Department of Agriculture

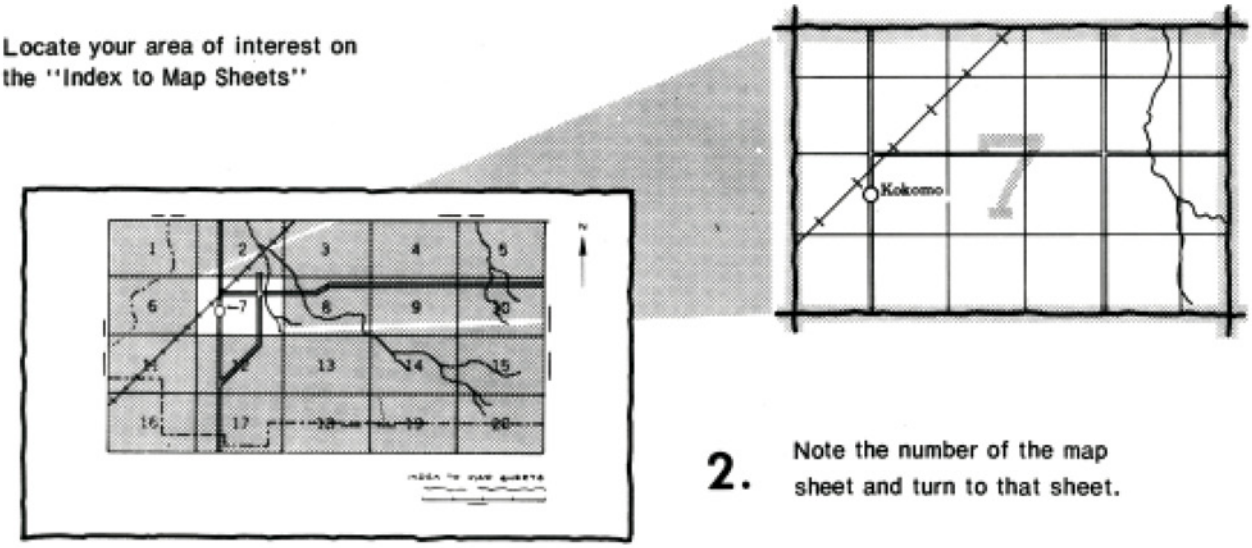
Soil Conservation Service

In cooperation with South Carolina Agricultural Experiment Station and South Carolina Land Resources Conservation Commission

Soil Survey of Aiken County Area South Carolina

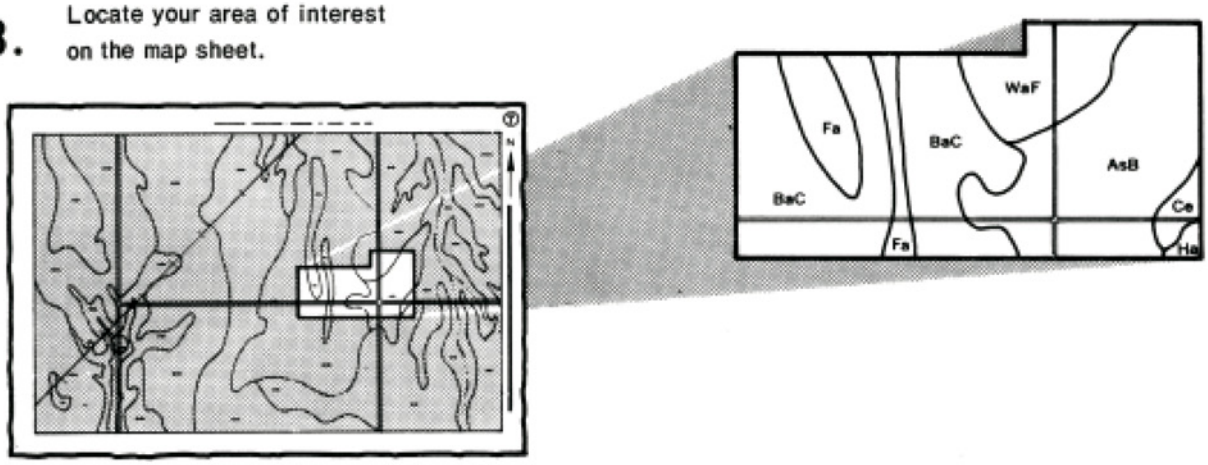
HOW TO USE

1. Locate your area of interest on the "Index to Map Sheets"

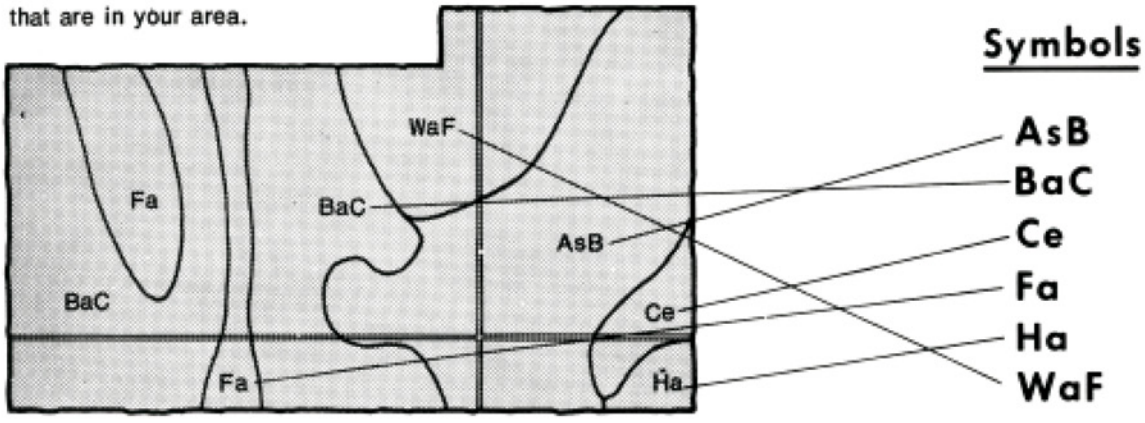


2. Note the number of the map sheet and turn to that sheet.

3. Locate your area of interest on the map sheet.

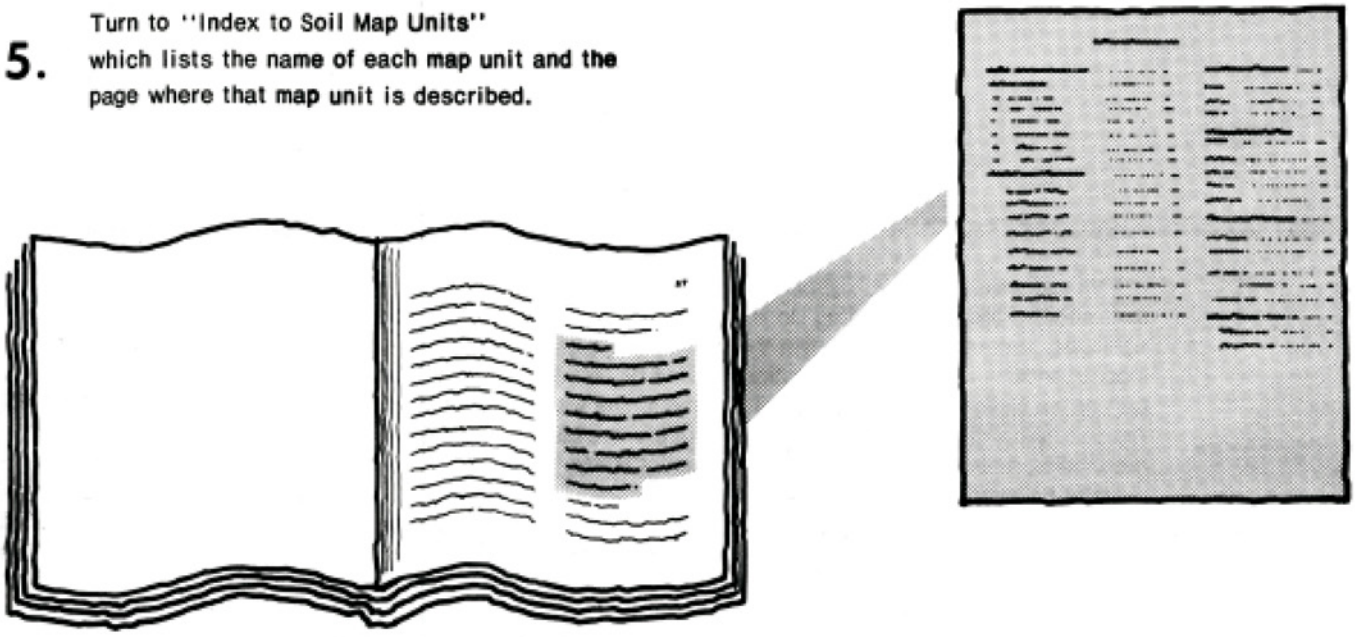


4. List the map unit symbols that are in your area.

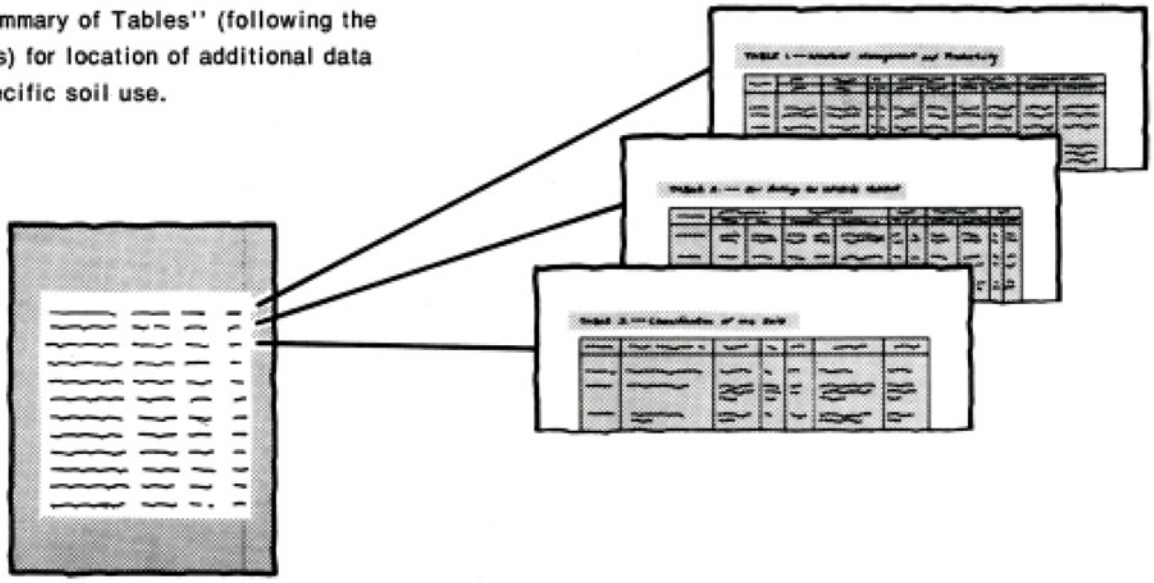


THIS SOIL SURVEY

5. Turn to "Index to Soil Map Units" which lists the name of each map unit and the page where that map unit is described.



6. See "Summary of Tables" (following the Contents) for location of additional data on a specific soil use.



7. Consult "Contents" for parts of the publication that will meet your specific needs. This survey contains useful information for farmers or ranchers, foresters or agronomists; for planners, community decision makers, engineers, developers, builders, or homebuyers; for conservationists, recreationists, teachers, or students; to specialists in wildlife management, waste disposal, or pollution control.

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. In line with Department of Agriculture policies, benefits of this program are available to all, regardless of race, color, national origin, sex, religion, marital status, or age.

Major fieldwork for this soil survey was completed in 1981. Soil names and descriptions were approved in 1981. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1981. This survey was made cooperatively by the Soil Conservation Service, the South Carolina Agricultural Experiment Station, and the South Carolina Land Resources Conservation Commission. It is part of the technical assistance furnished to the Aiken Soil and Water Conservation District.

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

Cover: Soybeans were planted in rye stubble in this area of Fuquay sand, 0 to 2 percent slopes. The cover crop and minimum tillage help to protect the soil from soil blowing.

Contents

Soil Series

Issued May 1985

Index to Map Units

Summary of Tables

Foreword

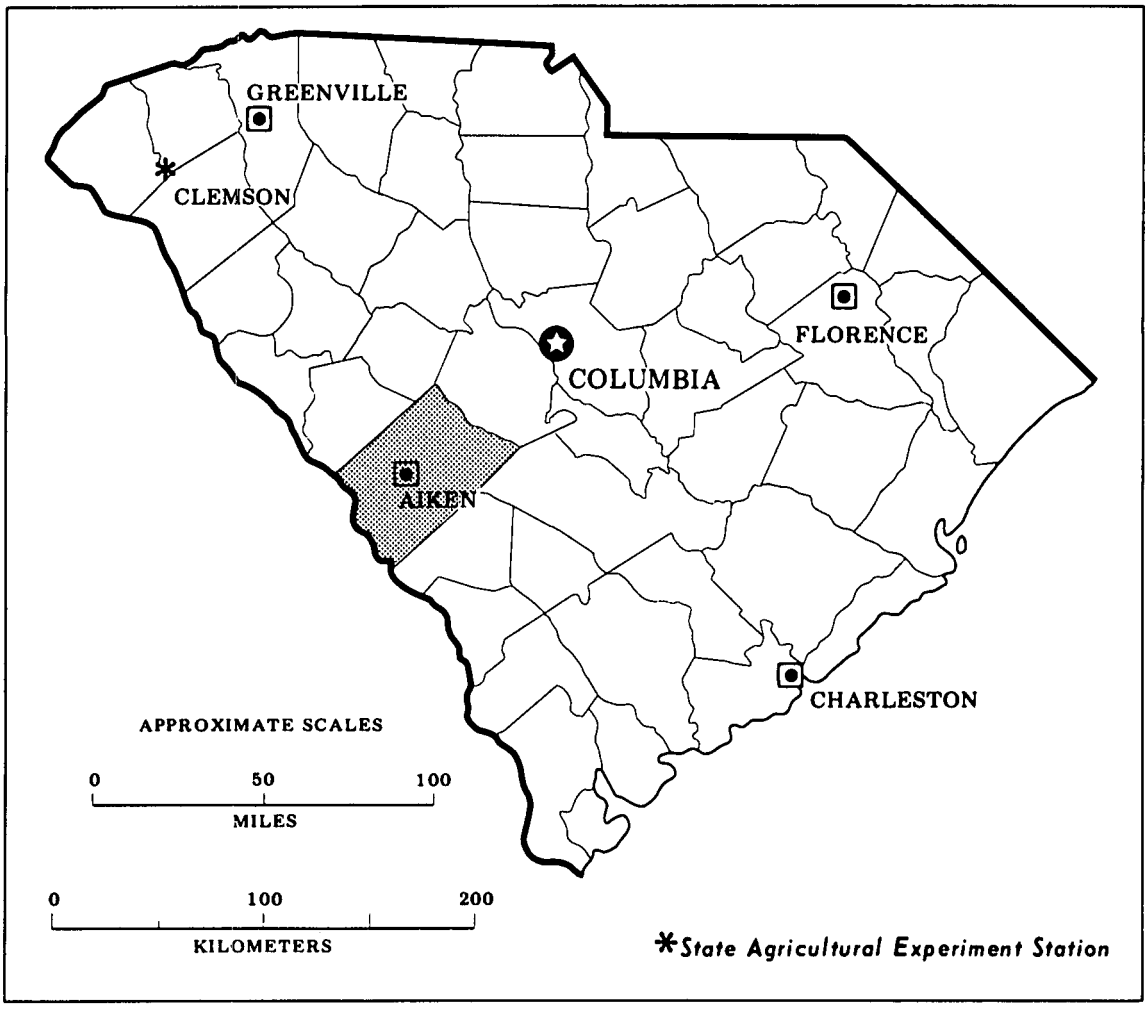
This soil survey contains information that can be used in land-planning programs in the Aiken County Area. It contains predictions of soil behavior for selected land uses. The survey also highlights limitations and hazards inherent in the soil, improvements needed to overcome the limitations, and the 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 potential of the soil and the management needed for maximum food and fiber production. Planners, community officials, engineers, developers, builders, and home buyers can use the survey to plan land use, select sites for construction, and identify special practices needed to insure 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.

Billy R. Abercrombie
State Conservationist
Soil Conservation Service



Location of Aiken County in South Carolina.

Soil Survey of
Aiken County Area, South Carolina

By Vergil A. Rogers, Soil Conservation Service

Soils surveyed by Vergil A. Rogers, G. E. Hardee, D. J. DeFrancesco, and L. L. Brown, Soil Conservation Service

United States Department of Agriculture, Soil Conservation Service
In cooperation with South Carolina Agricultural Experiment Station
and South Carolina Land Resources Conservation Commission

AIKEN COUNTY AREA is located about midway between the mountains and the coast. On the west, Aiken County is separated from Georgia by the Savannah River. On the north it is bounded by Edgefield and Saluda Counties; on the east it is separated from Lexington County by Chinquapin Creek and North Fork Edisto River; and on the southeast it is bounded by Barnwell and Orangeburg Counties.

Aiken County takes in about 704,000 acres, but about 73,000 acres in the southern part of the county is part of the Savannah River Plant of the Department of Energy and is not included in this survey.

General Nature of the Survey Area

Three major land resource areas are represented in the county: the Carolina and Georgia Sand Hills, Southern Coastal Plain, and Southern Piedmont areas (*3*). For conciseness, they are referred to hereafter as the Sand Hills, Coastal Plain, and Piedmont.

Aiken County lies mainly within the Sand Hills belt, which includes nearly 80 percent of the survey area. The soils are dominantly gently sloping to moderately steep and well drained or excessively drained. They commonly have moderately thick or thick sandy material over a loamy subsoil, or they are sandy throughout. Some soils have a subsoil that is dense and brittle in part.

About 15 percent of the survey area is in the Coastal Plain area. The soils are dominantly nearly level to sloping and well drained. Most of the soils are sandy over a loamy or clayey subsoil.

About 1 percent of the survey area is in the Piedmont area. The soils are dominantly sloping to very steep. They have a loamy surface layer over a clayey subsoil.

Climate

Prepared by the National Climatic Center, Asheville, North Carolina.

Table 1 gives data on temperature and precipitation for the survey area as recorded at Aiken in the period 1951 to 1973. 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 48 degrees F, and the average daily minimum temperature is 37 degrees. The lowest temperature on record, which occurred at Aiken on January 10, 1970, is 4 degrees. In summer the average temperature is 79 degrees, and the average daily maximum temperature is 90 degrees. The highest recorded temperature, which occurred at Aiken on June 27, 1954, is 108 degrees.

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

The total annual precipitation is 48 inches. Of this, 26 inches, or 55 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 21 inches. The heaviest 1-day rainfall during the period of record was 9.68 inches

at Aiken on April 16, 1969. Thunderstorms occur on about 55 days each year, and most occur in summer.

The average seasonal snowfall is 2 inches. The greatest snow depth at any one time during the period of record was 14 inches. Days when as much as 1 inch of snow is on the ground are rare, but the number of such days varies greatly from year to year.

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 southwest. Average windspeed is highest, 8 miles per hour, in spring.

History and Development

Aiken County was formed in 1872 from Edgefield and Barnwell districts. The county was named for William Aiken, who was the first president of the South Carolina Railroad and Canal Company and the father of Governor Aiken (*6*). The town of Aiken is the county seat.

The founding fathers of Aiken recognized good soils and located the county seat in the midst of some of the best soils for agricultural uses in the area. These highly productive soils on the broad upland ridges are friable and have a loamy or clayey subsoil that can store water for crops to use.

The county has about 260 frost-free days during the average calendar year. The major crops are corn, coastal bermudagrass, soybeans, timber, and peaches. The important minor crops are cotton, peanuts, watermelons, and sweet potatoes.

Beef and dairy cattle, hogs, chickens, and horses are the most common farm animals. Aiken is a center of racehorse training and is famous for its Triple Crown, which consists of the Sulky or Harness race, the Aiken Trials, and the Steeplechase.

Cotton had a strong influence in shaping the early growth of the Aiken community. The Beech Island Agricultural Club was organized in 1843 and became the forerunner of all agricultural clubs in the South. High yields of cotton in the 1800's encouraged the growth of a large manufacturing industry to process the cotton. The Graniteville mill was the only cotton mill in the South to operate uninterrupted throughout the Civil War. In the Battle of Aiken (1865), Kilpatrick's Raiders attempted to destroy the mill, but Wheeler's Cavalry successfully defended it.

The original South Carolina Railroad and Canal Company made its mark in the development of Aiken County. Its 136 miles of track from Charleston to Hamburg made this railroad, in 1833, the longest in the world.

In 1937, Aiken County was a part of the Edisto Soil Conservation District, which also included the counties of Barnwell, Orangeburg, Bamberg, and Allendale. Aiken County formed its own soil conservation district in 1951.

Kaolin clay, which local people call "chalk," is the most important mineral resource mined in Aiken County. It was formed along the fall line, which about 55 million years ago was the shore line of the Atlantic Ocean. There are about 15 active mines in the county, which occupy in all about 100 acres. Kaolin clay is used in making paper, medicine, ceramics, paint, and the nose cones of rockets.

Relief, Drainage, and Water Resources

The elevation in the Aiken County Area ranges from about 100 feet along the Savannah River near Jackson in the southwestern part of the county to about 635 feet near Monetta in the northern part. Most of the steep slopes are located along the slope breaks of major streams. The steeper slopes are in the extreme western corner of the survey area along the Savannah River. There are strongly sloping to moderately steep slopes along most major drainageways in the survey area. In general, the landscape is sloping to nearly level beyond about 1/2 to 1 mile from the major drains.

The Savannah River and its tributaries drain the southwestern half of the survey area, and the Edisto River and its tributaries drain the northeastern half.

Many small ponds in the survey area are used for irrigation and recreation. There is an excellent supply of surface streams. There are artesian wells in some localities. Underground streams are plentiful; their depth in different areas ranges from about 70 feet to more than 400 feet below the surface.

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 in which the soil formed. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biologic activity.

The soils in the survey area occur in an orderly pattern that is related to the geology, the landforms, relief, climate, and the 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 considerable 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, acidity, 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 generally are collected for laboratory analyses and for engineering tests. Soil scientists interpreted the data from these analyses and tests as well as the field-observed characteristics and the soil properties in terms of expected behavior of the soils under different uses. Interpretations for all of the soils were field tested through observation of the soils in different uses under different levels of management. Some interpretations are modified to fit local conditions, and new interpretations sometimes are developed to meet local needs. Data were 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 were 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 state with a fairly high degree of probability that a given soil will have a high water table within certain depths in most years, but they cannot assert 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, 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 several 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. These latter soils are called inclusions or included soils.

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, 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, a map unit 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 other units but in a different pattern.

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

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

Dominantly sloping to very steep soils on the Southern Piedmont

These soils formed in residuum of weathered gneiss, schist, and slate of the Southern Piedmont. They are well drained soils that have a sandy or loamy surface layer and a loamy or clayey subsoil.

1. Gundy-Wateree

Well drained, loamy soils that have a loamy or clayey subsoil

The landscape is characterized by marked relief. The soils in most places are sloping to very steep and are highly dissected by drainageways. They are in a single area in the extreme western corner of the county adjacent to the Savannah River. Almost all of the area is wooded. Roads are few, and they have deep cuts that expose bedrock. There are a few houses on small parcels of land along the main road in the area.

This map unit takes in about 0.25 percent of the survey area. It is made up of about 40 percent Gundy soils, 10 percent Wateree soils, and 50 percent soils of minor extent.

Gundy soils are strongly sloping and moderately steep. They are on narrow ridges and along drainageways. They have a loamy surface layer and a loamy or clayey subsoil. These soils have rippable bedrock at a depth of about 50 inches.

Wateree soils are steep or very steep and are mainly adjacent to major drainageways. They have a loamy surface layer, a loamy subsoil, and, below the subsoil, loamy material that contains many fragments of slatelike rock.

The minor soils in this map unit are Hiwassee, Fuquay, Troup, Ailey, and Vaucluse soils, all of which are well drained. All of these soils except Hiwassee soils have a sandy surface layer and a loamy subsoil. Hiwassee soils have a loamy surface layer and a clayey subsoil.

Most of the acreage is woodland. The forest cover consists of mixed hardwoods and pines. A high percentage of the woodland is unimproved. Some very small areas are used as cropland and pasture.

The soils in this map unit in most places are poorly suited to crops and pasture because of the slope. They are suited to use as woodland; however, slope is a severe limitation over much of the area. Erosion is a moderate to severe hazard because of the slope. The soils are poorly suited to most urban and recreation uses also because of the slope. Slope, the hazard of erosion, and the rocky subsoil are the chief problems in management.

2. Pacolet-Vaucluse-Ailey

Well drained, loamy and sandy soils that have a clayey or loamy subsoil; many have a dense, brittle layer in the subsoil

The landscape is characterized by marked relief. The soils are dominantly sloping to moderately steep. They are in two well separated areas adjacent to streams in the northern part of the county. The land use is mainly woodland of mixed pines and hardwoods. On some of the ridgetops the soils are less sloping and are used for crops or as pasture. Roads generally run across the areas. Farmsteads are sparse, and most of them are on the ridgetops.

This map unit makes up about 0.75 percent of the area. It is about 24 percent Pacolet soils, about 20 percent Vaucluse soils, about 12 percent Ailey soils, and about 44 percent soils of minor extent.

Pacolet soils have a loamy surface layer and a clayey or loamy subsoil.

Vaucluse and Ailey soils are so closely intermingled on the landscape that they generally are mapped together as a soil complex. Vaucluse soils have sandy surface

and subsurface layers and a loamy subsoil. Ailey soils have moderately thick sandy surface and subsurface layers and a loamy subsoil. Vaucluse and Ailey soils have a firm, dense, and brittle layer in the subsoil. The brittle layer partly restricts root development; consequently, windthrow uproots some trees along abrupt breaks.

The minor soils in this map unit are Fuquay and Troup soils. Also, Johnston soils are in some wet areas along the streams and major drainageways. They are subject to flooding.

About 75 percent of the acreage is woodland. Much of the woodland is unimproved; it is in a mixture of hardwoods and pines. Pine trees are more common on the less sloping soils. About 20 percent of the acreage is used as pasture, and 5 percent, consisting of less sloping soils, is in crops.

The soils in this map unit in most places are poorly suited to crops and pasture because of the slope, permeability, and droughtiness. However, some of the minor soils are suited to crops. The soils are poorly suited to use as woodland because of the slope and the relatively slow rate of tree growth. They are poorly suited to most urban and recreation uses. The slope is the main limitation for all of the major soils; the slow permeability, restricted root zone, and sandy texture of the Vaucluse and Ailey soils are also concerns in management.

Dominantly nearly level to moderately steep soils in the Sand Hills

These soils formed in sandy and loamy material in the Sand Hills. They are well drained soils that are sandy over a loamy subsoil and excessively drained soils that are sandy throughout.

3. Troup-Lakeland-Fuquay

Well drained, sandy soils that have a loamy subsoil and excessively drained soils that are sandy throughout

The landscape is characterized by moderate relief. The nearly level to gently sloping soils are on fairly broad ridgetops, and the more sloping soils are on the side slopes of drainageways. Areas of this map unit extend widely throughout the county. Most of the acreage is woodland. The forest cover varies from native turkey oaks and longleaf pines to planted pines. Roads are fairly well distributed. Farmsteads are sparse, but there are some houses on small acreages along the main roads.

This map unit makes up about 57 percent of the survey area. It is about 40 percent Troup soils, 28 percent Lakeland soils, 11 percent Fuquay soils, and about 21 percent soils of minor extent.

