults
Cecil	Clayey, kaolinitic, thermic Typic Hapludults
Chastain	Fine, mixed, acid, thermic Typic Fluvaquents
Chewacla	Fine-loamy, mixed, thermic Fluvaquentic Dystrochrepts
Chipley	Thermic, coated Aquic Quartzipsamments
Clarendon	Fine-loamy, siliceous, thermic Plinthaquic Paleudults
Cowarts	Fine-loamy, siliceous, thermic Typic Kanhapludults
Dogue	Clayey, mixed, thermic Aquic Hapludults
Dothan	Fine-loamy, siliceous, thermic Plinthic Kandiudults
Eustis	Sandy, siliceous, thermic Psammentic Paleudults
Faceville	Clayey, kaolinitic, thermic Typic Kandiudults
Fuquay	Loamy, siliceous, thermic Arenic Plinthic Paleudults
Grady	Clayey, kaolinitic, thermic Typic Paleaquults
Greenville	Clayey, kaolinitic, thermic Rhodic Kandiudults
Herod	Fine-loamy, siliceous, nonacid, thermic Typic Fluvaquents
Lakeland	Thermic, coated Typic Quartzipsamments
Lucy	Loamy, siliceous, thermic Arenic Kandiudults
Meggett	Fine, mixed, thermic Typic Albaqualfs
Muckalee	Coarse-loamy, siliceous, nonacid, thermic Typic Fluvaquents
Nankin	Clayey, kaolinitic, thermic Typic Kanhapludults
Ocilla	Loamy, siliceous, thermic Aquic Arenic Paleudults
Orangeburg	Fine-loamy, siliceous, thermic Typic Kandiudults
Osier	Siliceous, thermic Typic Psammaquents
Rains	Fine-loamy, siliceous, thermic Typic Paleaquults
Rembert	Clayey, kaolinitic, thermic Typic Ochraquults
Tifton	Fine-loamy, siliceous, thermic Plinthic Kandiudults
Troup	Loamy, siliceous, thermic Grossarenic Kandiudults
Udorthents	Udorthents
Wahee	Clayey, mixed, thermic Aeric Ochraquults
Wedowee	Clayey, kaolinitic, thermic Typic Hapludults

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