Troup soils are well drained. They are sandy to a depth of 40 inches or more over a loamy subsoil.

Lakeland soils are excessively drained. They are sandy to a depth of 80 inches or more.

Fuquay soils are well drained and are sandy to a depth of 20 to 40 inches over a loamy subsoil. The subsoil has iron-rich, brittle nodules.

The minor soils in this map unit are Dothan, Orangeburg, and Lucy soils, all of which are well drained; Bibb and Rembert soils, which are poorly drained; and Johnston soils, which are very poorly drained.

About 60 percent of the acreage is improved woodland. The rest is used as pasture, cropland (fig. 1), or unimproved woodland.

In most places the soils are poorly suited to crops because of droughtiness, the low available water capacity, and the rapid leaching of plant nutrients. The soils generally are suited to use as pasture. Troup and Fuquay soils are suited to use as woodland; however, Lakeland soils are poorly suited because trees grow more slowly and seedling mortality is higher than on the other soils. The soils are suited to most urban uses. Some of the soils are too rapidly or too slowly permeable for septic tank absorption fields to function properly. The sandy texture is a limitation for some recreation uses. Droughtiness, the low available water capacity and rapid loss of nutrients, the thick sandy surface material, and the low or very low content of organic matter are the chief problems in management of these soils.

4. Vaucluse-Ailey-Troup

Well drained, sandy soils that have a loamy subsoil; many have a dense, brittle layer in the subsoil

The landscape is characterized by moderate relief. The areas are scattered throughout the county. They border the major streams and drainageways. The soils are dominantly sloping to moderately steep. The forest cover is dominantly pines on the slopes and hardwoods along the drainageways and streams. In a few areas on ridgetops, the soils have been cleared and are used as cropland or pasture. Roads are fairly well distributed. Farmsteads are sparse, but a moderate number of houses are on small acreages along the main roads. Several towns are located in one area of this map unit in the western part of the county.

This map unit makes up about 24 percent of the survey area. About 40 percent of the map unit is Vaucluse soils, 23 percent is Ailey soils, 8 percent is Troup soils, and 29 percent is soils of minor extent.

Vaucluse and Ailey soils are so closely associated on the landscape that they generally are mapped together as a soil complex. Vaucluse soils have thin sandy surface and subsurface layers and a loamy subsoil that is dense and brittle in the lower part. The dense part is slowly to moderately slowly permeable and restricts root development. Ailey soils have moderately thick sandy surface and subsurface layers and a loamy subsoil that

Figure 1.—Soybeans are grown in wheat stubble in sandy soils to help conserve moisture and prevent soil blowing. The area is part of the Troup-Lakeland-Fuquay map unit.

is dense and brittle in the lower part. Troup soils have thick sandy surface and subsurface layers and a loamy subsoil.

The minor soils in this map unit are Fuquay, Orangeburg, and Dothan soils, all of which are well drained. There are a few areas of Lakeland soils, which are excessively drained. Johnston and Bibb soils, which are more poorly drained than the major soils, are along the drainageways and streams. They are subject to flooding.

About 85 percent of the acreage is woodland. A high percentage is in unimproved timber that has been logged and naturally reforested with a mixture of low-quality hardwoods and pines. About 10 percent is used as pasture, and about 5 percent is in crops.

The soils are poorly suited to crops because of the slope, the partly restricted root zone, droughtiness, and low available water capacity. They are poorly suited to use as pasture because of the slope, droughtiness, the low available water capacity, and the partly restricted root zone. In some small areas the soils are nearly level to gently sloping and are suited to use as pasture. The soils in this map unit are poorly suited to use as woodland. The growth of tree seedlings is retarded by the partly restricted root zone and by droughtiness. The slope limits equipment use. The soils are suited to urban uses and poorly suited to recreational development because of the slope, permeability, and the sandy texture of the surface material. Rolling slopes, slow permeability, the partly restricted root zone, sandy texture, and droughtiness are the chief problems in management.

Dominantly nearly level to sloping soils on the Coastal Plain

These soils formed in loamy and clayey sediments of the Coastal Plain. They are well drained soils that have a sandy or loamy surface layer and a loamy or clayey subsoil.

5. Faceville-Fuquay-Marlboro

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

The land surface is typically undulating. The soils are dominantly nearly level to sloping. They are on a broad ridge to the south and east of Aiken. They are mainly in

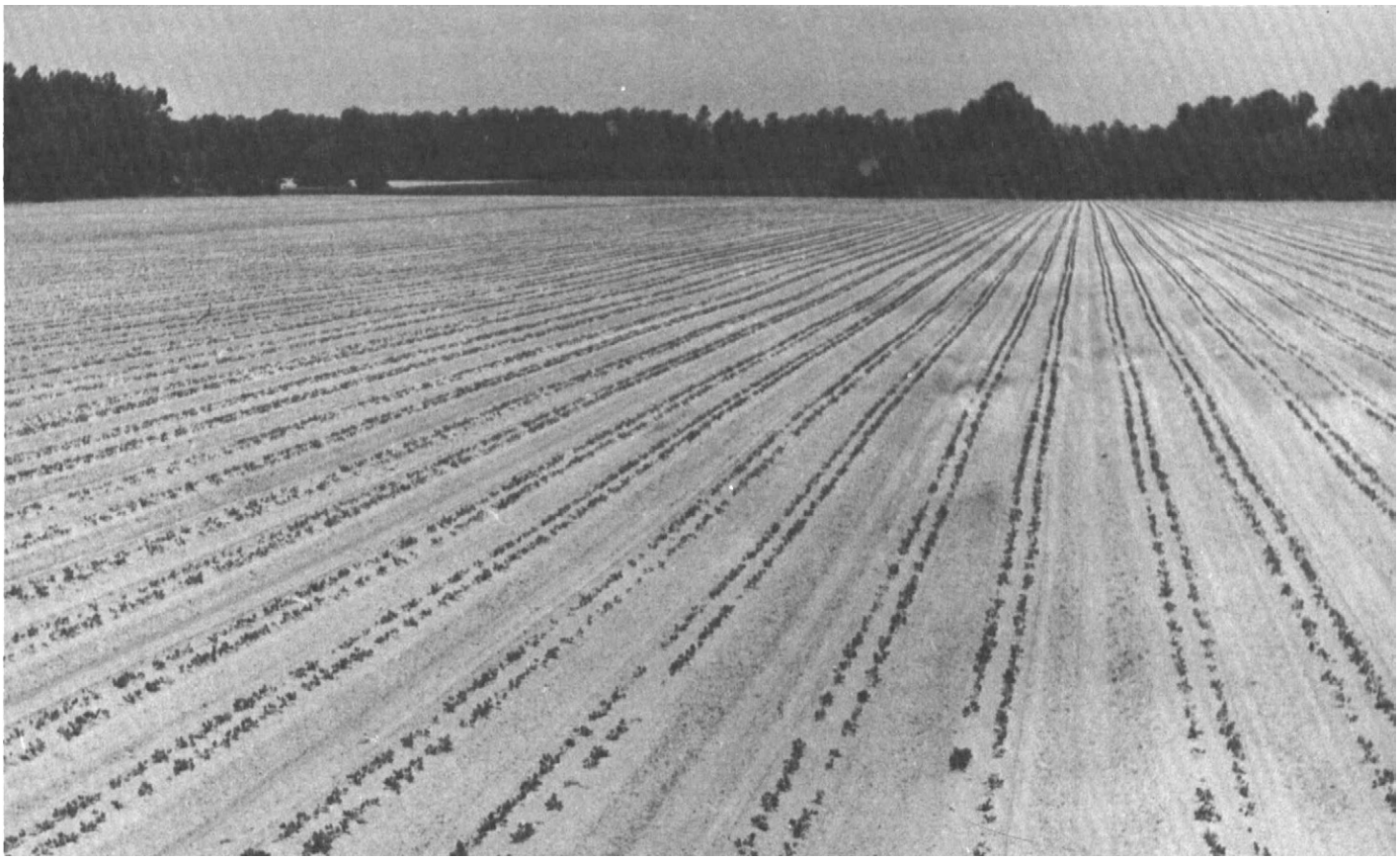


Figure 2.—The soils making up the Faceville-Fuquay-Marlboro map unit are used mainly for crops.

crops, but there are scattered tracts of planted pines. Roads and farmsteads are abundant in the area.

This map unit makes up about 3 percent of the survey area. It is about 27 percent Faceville soils, 26 percent Fuquay soils, 10 percent Marlboro soils, and 37 percent soils of minor extent.

Faceville soils have a loamy surface layer and a clayey subsoil. Fuquay soils have moderately thick sandy surface and subsurface layers and a loamy subsoil. The subsoil has iron-rich, brittle nodules. Marlboro soils have a sandy surface layer and a clayey subsoil.

The minor soils are Orangeburg, Dothan, Greenville, and Lucy soils, all of which are well drained. Also, there are poorly drained soils, such as Rembert soils, in small depressions.

About 85 percent of the acreage is cultivated. About 10 percent is woodland, and 5 percent is in pasture and other uses. The woodland is in planted pines.

The soils generally are well suited to crops (fig. 2). This map unit has a high percentage of prime farmland soils. The soils are well suited to use as pasture, hayland, and woodland. They generally are well suited to suited to most urban and recreation uses.

6. Dothan-Fuquay

Well drained, sandy soils that have a loamy subsoil

The land surface is characteristically undulating. The soils are on broad ridges that are dissected by shallow drainageways. The areas are scattered throughout the county. In most places they consist of open fields and occasional tracts of woodland (fig. 3). Commonly, the more sloping and more sandy soils in the map unit are used as woodland. There are numerous roads and farmsteads in the areas.

This map unit makes up about 10 percent of the survey area. It is about 45 percent Dothan soils, 45 percent Fuquay soils, and 10 percent soils of minor extent.

Dothan soils have a sandy surface layer and a loamy subsoil; the subsoil contains iron-rich nodules that are brittle. Fuquay soils have moderately thick sandy surface and subsurface layers and a loamy subsoil. The subsoil contains iron-rich nodules that are brittle.

The minor soils are Ailey, Lakeland, Lucy, Orangeburg, Troup, and Vaucluse soils, all of which are well drained,

and Bibb, Eunola, Rembert, and Ochlockonee soils, which are more poorly drained.

About half of the acreage is in crops. The rest is divided about equally between pasture and woodland. Much of the woodland is in planted pines.

The soils are well suited to poorly suited to crops. They are suited to use as pasture and woodland. They generally are suited to urban development; however, in most places there are moderate problems because of the slowly permeable or moderately slowly permeable subsoil. Slow or moderately slow permeability, sandy texture, droughtiness, and the low available water capacity are the chief problems in management.

Nearly level soils on flood plains or terraces

These soils formed dominantly in loamy sediment adjacent to the major rivers. They are well drained to very poorly drained soils that are loamy or primarily loamy throughout or that have a loamy surface layer and a clayey subsoil.

7. Shellbluff-Chewacla-Johnston

Well drained, somewhat poorly drained, and very poorly drained soils that are loamy or primarily loamy throughout; on flood plains

The landscape is characterized by slight relief. The soils are nearly level. They are in a single large area on the lowest part of the landscape adjacent to the Savannah River. The vegetation is dominantly hardwoods and some pines. Some areas of the better drained soils have been cleared and are used as cropland or pasture. There are very few roads and no houses.

The soils in this map unit make up about 3 percent of the survey area. About 38 percent of the map unit is Shellbluff soils, 32 percent is Chewacla soils, 24 percent is Johnston soils, and 6 percent is soils of minor extent.

Shellbluff soils are well drained. They have a silty clay loam surface layer and a silty clay loam subsoil.

Chewacla soils are somewhat poorly drained. They have a loam surface layer and a loamy subsoil.

Johnston soils are very poorly drained. They have a mucky loam surface layer that is underlain by a sandy layer and a loamy substratum.

The minor soils are Toccoa and Bibb soils. Toccoa soils are well drained, and Bibb soils are poorly drained.

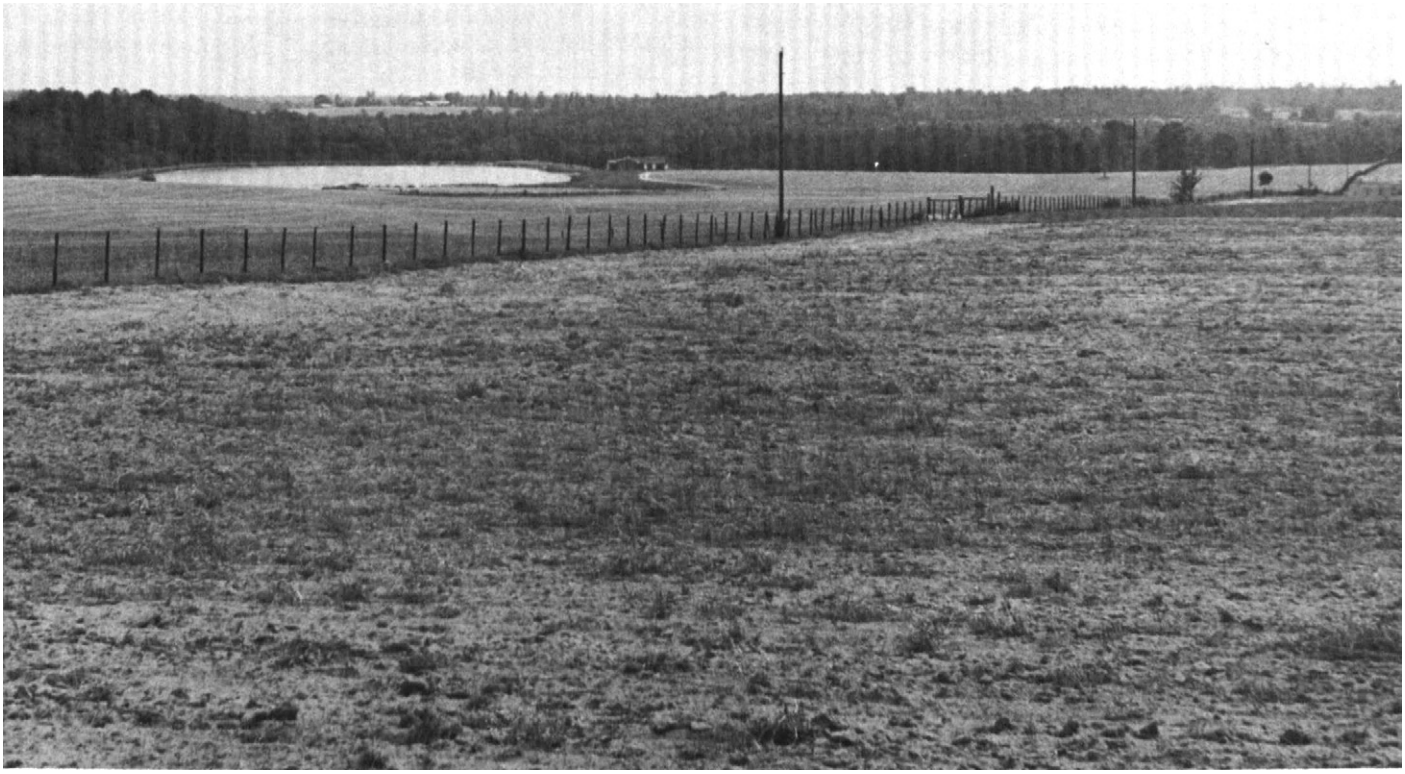


Figure 3.—Typical landscape in an area of the Dothan-Fuquay map unit.

About 80 percent of the acreage is woodland, and the rest is cropland or pasture. Most of the woodland is in unimproved hardwoods.

The soils in this map unit are well suited to poorly suited to crops. Frequent flooding is a hazard, and the seasonal high water table is a limitation. With the exception of Johnston soils, the soils are well suited to use as pasture and woodland. The soils generally are poorly suited to urban and recreational development because of flooding and wetness. The major problems in management are flooding and the high water table.

8. Johnston

Very poorly drained soils that are primarily loamy throughout; on flood plains

The landscape is characterized by slight relief. The soils are nearly level. They are in one long, narrow area on the flood plain of the South Fork Edisto River. The vegetation is dominantly hardwoods and some pines. In a few small areas that have been cleared, the soils are used as pasture. The only roads crossing the flood plain connect adjacent higher lying areas. There are no houses.

The soils in this map unit make up about 1 percent of the survey area. Johnston soils make up about 75 percent of the map unit, and soils of minor extent make up 25 percent.

Johnston soils have a mucky loam surface layer that is underlain by a sandy layer and a loamy substratum.

The minor soils are Dasher, Ogeechee, and Bibb soils and some soils that are well drained or moderately well drained.

About 90 percent of the acreage is woodland, and 10 percent is used as pasture. Most of the woodland is in unimproved hardwoods.

The soils in this map unit are poorly suited to crops because of frequent flooding and a very high water table. These soils are suited to use as pasture. In a few areas that have been cleared and are protected from flooding, the soils have been planted with grasses that are adapted to wet soils. The soils in this map unit are well suited to water-tolerant hardwoods, but they are poorly suited to loblolly pine. Wetness severely limits the use of equipment, and seedling mortality is high because of flooding and the seasonal high water table. These soils are poorly suited to urban and recreational development because of flooding and wetness. The chief problems in management of these soils are the frequent flooding and the high water table.

9. Bethera-Ogeechee-Angie

Poorly drained and moderately well drained, loamy soils that have a clayey or loamy subsoil; on terraces

The landscape is characterized by slight relief. The soils are in the southern part of the county near the Savannah River. They generally are nearly level, except those that border areas of more poorly drained soils. The vegetation in the lower, wetter areas is dominantly hardwood trees and some pines. In the higher lying areas the soils are used for crops or as pasture. Most fields are small. The distribution of roads and farmsteads is about average for the county.

This map unit makes up about 1 percent of the survey area. It is about 33 percent Bethera soils, 30 percent Ogeechee soils, 20 percent Angie soils, and 17 percent soils of minor extent.

Bethera soils are poorly drained. They have a clay loam surface layer and a clayey subsoil.

Ogeechee soils are poorly drained. They have a loamy surface layer and a loamy subsoil.

Angie soils are moderately well drained. They have a loamy surface layer and a clayey subsoil.

The minor soils are Ocilla Variant, Bayboro, Eunola, and Johnston soils. Also, there are small areas of well drained soils.

About 60 percent of the acreage is woodland; the rest has been cleared and is used as pasture or cropland.

The soils making up this map unit are well suited to crops if adequate drainage is provided. However, draining these soils is difficult because they are in low positions on the landscape and they have slow permeability. The soils are well suited to use as woodland. Drainage aids in obtaining good yields. Wetness severely limits the use of equipment on these soils and is a cause of seedling mortality. The soils generally are poorly suited to urban and recreational development. The chief problem in management is the removal of excess water.

Broad Land Use Considerations

About 15 to 20 percent of the land in the Aiken County Area is used for cultivated crops, mainly soybeans, corn, cotton, and small grains. Special crops include peanuts, peaches, and melons. There is some cropland in each map unit, but most of the cropland is in map units 5 and 6 and, in small, scattered areas, in map unit 3. The soils in map unit 3 are dominantly sandy and require intensive treatment for good yields. The soils in map unit 4 are also sandy and generally are more sloping; those in map units 1 and 2 are too sloping for cultivated crops. The soils in map unit 7 are productive, but they are subject to flooding and, in some areas, have a high water table. The soils in map unit 8 generally are poorly suited to cultivated crops because of flooding and wetness. The soils in map unit 9 are suited to some cultivated crops, but in most areas they need some drainage to produce satisfactory yields.

About 10 percent of the survey area is in pasture. Most of the pastureland is in map units 3 and 4. Coastal bermudagrass is suited to the sandy, sloping soils in these units. The soils in map units 1 and 8 are the most poorly suited to use as pasture. Those in map unit 1 are

too sloping, and those in map unit 8 are frequently flooded and have a high water table.

About 60 percent of the survey area is wooded. Map units 5 and 6 have the smallest percentage of woodland because the soils are equally well suited to crops. The soils in map units 1, 2, 7, 8, and 9 are used mainly as woodland. The soils in map unit 9 are well suited to this use, but drainage can improve yields and seedling survival. The soils in map units 1 and 2 are not well suited to use as woodland mainly because of the slope; also, in places the soils are sandy and have a dense, brittle layer in the subsoil. The soils in map unit 7 are suited to trees, but flooding and seasonal wetness limit their productivity. Frequent flooding and a high water table make the soils in map unit 8 poorly suited to most of the trees commonly grown in the county. However, water-tolerant hardwoods are well adapted to these soils.

About 1 percent of the county is urban or in dense residential development. In general, the soils in map units 1, 2, 7, and 8 are poorly suited to urban development. Those in map units 1 and 2 have steep slopes and in places have a dense, brittle layer in the subsoil. The soils in map units 7 and 8 are poorly suited because of flooding and wetness. The soils in map unit 9 are poorly suited because of their slow permeability and seasonal wetness. The major limitations of the soils in map units 3 and 4 are slope and either slow permeability or rapid permeability. The soils in map units 5 and 6 are best suited to urban development; however, some of these soils have moderate limitations caused by a slowly permeable layer in the subsoil and by the slope. In general, the soils that are suited to residential and urban development are also suited to recreation uses.

Most of the soils in the Aiken County Area are suited to use as habitat for wildlife. In some areas urban expansion has destroyed habitat for certain kinds of wildlife. The mixture of cultivated crops, pasture, and woodland in map units 1 through 6 offers good habitat for upland game. In map units 7, 8, and 9 there are sites that are suited to use as habitat for wetland wildlife. In all of the map units there are sites where ponds can be constructed.

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 "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, Fuquay sand, 0 to 2 percent slopes, is one of several phases in the Fuquay series.

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

A *soil complex* consists of two or more soils 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 soils are somewhat similar in all areas. Vaucluse-Ailey complex, 6 to 15 percent slopes, is an example.

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.

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 potentials for many uses. The Glossary defines many of the terms used in describing the soils.

Soil Descriptions

AeB—Ailey sand, 2 to 6 percent slopes. This is a well drained, gently sloping soil adjacent to major drainageways. The areas are long and narrow and range from 10 to 30 acres in size.

Typically, the surface layer is grayish brown sand about 3 inches thick. The subsurface layer, from 3 to 23 inches, is very pale brown sand. The subsoil from 23 to 72 inches is mainly mottled yellowish red and brownish yellow sandy clay loam. Below a depth of 30 inches, it is firm, compact, and slightly brittle.

Included with this soil in mapping are small areas of Dothan, Fuquay, Troup, and Vaucluse soils. There are a few small areas of soils that have slopes of more than 6 percent. The included soils make up about 15 percent of this map unit.

This soil is low in organic matter content. The available water capacity is low to very low. The soil is very strongly acid or strongly acid throughout, except in the surface layer where lime has been applied. Permeability is slow in the lower part of the subsoil and rapid in the surface and subsurface layers. Runoff is medium. The water table is at a depth of more than 6 feet. Root growth is partly restricted about 30 inches below the surface by the firm and compact part of the subsoil.

About 60 percent of the acreage is woodland. The rest, where the slopes are smoother and more gentle, is in cultivated crops or pasture.

This soil is poorly suited to crops. The main concerns in management are the low to very low available water capacity and consequent droughtiness and the low nutrient-holding capacity. The slowly permeable subsoil partly restricts the growth of deep-rooted plants. Yields can be improved by returning crop residue to the soil and including cover crops of grasses and legumes in the cropping system. These practices also reduce the hazard of soil blowing. Light, frequent applications of

fertilizer and lime help reduce the loss of nutrients by leaching.

This soil is suited to pasture and hay. This use is effective in controlling soil loss by erosion. Proper stocking, pasture rotation, deferment of grazing, and restricted use during wet periods help to keep the plants and soil in good condition.

This soil is poorly suited to use as woodland. The sandy texture is a moderate limitation to the use of equipment in planting and harvesting trees. Seedling mortality is moderate. Planting seedlings in a furrow improves the survival rate. Seedlings survive and grow moderately well if competing vegetation is controlled by site preparation, burning, spraying, cutting, or girdling. Loblolly pine is poorly suited, but longleaf pine is suited to this soil.

This soil is suited to urban development. Slow permeability in the subsoil is a severe limitation for septic tank absorption fields. This limitation can be reduced by enlarging the filter field area. The slow permeability and sandy texture are severe limitations for most recreation uses.

This soil is in capability subclass IIIs. The woodland ordination symbol is 4s.

AnA—Angle fine sandy loam, 0 to 2 percent slopes. This is a nearly level, moderately well drained soil on upland flats or in positions between better drained soils on uplands and soils on flood plains. The individual areas are 5 to 50 acres in size.

Typically, the surface layer is dark grayish brown fine sandy loam about 7 inches thick. The subsoil from 7 to 11 inches is yellowish brown fine sandy loam; from 11 to 25 inches, it is brownish yellow and yellowish brown clay; and from 25 to 74 inches it is brownish yellow and yellowish brown clay that is mottled with gray.

Included with this soil in mapping are small areas of eroded soils that have a surface layer of sandy clay loam and have slopes of more than 2 percent. Also included, in small depressions, are areas of Bethera, Ogeechee, and Williman soils, all of which are poorly drained. The included soils make up about 15 percent of the map unit.

This soil is low in organic matter content. It has a moderate available water capacity. It is extremely acid to strongly acid throughout, except in the surface layer where lime has been applied. Permeability is slow. Runoff is medium. The water table is at a depth of 3 to 5 feet in winter and early in spring.

About half of the acreage of this soil is in cultivated crops, and the rest is used as woodland or pasture.

This soil is suited to corn and soybeans. The major problems in management are the seasonal high water table and the slow permeability of the subsoil. Surface drainage and open ditches can remove some of the excess water. Returning crop residue to the soil improves fertility, reduces crusting, and increases the infiltration of water.

This soil is well suited to pasture and hay. Pasture plants in wide variety, including bermudagrass, bahiagrass, ryegrass, and clover, grow well on this soil. Proper stocking, pasture rotation, timely deferment of grazing, and restricted use during wet periods help to keep the plants and the soil in good condition.

This soil is well suited to use as woodland. Wetness is a moderate limitation to the use of equipment; therefore, harvesting should be done in the dry season. Competing vegetation can be controlled by site preparation, burning, spraying, cutting, or girdling or by a combination of these. Loblolly pine and American sycamore are well suited to this soil.

This soil is poorly suited to urban development. The seasonal high water table and the slow permeability of the subsoil are severe limitations for septic tank absorption fields. These limitations can be reduced by adding suitable fill material, land shaping to remove surface water, and enlarging the absorption field area. The shrinking and swelling of the expandable clay in the subsoil is a severe limitation for dwellings without basements. This limitation can be offset by using a specially designed foundation. This soil has moderate limitations for recreational development because of the seasonal high water table and the slow permeability of the subsoil. These limitations can be reduced by adding fill material, providing surface drainage, and shaping to remove surface water.

This soil is in capability subclass IIw. The woodland ordination symbol is 2w.

Ba—Bayboro clay loam. This is a nearly level, very poorly drained soil on broad flats associated with major streams in the survey area. The individual areas range from 5 to 250 acres in size.

Typically, the surface layer is black clay loam about 8 inches thick. The subsoil from 8 to 65 inches is very dark gray clay.

Included with this soil in mapping are small areas of soils that have a thick organic surface layer and a few small areas of soils that have sand or loamy sand at a depth of 30 to 50 inches. The included soils make up about 12 percent of this map unit.

This soil is very high in organic matter content. The available water capacity is high. The soil is very strongly acid or strongly acid throughout, except in the surface layer where lime has been added. Permeability is slow. Runoff is ponded. The water table is 1 foot above the surface to 1 foot below it in the winter and spring.

About 65 percent of the acreage of this soil has been drained and cleared. The rest is used as woodland.

This soil is well suited to corn and soybeans where it has been drained. It is poorly suited to cotton, peanuts, and peaches. The major management problems are the seasonal high water table and the slow permeability of

the subsoil. An intensive drainage system is needed if this soil is cultivated. Open ditches help to remove excess water. Land smoothing and surface drains also aid in the removal of surface water. Large amounts of lime are required because of the acidity and the very high content of organic matter.

This soil is well suited to such pasture grasses as bahiagrass where it has been drained. Drainage can be provided by open ditches, surface drains, or a combination of these. Proper stocking, pasture rotation, timely deferment of grazing, and restricted use during wet periods help to keep the plants and the soil in good condition.

This soil is well suited to trees. In a few small areas it is in native hardwoods. Competing vegetation can be controlled by site preparation, burning, spraying, cutting, or girdling. Wetness severely limits the use of equipment in planting or harvesting trees. Seedling mortality is high. Loblolly pine, sweetgum, and American sycamore grow well.

This soil is poorly suited to urban development. It has severe limitations for septic tank absorption fields, dwellings without basements, and most recreation uses because of the seasonal high water table and the slowly permeable subsoil. The limitations for septic tank absorption fields are very difficult to overcome. Surface drains, open ditches, and the use of fill material reduce the limitations for dwellings and recreation uses.

This soil is in capability subclass IIIw. The woodland ordination symbol is 2w.

Bb—Bethera clay loam. This is a nearly level, poorly drained soil on low river terraces and interstream divides on the upper Coastal Plain. The individual areas range from 5 to 100 acres in size.

Typically, the surface layer is very dark gray clay loam about 5 inches thick. The subsoil from 5 to 10 inches is gray sandy clay loam, and from 10 to 64 inches it is dark gray clay.

Included with this soil in mapping are areas of very poorly drained soils, in small depressions, that have a very dark gray or black surface layer 10 to 15 inches thick, a few small areas of soils that have a fine sandy loam surface layer, and a few small areas of Angie, Chewacla, Johnston, and Ogeechee soils. The included soils make up about 15 percent of the map unit.

This soil is moderate in organic matter content. The available water capacity is moderate. The soil is extremely acid to moderately acid throughout, except in the surface layer where lime has been applied. Permeability is slow. The water table is 1 foot above the surface to 1.5 feet below it in winter and early in spring.

Almost all of the acreage is woodland. About 10 percent is cultivated or in pasture.

This soil is well suited to corn and soybeans where it has been drained. It is poorly suited to cotton, peanuts, and peaches. The major problems in management are the seasonal high water table and the slow permeability of the subsoil. An intensive drainage system is needed if the soil is cultivated. Open ditches, land smoothing, and surface drains all help to remove surface water.

This soil is well suited to such pasture grasses as bahiagrass. Drainage is needed and can be provided by open ditches, surface drains, or a combination of these. Proper stocking, pasture rotation, timely deferment of grazing, and restricted use during wet periods help to keep the pasture and the soil in good condition.

This soil is well suited to use as woodland. In a few small areas it is in native hardwoods. Competing vegetation can be controlled by site preparation, burning, spraying, cutting, or girdling. Wetness severely limits the use of equipment in planting or harvesting trees. Seedling mortality is high. Loblolly pine, sweetgum, and American sycamore grow well.

This soil is poorly suited to urban development. It has severe limitations for septic tank absorption fields, dwellings without basements, and most recreation uses because of the seasonal high water table and the slowly permeable subsoil. The limitations for septic tank absorption fields are very difficult to overcome. Surface drains, open ditches, and the use of fill material reduce the limitations for dwellings and recreation uses.

This soil is in capability subclass IIIw. The woodland ordination symbol is 2w.

Bc—Bibb loamy sand. This is a poorly drained, nearly level soil on flood plains and in low, flat areas adjacent to small streams on the Coastal Plain. The land surface is smooth and concave, and the individual areas are 20 to 100 acres in size.

Typically, the surface layer is dark gray loamy sand about 7 inches thick. The substratum from 7 to 15 inches is light brownish gray sandy loam and very pale brown sand, and from 15 to 60 inches it is gray and light gray sandy loam and loamy sand.

Included with this soil in mapping are small narrow areas, near the base of slopes, of soils that have a thick, dark surface layer. Also included are a few small areas of Ogeechee, Chewacla, and Toccoa soils. The included soils make up about 20 percent of this map unit.

This soil is moderately low in organic matter content. It has a moderate available water capacity. It is very strongly acid or strongly acid throughout. Permeability is moderate. Runoff is very slow. The water table is 0.5 foot to 1.5 feet below the surface in winter and early in spring. This soil is subject to frequent, brief flooding in winter and spring.

Most of the acreage is woodland. The rest is in either pasture or miscellaneous uses.

This soil is poorly suited to crops because it is wet and frequently flooded and because plant nutrients are rapidly leached from the root zone. Drainage and flood prevention measures are needed if this soil is to be cultivated. Tile drains help to remove excess water.

Filters are needed to help prevent sand from entering and clogging the tile lines.

This soil is suited to pasture grasses that tolerate some wetness, such as bahiagrass, where it is drained and protected from flooding. Wetness is a limitation, and flooding is a major hazard. Shallow surface drains help to reduce wetness.

This soil is suited to use as woodland. The high water table and frequent flooding severely limit the use of equipment. Seedling mortality is high. Removal of the excess surface water and control of competing vegetation by site preparation, burning, cutting, spraying, or girdling help seedlings to survive. Loblolly pine is well suited to this soil, as are eastern cottonwood, sweetgum, and yellow-poplar.

This soil is poorly suited to urban development. It has severe limitations for septic tank absorption fields, dwellings without basements, and most recreation uses because of the seasonal high water table and frequent flooding. Because of the severity of the limitations, it is not practical to develop this soil for urban uses.

This soil is in capability subclass Vw. The woodland ordination symbol is 2w.

Ch—Chewacla loam. This is a nearly level, somewhat poorly drained soil on the flood plain along major streams. The individual areas range from 10 to 200 acres in size.

Typically, the surface layer is dark brown loam about 10 inches thick. The subsoil from 10 to 28 inches is mottled, brown sandy loam, and from 28 to 65 inches it is yellowish brown and greenish gray sandy clay loam and sandy loam.

Included with this soil in mapping are small areas where water is at or above the surface at all times and small areas of Johnston, Toccoa, and Shellbluff soils. The included areas make up about 20 percent of the map unit.

This soil is moderately low in organic matter content. The available water capacity is high. The soil is strongly acid to slightly acid throughout, except in the surface layer where lime has been added. Permeability is moderate. Runoff is very slow. The water table is 0.5 foot to 1.5 feet below the surface in winter and early in spring. This soil is subject to frequent, brief flooding from late in fall to early in spring.

About 65 percent of the acreage is woodland. In a few areas the soil has been planted to pines, but it is mainly in unimproved hardwoods. A small acreage of this soil is cultivated, and the rest is in pasture.

This soil is suited to corn and soybeans and poorly suited to cotton, peanuts, and peaches. The major problems in management are frequent flooding and the seasonal high water table. The severity of flooding has been reduced by the construction of dams, such as those at the Clark Hill and Hartwell reservoirs. Flood protection and drainage are needed if this soil is to be used as cropland.

This soil is well suited to such pasture grasses as bahiagrass and ryegrass. It is frequently flooded and has a high water table in winter and spring. Open ditches and shallow surface drains help to remove excess water. Proper stocking, pasture rotation, timely deferment of grazing, and restricted use during wet periods help to keep the grass and the soil in good condition.

This soil is well suited to use as woodland. Frequent flooding and the high water table are moderate limitations to the use of equipment and cause moderate seedling mortality. Shallow surface drains can remove some of the excess water. Competing vegetation can be controlled by site preparation, burning, spraying, cutting, or girdling. Loblolly pine, American sycamore, and yellow-poplar grow well on this soil.

This soil is poorly suited to urban development. The seasonal high water table and frequent flooding are severe limitations for septic tank absorption fields, dwellings without basements, and most recreation uses. Because of the severity of the limitations, it is not practical to develop this soil for urban uses.

This soil is in capability subclass IVw. The woodland ordination symbol is 1w.

Da—Dasher mucky peat. This is a very poorly drained organic soil in slight depressions on the flood plain of major streams. The individual areas are 5 to 40 acres in size.

Typically, the surface layer is very dark gray mucky peat about 6 inches thick. Below the surface layer, from a depth of 6 inches to a depth of 60 inches, there is black mucky peat.

Included with this soil in mapping are small areas of mineral soils and soils that are not so poorly drained as the Dasher soils. The included soils make up about 10 percent of the map unit.

This soil is very high in organic matter content. The available water capacity is very high. The soil is extremely acid throughout. Permeability is moderately rapid. Runoff is ponded. The water table is 3 feet above the surface to 0.5 foot below the surface.

About 95 percent of the acreage is unimproved woodland, and the rest is in pasture.

This soil is poorly suited to corn, soybeans, cotton, peanuts, and peaches. The major problems in managing this soil are the very high water table in winter and spring and the thickness of the organic layers. Because it is in low positions on the landscape, this soil is very difficult to drain. Subsidence of 10 to 25 percent can be expected if the soil is drained enough to be cultivated. There is so much organic matter in this soil that the surface layer will burn when dry.

This soil is poorly suited to use as pasture. It is ponded in winter and spring, and because of its position on the landscape it is very difficult to drain.

This soil is poorly suited to use as woodland because of the high water table and the ponded condition. Baldcypress and water tupelo grow naturally on this soil.

This soil is poorly suited to urban development. The seasonal high water table and frequent ponding are severe limitations for septic tank absorption fields, dwellings without basements, and most recreation uses. Because of the severity of the limitations, it is not practical to develop this soil for urban uses.

This soil is in capability subclass VIIw. The woodland ordination symbol is 4w.

DoA—Dothan loamy sand, 0 to 2 percent slopes. This is a well drained, nearly level soil on broad ridgetops on uplands of the Coastal Plain. Slopes are smooth and generally convex. Individual areas range from 5 to 100 acres in size.

Typically, the surface layer is grayish brown loamy sand about 8 inches thick. The subsurface layer, from 8 to 11 inches, is light yellowish brown sand. The subsoil from 11 to 31 inches is mainly strong brown sandy clay loam; from 31 to 65 inches it is mottled, reddish yellow and red sandy clay loam that is 5 to 15 percent nodules of plinthite.

Included with this soil in mapping are areas of Marlboro, Fuquay, and Eunola soils. The included soils make up about 20 percent of the map unit.

This soil is low in organic matter content. The available water capacity is moderate. The soil is very strongly acid or strongly acid throughout, except in the surface layer in areas where lime has been added. Permeability is moderate in the upper part of the subsoil and moderately slow in the lower part. Runoff is medium. The water table is 3 to 5 feet below the surface for brief periods in winter and early in spring. Root growth is partly restricted at a depth between 30 and 50 inches.

About 80 percent of the acreage of this soil is cultivated. The rest is used as woodland or pasture or is in miscellaneous uses.

This soil is well suited to crops and is suited to peaches. There are no major problems in management. Crop residue returned to the soil and grass and legume cover crops help to maintain the content of organic matter and to protect the soil from blowing. Minimum tillage or no-till farming and stripcropping also help to reduce soil blowing on large fields (fig. 4). The concentration of iron-rich nodules in the lower part of the subsoil retards the movement of water through the soil, so that a perched water table forms for a short period after prolonged or heavy rain. This water table is a moderate limitation for peach trees.

This soil is well suited to use as pasture. The common pasture crops in the area, such as bermudagrass and bahiagrass, grow well. Proper stocking, pasture rotation, timely deferment of grazing, and restricted use during wet periods help keep the plants and the soil in good condition.

This soil is well suited to use as woodland. There are no significant limitations for woodland use or management. Loblolly pine grows well on this soil.

This soil is suited to urban development. It has slight limitations for dwellings without basements and for most recreation uses. It has severe limitations for septic tank absorption fields because of seasonal wetness and the moderately slow permeability in the subsoil. The severity of these limitations can be reduced by modifying the design of the absorption field area.

This soil is in capability class I. The woodland ordination symbol is 2o.

DoB—Dothan loamy sand, 2 to 6 percent slopes. This is a well drained, gently sloping soil on broad ridgetops on uplands of the Coastal Plain. The slopes are smooth and generally convex. Individual areas are 5 to 100 acres in size.

Typically, the surface layer is grayish brown loamy sand about 8 inches thick. The subsurface layer, from 8 to 11 inches, is light yellowish brown sand. The subsoil from 11 to 31 inches is mainly strong brown sandy clay loam; from 31 to 65 inches it is mottled, reddish yellow and red sandy clay loam that is 5 to 15 percent nodules of plinthite.

Included with this soil in mapping are small areas of soils that have a surface layer of sandy clay loam. Also included are small areas of Faceville, Fuquay, Lucy, Orangeburg, Troup, and Vaucluse soils. The included soils make up about 10 percent of this map unit.

This soil is low in organic matter content. It has a moderate available water capacity. It is very strongly acid or strongly acid throughout, except in the surface layer where lime has been added. Permeability is moderate in the upper part of the subsoil and moderately slow in the lower part. Runoff is medium. The water table is 3 to 5 feet below the surface for brief periods in winter and early in spring. Root development is partly restricted at a depth of 30 to 50 inches.

About 75 percent of the acreage is cultivated. The rest is used as woodland or pasture or is in miscellaneous uses. Most of the woodland is in planted pines.

This soil is well suited to crops and is suited to peaches. Soil erosion is the main concern in management. Crop residue left on the surface and grass and legume cover crops help to maintain the content of organic matter, give protection against soil blowing, and reduce erosion. Minimum tillage, no-till farming, contour farming, and stripcropping help to reduce erosion and soil blowing. The concentration of iron-rich nodules in the lower part of the subsoil retards the movement of water through the soil, so that a perched water table forms for a short period after prolonged or heavy rain. This water table is a moderate limitation for peach trees.

This soil is well suited to use as pasture. Pasture crops common in the area, such as bermudagrass and bahiagrass, grow well. Proper stocking, pasture rotations,

Figure 4.—Corn grown under minimum tillage reduces the hazard of soil blowing. The soil is Dothan loamy sand, 0 to 2 percent slopes.

timely deferment of grazing, and restricted use during wet periods help keep the plants and soil in good condition.

This soil is well suited to use as woodland. There are no significant limitations for woodland use or management. Loblolly pine is well suited to this soil.

This soil is suited to urban development. It has slight limitations for dwellings without basements and most recreation uses. It has severe limitations for septic tank absorption fields because of seasonal wetness and the moderately slow permeability in the subsoil. The severity of these limitations can be reduced by modifying the design of the absorption field area.

This soil is in capability subclass IIe. The woodland ordination symbol is 2o.

DoC—Dothan loamy sand, 6 to 10 percent slopes. This is a well drained, rolling soil on the uppermost side slopes of broad ridges on uplands of the Coastal Plain. The slopes generally are convex. Individual areas are 5 to 50 acres in size.

Typically, the surface layer is grayish brown loamy sand about 8 inches thick. The subsurface layer, from 8 to 11 inches, is light yellowish brown sand. The subsoil from 11 to 31 inches is mainly strong brown sandy clay loam; from 31 to 65 inches it is mottled, reddish yellow and red sandy clay loam that is 5 to 15 percent nodules of plinthite.

Included with this soil in mapping are small areas of Ailey, Faceville, Fuquay, Marlboro, Orangeburg, Troup,

and Vaucluse soils. The included soils make up about 20 percent of the map unit.

This soil is low in organic matter content and moderate in available water capacity. It is very strongly acid or strongly acid throughout except in the surface layer where limed. Permeability is moderate in the upper part of the subsoil and moderately slow in the lower part. Runoff is medium to rapid. The water table is 3 to 5 feet below the surface for brief periods in winter and early in spring. Root growth is partly restricted at a depth of 30 to 50 inches.

About 60 percent of the acreage is woodland, most of which is in planted pines. The rest is cultivated or is in pasture and miscellaneous uses.

This soil is suited to crops and to peach orchards. The major concern in management is soil erosion. No-till and minimum tillage help reduce soil loss from erosion. Close-growing strip crops, terraces, grassed waterways, crop residue left on the surface, and contour farming all reduce erosion. The concentration of iron-rich nodules in the lower part of the subsoil retards the movement of water through the soil, so that a perched water table forms for a short period after prolonged or heavy rain. This water table is a moderate limitation for peach trees.

This soil is well suited to pasture and hay. Bahiagrass and bermudagrass are suited to hay and pasture. Proper stocking, pasture rotation, timely deferment of grazing, and restricted use during wet seasons help keep the plants and soil in good condition.

This soil is well suited to woodland. There are no significant limitations for woodland use or management. Loblolly pine is well suited to this soil.

This soil is poorly suited to urban development. It has severe limitations for septic tank absorption fields because of seasonal wetness and the moderately slow permeability of the subsoil. Modifying the design of the absorption field area helps reduce the severity of the limitations. The slope is a moderate limitation for dwellings without basements. Cutting and filling help to overcome the limitation. The slope is a moderate limitation for recreational development also. Proper design and management can reduce the limitation.

This soil is in capability subclass IIIe. The woodland ordination symbol is 2o.

EuA—Eunola loamy sand, 0 to 2 percent slopes. This is a moderately well drained, nearly level soil on low divides and in slight depressions. The individual areas are 5 to 25 acres in size.

Typically, the surface layer is dark gray loamy sand about 8 inches thick. The subsurface layer, from 8 to 15 inches, is very pale brown loamy sand. The subsoil from 15 to 30 inches is light yellowish brown and reddish yellow sandy clay loam that has gray mottles; from 30 to 55 inches it is mottled strong brown and light brownish gray sandy clay; and from 55 to 70 inches it is mottled, brownish yellow sandy loam.

Included with this soil in mapping are a few small areas of Angie, Ogeechee, and Williman soils. The included soils make up about 10 percent of the map unit.

This soil is low in content of organic matter. It has a moderate available water capacity. It is very strongly acid or strongly acid throughout, except in the surface layer where lime has been applied. Permeability is moderate. Runoff is medium. The water table is 1.5 to 2.5 feet below the surface in winter and early in spring.

About 60 percent of the acreage of this soil is woodland or in pasture. The rest is cultivated or in miscellaneous uses.

This soil is well suited to corn and soybeans. It is poorly suited to cotton, peanuts, and peaches. The major concern in management is the seasonal high water table. Subsurface tile drains help to reduce wetness. In some areas open ditches are needed to provide an adequate outlet for tile lines. Crop residue returned to the soil and grass and legume cover crops help to maintain the content of organic matter.

This soil is well suited to bahiagrass, ryegrass, and clover. Proper stocking, pasture rotation, timely deferment of grazing, and restricted use during wet periods help keep the plants and the soil in good condition.

This soil is well suited to use as woodland. Tree seedlings survive and grow well if competing vegetation is controlled or removed by site preparation, burning, cutting, or girdling. Wetness is a moderate limitation to the use of equipment in harvesting trees. Harvesting can be done in the dry season. Loblolly pine, yellow-poplar, American sycamore, and sweetgum are suited to this soil.

This soil is poorly suited to urban development. Seasonal wetness is a severe limitation for septic tank absorption fields and a moderate limitation for dwellings without basements and for most recreation uses. The limitation for septic tank absorption fields can be reduced by adding suitable fill material and modifying the design of the absorption field. Building sites can be shaped and filled so that surface water is directed away from the foundation. Recreation areas can be improved by installing surface drains and by shaping and filling to help remove excess water.

This soil is in capability subclass IIw. The woodland ordination symbol is 2w.

FaA—Faceville sandy loam, 0 to 2 percent slopes. This is a well drained, nearly level soil on very broad ridges on the Coastal Plain. The slopes are smooth and convex. The individual areas are 5 to 50 acres in size.

Typically, the surface layer is brown sandy loam about 6 inches thick. The subsoil from 6 to 75 inches is mainly red clay.

Included with this soil in mapping are small areas of soils that have slopes of more than 2 percent and a few small areas of Dothan, Greenville, Orangeburg, and

Vaucluse soils. The included soils make up about 10 percent of the map unit.

This soil is low in organic matter content. The available water capacity is moderate. The soil is very strongly acid to moderately acid throughout, except in the surface layer where lime has been added. Permeability is moderate. Runoff is medium. The seasonal high water table is more than 6 feet below the surface.

About 85 percent of the acreage of this soil is cultivated. The rest is woodland, pasture, or in miscellaneous uses.

This soil is well suited to all of the cultivated crops commonly grown in the county. There are no major problems in management. Crop residue returned to the soil and grass and legume cover crops help to maintain the content of organic matter and to reduce soil blowing on the larger fields.

This soil is well suited to use as pasture. Pasture plants in wide variety, including bermudagrass, bahiagrass, ryegrass, and clover, are well suited to this soil. Proper stocking, pasture rotation, timely deferment of grazing, and restricted use during wet periods help keep the plants and the soil in good condition.

This soil is suited to use as woodland. There are no significant limitations for woodland use or management. Loblolly pine is suited to this soil.

This soil is well suited to urban development. It has slight limitations for septic tank absorption fields, dwellings without basements, and most recreation uses.

This soil is in capability class I. The woodland ordination symbol is 3o.

FaB—Faceville sandy loam, 2 to 6 percent slopes. This is a well drained, gently sloping soil on broad ridges on the Coastal Plain. The slopes are smooth and convex. The individual areas are 5 to 60 acres in size.

Typically, the surface layer is brown sandy loam about 6 inches thick. The subsoil from 6 to 75 inches is mainly red clay.

Included with this soil in mapping are small areas of soils that have slopes of more than 6 percent and small areas of Dothan, Greenville, Orangeburg, and Vaucluse soils. The included soils make up about 10 percent of the map unit.

This soil is low in organic matter content. The available water capacity is moderate. The soil is very strongly acid to moderately acid throughout, except in the surface layer where lime has been added. Permeability is moderate. Runoff is medium. The seasonal high water table is at a depth of more than 6 feet.

About 75 percent of the acreage of this soil is cultivated. The rest is used as woodland or pasture or is in miscellaneous uses.

This soil is well suited to all of the cultivated crops commonly grown in the county. The hazard of erosion is the major concern in management. It can be reduced by farming on the contour, terraces, and grassed waterways. Leaving crop residue on the surface, planting grass and legume cover crops, and using no-till or limited tillage help to reduce erosion, to maintain the content of organic matter, and to reduce the risk of soil blowing.

This soil is well suited to pasture and hay. Bahiagrass and bermudagrass are well suited. Proper stocking, pasture rotation, timely deferment of grazing, and restricted use during wet seasons help keep the plants and the soil in good condition.

This soil is suited to use as woodland. There are no significant limitations for woodland use or management. Loblolly pine is suited to this soil.

This soil is well suited to urban development. It has slight limitations for septic tank absorption fields, dwellings without basements, and most recreation uses.

This soil is in capability subclass IIe. The woodland ordination symbol is 3o.

FaC—Faceville sandy loam, 6 to 10 percent slopes. This is a well drained, sloping soil on narrow ridges and the adjacent side slopes on the Coastal Plain. The slopes are gently rolling and convex. The individual areas are 5 to 30 acres in size.

Typically, the surface layer is brown sandy loam about 6 inches thick. The subsoil from 6 to 75 inches is mainly red clay.

Included with this soil in mapping are small areas of soils that have a surface layer of sandy clay loam, a few small areas of Dothan, Greenville, Orangeburg, and Vaucluse soils, and a few small areas of soils that have slopes of more than 10 percent. The included soils make up about 15 percent of the map unit.

This soil is low in organic matter content. The available water capacity is moderate. The soil is very strongly acid to moderately acid throughout, except in the surface layer where lime has been applied. Permeability is moderate. Runoff is medium. The seasonal high water table is more than 6 feet below the surface.

About 70 percent of the acreage of this soil is woodland or pasture. The rest is cultivated.

This soil is suited to most of the cultivated crops that are commonly grown in the county. It is suited to peaches and peanuts. The hazard of erosion is the major concern in management. It can be reduced by farming on the contour. Grass and legume cover crops and no-till or limited tillage also help reduce soil loss and help maintain the content of organic matter.

This soil is suited to pasture and hay. Bahiagrass and bermudagrass are suited. Proper stocking, pasture rotation, timely deferment of grazing, and restricted use during wet seasons help keep the plants and the soil in good condition.

This soil is suited to use as woodland. There are no significant limitations for woodland use or management. Loblolly pine is suited to this soil.

This soil is suited to urban development. The slope is a moderate limitation for septic tank absorption fields, dwellings without basements, and most recreation uses. The limitation for septic tank absorption fields can be reduced by cutting and filling, using step-down boxes, and placing filter lines on the contour. The limitation for dwellings can be reduced by cutting and filling or by modifying the design to accommodate the slope. The limitation for recreation uses can be reduced by design and management.

This soil is in capability subclass IIIe. The woodland ordination symbol is 3o.

FoB—Foxworth sand, 0 to 6 percent slopes. This is a nearly level to gently sloping, well drained soil along South Fork Edisto River. The individual areas of this soil are long and narrow or irregular in shape and range from 5 to 25 acres in size.

Typically, the surface layer is dark grayish brown sand about 4 inches thick. The substratum from 4 to 47 inches is yellowish brown sand, and from 47 to 80 inches it is light gray sand.

Included with this soil in mapping and making up about 10 percent of the map unit are small areas of Lakeland soils in positions higher than those of the Foxworth soil.

This soil is low in organic matter content. The available water capacity is low. The soil is very strongly acid to moderately acid throughout, except in the surface layer where lime has been applied. Permeability is very rapid, and runoff is slow. The water table is 3.5 to 6 feet below the surface in winter and early in spring.

Most of the acreage is woodland and is in mixed pines and hardwoods. In a few small areas the soil is used as pasture.

This soil is poorly suited to cultivated crops. The main concerns in management are excessive leaching and droughtiness. Frequent applications of fertilizer and lime help to offset the rapid leaching. The return of crop residue to the soil and grass and legume cover crops help to maintain the content of organic matter.

This soil is suited to pasture and hay. Bahiagrass is well suited to the soil. Proper stocking and pasture rotation help keep the plants and the soil in good condition.

This soil is suited to use as woodland. The deep sand hinders the use of equipment, but using caterpillar treads or wide tires on the equipment can help overcome the difficulty. Droughtiness is a cause of moderate seedling mortality. Planting seedlings at times of maximum rainfall helps them to survive. The soil is suited to loblolly pine.

This soil is suited to urban development. It has slight limitations for dwellings without basements. It has severe limitations for septic tank absorption fields because of the seasonal high water table and because the sand is a poor filter. There is a risk of contamination of the ground water. Fill material can be used to raise the base of the absorption field above the seasonal high water table. The sandy texture is a severe limitation for recreational development. This limitation can be reduced by planting close-growing grass cover, limiting traffic, and providing walkways.

This soil is in capability subclass IIIs. The woodland ordination symbol is 3s.

FuA—Fuquay sand, 0 to 2 percent slopes. This is a well drained, nearly level soil on very broad ridges on the Coastal Plain. The slopes are smooth and convex. The individual areas range from 5 to 100 acres in size.

Typically, the surface layer is grayish brown sand about 8 inches thick. The subsurface layer, from 8 to 26 inches, is pale yellow and light yellowish brown loamy sand. The subsoil from 26 to 35 inches is brownish yellow sandy loam; from 35 to 70 inches it is brownish yellow sandy clay loam that has brittle, iron-rich nodules.

Included with this soil in mapping are small areas of soils that have slopes of more than 2 percent and small areas of Dothan, Marlboro, and Troup soils. The included soils make up about 10 percent of this map unit.

This soil is low in organic matter content. The available water capacity is low. The soil is very strongly acid to moderately acid throughout, except in the surface layer where lime has been applied. Permeability is moderate in the upper part of the subsoil and slow in the lower part. Runoff is medium. A perched seasonal high water table is at a depth of 4 to 6 feet for brief periods in winter and early in spring. At a depth of about 35 to 40 inches, root growth is partly restricted by the firm, iron-rich nodules in the subsoil.

About 60 percent of the acreage of this soil is cultivated. The rest is used as woodland or pasture or is in miscellaneous uses.

This soil is suited to the cultivated crops that are commonly grown in Aiken County (fig. 5). The major problems in management are the low nutrient-holding capacity and droughtiness. Because nutrients are rapidly leached from this soil, frequent applications of fertilizer and lime are needed. Crop residue left on the surface reduces the risk of soil blowing, conserves moisture, and helps maintain the content of organic matter. The dense concentration of iron-rich nodules in the lower part of the subsoil retards the movement of water through the soil, so that a perched water table is formed for a short period after prolonged or heavy rain. This water table is a limitation for peach trees.

This soil is suited to pasture and hay. These uses are effective in controlling soil blowing. Proper stocking and pasture rotation help keep the plants and the soil in good condition.

This soil is suited to use as woodland. The sandy surface material limits the use of equipment in planting and harvesting trees. Seedling mortality is moderate.

Figure 5.—Soybeans are grown in this area of Fuquay sand, 0 to 2 percent slopes.

Planting seedlings in a furrow helps them to survive by making more moisture available and reducing plant competition. Loblolly pine is suited to this soil.

This soil is well suited to urban development. It has slight limitations for dwellings without basements. This soil has a moderate limitation for septic tank absorption fields because of the slow permeability in the subsoil. This limitation can be reduced by enlarging the absorption field. The sandy surface material is a severe limitation for recreation uses. This limitation can be reduced by planting close-growing grasses, limiting traffic, and providing walkways to protect the soil from heavy traffic.

This soil is in capability subclass IIs. The woodland ordination symbol is 3s.

FuB—Fuquay sand, 2 to 6 percent slopes. This is a well drained, gently sloping soil on broad ridges and adjoining side slopes on the Coastal Plain. The slopes are smooth and convex. The individual areas generally range from 10 to 150 acres in size.

Typically, the surface layer is grayish brown sand about 8 inches thick. The subsurface layer, from 8 to 26 inches, is pale yellow and light yellowish brown loamy sand. The subsoil from 26 to 35 inches is brownish yellow sandy loam; from 35 to 70 inches it is brownish yellow sandy clay loam that has brittle, iron-rich nodules.

Included with this soil in mapping are small areas of soils that have slopes of more than 6 percent. Also included are small areas of Dothan, Marlboro, and Troup soils. The included soils make up about 10 percent of the map unit.

This soil has a low content of organic matter. The available water capacity is low. The soil is very strongly acid to moderately acid throughout, except in the surface layer where lime has been added. Permeability is moderate in the upper part of the subsoil and slow in the lower part. Runoff is medium. A perched seasonal high water table is at a depth of 4 to 6 feet for brief periods in

winter and early in spring. At a depth of about 35 to 40 inches, the downward growth of roots is partly obstructed by the firm, iron-rich nodules in the subsoil.

About half of the acreage of this soil is cultivated. The rest is used as woodland or pasture or is in miscellaneous uses.

This soil is suited to the cultivated crops that are commonly grown in the county. The major problems in management are the low nutrient-holding capacity, droughtiness, and erosion. No-till or minimum tillage, farming on the contour, and strips of close-growing crops help to reduce soil blowing and erosion and also to conserve moisture. Crop residue left on the surface, along with grass and legume cover crops, helps to maintain productivity and the content of organic matter and to reduce the risk of soil blowing. The dense concentration of iron-rich nodules in the lower part of the subsoil retards the movement of water through the soil, so that a perched water table forms for a short period after prolonged or heavy rain. This water table is a limitation for peach trees.

This soil is suited to pasture and hay. These uses are also effective in controlling soil blowing. Proper stocking and pasture rotation help keep the plants and soil in good condition.

This soil is suited to use as woodland. The sandy surface material limits the use of equipment in planting and harvesting trees. Seedling mortality is moderate. Planting seedlings in a furrow helps them to survive by making more moisture available and reducing plant competition. Loblolly pine is suited to this soil.

This soil is well suited to urban development. It has slight limitations for dwellings without basements. It has a moderate limitation for septic tank absorption fields because of the slow permeability in the subsoil. This limitation can be reduced by enlarging the absorption field. The sandy texture is a severe limitation for recreation uses. This limitation can be reduced by planting close-growing grasses, limiting traffic, and providing walkways to protect the soil from heavy traffic.

This soil is in capability subclass IIs. The woodland ordination symbol is 3s.

FuC—Fuquay sand, 6 to 10 percent slopes. This is a well drained, sloping soil on narrow ridges and the adjacent side slopes on the Coastal Plain. The slopes are smooth to slightly irregular and convex. The individual areas are 5 to 50 acres in size.

Typically, the surface layer is grayish brown sand about 8 inches thick. The subsurface layer, from 8 to 26 inches, is pale yellow and light yellowish brown loamy sand. The subsoil from 26 to 35 inches is brownish yellow sandy loam; from 35 to 70 inches it is brownish yellow sandy clay loam that has brittle, iron-rich nodules.

Included with this soil in mapping are small areas of soils that have slopes of more than 10 percent. Also included are a few small areas of Ailey, Dothan, Marlboro, Lakeland, Lucy, and Troup soils. The included soils make up about 20 percent of the map unit.

This soil is low in organic matter content. The available water capacity is low. The soil is very strongly acid to moderately acid throughout except in the surface layer where lime has been added. Permeability is moderate in the upper part of the subsoil and slow in the lower part. Runoff is medium. A perched seasonal high water table is at a depth of 4 to 6 feet for brief periods in winter and early in spring. At a depth of about 35 to 40 inches, root development is partly obstructed by the firm, iron-rich nodules in the subsoil.

About 60 percent of the acreage is woodland, and 20 percent is used as pasture. The rest is mainly cultivated; a small acreage is in miscellaneous uses.

This soil is suited to cotton and peanuts. It is poorly suited to most of the other cultivated crops commonly grown in the county. The major problems in management are the low nutrient-holding capacity, droughtiness, and the hazard of erosion. No-till or minimum tillage, farming on the contour, and use of close-growing crops help to reduce soil blowing and erosion. Crop residue left on the surface and grass and legume cover crops in the rotation also help to maintain the content of organic matter and conserve moisture.

This soil is suited to pasture and hay. This use is also effective in controlling soil blowing. Proper stocking and pasture rotation help keep the plants and the soil in good condition.

This soil is suited to use as woodland. The sandy surface material limits the use of equipment in planting and harvesting trees. Seedling mortality is moderate. Planting seedlings in a furrow helps them to survive by making more moisture available and reducing plant competition. Loblolly pine is suited to this soil.

The soil is suited to urban development. It has moderate limitations for septic tank absorption fields because of the slow permeability in the subsoil and the slope. These limitations can be reduced by enlarging the absorption field, cutting and filling, using step-down boxes, or installing filter lines on the contour. The slope is a limitation for dwellings without basements, but this limitation can be reduced by cutting and filling or by modifying the design. The slope and the sandy surface material are severe limitations for recreation uses. Planting close-growing sod, building roads and trails on the contour, and providing walkways help protect the soil from heavy traffic.

This soil is in capability subclass IIIs. The woodland ordination symbol is 3s.

GrA—Greenville sandy loam, 0 to 2 percent slopes. This is a well drained, nearly level soil on high, very broad ridges on the Coastal Plain. The individual areas are 5 to 25 acres in size.

Typically, the surface layer is dark reddish brown sandy loam about 7 inches thick. The subsurface layer,

from 7 to 12 inches, is yellowish red sandy loam. The subsoil from 12 to 60 inches is dark red sandy clay.

Included with this soil in mapping are a few very small areas of soils that have slopes of more than 2 percent and a few very small areas of Faceville, Lucy, and Orangeburg soils. The included soils make up about 10 percent of the map unit.

This soil is low in organic matter content. The available water capacity is moderate. The soil is very strongly acid to moderately acid throughout, except in the surface layer where lime has been applied. Permeability is moderate, and runoff is medium. The seasonal high water table is more than 6 feet below the surface.

About 90 percent of the acreage of this soil is cultivated. The rest is used as pasture and woodland.

This soil is well suited to most of the cultivated crops commonly grown in the county. There are no major problems in management. Crop residue returned to the soil and grass and legume cover crops help to maintain organic matter content and protect the soil from blowing. Minimum tillage or no-till farming and stripcropping help to reduce soil blowing on larger fields.

This soil is well suited to pasture and hay. Bahiagrass and bermudagrass are well suited. Proper stocking, pasture rotation, timely deferment of grazing, and restricted use during wet seasons help keep the plants and the soil in good condition.

This soil is suited to use as woodland. There are no significant limitations for woodland use or management. Loblolly pine is suited to this soil.

This soil is well suited to urban development. It has only slight limitations for dwellings without basements, for recreational development, and for septic tank absorption fields.

This soil is in capability class I. The woodland ordination symbol is 3o.

GrB—Greenville sandy loam, 2 to 6 percent slopes. This is a well drained, gently sloping soil on broad ridges and the adjacent side slopes on the Coastal Plain. The slopes are smooth and convex. The individual areas are 5 to 40 acres in size.

Typically, the surface layer is dark reddish brown sandy loam about 7 inches thick. The subsurface layer, from 7 to 12 inches, is yellowish red sandy loam. The subsoil from 12 to 60 inches is dark red sandy clay.

Included with this soil in mapping are small areas of soils that have a sandy clay loam surface layer and a few small areas of Faceville, Lucy, and Orangeburg soils. The included soils make up about 10 percent of the map unit.

This soil is low in organic matter content. The available water capacity is moderate. The soil is very strongly acid to moderately acid throughout, except in the surface layer where lime has been added. Permeability is moderate, and runoff is medium. The seasonal high water table is more than 6 feet below the surface.

About 80 percent of the acreage of this soil is cultivated. The rest is used as pasture and woodland.

This soil is well suited to most of the cultivated crops commonly grown in the county. The major concern in management is the hazard of erosion. This hazard can be reduced by farming on the contour, constructing terraces and waterways, leaving crop residue on the surface, planting grass and legume cover crops, and using no-till or limited tillage. These practices also help to maintain the organic matter content.

This soil is well suited to pasture and hay. Bahiagrass and bermudagrass are well suited. Proper stocking, pasture rotation, timely deferment of grazing, and restricted use during wet seasons help to keep the plants and the soil in good condition and also to reduce erosion.

This soil is suited to use as woodland. There are no significant limitations for woodland use or management. Loblolly pine is suited to this soil.

This soil is well suited to urban development. It has only slight limitations for dwellings without basements, for most recreational development, and for septic tank absorption fields.

This soil is in capability subclass IIe. The woodland ordination symbol is 3o.

GrC—Greenville sandy loam, 6 to 10 percent slopes. This is a well drained, sloping soil in narrow, irregularly shaped areas on the Coastal Plain. The slopes are smooth and convex. The individual areas are 5 to 20 acres in size.

Typically, the surface layer is dark reddish brown sandy loam about 7 inches thick. The subsurface layer, from 7 to 12 inches, is yellowish red sandy loam. The subsoil from 12 to 60 inches is dark red sandy clay.

Included with this soil in mapping are small areas of soils that have a sandy clay loam surface layer or that have slopes of more than 10 percent and a few small areas of Ailey, Faceville, Lucy, Orangeburg, and Vaucluse soils. The included soils make up about 15 percent of the map unit.

This soil is low in organic matter content. The available water capacity is moderate. The soil is very strongly acid to moderately acid throughout, except in the surface layer where lime has been added. Permeability is moderate, and runoff is medium. The seasonal high water table is more than 6 feet below the surface.

About 40 percent of the acreage of this soil is cultivated. About 35 percent is woodland, and 25 percent is in pasture and miscellaneous uses.

This soil is poorly suited to most cultivated crops, but it is suited to peach orchards. The major concern in management is erosion. The hazard of erosion can be reduced by no-till farming or limited tillage, farming on

the contour, and use of terraces and waterways where needed. Leaving crop residue on the surface and planting grass and legume cover crops help to maintain the content of organic matter and to reduce erosion.

This soil is well suited to coastal bermudagrass. Proper stocking, pasture rotation, timely deferment of grazing, and restricted use during wet seasons help keep the pasture plants and the soil in good condition.

This soil is suited to use as woodland. There are no significant limitations for woodland use or management. Loblolly pine is suited to this soil.

This soil is suited to urban uses. The slope is a moderate limitation to use of the soil as septic tank absorption fields. This limitation can be reduced by cutting and filling, using step down boxes, and placing filter lines on the contour. The slope is also a moderate limitation for dwellings without basements and for most recreation uses. The design of a building can be modified to accommodate the slope; cutting, filling, and shaping also help to reduce the limitation for dwellings. In recreation areas, grading, cutting and filling, maintaining a close-growing grass sod, and building roads on the contour help reduce the limitation.

This soil is in capability subclass IIIe. The woodland ordination symbol is 3o.

GuD—Gundy loam, 10 to 25 percent slopes. This is a well drained, strongly sloping and moderately steep soil on breaks on the divide between the Piedmont and the Sand Hills. The individual areas are 5 to 40 acres in size.

Typically, the surface layer is reddish brown loam about 3 inches thick. The subsoil, from 3 to 26 inches, is yellowish red and red clay loam. The substratum, from 26 to 54 inches, is reddish yellow slaty loam and yellowish brown slaty silt loam. Soft bedrock is at a depth of 54 inches.

Included with this soil in mapping are small areas of soils that are 50 to 80 percent rock fragments below a depth of about 15 inches and small areas of Wateree, Ailey, Hiwassee, Vaucluse, and Troup soils. The included soils make up about 20 percent of the map unit.

This soil is low in content of organic matter. It has a moderate available water capacity. It is strongly acid to slightly acid throughout, except in the surface layer where lime has been applied. Permeability is moderate, and runoff is medium. The seasonal high water table is more than 6 feet below the surface.

About 90 percent of the acreage of this soil is woodland. The rest is in pasture or miscellaneous uses.

This soil is poorly suited to cultivated crops because of the slope. Erosion is a severe hazard and is the major management concern.

This soil is poorly suited to use as pasture and hayland because of the slope. Good pasture management is essential if the plants and the soil are to remain in good condition.

This soil is suited to use as woodland. The slope is a moderate limitation to the use of equipment and causes a moderate hazard of erosion. Constructing roads and fire lanes on the contour helps reduce the hazard of erosion. Loblolly pine is suited to this soil.

This soil is poorly suited to urban development. The slope is a severe limitation for septic tank absorption fields. Placing the distribution lines on the contour, cutting and filling, and using step-down boxes reduce the severity of this limitation. Soft rock, which is at a depth of about 50 inches, can be a limitation. The slope is a severe limitation for dwellings without basements. This limitation can be reduced by cutting and filling and by designing a building to accommodate the slope. Slope also severely limits this soil for recreational development. Grading, cutting, filling, building roads and trails on the contour, and maintaining a close-growing grass cover help reduce the severity of the limitation.

This soil is in capability subclass VIe. The woodland ordination symbol is 4r.

HwC—Hiwassee sandy loam, 6 to 10 percent slopes. This is a well drained, sloping soil on high ridges and adjoining side slopes on the Piedmont. The areas of this soil are in the northwest corner of the county near the Savannah River. The individual areas are 5 to 30 acres in size.

Typically, the surface layer is dusky red sandy loam about 4 inches thick. The subsoil from 4 to 45 inches is dark red clay and clay loam, and from 45 to 65 inches it is dark red sandy loam.

Included with this soil in mapping are small areas of soils that have a dark red clay loam subsoil, other soils that have a red subsoil, and soils that are loamy sand to a depth of 15 to 30 inches. The included soils make up about 15 percent of the map unit.

This soil is low in organic matter content. The available water capacity is moderate. The soil is very strongly acid to slightly acid throughout, except in the surface layer where lime has been added. Permeability is moderate, and runoff is medium. The seasonal high water table is more than 6 feet below the surface.

About 80 percent of the acreage is woodland. The rest is in pasture, crops, or miscellaneous uses.

This soil is poorly suited to corn and to other cultivated crops commonly grown in the county. The major concern in management is the hazard of erosion. This hazard can be reduced by no-till farming or limited tillage, farming on the contour, terraces, and waterways where needed. Leaving crop residue on the surface and planting grass and legume cover crops help to maintain the organic matter content and to reduce the hazard of erosion.

This soil is well suited to coastal bermudagrass for pasture. It is suited to use as hayland. Proper stocking, pasture rotation, timely deferment of grazing, and restricted use during wet seasons help keep the plants and the soil in good condition.

This soil is well suited to trees. There are no significant limitations for use or management. Loblolly pine is suited to this soil.

This soil is suited to urban development. The slope and the clayey subsoil are severe limitations for septic tank absorption fields. These limitations can be reduced by cutting and filling, using step-down boxes, enlarging the filter field, and placing the filter lines on the contour. The slope is a moderate limitation for dwellings without basements and for most recreation uses. The limitation for dwellings can be reduced by cuts and fills or by a simple modification of the building design. Cutting and filling, grading, and placing roads and trails on the contour help reduce the limitation for recreational development.

This soil is in capability subclass IIIe. The woodland ordination symbol is 3o.

HwE—Hiwassee sandy loam, 10 to 25 percent slopes. This is a well drained, strongly sloping to moderately steep soil on side slopes on the Piedmont. The areas of this soil are in the northwest corner of the county near the Savannah River. The individual areas are 5 to 60 acres in size.

Typically, the surface layer is dusky red sandy loam about 4 inches thick. The subsoil from 4 to 45 inches is dark red clay and clay loam, and from 45 to 60 inches it is dark red sandy loam.

Included with this soil in mapping are small areas of Ailey, Vaucluse, and Wateree soils. There are a few small areas of soils that have bedrock within 20 to 40 inches of the surface. The included soils make up about 15 percent of the map unit.

This soil is low in organic matter content. The available water capacity is moderate. The soil is very strongly acid to slightly acid throughout, except in the surface layer where lime has been added. Permeability is moderate, and runoff is medium. The seasonal high water table is more than 6 feet below the surface.

About 90 percent of the acreage is woodland; the rest is in pasture and miscellaneous uses.

This soil is poorly suited to cultivated crops. Because of the slope, erosion is a severe hazard if this soil is cultivated.

This soil is suited to coastal bermudagrass for pasture. Proper stocking, pasture rotation, timely deferment of grazing, and restricted use during wet seasons help keep the plants and the soil in good condition.

This soil is suited to use as woodland. It has moderate limitations to the use of equipment. These problems can be reduced by using special types of equipment, building roads on the contour, and scheduling operations during dry periods. This soil is suited to loblolly pine.

This soil is poorly suited to urban development. The slope is a severe limitation for septic tank absorption fields. This limitation can be reduced by cutting and filling, using step-down boxes, and installing filter lines on the contour. The slope is a severe limitation for dwellings without basements and for recreation uses. The limitation for dwellings can be reduced by cutting and filling, grading, or modifying the design of the house. The limitation for recreational development can be reduced by major cut and fill operations and by placing roads and trails on the contour.

This soil is in capability subclass VIe. The woodland ordination symbol is 3r.

Jo—Johnston mucky loam. This is a very poorly drained, nearly level soil on the flood plains of the larger creeks and rivers throughout the survey area. The individual areas are 10 to 150 acres in size.

Typically, the surface layer is black mucky loam about 19 inches thick. The layer below that, which extends to a depth of 34 inches, is black loamy sand. The substratum from 34 to 60 inches is light gray sandy loam.

Included with this soil in mapping are some small areas of Bibb and Dasher soils. Also included are a few small areas of loamy soils that are not so poorly drained. The included soils make up about 20 percent of this map unit.

This soil is high in content of organic matter. It has a moderate available water capacity. It is very strongly acid or strongly acid throughout, except in the surface layer in areas where lime has been added. Permeability is moderately rapid, and runoff is very slow. The seasonal high water table fluctuates from 1 foot above the surface to 1.5 feet below the surface during winter and spring. This soil is subject to frequent flooding from fall until early in summer.

Almost all of the acreage of this soil is woodland. A few areas are in pasture and miscellaneous uses.

This soil is poorly suited to cultivated crops and to pasture because of frequent flooding and a seasonal high water table.

This soil is well suited to water-tolerant hardwoods. Equipment limitations and seedling mortality are severe. Flooding is difficult to control on this soil. In some areas, shallow ditches help to remove excess water. Baldcypress is suited to this soil.

This soil is poorly suited to urban development because flooding is frequent and the water table is very high for extended periods. It is not practical to use this soil for septic tank absorption fields, dwellings without basements, and most recreation uses.

This soil is in capability subclass VIIw; the woodland ordination symbol is 1w.

LaB—Lakeland sand, 0 to 6 percent slopes. This is an excessively drained, nearly level to gently sloping, sandy soil on broad ridges on the Coastal Plain. The slopes are irregular and convex. The individual areas range from 5 to 200 acres in size.

Typically, the surface layer is dark gray and grayish brown sand about 8 inches thick. The substratum from 8

Figure 6.—Hay is harvested in an area of Lakeland sand, 0 to 6 percent slopes.

to 66 inches is yellow and brownish yellow sand, and from 66 to 80 inches it is reddish yellow sand.

Included with this soil in mapping are areas of soils that have a loamy sand subsoil layer. Also included are a few small areas of Fuquay and Troup soils. The included soils make up about 15 percent of the map unit.

This soil is very low in organic matter content. It has a very low available water capacity. It is very strongly acid to moderately acid throughout, except in the surface layer where lime has been added. Permeability is rapid, and runoff is very slow. The seasonal high water table is more than 6 feet below the surface.

About 90 percent of the acreage of this soil is woodland. The rest is cultivated or is in pasture or miscellaneous uses.

This soil is poorly suited to most of the cultivated crops commonly grown in the county. The major management problems in cultivating this soil are its low available water capacity, low nutrient-holding capacity, rapid permeability, and low content of organic matter. Soil blowing is a hazard on large, open cultivated fields. Irrigation, large amounts of fertilizer and lime, and good crop residue management are needed to obtain reasonable yields. On this soil, fertilizer is used most efficiently if it is applied at intervals or added to the irrigation water. Cover crops of grasses and legumes help to increase the available water capacity and the nutrient-holding capacity and to reduce the risk of soil blowing.

This soil is suited to pasture and hay (fig. 6). Because its available water capacity and nutrient-holding capacity are low, it is best suited to deep-rooted plants, such as improved bermudagrass. Split applications of fertilizer are more effective than a single application. Proper stocking, pasture rotation, and deferment of grazing help to keep the plants and the soil in good condition.

This soil is poorly suited to use as woodland. Good site preparation includes burning, spraying, cutting, or girdling to control competing vegetation. The deep sand limits the use of equipment. The seedling survival rate is moderate. Longleaf pine is suited to this soil, but seedling mortality is high.

This soil is poorly suited to urban development. It has slight limitations for dwellings without basements, but it has severe limitations for septic tank absorption fields because the sand is a poor filter and there is a risk of contamination of underground water sources. The thick sandy surface material severely limits this soil for recreation uses. Maintaining a cover of close-growing

grasses and constructing walkways help reduce the limitation.

This soil is in capability subclass IVs. The woodland ordination symbol is 4s.

LaD—Lakeland sand, 6 to 15 percent slopes. This is an excessively drained, sloping and strongly sloping, sandy soil on ridges and adjacent side slopes on the Coastal Plain. The slopes are complex and irregular. The individual areas are 5 to 100 acres in size.

Typically, the surface layer is dark gray and grayish brown sand about 8 inches thick. The substratum from 8 to 66 inches is yellow and brownish yellow sand, and from 66 to 80 inches it is reddish yellow sand.

Included with this soil in mapping are small areas of soils that have slopes of more than 15 percent. Also included are a few small areas of Fuquay, Lucy, and Troup soils. The included soils make up about 15 percent of the map unit.

This soil is very low in organic matter content. It has a very low available water capacity. It is very strongly acid to moderately acid throughout, except in the surface layer where lime has been added. Permeability is rapid, and runoff is slow. The seasonal high water table is more than 6 feet below the surface.

About 95 percent of the acreage of this soil is woodland. The rest is in pasture or miscellaneous uses.

This soil is poorly suited to most of the cultivated crops commonly grown in the county. The major management problems in cultivating this soil are its low available water capacity and low nutrient-holding capacity, rapid permeability, low content of organic matter, and slope. Soil blowing is a hazard on large, open cultivated fields. Irrigation, large amounts of fertilizer and lime, and good crop residue management are needed to obtain reasonable yields. On this soil, fertilizer is used most efficiently if it is applied at intervals or added to the irrigation water. Cover crops of grasses and legumes help to increase the available water capacity and the nutrient-holding capacity and to reduce the risk of soil blowing.

This soil is suited to use as pasture. Because its available water capacity and nutrient-holding capacity are low, deep-rooted plants, such as improved bermudagrass, are preferred. Split applications of fertilizer are more effective than a single application. Proper stocking, pasture rotation, and deferment of grazing help to keep the plants and the soil in good condition.

This soil is poorly suited to use as woodland. Good site preparation includes burning, spraying, cutting, or girdling to control competing vegetation. The deep sand limits the use of equipment. The seedling survival rate is moderate. Longleaf pine is suited to this soil, but seedling mortality is high.

This soil is poorly suited to urban development. It has severe limitations for septic tank absorption fields because the sand is a poor filter, causing a risk of contamination, and because of the slope. The slope is a moderate limitation for dwellings without basements. This limitation can be reduced by cutting and filling and by modifying the design of the house. This soil has severe limitations for recreational development because of the thick sandy surface material and the slope. Cutting and filling, maintaining a close-growing sod, and constructing walkways for traffic help to reduce the severity of the limitations.

This soil is in capability subclass VIs. The woodland ordination symbol is 4s.

LaE—Lakeland sand, 15 to 25 percent slopes. This is an excessively drained, moderately steep, sandy soil on short side slopes on the Coastal Plain. The slopes are complex and irregular. The individual areas are 5 to 75 acres in size.

Typically, the surface layer is dark gray and grayish brown sand about 8 inches thick. The substratum from 8 to 66 inches is yellow and brownish yellow sand, and from 66 to 80 inches it is reddish yellow sand.

Included with this soil in mapping are small areas of soils that have slopes of more than 25 percent and a few small areas of Ailey, Fuquay, and Troup soils. The included soils make up about 20 percent of this map unit.

This soil is very low in organic matter content. It has a very low available water capacity. It is very strongly acid to moderately acid throughout, except in the surface layer where lime has been added. Permeability is rapid, and runoff is slow. The seasonal high water table is more than 6 feet below the surface.

Almost all of the acreage of this soil is woodland. A small acreage is used as pasture or is in miscellaneous uses.

This soil is poorly suited to cultivated crops because it is droughty and because of the slope. This soil generally is not cultivated.

This soil is suited to use as pasture. Because its available water capacity and nutrient-holding capacity are low, deep-rooted plants, such as improved bermudagrass, are preferred. Split applications of fertilizer are more effective than a single application. Proper stocking, pasture rotation, and deferment of grazing help keep the plants and the soil in good condition.

This soil is poorly suited to use as woodland. Good site preparation can include burning, spraying, cutting, or girdling to control competing vegetation. The deep sand limits the use of equipment. The seedling survival rate is moderate. Longleaf pine is suited to this soil, but seedling mortality is high.

This soil is poorly suited to urban development. It has severe limitations for septic tank absorption fields because the sand is a poor filter, causing a risk of contamination, and because of the slope. The slope is a

severe limitation for dwellings without basements. This limitation can be reduced by cutting and filling or by modifying the design of the house. This soil has severe limitations for recreation uses because of the thick sandy surface material and the slope. Cutting and filling, maintaining a close-growing sod, and constructing walkways for traffic help to reduce the limitations.

This soil is in capability subclass VIIs. The woodland ordination symbol is 4s.

LuA—Lucy sand, 0 to 2 percent slopes. This is a well drained, nearly level soil on fairly broad ridgetops. The individual areas are 5 to 40 acres in size.

Typically, the surface layer is dark grayish brown sand about 9 inches thick. The subsurface layer, from 9 to 26 inches, is very pale brown sand. The subsoil from 26 to 70 inches is mainly yellowish red sandy clay loam.

Included with this soil in mapping are small areas of soils that have slopes of more than 2 percent and small areas of Faceville, Orangeburg, and Troup soils. The included soils make up about 15 percent of the map unit.

This soil is low in organic matter content. It has a low available water capacity. It is very strongly acid or strongly acid throughout, except in the surface layer where lime has been added. Permeability is moderate, and runoff is medium. The seasonal high water table is more than 6 feet below the surface.

About half of the acreage of this soil is cultivated. The rest is used as pasture or woodland or is in miscellaneous uses.

This soil is suited to all of the cultivated crops commonly grown in the county. It is suited to peaches. The major management problems are the low nutrient-holding capacity and droughtiness. Because nutrients are rapidly leached from this soil, frequent applications of fertilizer and lime are needed for crop production. Leaving crop residue on the surface reduces the risk of soil blowing, conserves moisture, and helps maintain the content of organic matter. Close-growing grasses and legumes also help maintain the content of organic matter.

This soil is well suited to pasture and hay. Management problems are droughtiness and the low nutrient-holding capacity. Bermudagrass and bahiagrass are suited to this soil. The use of this soil as pasture or hayland is effective in controlling soil blowing. Proper stocking, pasture rotation, deferment of grazing, and restricted use during wet periods help keep the plants and soil in good condition.

This soil is suited to use as woodland. The sandy texture is a moderate limitation to the use of equipment and to seedling survival. Planting in a furrow and removing competing vegetation by site preparation, burning, spraying, cutting, or girdling help to reduce seedling mortality. Loblolly pine is suited to this soil.

This soil is well suited to urban development. It has slight limitations for septic tank absorption fields and dwellings without basements. The sandy texture is a severe limitation for most recreational development. Maintaining a grass sod cover and providing walkways help to protect the soil from foot traffic.

This soil is in capability subclass IIs. The woodland ordination symbol is 3s.

LuB—Lucy sand, 2 to 6 percent slopes. This is a well drained, gently sloping soil on ridges. The individual areas are 5 to 50 acres in size.

Typically, the surface layer is dark grayish brown sand about 9 inches thick. The subsurface layer, from 9 to 26 inches, is very pale brown sand. The subsoil from 26 to 70 inches is mainly yellowish red sandy clay loam.

Included with this soil in mapping are small areas of soils that have slopes of more than 6 percent. Also included are small areas of Ailey, Faceville, Orangeburg, and Troup soils. The included soils make up about 15 percent of the map unit.

This soil is low in organic matter content. It has a low available water capacity. It is very strongly acid or strongly acid throughout, and runoff is medium. The seasonal high water table is more than 6 feet below the surface.

About half of the acreage of this soil is cultivated. The rest is used as pasture or woodland, except a small acreage that is in miscellaneous uses.

This soil is suited to all of the cultivated crops commonly grown in the county. It is suited to peaches. The major management problems are the low nutrient-holding capacity and droughtiness. Because nutrients are rapidly leached from this soil, frequent applications of fertilizer and lime are needed for crop production. Leaving crop residue on the surface reduces the risk of soil blowing, conserves moisture, and helps maintain the content of organic matter. A crop of close-growing grasses and legumes also helps maintain the content of organic matter. Erosion is a hazard on this soil, but no-till planting, plowing on the contour, and planting strips of close-growing crops all help to reduce erosion.

This soil is well suited to use as pasture and hayland. Bahiagrass and coastal bermudagrass grow well. The use of this soil as pasture and hayland is effective in controlling erosion. Proper stocking, pasture rotation, deferment of grazing, and restricted use during wet periods help keep the plants and soil in good condition.

This soil is suited to use as woodland. The sandy texture is a limitation to the use of equipment and to seedling survival. Planting in a furrow and removing vegetation by site preparation, burning, spraying, cutting, or girdling help reduce seedling mortality. Loblolly pine is suited to this soil.

This soil is well suited to urban development. It has slight limitations for septic tank absorption fields and dwellings without basements. The sandy surface material is a severe limitation for recreational development. The limitation can be reduced by planting and maintaining a

good sod cover and by providing walkways to protect the soil from foot traffic.

This soil is in capability subclass IIs. The woodland ordination symbol is 3s.

MaA—Marlboro loamy sand, 0 to 2 percent slopes. This is a nearly level, well drained soil on broad ridgetops on the Coastal Plain. The individual areas are 5 to 50 acres in size.

Typically, the surface layer is dark grayish brown loamy sand about 7 inches thick. The subsoil from 7 to 70 inches is mainly yellowish brown and brownish yellow sandy clay.

Included with this soil in mapping are a few small areas of Dothan, Faceville, and Fuquay soils. The included soils make up about 10 percent of the map unit.

This soil is low in organic matter content. The available water capacity is moderate. The soil is very strongly acid to moderately acid throughout, except in the surface layer where lime has been added. Permeability is moderate, and runoff is medium. The seasonal high water table is more than 6 feet below the surface.

About 90 percent of the acreage is cultivated. The rest is used as pasture or woodland or is in urban and miscellaneous uses.

This soil is well suited to most of the cultivated crops commonly grown in the county. There are no major problems in management. Crop residue returned to the soil and grass and legume cover crops help to maintain the content of organic matter and to protect the soil from blowing. Minimum tillage, no-till farming, and stripcropping are also helpful in reducing soil blowing on large fields.

This soil is well suited to use as pasture and hayland. Bahiagrass and bermudagrass are well suited. Proper stocking, pasture rotation, timely deferment of grazing, and restricted use during wet seasons help keep the pasture plants and the soil in good condition.

This soil is suited to use as woodland. There are no significant limitations. Seedlings survive and grow well if competing vegetation is controlled or removed by site preparation, burning, spraying, cutting, or girdling. Loblolly pine is suited to this soil.

This soil is well suited to urban development. Limitations are slight for dwellings without basements, most recreation uses, and septic tank absorption fields.

This soil is in capability class I. The woodland ordination symbol is 3o.

MaB—Marlboro loamy sand, 2 to 6 percent slopes. This is a gently sloping, well drained soil on high ridges and side slopes on the Coastal Plain. Individual areas are 5 to 40 acres in size.

Typically, the surface layer is dark grayish brown loamy sand about 7 inches thick. The subsoil from 7 to 70 inches is mainly yellowish brown and brownish yellow sandy clay.

Included with this soil in mapping are small areas of soils that have slopes of more than 6 percent, a few areas of soils that have a sandy clay loam surface layer, and small areas of Dothan, Faceville, Fuquay, and Orangeburg soils. The included soils make up about 20 percent of the map unit.

This soil is low in organic matter content. The available water capacity is moderate. The soil is very strongly acid to moderately acid throughout, except in the surface layer where lime has been added. Permeability is moderate, and runoff is medium. The seasonal high water table is more than 6 feet below the surface.

About 80 percent of the acreage is cultivated. The rest is used as pasture or woodland or is in miscellaneous uses.

This soil is well suited to most of the cultivated crops commonly grown in the county. It is suited to peaches. The hazard of erosion is the major management concern in cultivating this soil. This hazard can be reduced by farming on the contour, terraces, and grassed waterways. Crop residue left on the surface, grass and legume cover crops, and no-till or limited tillage help to reduce erosion and to maintain the content of organic matter. These practices also reduce the risk of soil blowing on large fields.

This soil is well suited to pasture and hay. Bahiagrass and bermudagrass are well suited. Proper stocking, pasture rotation, timely deferment of grazing, and restricted use during wet seasons help keep the pasture plants and the soil in good condition.

This soil is suited to use as woodland. There are no major hazards. Seedlings survive and grow well where competing vegetation is controlled or removed by site preparation, burning, spraying, cutting, or girdling. Loblolly pine is suited to this soil.

This soil is well suited to urban development. Limitations are slight for septic tank absorption fields, dwellings without basements, and most recreation uses.

This soil is in capability subclass IIe. The woodland ordination symbol is 3o.

Oc—Ochlockonee sandy loam. This is a nearly level, well drained soil in draws and valley depressions throughout the survey area. The areas are long and narrow and are mainly between 5 and 10 acres in size.

Typically, the surface layer is dark brown sandy loam about 6 inches thick. The substratum from 6 to 38 inches is brownish loamy sand, sandy loam, and clay loam, and from 38 to 63 inches it is grayish and brownish loamy sand.

Included with this soil in mapping are small areas of soils that are not so well drained as this Ochlockonee soil. Also included are small areas of Dothan, Fuquay,

Orangeburg, and Troup soils. The included soils make up about 20 percent of the map unit.

This soil is low in organic matter content and low in available water capacity. It is very strongly acid or strongly acid throughout, except in the surface layer where lime has been added. Permeability is moderate, and runoff is slow. The seasonal high water table is 3 to 4 feet below the surface in winter and early in spring. This soil is subject to occasional, very brief flooding.

About 65 percent of the acreage is cultivated, and the rest is in pasture.

This soil is well suited to corn and soybeans. The major problems in management are occasional flooding, the leaching of nutrients, and the low available water capacity. Dams, ditches, or dikes can help protect the soil from flooding. Fertilizer and lime are more effective if applied at intervals. Crop residue management and the use of cover crops of grasses and legumes help to maintain the content of organic matter, improve the available water capacity, and reduce leaching of nutrients.

This soil is suited to pasture and hay. Bahiagrass and bermudagrass are suited. Proper stocking and restricted use during wet periods help keep the pasture plants and the soil in good condition.

This soil is well suited to use as woodland. There are no significant limitations to this use. Seedlings survive and grow well if competing vegetation is controlled or removed by site preparation, burning, spraying, cutting, or girdling. Loblolly pine grows well on this soil.

This soil is poorly suited to urban development. Flooding severely limits its use for septic tank absorption fields, dwellings without basements, and recreational development. The hazard of flooding is difficult to reduce because of the low position of this soil on the landscape. Terraces, dikes, and proper fill material help to reduce the severity of the limitation for septic tank absorption fields. A combination of fill, dikes, and water diversion methods helps to reduce the limitation for dwellings without basements. Because of the severity of the limitations, it is not practical to develop this soil for urban uses.

This soil is in capability subclass IIw. The woodland ordination symbol is 1o.

Od—Ocilla Variant loamy sand. This is a nearly level, moderately well drained soil on upland flats and stream terraces on the Coastal Plain. The individual areas are 5 to 30 acres in size.

Typically, the surface layer is grayish brown loamy sand about 7 inches thick. The subsurface layer, from 7 to 24 inches, is very pale brown sand. The subsoil from 24 to 52 inches is mottled, brownish yellow sandy loam and sandy clay loam, and from 52 to 65 inches it is gray and light gray clay.

Included with this soil in mapping are small areas of Dothan, Eunola, Fuquay, Ogeechee, and Williman soils. The included soils make up about 15 percent of the map unit.

This soil is low in organic matter content. It has a low available water capacity. It is very strongly acid or strongly acid throughout, except in the surface layer where lime has been applied. Permeability is moderate in the upper part of the subsoil and slow in the lower part. Runoff is slow. The seasonal high water table is 2 to 3 feet below the surface in winter and early in spring.

About half of the acreage is cultivated, and the rest is used as woodland or pasture.

This soil is suited to corn and well suited to soybeans. The major management problems are the seasonal high water table, the low nutrient-holding capacity, and droughtiness. If subsurface drains are used to lower the seasonal high water table, a filter is needed to prevent sand from clogging the drains. Fertilizer and lime can be applied at intervals to reduce the loss of nutrients by leaching. Grass and legume cover crops help to maintain the organic matter content, improve the available water capacity, and reduce leaching.

This soil is well suited to pasture and to grasses that tolerate wetness, such as bahiagrass. Proper stocking, pasture rotation, and restricted use during wet periods help keep the plants and the soil in good condition. Shallow surface drains help remove excess surface water.

This soil is well suited to use as woodland. Seedling mortality is moderate, and seasonal wetness is a moderate limitation to the use of equipment in planting or harvesting trees. Removal of the excess surface water reduces the equipment limitation. The seedling survival rate improves if competing vegetation is controlled by site preparation, burning, spraying, cutting, or girdling. Loblolly pine is suited to this soil.

This soil is suited to urban development. The seasonal high water table is a limitation for septic tank absorption fields. Shaping the surface, adding fill material, and enlarging the absorption field area help reduce this problem. Wetness is a moderate limitation for dwellings without basements and for recreational development. Shallow surface drains and the use of fill material in low spots help to reduce this problem.

This soil is in capability subclass IIw. The woodland ordination symbol is 3w.

Og—Ogeechee sandy loam. This is a nearly level, poorly drained soil in small to medium-sized depressions and on low flats. The total acreage is small, and the individual areas are 5 to 25 acres in size.

Typically, the surface layer is dark grayish brown sandy loam about 8 inches thick. The subsurface layer, from 8 to 15 inches, is light gray loamy sand. The subsoil from 15 to 45 inches is mottled, light gray and gray sandy clay loam, and from 45 to 65 inches it is mottled, light gray sandy loam.

Included with this soil in mapping are small areas of Bethera, Eunola, Ocilla Variant, and Williman soils. The included soils make up about 10 percent of the map unit.

This soil is moderately low in organic matter content. It has a moderate available water capacity. It is very strongly acid or strongly acid throughout, except in the surface layer where lime has been added. Permeability is moderate, and runoff is slow. The seasonal high water table is at or near the surface in winter and early in spring.

About 70 percent of the acreage is woodland. The rest is cultivated, in pasture, or in miscellaneous uses.

This soil is well suited to soybeans and is suited to corn if it is adequately drained. The major problem in management is the seasonal high water table. The water table can be lowered by using open ditches or subsurface drains or a combination of the two. Returning crop residue to the soil and planting grass and legume cover crops help maintain the content of organic matter and improve fertility.

This soil is well suited to bahiagrass. Shallow surface drains can be used to reduce wetness. Proper stocking, pasture rotation, deferment of grazing, and restricted use during wet seasons help keep the pasture plants and the soil in good condition.

This soil is well suited to trees, and many areas remain in native hardwoods. The survival and growth rates of tree seedlings improve if competing vegetation is controlled by site preparation, burning, spraying, cutting, or girdling. Seasonal wetness severely limits the use of equipment and causes moderate seedling mortality. Removing the excess surface water reduces hazards in using equipment, lowers seedling mortality, and improves soil aeration in the root zone. Loblolly pine, American sycamore, and water oak are well suited to this soil.

This soil is poorly suited to urban development. Seasonal wetness is a severe limitation for septic tank absorption fields. This limitation is difficult to overcome. The seasonal high water table is a severe limitation for dwellings without basements and for recreational development. Adding fill material and shaping the surface reduce the severity of this limitation.

This soil is in capability subclass IIIw. The woodland ordination symbol is 2w.

OrA—Orangeburg loamy sand, 0 to 2 percent slopes. This is a well drained, nearly level soil on broad ridgetops on the Coastal Plain. The individual areas are 5 to 80 acres in size.

Typically, the surface layer is very dark grayish brown loamy sand about 6 inches thick. The subsoil from 6 to 24 inches is yellowish red and red sandy clay loam, and from 24 to 60 inches it is red sandy clay.

Included with this soil in mapping are small areas of Dothan, Faceville, Fuquay, and Lucy soils. A few small areas of Ogeechee soils are also included and are indicated by a wet spot symbol. The included soils make up about 10 percent of the map unit.

This soil is low in content of organic matter. It has a moderate available water capacity. It is very strongly acid or strongly acid throughout, except in the surface layer where lime has been added. Permeability is moderate, and runoff is medium. The seasonal high water table is more than 6 feet below the surface.

About 90 percent of the acreage is cultivated. The rest is woodland or in pasture or is in miscellaneous uses.

This soil is well suited to all of the cultivated crops commonly grown in the county. There are no major management problems. Return of crop residue to the soil and grass and legume cover crops help to maintain the content of organic matter and protect the soil from blowing. Minimum tillage or no-till farming and stripcropping also help to reduce soil blowing on large fields.

This soil is well suited to pasture and hay. Bahiagrass and bermudagrass are well suited. Proper stocking, pasture rotation, timely deferment of grazing, and restricted use during wet seasons help keep the plants and the soil in good condition.

This soil is well suited to use as woodland. There are no significant limitations. Loblolly pine is well suited to this soil.

This soil is well suited to urban development. It has slight limitations for septic tank absorption fields, dwellings without basements, and most recreation uses.

This soil is in capability class I. The woodland ordination symbol is 2o.

OrB—Orangeburg loamy sand, 2 to 6 percent slopes. This is a well drained, gently sloping soil on broad ridges and smooth side slopes on the Coastal Plain. The individual areas are 5 to 75 acres in size.

Typically, the surface layer is very dark grayish brown loamy sand about 6 inches thick. The subsoil from 6 to 24 inches is yellowish red and red sandy clay loam, and from 24 to 60 inches it is red sandy clay.

Included with this soil is mapping are small areas of Ailey, Dothan, Faceville, Fuquay, Lucy, and Ogeechee soils. The included soils make up about 15 percent of the map unit.

This soil is low in content of organic matter. It has a moderate available water capacity. It is very strongly acid or strongly acid throughout, except in the surface layer where lime has been added. Permeability is moderate, and runoff is medium. The seasonal high water table is more than 6 feet below the surface.

About 80 percent of the acreage is cultivated. The rest is woodland or in pasture or is in miscellaneous uses.

This soil is well suited to all of the cultivated crops commonly grown in the county. Erosion is the main problem in management. The hazard of erosion can be reduced by contour farming, terraces, grassed waterways, and stripcropping. No-till or limited tillage

also helps to reduce soil blowing and erosion. A cover crop of grasses and legumes helps to maintain the content of organic matter and to reduce soil loss.

This soil is well suited to pasture and hay. Bahiagrass and bermudagrass are well suited. Proper stocking, pasture rotation, timely deferment of grazing, and restricted use during wet seasons help keep the plants and the soil in good condition.

This soil is well suited to use as woodland. There are no significant limitations for woodland use or management. Loblolly pine is well suited to this soil.

This soil is well suited to urban development. It has slight limitations for septic tank absorption fields, dwellings wihout basements, and most recreation uses.

This soil is in capability subclass IIe. The woodland ordination symbol is 2o.

OrC—Orangeburg loamy sand, 6 to 10 percent slopes. This is a well drained, sloping soil on breaks below gently sloping or nearly level ridgetops on the Coastal Plain. The individual areas are 5 to 40 acres in size.

Typically, the surface layer is very dark grayish brown loamy sand about 6 inches thick. The subsoil from 6 to 24 inches is yellowish red and red sandy clay loam, and from 24 to 60 inches it is red sandy clay.

Included with this soil in mapping are small areas of Ailey, Vaucluse, Faceville, Fuquay, and Lucy soils. The included soils make up about 20 percent of the map unit.

This soil is low in content of organic matter. It has a moderate available water capacity. It is very strongly acid or strongly acid throughout, except in the surface layer where lime has been added. Permeability is moderate, and runoff is medium. The seasonal high water table is more than 6 feet below the surface.

About half of the acreage is woodland. The rest is in crops, pasture, or miscellaneous uses.

This soil is suited to most cultivated crops commonly grown in the county. If this soil is cultivated, erosion is the major concern in management. No-till farming, stripcropping, terraces, contour farming, grassed waterways, and crop residue left on the surface all help to reduce the hazard of erosion. Good crop residue management also helps to maintain the content of organic matter.

This soil is suited to pasture and hay. Bahiagrass and bermudagrass are well suited. Proper stocking, pasture rotation, timely deferment of grazing, and restricted use during wet seasons help keep the plants and the soil in good condition. Proper pasture management greatly reduces the hazard of erosion on this soil.

This soil is suited to use as woodland. There are no major hazards or limitations for woodland use or management. Loblolly pine is suited to this soil.

This soil is suited to urban development. The slope is a moderate limitation for septic tank absorption fields. This limitation can be reduced by cuts and fills, step-down boxes, and installation of filter lines on the contour. The slope is a moderate limitation for dwellings without basements. This limitation can be reduced by cutting and filling or by modifying the design of the house to accommodate the slope. The slope is a moderate limitation for recreational development. The limitation can be reduced by grading, planning, and adapting the design of facilities.

This soil is in capability subclass IIIe. The woodland ordination symbol is 2o.

PaB—Pacolet sandy loam, 2 to 6 percent slopes. This is a well drained, gently sloping soil on ridgetops and side slopes of the Piedmont. The individual areas are 5 to 20 acres in size.

The surface layer is reddish brown sandy loam about 4 inches thick. The subsoil from 4 to 24 inches is red clay loam; from 24 to 38 inches it is reddish yellow sandy clay loam. The substratum from 38 to 60 inches is yellowish red sandy loam.

Included with this soil in mapping are a few small areas of soils that have a sandy layer of Coastal Plain sediment at the surface and a few small areas where boulders are on the surface. The included areas make up about 20 percent of the map unit.

This soil is low in organic matter content. It has a moderate available water capacity. It is very strongly acid to moderately acid throughout, except in the surface layer where lime has been applied. Permeability is moderate, and runoff is rapid. The seasonal high water table is more than 6 feet below the surface.

About 40 percent of the acreage of this soil is cultivated, and 40 percent is pasture. The rest is woodland.

This soil is suited to corn, soybeans, and cotton. The major problem in management is erosion. No-till, farming on the contour, terraces, grassed waterways, and crop residue left on the surface all help to reduce the hazard of erosion. Cover crops of grasses and legumes help to reduce runoff and to maintain the content of organic matter.

The soil is suited to such pasture grasses as bahiagrass and coastal bermudagrass. Close-growing pasture grasses help reduce the hazard of erosion. Proper stocking, pasture rotation, timely deferment of grazing, and restricted use during wet periods help keep the pasture plants and the soil in good condition.

The soil is suited to use as woodland. There are no major hazards. Seedlings survive and grow well where competing vegetation is controlled or removed by site preparation, burning, spraying, cutting, or girdling. Loblolly pine is suited to this soil.

The soil is suited to urban development. It has slight limitations for dwellings without basements and for most recreation uses. It has a moderate limitation for septic tank absorption fields because water moves slowly

through the subsoil. This limitation can be reduced by enlarging the absorption field.

This soil is in capability subclass IIe. The woodland ordination symbol is 3o.

PaD—Pacolet sandy loam, 6 to 15 percent slopes. This is a well drained, sloping to strongly sloping soil of the Piedmont. It is on breaks that generally are close to a major drainageway or river. The individual areas are 5 to 25 acres in size.

Typically, the surface layer is reddish brown sandy loam about 4 inches thick. The subsoil from 4 to 24 inches is red clay loam; from 24 to 38 inches it is reddish yellow sandy clay loam. The substratum from 38 to 60 inches is yellowish red sandy loam.

Included with this soil in mapping are small areas of soils that have a sandy layer of Coastal Plain sediment at the surface and a few small areas where boulders are on the surface. The included areas make up about 20 percent of the map unit.

This soil is low in organic matter content. It has a moderate available water capacity. It is very strongly acid to moderately acid throughout, except in the surface layer where lime has been applied. Permeability is moderate, and runoff is rapid. The seasonal high water table is more than 6 feet below the surface.

Most of the acreage is pastureland. In a few small areas, this soil is wooded or in crops.

This soil is poorly suited to cultivated crops. The major problem in management is erosion. No-till farming, contour farming, and close-growing crops help reduce the hazard of erosion.

This soil is poorly suited to use as hayland because of the slope, but it is suited to pasture. Bahiagrass, bermudagrass, fescue, and clover are the common pasture plants. Proper stocking, pasture rotation, timely deferment of grazing, and restricted use during wet periods help keep the pasture plants and the soil in good condition.

This soil is suited to use as woodland. There are no major hazards. Seedlings survive and grow well where competing vegetation is controlled or removed by site preparation, burning, spraying, cutting, or girdling. Loblolly pine is suited to this soil.

This soil is suited to urban development. This soil has moderate limitations for septic tank absorption fields because water moves slowly through the subsoil and because of the slope. These problems may be reduced by cutting and filling, enlarging the absorption field area, using step-down boxes, and installing the filter lines on the contour. This soil has a moderate limitation for dwellings without basements because of slope. Cutting and filling and modifying the design of the house to accommodate the slope help to reduce this limitation. The slope is a moderate limitation for recreational development. This limitation can be reduced by building structures and roads on the contour. A close-growing grass sod helps reduce the hazard of erosion.

This soil is in capability subclass IVe. The woodland ordination symbol is 3o.

PaE—Pacolet sandy loam, 15 to 25 percent slopes. This is a well drained, moderately steep soil on slopes near major drainageways on the Piedmont. The individual areas are 10 to 40 acres in size.

Typically, the surface layer is reddish brown sandy loam about 4 inches thick. The subsoil from 4 to 24 inches is red clay loam; from 24 to 38 inches, it is reddish yellow sandy clay loam. The substratum from 38 to 60 inches is yellowish red sandy loam.

Included with this soil in mapping are small areas of soils that have a sandy clay loam or loam subsoil and areas where rock outcrops or boulders are on the surface. The included areas make up about 20 percent of this map unit.

This soil is low in organic matter content and moderate in available water capacity. It is very strongly acid to moderately acid throughout, except in the surface layer where lime has been applied. Permeability is moderate, and runoff is rapid. The seasonal high water table is more than 6 feet below the surface.

About 90 percent of the acreage of this soil is woodland, and 10 percent is in pasture.

This soil is poorly suited to cultivated crops. Erosion is a severe hazard, and the slope is a major problem in management if this soil is cultivated. This soil generally is not cultivated.

This soil is poorly suited to use as pasture and is not suited to use as hayland because of the slope. Bahiagrass, bermudagrass, fescue, and clover are suited to this soil. Proper stocking, pasture rotation, timely deferment of grazing, and restricted use during wet periods help keep the plants and the soil in good condition.

This soil is suited to use as woodland. The slope is a moderate limitation to the use of equipment and causes a moderate hazard of erosion. Special equipment can be used. Constructing roads on the contour helps reduce the hazard of erosion. Seedlings survive and grow well if competing vegetation is controlled by site preparation, burning, spraying, cutting, or girdling. This soil is suited to loblolly pine.

This soil is poorly suited to urban development. It has a severe limitation for septic tank absorption fields because of the slope. Also, water moves slowly through the subsoil. These problems are very difficult to reduce. Major cuts and fills, increased size of absorption fields, use of step-down boxes, and installation on the contour help to reduce the limitations. This soil has severe limitations for dwellings without basements because of slope. Generally, cuts and fills and modification of the design of the house help to reduce this limitation. The slope is a severe limitation for recreational development.

Extensive cutting and filling and erosion control measures are needed.

This soil is in capability subclass VIe. The woodland ordination symbol is 3r.

Re—Rembert loam. This is a poorly drained, nearly level soil in oval depressions on the Coastal Plain. The individual areas are 5 to 25 acres in size.

Typically, the surface layer is very dark gray loam about 7 inches thick. The subsoil from 7 to 30 inches is grayish sandy clay; from 30 to 42 inches it is grayish sandy clay loam. The substratum from 42 to 60 inches is white sand and sandy loam.

Included with this soil in mapping are small areas of Dothan and Ogeechee soils. The included soils make up about 10 percent of the map unit.

This soil is moderate in organic matter content. It has a moderate available water capacity. It is very strongly acid or strongly acid throughout, except in the surface layer where lime has been added. Permeability is slow, and runoff is ponded. The seasonal high water table is 1 foot above the surface to 1 foot below it in winter and spring.

About half of the acreage is cultivated. The rest is in pasture or woodland.

This soil is well suited to soybeans. It is suited to corn. The major problems in management are the seasonal high water table and ponding. Open ditches and shallow surface drains can help remove excess water.

This soil is well suited to use as pasture. Bahiagrass and other grasses that tolerate a high water table are best adapted to this soil. Providing open ditches and shallow surface drains aids in good pasture management. Proper stocking, pasture rotation, timely deferment of grazing, and restricted use during wet periods help keep the plants and the soil in good condition.

This soil is well suited to use as woodland. Some areas remain in native hardwoods. Seedlings survive and grow better if competing vegetation is controlled by site preparation, burning, spraying, cutting, or girdling. Wetness limits the use of equipment and causes moderate seedling mortality. Shallow ditches help to remove excess water, thereby reducing the limitation for equipment use, lowering seedling mortality, and helping to aerate the soil around tree roots. Loblolly pine, sweetgum, and eastern cottonwood are well suited.

This soil is poorly suited to urban development because of the seasonal high water table and the slowly permeable subsoil. It is very difficult to overcome the limitations for septic tank absorption fields. Surface drains, open ditches, and adding fill material reduce the limitations for dwellings and for recreation uses.

This soil is in capability subclass IIIw. The woodland ordination symbol is 2w.

Sh—Shellbluff silty clay loam. This is a nearly level, well drained soil on flood plains along large streams. The individual areas are 15 to 75 acres in size.

Typically, the surface layer is brown silty clay loam about 5 inches thick. The subsoil, from 5 to 34 inches, is reddish brown and dark brown silty clay loam. The substratum from 34 to 70 inches is mottled, light brownish gray silty clay loam.

Included with this soil in mapping are small areas of Chewacla and Toccoa soils. Also included are small areas of poorly drained soils in small depressions and a few long, narrow draws. The included soils make up about 10 percent of the map unit.

This soil is moderately low in organic matter content. It has a high available water capacity. It is very strongly acid to slightly acid throughout, except in the surface layer in areas where lime has been added. Permeability is moderate, and runoff is slow. The seasonal high water table is 3 to 5 feet below the surface in winter and early in spring. The soil is subject to frequent, brief flooding.

About 60 percent of the acreage is woodland. The rest is in pasture or is cultivated.

This soil is well suited to corn and soybeans. The major concern in management is flooding, because the soil is in low-lying areas mainly adjacent to the Savannah River. Flooding is very difficult to control, but its intensity and duration have been reduced by the construction of dams at the Clark Hill and Hartwell reservoirs. Smaller dams on local watershed projects also help to reduce flooding on this soil. Land shaping and shallow ditches help to remove the excess water.

This soil is well suited to use as pasture. It is suited to hayland. Bahiagrass, fescue, ryegrass, and bermudagrass grow well. Proper stocking, pasture rotation, timely deferment of grazing, and restricted use during wet periods help keep the soil from becoming compacted and keep the pasture plants in good condition.

This soil is well suited to use as woodland. Many areas remain in native hardwoods. The survival rate of tree seedlings is higher if competing vegetation is controlled by site preparation, burning, spraying, cutting, or girdling. This soil is subject to frequent flooding. Removal of the excess surface water reduces hazards in using equipment, lessens seedling mortality, and improves soil aeration in the root zone. Loblolly pine, yellow-poplar, cherrybark oak, scarlet oak, and water oak are well suited to this soil.

This soil is poorly suited to urban development. It has severe limitations for septic tank absorption fields, dwellings without basements, and most recreation uses because of frequent flooding. Flooding is very difficult to control because of the low position of this soil. Consequently, it is not practical to develop this soil for urban uses.

This soil is in capability subclass IIIw. The woodland ordination symbol is 1o.

To—Toccoa loam. This is a nearly level, well drained soil on flood plains, mainly along the Savannah River. The individual areas are 10 to 75 acres in size.

Typically, the surface layer is reddish brown loam about 9 inches thick. The substratum from 9 to 72 inches is loam and sandy loam. It is dominantly dark brown.

Included with this soil in mapping are small areas of Chewacla, Johnston, and Shellbluff soils. The included soils make up about 20 percent of the map unit.

This soil is low in content of organic matter. The available water capacity is moderate. The soil is strongly acid to slightly acid throughout, except in the surface layer where lime has been added. Permeability is moderately rapid, and runoff is slow. The seasonal high water table is 2.5 to 5.0 feet below the surface in winter and early in spring. This soil is subject to frequent, brief flooding in winter.

About 60 percent of the acreage is cultivated. The rest is in pasture or woodland.

This soil is suited to corn and soybeans. The major concern in management is flooding. Because this soil is in low-lying areas adjacent to streams, flooding is very difficult to control. However, the intensity and duration of flooding have been reduced by the construction of dams at the Clark Hill and Hartwell reservoirs. Other small dams on local watershed projects also help to reduce flooding on this soil. Land shaping and shallow ditches help to remove excess water.

This soil is well suited to bahiagrass and is suited to bermudagrass. Proper stocking, pasture rotation, timely deferment of grazing, and restricted use during wet periods help keep the pasture plants and the soil in good condition.

This soil is well suited to use as woodland. Some areas remain in native hardwoods. Young seedlings are helped to survive if competing vegetation is controlled by site preparation, burning, spraying, cutting, or girdling. Loblolly pine, American sycamore, yellow-poplar, and cherrybark oak are among the trees suited to this soil.

This soil is poorly suited to urban development. Frequent flooding severely limits its use for septic tank absorption fields, dwellings without basements, and most recreational development. Because of the severity of the limitation and the difficulty in installing flood control measures, it is not practical to develop this soil for urban uses.

This soil is in capability subclass IIIw. The woodland ordination symbol is 1o.

TrB—Troup sand, 0 to 6 percent slopes. This is a well drained, nearly level to gently sloping soil on broad ridges and side slopes on the Coastal Plain. Slopes are smooth and convex. The individual areas are 10 to 100 acres in size.

Typically, the surface layer is grayish brown sand about 2 inches thick. The subsurface layer, from 2 to 60 inches, is brownish yellow, strong brown, and reddish yellow sand. The subsoil from 60 to 80 inches is mottled, reddish yellow and red sandy clay loam.

Included with this soil in mapping are a few areas of soils that have slopes of more than 6 percent. Also included are a few small areas of Ailey, Fuquay, and Lakeland soils. The included soils make up about 15 percent of the map unit.

This soil is low in content of organic matter. The available water capacity is also low. The soil is very strongly acid or strongly acid throughout, except in the surface layer in areas where lime has been added. Permeability is rapid in the surface and subsurface layers and moderate in the subsoil. Runoff is slow. The seasonal high water table is more than 6 feet below the surface.

About 70 percent of the acreage of this soil is woodland. The rest is divided about equally between cultivated crops and pasture.

This soil is poorly suited to most of the cultivated crops commonly grown in the county. It is suited to watermelons. The major problems in management are droughtiness, the low available water capacity and low content of organic matter, rapid leaching, and low fertility. Soil blowing is a hazard on large cultivated fields. Irrigation, large amounts of fertilizer and lime, and good crop residue management help to improve yields. For best results, fertilizers can be applied at intervals or added to the irrigation water to reduce loss by leaching. Cover crops of grasses and legumes help to increase the available water capacity, to reduce leaching of plant nutrients, and to control soil blowing.

This soil is suited to pasture and hay. Because the soil tends to be droughty and is rapidly leached of nutrients, deep-rooted plants, such as improved bermudagrass, are preferred. Split applications of fertilizers are more effective than a single yearly application. Proper stocking, pasture rotation, and deferment of grazing help keep the plants and the soil in good condition. Good pasture management also helps control soil blowing.

This soil is suited to use as woodland. The major problems in management are a moderate limitation in using equipment and moderate seedling mortality, which is caused by the droughtiness of the deep sandy layers and by plant competition. Plant competition can be controlled by site preparation, burning, cutting, or girdling. Special equipment can be used. Loblolly pine and longleaf pine are suited to this soil.

This soil is well suited to urban development. It has slight limitations for septic tank absorption fields and dwellings without basements. The thick sandy surface and subsurface layers are a severe limitation for recreational development. The severity of this limitation can be reduced by maintaining a close-growing grass sod, limiting traffic in the area, or building walkways where traffic is heavy.

This soil is in capability subclass IIIs. The woodland ordination symbol is 3s.

TrC—Troup sand, 6 to 10 percent slopes. This is a well drained, sloping soil on narrow ridges and side slopes on the Coastal Plain. Slopes are smooth and convex. The individual areas are 10 to 50 acres in size.

Typically, the surface layer is grayish brown sand about 2 inches thick. The subsurface layer, from 2 to 60 inches, is brownish yellow, strong brown, and reddish yellow sand. The subsoil from 60 to 80 inches is mottled, reddish yellow and red sandy loam and sandy clay loam.

Included with this soil in mapping are some small areas of soils that have slopes of more than 10 percent and a few small areas of Ailey, Fuquay, and Lakeland soils. The included soils make up less than 20 percent of this map unit.

This soil is low in organic matter content. The available water capacity is low. The soil is very strongly acid or strongly acid throughout, except in the surface layer where lime has been added. Permeability is rapid in the surface and subsurface layers and moderate in the subsoil. Runoff is slow. The seasonal high water table is more than 6 feet below the surface.

About 70 percent of the acreage is woodland. The rest is in pasture, is cultivated, or is in miscellaneous uses.

This soil is poorly suited to most of the cultivated crops commonly grown in the county. It is suited to watermelons. The major problems in management are droughtiness, the low available water capacity, the low nutrient-holding capacity, and the low content of organic matter. Irrigation, good crop residue management, grass and legume cover crops, and fertilizers and lime applied at intervals all help to overcome the problems.

This soil is suited to pasture and hay. Because the soil tends to be droughty and is rapidly leached of nutrients, deep-rooted plants, such as improved bermudagrass, are preferred. Split applications of fertilizers are more effective than a single application. Proper stocking, pasture rotation, and deferment of grazing help keep the plants and the soil in good condition.

This soil is suited to use as woodland. The major problems in management are a moderate limitation to the use of equipment and moderate seedling mortality, which is caused by the droughtiness of the deep sandy layers and by plant competition. Plant competition can be controlled by site preparation, burning, cutting, or girdling. Special equipment can be used. Loblolly pine and longleaf pine are suited to this soil.

This soil is suited to urban development. The slope is a moderate limitation for septic tank absorption fields and dwellings without basements. The limitation for septic tank absorption fields can be reduced by cutting and filling, using step-down boxes, and installing the filter field on the contour. The limitation for dwellings can be reduced by cutting and filling or by modifying the design of the house. This soil has a severe limitation for recreational development because of the thick sandy surface and subsurface layers. The limitation can be reduced by maintaining a close-growing grass sod, limiting traffic in the area, or building walkways where traffic is heavy.

This soil is in capability subclass IVs. The woodland ordination symbol is 3s.

TrE—Troup sand, 10 to 25 percent slopes. This is a well drained, strongly sloping to moderately steep soil on side slopes on the Coastal Plain. The individual areas are 5 to 50 acres in size.

Typically, the surface layer is grayish brown sand about 2 inches thick. The subsurface layer, from 2 to 60 inches, is brownish yellow, strong brown, and reddish yellow sand. The subsoil from 60 to 80 inches is mottled, reddish yellow and red sandy loam and sandy clay loam.

Included with this soil in mapping are some small areas of soils that have slopes of more than 25 percent and a few small areas of Ailey, Fuquay, and Lakeland soils. The included soils make up about 20 percent of this map unit.

This soil is low in organic matter. It has a low available water capacity. It is very strongly acid or strongly acid throughout, except in the surface layer where lime has been added. Permeability is rapid in the surface and subsurface layers and moderate in the subsoil. Runoff is slow. The seasonal high water table is more than 6 feet below the surface.

About 90 percent of the acreage is woodland; much of this is unimproved woodland. The rest is in pasture.

This soil is poorly suited to cultivated crops because it is droughty and because of the slope. This soil generally is not cultivated.

This soil is poorly suited to hay crops. The slope limits the use of equipment and makes erosion a severe hazard. Under good management, this soil can be used as permanent pasture. Because the available water capacity and the nutrient-holding capacity are low, deep-rooted plants, such as improved bermudagrass, should be selected for planting. Proper stocking, pasture rotation, and deferred grazing help keep the pasture and soil in good condition.

This soil is suited to use as woodland. The major problems in management are a moderate limitation in using equipment and moderate seedling mortality, which is caused by the droughtiness of the deep sandy layers and by plant competition. Plant competition can be controlled by site preparation, burning, cutting, or girdling. Special equipment can be used. Loblolly pine and longleaf pine are suited to this soil.

This soil is poorly suited to urban development. The slope is a severe limitation to use of the soil for septic tank absorption fields. Major cuts and fills, use of step-down boxes, and installation of filter lines on the contour help to reduce the limitation. The slope is a severe limitation for dwellings without basements. This limitation

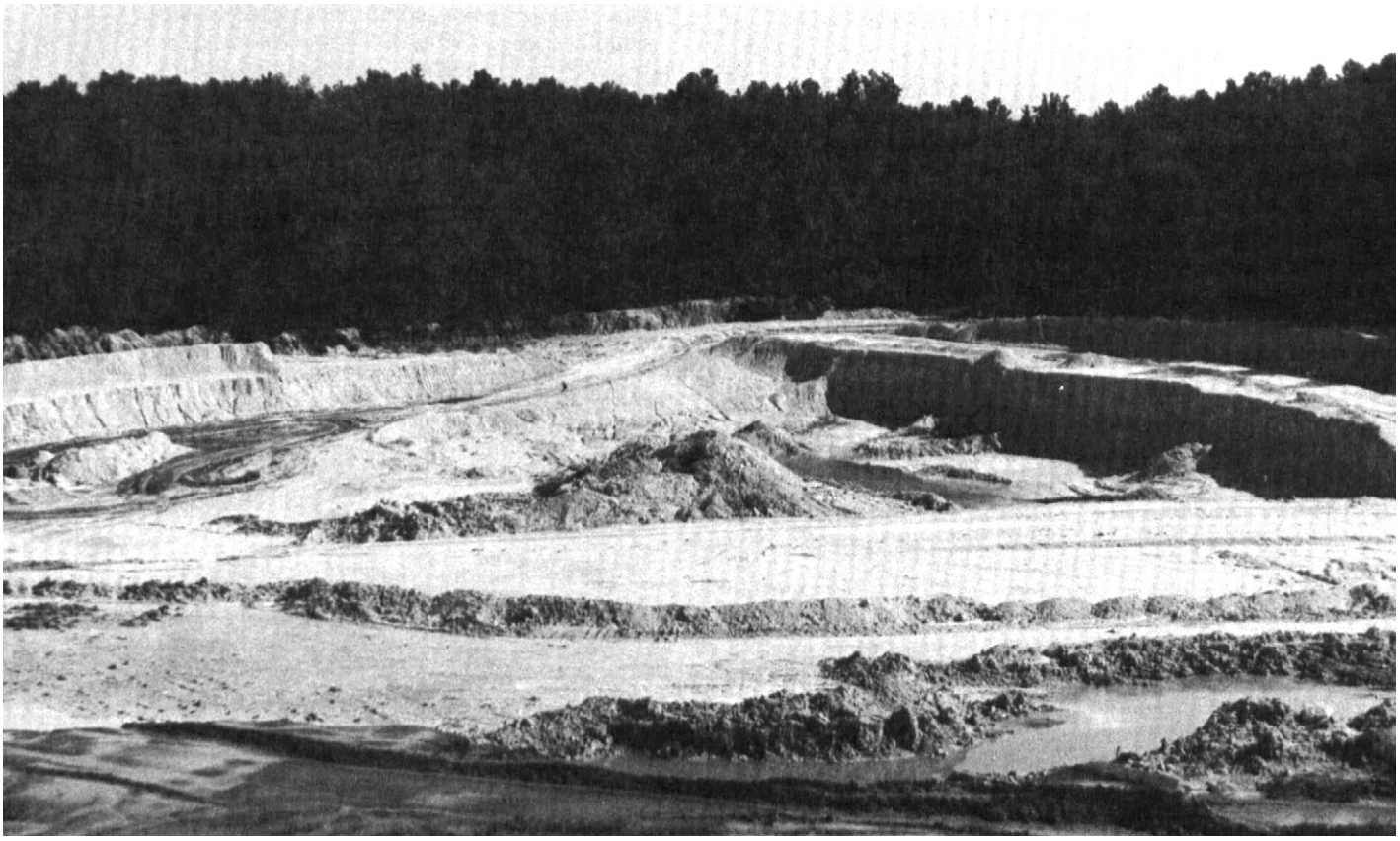


Figure 7.—Kaolin clay pit in an area of Udorthents-Arents complex, loamy and sandy.

can be reduced by cutting and filling or by modifying the design of the house. This soil has severe limitations for recreation uses because of the slope and the thick sandy surface material.

This soil is in capability subclass VIIs. The woodland ordination symbol is 3s.

UaB—Udorthents-Arents complex, loamy and sandy. This map unit consists of small areas of soils that are so intermingled that they could not be separated at the scale selected for mapping. The soils are the result of surface mining for kaolin clay. The areas consist of pits 15 to 80 feet deep and the piles of spoil around or near the pits (fig. 7).

Udorthents are the soil material at the bottom of the pits and on the sloping lower part of the pit walls. They make up about 55 percent of this map unit. Udorthents vary in texture and color, depending on the type of mine.

Arents are the product of the mixing of soil material that was removed in mining. This material was placed adjacent to the mined area or in previously mined areas. Arents make up about 35 percent of this map unit. They are highly variable in texture and color.

Included in the mapped areas are small areas of Vaucluse, Ailey, and Troup soils and some small ponds. The included areas make up about 10 percent of the map unit.

Udorthents and Arents are very low in content of organic matter. The available water capacity is low. The soils are extremely acid to strongly acid throughout. Permeability ranges from slow to rapid. Runoff is slow or very slow, or it is ponded. The seasonal high water table is variable. Soil properties are highly variable within a short distance.

These soils are not suited to cultivated crops, pasture, hayland, and urban development. Their suitability for use as woodland ranges from poor to fair. Some areas have been reshaped, fertilized, and planted with grasses or trees. A few areas have been converted into sanitary landfills. An onsite investigation is needed to determine the soil properties of a particular site and its suitability for any proposed use.

A capability subclass and woodland ordination symbol were not assigned to Udorthents or Arents.

VaB—Vaucluse loamy sand, 2 to 6 percent slopes. This is a well drained, gently sloping soil on ridgetops and short side slopes on the Coastal Plain. Slopes are irregular, undulating, and complex. Areas are 5 to 30 acres in size.

Typically, the surface layer is brown loamy sand about 3 inches thick. The subsurface layer, from 3 to 10 inches, is brownish yellow loamy sand. The subsoil from 10 to 22 inches is yellowish brown sandy loam; from 22 to 59 inches, it is mottled, brown and red sandy clay loam; and from 59 to 74 inches it is red loamy sand. The layer between depths of 22 and 59 inches is firm, dense, and brittle when dry.

Included with this soil in mapping are areas of eroded soils that have a sandy loam or sandy clay loam surface layer. Also included are small areas of soils that have slopes of more than 6 percent and a few small areas of Ailey, Dothan, Fuquay, Lakeland, and Troup soils. The included soils make up about 20 percent of the map unit.

This soil is low in content of organic matter. It has a low available water capacity. It is extremely acid to strongly acid throughout, except in the surface layer where lime has been applied. Permeability is slow to moderately slow, and runoff is medium. The seasonal high water table is more than 6 feet below the surface. The firm, compact layer about 15 to 30 inches below the surface partly restricts root growth.

About 65 percent of the acreage is woodland. The rest is in pasture, is cultivated, or is in miscellaneous uses.

This soil is poorly suited to most of the cultivated crops commonly grown in this area. The major problem is the slowly or moderately slowly permeable subsoil. Erosion is a severe hazard if this soil is cultivated. Minimum tillage and cover crops that include grasses and legumes help reduce the hazard of erosion and maintain the content of organic matter.

This soil is suited to use as pasture and hayland. Proper stocking, pasture rotation, timely deferment of grazing, and restricted use during wet periods help keep the plants and the soil in good condition.

This soil is suited to use as woodland. Windthrow is a moderate hazard because of the restricted root zone. Plant competition can be controlled by site preparation, burning, cutting, or girdling. Loblolly pine is suited to this soil.

This soil is suited to urban development. However, because water moves slowly through the subsoil, the limitation for septic tank absorption fields are severe. These limitations can be reduced by special design, for example, enlarging the absorption field area. The limitations are slight for dwellings without basements.

This soil is in capability subclass IIIs. The woodland ordination symbol is 3o.

VcD—Vaucluse-Ailey complex, 6 to 15 percent slopes. This complex consists of small areas of Vaucluse and Ailey soils that are so intermingled that they could not be separated at the scale selected for mapping. The soils are sloping and strongly sloping and are on breaks along the drainageways. The areas range from 5 acres to 200 acres in size.

Vaucluse loamy sand makes up about 50 percent of each mapped area. Typically, the surface layer is brown loamy sand about 3 inches thick. The subsurface layer, from 3 to 10 inches, is brownish yellow loamy sand. The subsoil from 10 to 22 inches is yellowish brown sandy loam; from 22 to 59 inches it is mottled, brown and red sandy clay loam; and from 59 to 74 inches it is red loamy sand. The layer that extends from a depth of 22 inches to a depth of 59 inches is firm, dense, and brittle when dry.

Ailey sand makes up about 25 percent of each mapped area. Typically, the surface layer is grayish brown sand about 3 inches thick. The subsurface layer, from 3 to 23 inches, is very pale brown sand. The subsoil from 23 to 72 inches is yellowish red and brownish yellow sandy clay loam. It is mottled below a depth of 30 inches. Also, below that depth it is firm, compact, and slightly brittle.

Included in mapping are small areas of Dothan, Fuquay, Orangeburg, and Troup soils. The included soils make up about 25 percent of the mapped areas.

The soils in this complex are low in organic matter content. They have a low or very low available water capacity. They are extremely acid to strongly acid throughout, except in the surface layer in places where lime has been added. Permeability is slow or moderately slow, and runoff is medium to rapid. The seasonal high water table is more than 6 feet below the surface. The firm, compact layer about 15 to 30 inches below the surface partly restricts root growth.

About 70 percent of the acreage of these soils is used as woodland, 20 percent is used as pasture, and 10 percent is cultivated or in miscellaneous uses.

These soils are poorly suited to cultivated crops. Because of the slope and the severe hazard of erosion, the soils generally are not cultivated.

The soils are poorly suited to use as pasture because of the slope and the slowly or moderately slowly permeable subsoil. Seeding close-growing pasture plants helps to reduce the hazard of erosion.

These soils are poorly suited to use as woodland. Windthrow is a moderate hazard because the firm, dense subsoil restricts rooting depth. Loblolly pine is adapted to these soils.

The soils are suited to urban development. They have severe limitations for septic tank absorption fields because water moves slowly through the subsoil. The limitations are difficult to reduce. Cuts and fills, use of suitable fill material, step-down boxes, and placement of the distribution lines on the contour help to reduce the

severity of the limitations. The soils are moderately limited as sites for dwellings without basements because of the slope. The limitation can be reduced by cutting and filling or by adapting the design of the house to accommodate the slope. The slope is also a moderate limitation for most recreation uses. This limitation can be reduced by cutting and filling, placing roads and paths on the contour, and employing special designs for the intended use.

These soils are in capability subclass IVe. The woodland ordination symbol for the Vaucluse soil is 3o, and that for the Ailey soil is 4s.

VcE—Vaucluse-Ailey complex, 15 to 25 percent slopes. This complex consists of small areas of Vaucluse and Ailey soils that are so intermingled that they could not be separated at the scale selected for mapping. The soils are moderately steep and are on slope breaks along drainageways. The areas range from 5 acres to over 150 acres in size.

Vaucluse loamy sand makes up about 50 percent of each mapped area. Typically, the surface layer is brown loamy sand about 3 inches thick. The subsurface layer, from 3 to 10 inches, is brownish yellow loamy sand. The subsoil from 10 to 22 inches is yellowish brown sandy loam; from 22 to 59 inches it is mottled, brown and red sandy clay loam; and from 59 to 74 inches it is red loamy sand. The layer between depths of 22 and 59 inches is firm, dense, and brittle when dry.

Ailey sand makes up about 25 percent of each mapped area. Typically, the surface layer is grayish brown sand about 3 inches thick. The subsurface layer, from 3 to 23 inches, is very pale brown sand. The subsoil from 23 to 72 inches is yellowish red and brownish yellow sandy clay loam. It is mottled below a depth of 30 inches. Also, below that depth it is firm, compact, and slightly brittle.

Included are small areas of Dothan, Fuquay, Orangeburg, and Troup soils. The included soils make up about 25 percent of the mapped areas.

The soils in this complex are low in organic matter content. They have a low or very low available water capacity. They are extremely acid to strongly acid throughout, except in the surface layer where lime has been added. Permeability is slow or moderately slow, and runoff is rapid. The seasonal high water table is more than 6 feet below the surface. The firm and compact layer about 15 to 30 inches below the surface partly restricts root growth.

About 90 percent of the acreage of these soils is woodland, and about 10 percent is in pasture.

The soils are poorly suited to cultivated crops. Because of the severe hazard of erosion and because of the firm, brittle layer that restricts root development, these soils generally are not cultivated.

The soils are poorly suited to use as pasture because of the slope and the slowly or moderately slowly permeable subsoil. However, seeding close-growing grasses reduces the hazard of erosion.

The soils are poorly suited to use as woodland. Windthrow is a moderate hazard because the firm, dense subsoil layer restricts root growth. Loblolly pine is suited to these soils.

The soils are poorly suited to urban development. They have severe limitations for septic tank absorption fields because water moves slowly through the subsoil and because of the slope. These limitations are difficult to reduce. Cuts and fills, use of suitable fill material, step-down boxes, and placement of the distribution lines on the contour help to reduce the severity of the limitations. There is a hazard of seepage downslope. The slope is a severe limitation for dwellings without basements. Cutting and filling or major changes in the design of the house are needed to reduce the limitation. The slope is a severe limitation for recreational development. In most areas these soils are not used for recreational purposes.

These soils are in capability subclass VIe. The Vaucluse soil has woodland ordination symbol 3o, and the Ailey soil has woodland ordination symbol 4s.

VuE—Vaucluse-Udorthents complex, 6 to 25 percent slopes. The areas of this complex generally are at the head of drainageways and on the upper part of slopes. Vaucluse soils are on the uneroded part of the landscape; Udorthents are on the severely eroded part, where as much as 2 to 6 feet of soil has been removed by erosion.

Vaucluse soils make up about 60 percent of the complex. Typically, the surface layer is brown loamy sand about 3 inches thick. The subsurface layer, from 3 to 10 inches, is brownish yellow loamy sand. The subsoil from 10 to 22 inches is yellowish brown sandy loam; from 22 to 59 inches it is mottled, brown and red sandy clay loam; and from 59 to 74 inches it is red loamy sand. The layer between depths of 22 and 59 inches is firm, dense, and brittle when dry.

Udorthents make up about 25 percent of the complex. Typically, they consist of gravelly sandy clay loam or sandy loam material, which in some areas is compact and brittle. The severely eroded areas are dissected by gullies 3 to 20 feet deep and 6 to 30 feet wide. Kaolin clay or sand is at the surface in some gullies.

Included in mapping are small areas of Ailey, Dothan, Orangeburg, and Troup soils. The included soils make up about 15 percent of the mapped areas.

The Vaucluse soils are low in organic matter content. They have a low available water capacity. They are extremely acid to strongly acid throughout, except in the surface layer where lime has been added. Permeability is slow or moderately slow, and runoff is rapid. The seasonal high water table is more than 6 feet below the surface. The firm, compact layer about 15 to 30 inches below the surface is partly restrictive to root growth.

Udorthents are variable in organic matter content, available water capacity, acidity, and permeability. An onsite investigation is needed to determine these properties.

Almost all of the acreage is either idle or wooded. The idle land is barren or nearly barren of vegetation.

The soils are poorly suited to cultivated crops because of the slope, the severe hazard of erosion, and the firm, brittle subsoil of the Vaucluse soils. Because of the severe limitations, most areas of this complex are not in cultivation.

The soils are poorly suited to use as pasture and hayland because of the slope, gullies, and the slow permeability. Use of close-growing pasture grasses helps reduce the hazard of erosion.

The soils are poorly suited to use as woodland. The slope limits the use of equipment. Seedling mortality and the hazard of erosion are also concerns. Loblolly pine is suitable for planting in areas of these soils.

The soils are poorly suited to urban development. The slope and slow permeability are severe limitations for septic tank absorption fields. The slope is a severe limitation for dwellings without basements and for recreation uses. These soils generally are not used for urban or recreational purposes.

This complex is in capability subclass VIIe. The Vaucluse soils have woodland ordination symbol 3o; Udorthents are not assigned a woodland ordination symbol.

WaF—Wateree sandy loam, 25 to 60 percent slopes. This is a steep or very steep, moderately deep, well drained soil on slope breaks. The individual areas are long and narrow and range from 10 to 75 acres in size.

Typically, the surface layer is brown sandy loam about 3 inches thick. The subsoil, from 3 to 20 inches, is yellowish brown sandy loam. The substratum from 20 to 24 inches is yellowish brown sandy loam; from 24 to 41 inches it is yellowish brown and yellowish red slate rock that crushes to sandy loam. Rippable slate bedrock is at a depth of 41 inches.

Included with this soil in mapping are small areas of Ailey, Gundy, Hiwassee, and Vaucluse soils and some very steep soils, on breaks near the Savannah River, that have slopes of more than 60 percent. The included soils make up less than 20 percent of the map unit.

This soil is low in organic matter content. It has a very low available water capacity. It is very strongly acid to moderately acid in the surface layer and subsoil and ranges to extremely acid in the substratum. Permeability is moderately rapid, and runoff is medium. The seasonal high water table is more than 6 feet below the surface.

Nearly all of the acreage is unimproved woodland. Most areas are in a mixture of pines and hardwoods.

This soil is poorly suited to cultivated crops because of the slope. Erosion is a very severe hazard if this soil is cultivated.

This soil is poorly suited to use as pasture because of the slope. A permanent cover of close-growing grasses helps to reduce the hazard of erosion on this soil.

This soil is poorly suited to use as woodland. Seedling mortality is moderate. The slope limits the use of equipment, and the hazard of erosion is a concern because of the steep slopes and moderate depth to bedrock. Special equipment can be used. Roads and fire lanes can be built on the contour to reduce the hazard of erosion.

This soil is poorly suited to urban uses. The very steep slopes and the moderate depth to rock are severe limitations for most urban and recreational development. Generally, the areas of this soil are suited to use as natural habitat for woodland wildlife.

This soil is in capability subclass VIIe. The woodland ordination symbol is 3r.

Wm—Willman sand. This is a poorly drained, nearly level soil in low-lying areas and slight depressions. The individual areas are 5 to 20 acres in size.

Typically, the surface layer is very dark gray loamy sand about 8 inches thick. The subsurface layer, from 8 to 28 inches, is light brownish gray sand. The subsoil from 28 to 58 inches is mottled, gray sandy clay loam, and from 58 to 66 inches it is mottled, light gray loamy sand.

Included with this soil are small areas of soils that have more than 3 percent of organic matter in the surface layer. There are also small areas of Bethera, Ocilla Variant, and Ogeechee soils. The included soils make up less than 20 percent of the map unit.

This soil is moderately low in content of organic matter. It has a low available water capacity. It is extremely acid to strongly acid throughout, except in the surface layer where lime has been applied. Permeability is moderate, and runoff is slow. The seasonal high water table is at the surface or within 1 foot of the surface in winter and early in spring.

About half of the acreage is cultivated, and the rest is woodland or in pasture.

This soil is well suited to soybeans and is suited to corn. It is poorly suited to most of the other cultivated crops commonly grown in the county. The major concerns in management are the seasonal high water table and the low nutrient-holding capacity. A combination of tile drains and open ditches helps lower the water table. Tile drains need a filter to keep sand from entering and clogging the pipe. Water control structures in open ditches help to keep water at the desired level during dry seasons. The sandy surface and subsurface layers are droughty in dry seasons. Grass and legume cover crops returned to the soil help to

maintain the content of organic matter and the nutrient-holding capacity.

This soil is well suited to use as pasture. Grasses that tolerate a relatively high water table, such as bahiagrass, are commonly planted. In most areas this soil requires some drainage for good pasture management. Open ditches and shallow surface drains can be used. Proper stocking, pasture rotation, timely deferment of grazing, and restricted use during wet periods help keep the plants and the soil in good condition.

This soil is well suited to use as woodland. Seasonal wetness severely limits the use of equipment in planting or harvesting trees and causes high seedling mortality where there is no system for removal of excess surface water. Shallow ditches help to remove excess water. The survival rate of seedlings also increases if competing vegetation is controlled by site preparation, burning, spraying, cutting, girdling, or a combination of these. Loblolly pine, American sycamore, and water oak are well suited to this soil.

This soil is poorly suited to urban development. Wetness is a severe limitation for septic tank absorption fields and for dwellings without basements. It is difficult to correct the wetness for septic tank absorption fields, however, surface drains can be placed near buildings to reduce the problem. Seasonal wetness and the sandy texture are severe limitations for recreation uses. Shaping, surface drainage, and adding fill material help reduce the severity of the limitations.

This soil is in capability subclass IIIw. The woodland ordination symbol is 2w.

Prime Farmland

In this section, prime farmland is defined and discussed, and the prime farmland soils in the Aiken County Area are listed.

Prime farmland is one of several kinds of important farmland defined by the U.S. Department of Agriculture. It is of major importance in filling 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 producing food, feed, forage, fiber, and oilseed crops. Such soils have properties that are favorable for the economic production of sustained high yields of crops (fig. 8). The soils need only to be treated and managed using acceptable farming methods. The moisture supply, of course, must be adequate, and the growing season has to be sufficiently long. Prime farmland soils produce the highest yields with minimal inputs of energy and economic resources, and farming these soils results in the least damage to the environment.

Prime farmland soils may presently be in use as cropland, pasture, or woodland, or they may be in other

Figure 8.—Orangeburg loamy sand, 2 to 6 percent slopes, is one of the prime farmland soils in Aiken County. It is used mainly for cultivated crops.

uses. They either are used for producing food or fiber or are available for these uses. Urban or built-up land and water areas cannot be considered prime farmland.

Prime farmland soils usually get 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 subject to frequent flooding during the growing season. The slope ranges mainly from 0 to 6 percent.

Soils that have a high water table, are subject to flooding, or are droughty may qualify as prime farmland soils if the limitations or hazards are overcome by drainage, flood control, or irrigation. Onsite evaluation is necessary to determine the effectiveness of corrective measures. More information on the criteria for prime farmland soils can be obtained at the local office of the Soil Conservation Service.

About 69,000 acres, or nearly 11 percent of the Aiken County Area, meets the soil requirements for prime farmland. The areas of prime farmland are scattered throughout the county; however, they are mainly in map units 5, 6, and 7 of the general soil map. There has been no large-scale loss of prime farmland to industrial and urban uses in the Aiken County Area. The loss of prime farmland to other uses puts pressure on marginal lands, which generally are wet, more erodible, droughty, or difficult to cultivate and less productive than prime farmland.

The following map units, or soils, make up prime farmland in the Aiken County Area. If a soil is prime farmland only under certain conditions, the conditions are specified in parentheses after the soil name. The location of each map unit is shown on the detailed soil maps at the back of this publication. The extent of each unit is given in table 4. The soil qualities that affect use and management are described in the section "Detailed Soil Map Units." This list does not constitute a recommendation for a particular land use.

AnA Angie fine sandy loam, 0 to 2 percent slopes
Ch Chewacla loam (where drained and protected from flooding)
DoA Dothan loamy sand, 0 to 2 percent slopes
DoB Dothan loamy sand, 2 to 6 percent slopes
EuA Eunola loamy sand, 0 to 2 percent slopes
FaA Faceville sandy loam, 0 to 2 percent slopes
FaB Faceville sandy loam, 2 to 6 percent slopes
GrA Greenville sandy loam, 0 to 2 percent slopes
GrB Greenville sandy loam, 2 to 6 percent slopes
MaA Marlboro loamy sand, 0 to 2 percent slopes
MaB Marlboro loamy sand, 2 to 6 percent slopes
OrA Orangeburg loamy sand, 0 to 2 percent slopes
OrB Orangeburg loamy sand, 2 to 6 percent slopes
PaB Pacolet sandy loam, 2 to 6 percent slopes
Sh Shellbluff silty clay loam (where protected from flooding)

Use and Management of the Soils

This soil survey is an inventory and evaluation of the soils in the survey area. It can be used to adjust land uses to the limitations and potentials of natural resources and the environment. Also, it can help avoid 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 behavior characteristics of the soils. They collect data on erosion, droughtiness, flooding, and other factors that affect various soil uses and management. Field experience and collected data on soil properties and performance are used as a basis in predicting soil behavior.

Information in this section can be used to plan the use and management of soils for crops and pasture; as woodland; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreation facilities; and for wildlife habitat. It can be used to identify the potentials and limitations of each soil for specific land uses and to help prevent construction failures caused by unfavorable soil properties.

Planners and others using soil survey information can evaluate the effect of specific land uses on productivity and on the environment in all or part of the survey area. The survey can help planners to maintain or create a land use pattern in harmony with the natural soil.

Contractors can use this survey to locate sources of sand and gravel, roadfill, and topsoil. They can use it to identify areas where bedrock, wetness, or very firm soil layers can cause difficulty in excavation.

Health officials, highway officials, engineers, and others may also find this survey useful. The survey can help them plan the safe disposal of wastes and locate sites for pavements, sidewalks, campgrounds, playgrounds, lawns, and trees and shrubs.

Crops and Pasture

Gene E. Hardee, conservation agronomist, Soil Conservation Service, assisted in preparing 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 "Detailed Soil Map Units." Specific information can be obtained from the local office of the Soil Conservation Service or the Cooperative Extension Service.

More than 130,000 acres, or almost one-fifth of the land area of Aiken County, was used for field crops, pasture, and hayland in 1976 according to the Aiken County Soil Conservation Service Field Office Program Analysis. Of this total, about 105,000 acres was used for field crops, mainly soybeans, peanuts, corn, cotton, wheat, oats, barley, and rye; about 25,000 acres was used as pasture and hayland; and about 1,000 acres was used for fruit trees, mainly peaches.

The soils in Aiken County have good potential for increased production of food. The production of food can be increased by extending the latest technology for crop production to all cropland in the county.

The acreage in pasture has been decreasing gradually as more and more land is used for row crops, peaches, and urban development. According to the 1977 South Carolina Resource Inventory of Nonfederal Land and Water (*7*), an estimated 63,000 acres was urban and built-up land in the county. This figure has been growing at the rate of about 1,100 acres per year. The use of this soil survey in making land use decisions that bear on the future role of farming in the county is discussed in the section "General Soil Map Units."

Soil erosion is a major concern on about 80 percent of the land in Aiken County. Water erosion commonly is a hazard on soils that have slopes of more than 2 percent and on very long slopes of 1 to 2 percent. Many soils in Aiken County that are used for crops are subject to erosion. Wind erosion is also a concern on clean-tilled sandy soils. However, most of the damage caused by wind movement of soil particles is injury to young plants rather than actual soil loss.

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, for example, on Faceville, Greenville, Gundy, Hiwassee, Marlboro, and Pacolet soils, and on soils that

Figure 9.—A grassed waterway in an area of the Dothan-Fuquay map unit. Minimum tillage also helps control water erosion on the cornfield.

have a layer in or below the subsoil that limits the depth of the root zone. The dense, somewhat brittle layer in Vaucluse soils is such a layer. Erosion also reduces productivity on deep, sandy soils. Second, soil erosion on farmland results in sediment entering streams. Controlling erosion minimizes the pollution of streams by sediment and improves the quality of water for municipal use, for recreation, and for fish and wildlife.

Preparation of a good seedbed and tillage are difficult on clayey spots where the original friable surface layer has been eroded away. Such spots are common on the most sloping part of intensively cropped areas of Faceville, Greenville, Marlboro, and Pacolet soils.

Water erosion can best be controlled by a combination of structural measures that remove excess water from the field and cropping and tillage systems that provide surface cover and reduce runoff. Structural measures such as diversions, terraces, and grassed waterways reduce the length of the slope and conduct excess water from the field at a nonerosive velocity (fig. 9). Contour tillage slows runoff and increases the infiltration of water into the soil. Cropping systems that include sod crops in the rotation and tillage that leaves residue on the surface provide protective surface cover, reduce runoff, and increase infiltration. On livestock farms, which require pasture and hay, the legume and grass forage crops in

the cropping system reduce erosion on sloping land and also provide nitrogen for the following crop.

Terraces and diversions can be effectively utilized in erosion control systems on deep, well drained soils that have uniform slopes, such as Dothan, Faceville, Greenville, Marlboro, and Orangeburg soils. However, these practices concentrate runoff and are not adapted on the less stable sandy soils, such as Ailey, Foxworth, Fuquay, Lakeland, Lucy, and Troup soils. On these soils, erosion control systems commonly consist of such practices as contour farming, contour stripcropping, and conservation tillage, which reduce the amount and velocity of runoff and do not concentrate the runoff.

Information on the design of erosion control practices for each kind of soil is available in the local office of the Soil Conservation Service.

Damage to young plants by soil blowing is a major management concern on Ailey, Dothan, Eunola, Foxworth, Lakeland, Lucy, Marlboro, Orangeburg, Troup, and Vaucluse soils, especially in large fields where the surface is unprotected. Conservation tillage, permanent vegetated strips, and strips of close-growing crops help to protect sandy soils that are subject to blowing.

Soil drainage is a major management concern on about 10 percent of the soils in Aiken County. However, drainage sufficient for cropland and hayland is practical on only about 40 percent of the soils that have a wetness problem. Drainage commonly is feasible on Angie, Bethera, Ocilla Variant, Ogeechee, and Rembert soils and in some areas of Chewacla soils. Drainage is generally not feasible on Bibb and Johnston soils, which lack adequate outlets and are subject to frequent flooding. Shellbluff and Toccoa soils need protection from flooding.

Soil fertility is naturally low in all of the soils in Aiken County. The soils need regular applications of lime and fertilizer. Nearly all of the soils on uplands are naturally strongly acid or very strongly acid. If the soils have never been limed, regular applications of ground limestone are needed to raise the pH level sufficiently for good crop growth. The levels of available phosphorus and potash are naturally low in most of these soils. On the deep sandy soils, split applications of fertilizer are the most cost-effective, because in these soils plant nutrients are rapidly leached below the root zone. 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 expected level of yields. The Cooperative Extension Service can help in determining the amounts of fertilizer and lime to apply.

Tilth is an important factor in seed germination and in the infiltration of water into the soil. The surface layer of most soils in Aiken County is sand or loamy sand. Consequently, the surface layer is granular and porous and has weak structure. These conditions are generally ideal for good germination of seeds and infiltration of water. However, the soils generally are very low in organic matter, and the retention of moisture in the surface layer is low.

Fall tillage generally is not a good practice on the soils in this county, because much of the cropland consists of sloping soils that are subject to damaging water erosion or to soil blowing if they are tilled in the fall. For some crops, fall tillage is an important step in controlling insects and diseases. A winter cover crop should then be planted following the fall tillage.

Field crops suited to the soils and climate of Aiken County include many that are not commonly grown. Soybeans, corn, cotton, and peanuts are the important row crops. Grain sorghum, field peas, English peas, sweet potatoes, squash, cucumbers, okra, snapbeans, and similar crops can be grown. Wheat, rye, oats, and barley are the common close-growing crops. However, several close-growing legumes such as alfalfa, arrowleaf clover, and crimson clover can be grown for hay or seed. Grass seed can be produced from bahiagrass, and Coastal bermudagrass can be grown for hay.

Special crops grown in the county include vegetables and peaches. A small acreage is used for melons, blueberries, sweet corn, tomatoes, collards, and turnips. In addition, large areas can be adapted to other special crops such as grapes and strawberries.

Deep soils that have good natural drainage and a moderate to high available water capacity and that warm up early in the spring are especially well suited to many vegetables. In this county, crops generally can be planted and harvested early on Dothan, Faceville, Fuquay, Greenville, Marlboro, Lucy, and Orangeburg soils.

The latest information and suggestions for growing 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 5. 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 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 insures the smallest possible loss.

The estimated yields reflect the productive capacity of each soil for each of the principal crops. Yields are likely to increase as new production technology is developed. The productivity of a given soil compared with that of other soils, however, is not likely to change.

Crops other than those shown in table 5 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 most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The grouping does not take into account major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor does it consider 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. These levels are defined in the following paragraphs.

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 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 limitation is risk of erosion unless close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); *s* shows that the soil is limited mainly because it is shallow, droughty, or stony; and *c*, used in only some parts of the United States, shows that the chief limitation is climate that is very cold or very dry.

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

The acreage of soils in each capability class and subclass is shown in table 6. The capability classification of each map unit is given in the section "Detailed Soil Map Units."

Woodland Management and Productivity

Norman W. Runge, forester, Soil Conservation Service, assisted in preparing this section.

Originally, the county was forested. Forests now cover 489,000 acres, or more than 77 percent of the survey area. Pines are most abundant on the hills, and hardwoods generally are dominant on the bottom lands along rivers and creeks.

Southern pine and upland hardwood forest types cover 88 percent of the forest land. The most important pine species are longleaf, slash, loblolly, and shortleaf pines. Upland hardwoods are mainly oaks and hickories. The rest of the forest land is in bottomland hardwood forest types.

Good stands of commercial trees are produced. The commercial value of forest products in Aiken County is substantial, but it is well below the potential capacity. Even now, the annual growth is almost double the amount harvested. Much of the existing commercial forest would benefit if stands were improved by weeding out undesirable species. Continued protection from grazing and fire and control of diseases and insects are also needed to improve stands. The level of woodland management has improved significantly in recent years. Uncontrolled burning, which was generally practiced in the area about two decades ago, has given way to fire protection and, when the conditions are favorable, to prescribed burning. Other measures now being practiced or considered include planting genetically improved strains, fostering natural regeneration, and fertilization.

Table 7 can be used by woodland owners or forest managers in planning the use of soils for wood crops. Only those soils suitable for wood crops are listed. The table lists the ordination (woodland suitability) symbol for each soil. Soils assigned the same ordination symbol require the same general management and have about the same potential productivity.

The first part of the *ordination symbol*, a number, indicates the potential productivity of the soils for important trees. The number 1 indicates very high productivity; 2, high; 3, moderately high; 4, moderate; and 5, low. The second part of the symbol, a letter, indicates the major kind of soil limitation. The letter *w* indicates excessive water in or on the soil; *s*, sandy texture; and *r*, steep slopes. The letter *o* indicates that limitations or restrictions are insignificant. If a soil has more than one limitation, the priority is as follows: w, s, and r.

In table 7, *slight, moderate,* and *severe* indicate the degree of the major soil limitations to be considered in management.

Ratings of the *erosion hazard* indicate the risk of loss of soil in well managed woodland. The risk is *slight* if the expected soil loss is small, *moderate* if measures are needed to control erosion during logging and road construction, and *severe* if intensive management or special equipment and methods are needed to prevent excessive loss of soil.

Ratings of *equipment limitation* reflect the characteristics and conditions of the soil that restrict use of the equipment generally needed in woodland management or harvesting. A rating of *slight* indicates that use of equipment is not limited to a particular kind of equipment or time of year; *moderate* indicates a short seasonal limitation or a need for some modification in management or in equipment; and *severe* indicates a seasonal limitation, a need for special equipment or management, or a hazard in the use of equipment.

Seedling mortality ratings indicate the degree to which the soil affects the mortality of tree seedlings. Plant competition is not considered in the ratings. The ratings apply to seedlings from good stock that are properly planted during a period of sufficient rainfall. A rating of *slight* indicates that the expected mortality is less than 25 percent; *moderate*, 25 to 50 percent; and *severe*, more than 50 percent.

Ratings of *windthrow hazard* are based on soil characteristics that affect the development of tree roots and the ability of the soil to hold trees firmly. A rating of *slight* indicates that few trees may be blown down by strong winds; *moderate*, that some trees will be blown down during periods of excessive soil wetness and strong winds; and *severe*, that many trees are blown down during periods of excessive soil wetness and moderate or strong winds.

The *potential productivity* of merchantable or *common trees* on a soil is expressed as a *site index*. This index is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. Commonly grown trees are those that woodland managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability.

Trees to plant are those that are suited to the soils and to commercial wood production.

Recreation

The soils of the survey area are rated in table 8 according to limitations that affect their suitability for recreation. The ratings are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewerlines. 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 recreation facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

In table 8, 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 8 can be supplemented by other information in this survey, for example, interpretations for septic tank absorption fields in table 11 and interpretations for dwellings without basements and for local roads and streets in table 10.

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

William J. Melven, biologist, Soil Conservation Service, assisted in preparing this section.

There is a wide diversity of wildlife habitat in the area. Forestry, agricultural practices, and land development have greatly influenced the types and abundance of wildlife species.

Current trends in agriculture favor large, commonly monocultural farms instead of the small subsistence farms of former times. Those smaller "patch farms," consisting of small fields of diversified crops interspersed with woods and brushy fields, furnished excellent habitat for quail and rabbits. The larger fields of today cannot provide the necessary cover for wildlife habitat but do provide some food in the crop residue.

The more common wildlife species in Aiken County include opossum, eastern cottontail, gray squirrel, red fox, gray fox, raccoon, mallard, wood duck, turkey vulture and black vulture, bobwhite quail, dove, screech owl, barred owl, common crow, and Carolina wren. Other animals in the county are beaver, white-tailed deer, and many furbearers. Waterfowl and other birds are numerous.

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 9, 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 flood hazard. Soil temperature and soil moisture are also considerations. Examples of grain and seed crops are corn, wheat, oats, and barley (fig. 10).

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, flood hazard, and slope. Soil temperature and soil moisture are also considerations. Examples of grasses and legumes are fescue, ryegrass, bahiagrass, 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 flood hazard. Soil temperature and soil moisture are also considerations. Examples of wild herbaceous plants are ragweed, goldenrod, beggarweed, wheatgrass, and partridgepea.

Figure 10.—Corn planted in rye on Fuquay sand, 2 to 6 percent slopes. Minimum tillage affords cover for wildlife and reduces the risk of erosion by wind and water.

Hardwood trees, woody understory, and woodland borders 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, the available water capacity, and wetness. Examples of these plants are oak, poplar, cherry, sweetgum, persimmon, apple, hawthorn, dogwood, hickory, blackberry, blueberry, and greenbrier. Examples of fruit-producing shrubs that are suitable for planting on soils rated *good* are pyracantha, dogwood, honeysuckle, 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 cedar.

Shrubs are bushy woody plants that produce fruit, buds, twigs, bark, and foliage. Soil properties and features that affect the growth of shrubs are depth of the root zone, available water capacity, salinity, and soil moisture. Examples of shrubs are sumac, common winterberry, wild rose, snowberry, and viburnum.

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, slope, and surface stoniness. Examples of wetland plants are smartweed,

wild millet, wildrice, cordgrass, rushes, sedges, and reeds.

Shallow water areas have an average depth of less than 5 feet. Some are naturally wet areas. Others are created by dams 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 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. The 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, ruffed grouse, woodcock, thrushes, woodpeckers, squirrels, gray fox, raccoon, and deer.

Habitat for wetland wildlife consists of open, swampy shallow water areas. Some of the wildlife attracted to such areas are ducks, geese, muskrat, mink, and beaver.

Engineering

W. Burton Wells, state conservation engineer, Soil Conservation Service, assisted in preparing 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. The ratings are given in the following tables: 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 need to 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 to 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 kind 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 (1) evaluate the potential of areas for residential, commercial, industrial, and recreation uses; (2) make preliminary estimates of construction conditions; (3) evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; (4) evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; (5) plan detailed onsite investigations of soils and geology; (6) locate potential sources of gravel, sand, earthfill, and topsoil; (7) plan drainage systems, irrigation systems, ponds, terraces, and other structures for soil and water conservation; and (8) 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 10 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 the 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, shrink-swell potential, and organic layers can cause the movement of footings. A high water table, depth to bedrock or to a cemented pan, large stones, and flooding affect the ease of excavation and construction. Landscaping and grading that require cuts and fills of more than 5 to 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, a high water table, flooding, large stones, and slope affect the ease of excavating and grading. Soil strength (as inferred from the engineering classification of the soil), shrink-swell potential, and depth to a high water table affect the traffic supporting capacity.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. The ratings are based on soil properties, site features, and observed performance of the soils. Soil reaction, a high water table, depth to bedrock 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 11 shows the degree and the 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 11 also shows the suitability of the soils for use as daily cover for landfills. A rating of *good* indicates that soil properties and site features are favorable for the use and good performance and low maintenance can be expected; *fair* indicates that soil properties and site features are moderately favorable for the use and one or more soil properties or site features make the soil less desirable than the soils rated good; and *poor* indicates that one or more soil properties or site features are unfavorable for the use and overcoming the unfavorable properties requires special design, extra maintenance, or costly alteration.

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 72 inches is evaluated. The ratings are based on soil properties, site features, and observed performance of the soils. Permeability, a high water table, depth to bedrock 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 11 gives ratings for the natural soil that makes up the lagoon floor. The surface layer and, generally, 1 or 2 feet of soil material below the surface layer are excavated to provide material for the embankments. The ratings are based on soil properties, site features, and observed performance of the soils. Considered in the

ratings are slope, permeability, a high water table, depth to bedrock or to a cemented pan, flooding, large stones, and content of organic matter.

Excessive seepage due to rapid permeability of 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 needs to be considered.

The ratings in table 11 are based on soil properties, site features, and observed performance of the soils. Permeability, depth to bedrock or to a cemented pan, 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 type 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 type 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 12 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 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, 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 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 the depth to the water table is 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. Sand and gravel are used in many kinds of construction. Specifications for each use vary widely. In table 12, 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 water table at or near the surface.

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

Water Management

Table 13 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; embankments, dikes, and levees; and aquifer-fed ponds. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and are easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increase in construction costs, and possibly increased maintenance are required.

This table also gives for each soil the restrictive features that affect drainage, irrigation, terraces and diversions, and grassed waterways.

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the permeability of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

Embankments, dikes, and levees are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. In this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth even greater than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, organic matter, or salts or sodium. A high water table affects the amount of usable material. It also affects trafficability.

Drainage is the removal of excess surface and subsurface water from the soil. How easily and effectively the soil is drained depends on the depth to bedrock, 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 potential 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 reduce 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 wind 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 wind erosion, 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. These results are reported in table 17.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on laboratory tests of samples of similar soils in nearby areas. Tests verify field observations, verify properties that cannot be estimated accurately by field observation, and help characterize key soils.

The estimates of soil properties shown in the tables include the range of grain-size distribution and Atterberg limits, the engineering classifications, 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 14 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 "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 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. The AASHTO classification for soils tested, with group index numbers in parentheses, is given in table 17.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an ovendry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

The estimates of grain-size distribution, liquid limit, and plasticity index are 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 15 shows estimates of some characteristics and features that affect soil behavior. These estimates are given for the major layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In this table, the estimated clay content of each major soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The amount and kind of clay greatly affect the fertility and physical condition of the soil. They determine the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, permeability, and plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earth-moving operations.

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at 1/3 bar moisture tension. Weight is determined after drying the soil at 105 degrees C. In this table, the estimated moist bulk density of each major soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. A bulk density of more than 1.6 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Permeability refers to the ability of a soil to transmit water or air. The estimates indicate the rate of downward movement of water when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems, septic tank absorption fields, and construction where the rate of water movement under saturated conditions affects behavior.

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 change is based on the soil fraction less than 2 millimeters in diameter. The classes are *low*, a change of less than 3 percent; *moderate*, 3 to 6 percent; and *high*, more than 6 percent. *Very high*, greater 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.

Wind erodibility groups are made up of soils that have similar properties affecting their resistance to wind erosion in cultivated areas. The groups indicate the susceptibility of soil to wind erosion and the amount of

soil lost. Soils are grouped according to the following distinctions:

1. Sands, coarse sands, fine sands, and very fine sands. These soils are generally not suitable for crops. They are extremely erodible, and vegetation is difficult to establish.
2. Loamy sands, loamy fine sands, and loamy very fine sands. These soils are very highly erodible. Crops can be grown if intensive measures to control wind erosion are used.
3. Sandy loams, coarse sandy loams, fine sandy loams, and very fine sandy loams. These soils are highly erodible. Crops can be grown if intensive measures to control wind erosion are used.

4L. Calcareous loamy soils that are less than 35 percent clay and more than 5 percent finely divided calcium carbonate. These soils are erodible. Crops can be grown if intensive measures to control wind erosion are used.

4. Clays, silty clays, clay loams, and silty clay loams that are more than 35 percent clay. These soils are moderately erodible. Crops can be grown if measures to control wind erosion are used.
5. Loamy soils that are less than 18 percent clay and less than 5 percent finely divided calcium carbonate and sandy clay loams and sandy clays that are less than 5 percent finely divided calcium carbonate. These soils are slightly erodible. Crops can be grown if measures to control wind erosion are used.
6. Loamy soils that are 18 to 35 percent clay and less than 5 percent finely divided calcium carbonate, except silty clay loams. These soils are very slightly erodible. Crops can easily be grown.
7. Silty clay loams that are less than 35 percent clay and less than 5 percent finely divided calcium carbonate. These soils are very slightly erodible. Crops can easily be grown.
8. Stony or gravelly soils and other soils not subject to wind erosion.

Organic matter is the plant and animal residue in the soil at various stages of decomposition.

In table 15, 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 of 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 16 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 intake 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.

Dual hydrologic soil groups: in table 16, some soils that have a high water table are assigned to dual hydrologic soil groups, for example, B/D. In this example, under natural conditions the soil fits in hydrologic group D; however, the water table can be artificially lowered so that the soil fits in hydrologic group B. Onsite investigation is necessary to determine the hydrologic group of the soil in a particular area, because there are different degrees of drainage or water table control.

Flooding, the temporary inundation of an area, is caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, nor is water in swamps and marshes.

Table 16 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, common, occasional, and frequent. *None* means that flooding is not probable; *rare* that it is unlikely but possible under unusual weather conditions; *common* that it is likely under normal conditions; *occasional* that it occurs, on the average, no more than once in 2 years; and *frequent* that it occurs, on the average, more than once in 2 years. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, and *long* if more than 7 days. Probable dates are expressed in months;

November-May, for example, means that flooding can occur during the period November through May.

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 absence of distinctive horizons that form in soils that are not subject to flooding.

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 depth to a seasonal high water table applies to undrained soils. The estimates are based mainly on the evidence of a saturated zone, namely grayish colors or mottles in the soil. Indicated in table 16 are the depth to the seasonal high water table; the kind of water table—that is, perched, artesian, 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 16.

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.

Only saturated zones within a depth of about 6 feet are indicated. A plus sign preceding the range in depth indicates that the water table is above the surface of the soil. The first numeral in the range indicates how high the water rises above the surface. The second numeral indicates the depth below the surface.

Subsidence is the settlement of organic soils or of saturated mineral soils of very low density. Subsidence results from either desiccation and shrinkage or oxidation of organic material, or both, following drainage. Subsidence takes place gradually, usually over a period of several years. Table 16 shows the expected initial subsidence, which usually is a result of drainage, and total subsidence, which usually is a result of oxidation.

Not shown in the table is subsidence caused by an imposed surface load or by the withdrawal of ground water throughout an extensive area as a result of lowering the water table.

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 creates a severe corrosion environment. 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.

Engineering Index Test Data

Table 17 shows laboratory test data for several pedons sampled at carefully selected sites in the survey area. The pedons are typical of the series, and, except that of the Orangeburg soil, they are described in the section "Soil Series and Their Morphology." The soil samples were tested by South Carolina Department of Highways and Public Transportation.

The testing methods generally are those of the American Association of State Highway and Transportation Officials (AASHTO) or the American Society for Testing and Materials (ASTM).

The tests and methods are: AASHTO classification—M 145 (AASHTO), D 3282 (ASTM); Unified classification—D 2487 (ASTM); Grain size distribution—T 88 (AASHTO), D 2217 (ASTM); Liquid limit—T 89 (AASHTO), D 423 (ASTM); Plasticity index—T 90 (AASHTO), D 424 (ASTM).

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories (*9*). 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 18 shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

ORDER. Ten 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 river deposit, plus *aquent*, the suborder of the Entisols that have 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. Mostly 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 coarse-loamy, siliceous, 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 substratum 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 (*8*). Many of the technical terms used in the descriptions are defined in Soil Taxonomy (*9*). 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 have moderately thick sandy surface and subsurface layers over a slowly permeable subsoil that is compact, cemented, and slightly brittle. These soils formed in marine terrace deposits on gently sloping to moderately steep uplands. The slopes range from 2 to 25 percent. The soils mapped as Ailey soils are taxadjuncts to the series; they are classified as loamy, siliceous, thermic Arenic Hapludults.

Ailey soils are on the same landscape as Vaucluse, Fuquay, and Dothan soils. Unlike Ailey soils, Vaucluse

soils are sandy to a depth of less than 20 inches, but they have compact subsoil material similar to that of Ailey soils. Dothan soils are sandy to a depth of less than 20 inches and have a subsoil that is 5 percent or more nodules of plinthite. Fuquay soils have a subsoil that is more than 5 percent nodules of plinthite.

Typical pedon of Ailey sand, in an area of Vaucluse-Ailey complex, 6 to 15 percent slopes, 1,900 feet north of U.S. Highway 1, on the northwest side of Aiken, 400 feet northwest of Edisto Avenue and southeast of Lawson Road, in a wooded area:

A—0 to 3 inches; grayish brown (10YR 5/2) sand; weak fine granular structure; loose; many fine and medium roots; strongly acid; clear smooth boundary.

E—3 to 23 inches; very pale brown (10YR 7/4) sand; weak fine granular structure; loose; many medium roots; strongly acid; gradual wavy boundary.

Bt1—23 to 30 inches; brownish yellow (10YR 6/6) sandy clay loam; weak medium subangular blocky structure; friable; few medium roots; strongly acid; abrupt wavy boundary.

Bt2—30 to 50 inches; mottled yellowish red (5YR 4/8) and brownish yellow (10YR 6/8) sandy clay loam; weak coarse subangular blocky structure; firm, compact, and slightly brittle in part; many distinct clay films on faces of peds; few fine roots; few coarse krotovinas; strongly acid; gradual wavy boundary.

Bt3—50 to 72 inches; mottled yellowish red (5YR 4/8) and brownish yellow (10YR 6/8) sandy clay loam; few medium distinct light gray (10YR 7/1) mottles; weak coarse subangular blocky structure; firm, compact, and slightly brittle in part; many faint clay films on faces of peds; few fine pores; strongly acid.

The solum is 60 to 80 inches thick. The soil is very strongly acid or strongly acid in all horizons except the surface layer where lime has been added. A compact and slightly brittle layer is at a depth of 27 to 45 inches.

The Ap or A horizon has hue of 10YR, value of 4 or 5, and chroma of 1 or 2. The E horizon has hue of 10YR, value of 5 to 7, and chroma of 3 to 6. The A and E horizons are sand or loamy sand.

In some pedons there is a BE horizon. It has hue of 7.5YR or 10YR, value of 4 to 7, and chroma of 4 to 8. It is sandy loam.

The upper part of the B horizon has hue of 5YR to 10YR, value of 5 or 6, and chroma of 4 to 8. Mottles in shades of red, yellow, or brown range from none to common. This horizon is sandy loam or sandy clay loam.

The lower part of the Bt horizon has hue of 5YR to 10YR, value of 4 or 5, and chroma of 4 to 8 and have common or many brown, gray, red, and yellow mottles. These horizons are sandy clay loam or sandy loam.

The Ailey soils in this survey area are taxadjuncts because they have a slightly deeper solum than is described for the Ailey series. The difference, however, does not affect the use, management, and behavior of the soils.

Angie Series

The Angie series consists of moderately well drained, slowly permeable soils that formed in marine and river deposits on the Coastal Plain. The slopes are 0 to 2 percent. Angie soils are classified as clayey, mixed, thermic Aquic Paleudults.

Angie soils are on the same general landscape as Bethera soils and are closely associated with Bayboro, Ogeechee, Williman, Ocilla Variant, Dothan, and Marlboro soils. Dothan and Marlboro soils are in higher positions on the landscape and are better drained than Angie soils. Bethera, Bayboro, Ogeechee, and Williman soils are in lower positions on the landscape and are poorly drained. Ocilla Variant soils, unlike Angie soils, have thick sandy surface and subsurface layers.

Typical pedon of Angie fine sandy loam, 0 to 2 percent slopes, approximately 22 miles from Aiken to Jackson Railroad Station, 700 feet north of station, 0.9 mile southwest from railroad track to curve in road, 150 feet west of road, in a wooded area:

Ap—0 to 7 inches; dark grayish brown (10YR 4/2) fine sandy loam; moderate medium granular structure; very friable; many fine and few medium roots; medium acid; abrupt smooth boundary.

AB—7 to 11 inches; yellowish brown (10YR 5/4) fine sandy loam; common medium faint yellowish brown (10YR 5/6) mottles; weak fine subangular blocky structure; friable; common faint clay films on faces of peds; few fine roots; few fine pores; very strongly acid; clear smooth boundary.

Bt1—11 to 17 inches; brownish yellow (10YR 6/6) clay; common medium distinct strong brown (7.5YR 5/6) mottles; moderate fine and medium subangular blocky structure; friable; many faint distinct clay films on faces of peds; few fine roots; few fine and medium pores; few prominent coatings of very fine sand on vertical faces of peds; very strongly acid; gradual wavy boundary.

Bt2—17 to 25 inches; brownish yellow (10YR 6/6) clay; common medium distinct reddish yellow (7.5YR 6/6) and few fine faint very pale brown and reddish yellow mottles; moderate medium subangular blocky structure; friable; many distinct clay films on faces of peds; few medium roots; few medium pores; few coarse krotovinas; very strongly acid; gradual wavy boundary.

Bt3—25 to 34 inches; brownish yellow (10YR 6/6) clay; many medium distinct light gray (10YR 7/2) and common medium prominent yellowish red (5YR 5/6) mottles; moderate medium subangular blocky structure; firm; many distinct clay films on faces of

peds; few fine roots; few fine pores; very strongly acid; gradual wavy boundary.
Bt4—34 to 59 inches; yellowish brown (10YR 5/8) clay; many coarse prominent light gray (10YR 7/2) mottles; weak coarse subangular blocky structure; firm; many faint clay films on faces of peds; few fine roots; very strongly acid; gradual wavy boundary.
Bt5—59 to 74 inches; mottled light gray (10YR 7/1) and gray (10YR 5/1) clay; common coarse distinct very dark gray (10YR 3/1) and few medium prominent yellowish brown (10YR 5/6) mottles; firm; common faint clay films on faces of peds; very strongly acid.

The solum is 60 to 75 inches thick. Reaction is very strongly acid to slightly acid in the A and E horizons and extremely acid to strongly acid in the Bt horizon.

The Ap or A horizon has hue of 10YR or 2.5Y, value of 3 to 6, and chroma of 1 to 4.

In some pedons there is an E horizon. It has hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 3 to 6. It is sandy loam.

The AB horizon has hue of 7.5YR to 2.5Y, value of 4 to 7, and chroma of 3 to 6.

The upper part of the Bt horizon has hue of 10YR or 7.5YR, value of 5 or 6, and chroma of 4 to 8. Mottles that have chroma of 2 or less are within 30 inches of the surface and increase in size and number with depth. The lower part of the Bt horizon has mottles similar in color to the matrix of the upper part. It is mottled in shades of gray at a depth of 45 to 60 inches. The clay content is 35 to 60 percent. Fine flakes of mica range from none to many.

Bayboro Series

The Bayboro series consists of very poorly drained, slowly permeable soils that formed in a mixture of marine and river deposits. The slopes are 0 to 2 percent. Bayboro soils are classified as clayey, mixed, thermic Umbric Paleaquults.

Bayboro soils are on the same landscape as Bethera soils and are closely associated with Angie and Ogeechee soils. Unlike Bayboro soils, Bethera, Angie, and Ogeechee soils do not have an umbric surface layer. Angie soils are better drained than Bayboro soils.

Typical pedon of Bayboro clay loam, about 23 miles southwest of Aiken, 3.1 miles southwest of Jackson along county road, 0.2 mile east of Seaboard Coastline Railroad, north on field road 0.6 mile along drainage ditch, 75 feet west of road, in a cultivated field:

Ap—0 to 8 inches; black (10YR 2/1) clay loam; moderate coarse granular structure; very friable; few fine roots; about 9 percent organic matter; very strongly acid; gradual smooth boundary.
Btg—8 to 65 inches; very dark gray (10YR 3/1) clay; moderate coarse prismatic structure parting to weak coarse subangular blocky; firm; sticky; common fine and few medium roots; about 3 percent organic matter; very strongly acid.

The solum is more than 60 inches thick. It is very strongly acid or strongly acid throughout, except in the surface layer where lime has been added.

The A horizon has hue of 10YR or is neutral; it has value of 2 or 3 and chroma of 0 to 2. It is clay loam or loam.

The Btg horizon has hue of 10YR or is neutral; it has value of 3 to 5 and chroma of 0 to 2. It is clay loam or clay.

Bethera Series

The Bethera series consists of poorly drained, slowly permeable soils that formed in depressions and on low, nearly level stream terraces. Most of the acreage is near the Savannah River. The slopes are less than 2 percent. Bethera soils are classified as clayey, mixed, thermic Typic Paleaquults.

Bethera soils are closely associated with Johnston, Angie, Ogeechee, Chewacla, and Toccoa soils. Johnston, Ogeechee, Chewacla, and Toccoa soils have less clay in the subsoil than Bethera soils have. Also, Johnston soils have a cumulic surface layer. Angie soils are better drained than Bethera soils.

Typical pedon of Bethera clay loam, about 23 miles southwest of Aiken, 5 miles southwest of Jackson, 1.1 miles west of Seaboard Coastline Railroad, 40 feet north of farm road, in an area of hardwood (oak) forest:

A—0 to 5 inches; very dark gray (10YR 3/1) clay loam; weak fine subangular blocky structure; very friable; many fine and medium roots; very strongly acid; clear smooth boundary.
Btg1—5 to 10 inches; gray (10YR 5/1) sandy clay loam; moderate coarse angular blocky structure; friable; slightly plastic, very hard; common faint clay films on faces of peds; few coarse roots; few medium and common fine pores; very strongly acid; gradual smooth boundary.
Btg2—10 to 18 inches; dark gray (N 4/0) clay; few medium prominent yellowish brown (10YR 5/8) mottles; strong coarse angular blocky structure; firm; plastic, very hard; many distinct clay films on faces of peds; few medium roots; common medium pores; very strongly acid; gradual wavy boundary.
Btg3—18 to 64 inches; dark gray (N 4/0) clay; many coarse prominent yellowish brown (10YR 5/6) mottles; weak coarse subangular blocky structure; firm; plastic; many distinct clay films on faces of peds; few fine and medium roots; very strongly acid.

The solum is 60 to more than 80 inches thick. The soil ranges from extremely acid to moderately acid throughout.

The A horizon has hue of 10YR or 2.5Y, or it is neutral; it has value of 2 or 3 and chroma of 0 to 2.

The Btg horizon has hue of 10YR to 5Y, value of 4 to 6, and chroma of 2 or less. It is dominantly clay, sandy clay, or clay loam but the upper few inches may be sandy clay loam.

Bibb Series

The Bibb series consists of moderately permeable, poorly drained soils that formed in sandy sediment on the Coastal Plain. These nearly level soils are on flood plains and in low, wet areas adjacent to small streams. The slopes are less than 2 percent. Bibb soils are classified as coarse-loamy, siliceous, acid, thermic Typic Fluvaquents.

Bibb soils are associated with Vaucluse, Ailey, Ochlockonee, Dothan, Fuquay, Troup, Ogeechee, Williman, Lucy, and Orangeburg soils. All of these soils except Ogeechee and Williman soils are better drained than Bibb soils. Unlike Bibb soils, Ogeechee and Williman soils have a subsoil, and Ochlockonee soils are flooded only occasionally and very briefly. Except for Ochlockonee, Ogeechee, and Williman soils, all of the associated soils are on convex ridges and are higher on the landscape than Bibb soils.

Typical pedon of Bibb loamy sand, about 11 miles west of Aiken, 6 miles west of Graniteville on S.C. Highway 33, 200 feet southeast of S.C. Highway 33, east of Franklin Branch, in a wooded area:

A—0 to 7 inches; dark gray (10YR 4/1) loamy sand; weak fine subangular blocky structure; very friable; common medium and coarse roots; common fine flakes of mica; strongly acid; clear wavy boundary.

C1—7 to 11 inches; light brownish gray (10YR 6/2) sandy loam; few fine distinct yellowish red (5YR 4/8) mottles; weak fine granular structure; very friable; common fine roots; few fine pockets of yellow (10YR 7/6) sand; common fine flakes of mica; strongly acid; abrupt wavy boundary.

C2—11 to 15 inches; very pale brown (10YR 7/4) sand; few fine distinct yellowish red (5YR 4/8) mottles; single grained; loose; few fine roots; few fine flakes of mica; strongly acid; clear wavy boundary.

Cg1—15 to 30 inches; gray (10YR 5/1) sandy loam; few fine distinct yellowish red (5YR 5/8) mottles; weak fine granular structure; very friable; few fine roots; common fine flakes of mica; strongly acid; clear wavy boundary.

Cg2—30 to 36 inches; gray (10YR 5/1) sandy loam; few medium distinct yellowish red (5YR 5/8) mottles; few pockets of very pale brown loamy sand; weak medium subangular blocky structure; very friable; few fine roots; few fine flakes of mica; strongly acid; clear wavy boundary.

Cg3—36 to 42 inches; light gray (10YR 7/2) loamy sand; single grained; loose; few medium and coarse roots; few fine flakes of mica; strongly acid; abrupt wavy boundary.

Cg4—42 to 60 inches; light gray (10YR 7/1) sandy loam; few fine distinct yellowish red (5YR 5/8) mottles; weak medium subangular blocky structure; very friable; few fine roots; few fine flakes of mica; strongly acid.

The soil is very strongly acid or strongly acid throughout.

The A horizon has hue of 10YR, value of 2 to 4, and chroma of 1 or 2.

The C and Cg horizons are stratified layers that have hue of 10YR or 2.5Y, value of 4 to 7, and chroma of 1 or 2. They are dominantly sandy loam, but many pedons have thin layers of loamy sand or sand.

Chewacla Series

The Chewacla series consists of somewhat poorly drained, moderately permeable soils that formed in loamy alluvium on flood plains near the larger creeks and along rivers. These soils are subject to flooding. Chewacla soils are classified as fine-loamy, mixed, thermic Fluvaquentic Dystrochrepts.

Chewacla soils are geographically closely associated with Toccoa, Shellbluff, and Johnston soils. Chewacla soils are better drained than Johnston soils but not so well drained as Toccoa and Shellbluff soils. Toccoa and Shellbluff soils do not have gray mottles within 20 inches of the surface as Chewacla soils do. Johnston soils have a cumulic surface layer and are flooded more frequently than Chewacla soils.

Typical pedon of Chewacla loam, 5 miles southwest of Beech Island, 1.4 miles west of Seaboard Coastline Railroad, 2.8 miles east of Savannah River, 20 feet south of trail:

A—0 to 10 inches; dark brown (10YR 4/3) loam; moderate medium granular structure; friable; many fine and medium roots; common medium and large pores; strongly acid; gradual smooth boundary.

Bw1—10 to 28 inches; brown (10YR 5/3) sandy loam; many medium distinct light gray (10YR 7/2) mottles; weak coarse subangular blocky structure; friable; many fine and medium roots; few fine flakes of mica; common large holes; common fine to coarse pores; moderately acid; gradual irregular boundary.

Bw2—28 to 43 inches; yellowish brown (10YR 5/6) and greenish gray (5GY 5/1) sandy clay loam; many coarse light gray (10YR 7/2) mottles; weak medium subangular blocky structure; friable; common fine roots; common coarse pores; 3 percent medium very dark brown nodules of ironstone; few fine flakes of mica; slightly acid; gradual irregular boundary.

Bg—43 to 65 inches; greenish gray (5GY 5/1) sandy loam; few medium prominent yellowish brown (10YR 5/6) mottles; massive; friable; few coarse pores; few fine flakes of mica; strongly acid.

The solum is 36 to more than 60 inches thick. It is strongly acid to slightly acid throughout, except in the surface layer where lime has been added. Few to common mica flakes are in some horizons of most pedons.

The A horizon has hue of 7.5YR or 10YR, value of 4, and chroma of 2 or 3. Where the A horizon is less than 10 inches thick, the value can be 3.

The upper part of the B horizon has hue of 10YR to 5YR, value of 3 to 5, and chroma of 3 or 4. The lower part of the B horizon has hue of 10YR to 5GY, value of 3 to 5, and chroma of 1 to 6. The B horizon is silty clay loam, clay loam, sandy loam, sandy clay loam, or silt loam. In some pedons there are thin strata of silty clay. Most pedons have gray mottles that increase with depth.

Dasher Series

The Dasher series consists of very poorly drained, moderately rapidly permeable soils on the flood plain of major streams. These soils are nearly level and are in slight depressions, generally near the upland side of the flood plain. The areas are small and irregular in shape. The slopes are less than 2 percent. Dasher soils are classified as dysic, thermic Typic Medihemists.

Dasher soils are on the same general landscape as Johnston, Bibb, and Chewacla soils. Unlike Dasher soils, Johnston, Bibb, and Chewacla soils are mineral soils.

Typical pedon of Dasher mucky peat, about 12 miles north of Aiken; northeast about 5 miles on S.C. Highway 29 from Aiken, north about 6 miles on S.C. Highway 49 to Camp Long, south on S.C. Highway 1527 about 1 mile, east on field road about 1,800 feet to power line; north 2,500 feet along power line, about 100 feet from hill:

Oe1—0 to 6 inches; very dark gray (5YR 3/1) unrubbed and rubbed partly decomposed organic material; about 50 percent fiber unrubbed; about 25 percent fiber rubbed; massive; very friable; extremely acid; gradual wavy boundary.

Oe2—6 to 30 inches; black (5YR 2/1) unrubbed and rubbed partly decomposed organic material; about 40 percent fiber unrubbed; about 25 percent fiber rubbed; massive; very friable; mineral matter about 10 percent; extremely acid; gradual wavy boundary.

Oe3—30 to 50 inches; black (5YR 2/1) unrubbed and rubbed partly decomposed organic material; about 45 percent fiber unrubbed; about 25 percent fiber rubbed; massive; very friable; mineral matter about 5 percent; extremely acid; gradual wavy boundary.

Oe4—50 to 60 inches; black (5YR 2/1) unrubbed and rubbed partly decomposed organic material; about 40 percent fiber unrubbed; about 20 percent fiber rubbed; massive; very friable; mineral matter about 10 percent; extremely acid.

The organic material is more than 51 inches thick. The soil is extremely acid in 0.01M $CaCl_2$ throughout. Some pedons have a thin Oa1 surface horizon of well decomposed organic material.

The Oe1 horizon has hue of 5YR to 10YR, value of 2 or 3, and chroma of 0 to 2. The fiber content is about 35 to 50 percent unrubbed and 18 to 25 percent rubbed. The mineral content ranges from 2 to 5 percent.

The Oe2, Oe3 and Oe4 horizons have hue of 5YR to 10YR, value of 2 or 3, and chroma of 0 to 3. The fiber content is about 35 to 50 percent unrubbed and 18 to 25 percent rubbed. The mineral content averages about 5 percent in the Oe2 horizon and increases to as much as 15 percent in the Oe3 and Oe4 horizons.

Dothan Series

The Dothan series consists of well drained, moderately slowly permeable soils that formed in thick beds of unconsolidated sands and clays. These nearly level to sloping soils are on uplands on the Coastal Plain. The slopes range from 0 to 10 percent. Dothan soils are classified as fine-loamy, siliceous, thermic Plinthic Paleudults.

Dothan soils are associated with Ailey, Troup, Faceville, Fuquay, Rembert, Orangeburg, Marlboro, and Vaucluse soils. Unlike Dothan soils, Ailey and Vaucluse soils have a firm, compact, slightly brittle layer in the subsoil. Rembert soils, which are in depressions, are poorly drained. Ailey and Fuquay soils are sandy to a depth of 20 to 40 inches. Troup soils are sandy to a depth of 40 inches or more. Faceville, Rembert, and Marlboro soils are clayey in the control section. Faceville, Marlboro, and Orangeburg soils do not have percent nodules of plinthite in any horizon, and they have a Bt horizon that has hue of 5YR or is redder.

Typical pedon of Dothan loamy sand, 0 to 2 percent slopes, about 6 miles south of Aiken, 0.3 miles south of the junction of S.C. Highway 81 and 302, 600 feet west of S.C. Highway 302, 50 feet north of field road, in a cultivated field:

Ap—0 to 8 inches; grayish brown (10YR 5/2) loamy sand; moderate medium granular structure; very friable; few fine roots; few nodules of ironstone; strongly acid; abrupt smooth boundary.

E—8 to 11 inches; light yellowish brown (10YR 6/4) sand; single grained; loose; few fine roots; strongly acid; clear wavy boundary.

Bt1—11 to 14 inches; yellowish brown (10YR 5/6) sandy loam; moderate medium subangular blocky structure; friable; many faint clay films on faces of

peds; few fine roots; very strongly acid; clear wavy boundary.

Bt2—14 to 31 inches; strong brown (7.5YR 5/8) sandy clay loam; few medium distinct yellowish red (5YR 5/6) mottles; moderate medium subangular blocky structure; friable; many faint clay films on faces of peds; about 1 percent nodules of plinthite; about 1 percent nodules of ironstone; very strongly acid; gradual wavy boundary.

Btv1—31 to 44 inches; reddish yellow (7.5YR 6/6) sandy clay loam; few medium distinct pale brown (10YR 6/3) and few medium distinct yellowish red (5YR 5/6) mottles; moderate medium subangular blocky structure; friable; many faint clay films on faces of peds; about 9 percent nodules of plinthite; about 2 percent nodules of ironstone; very strongly acid; gradual wavy boundary.

Btv2—44 to 56 inches; mottled reddish yellow (7.5YR 6/6) and yellowish red (5YR 5/6) sandy clay loam; common medium distinct pale brown (10YR 6/3) mottles; weak medium subangular blocky structure; friable; about 5 percent nodules of plinthite; very strongly acid; gradual wavy boundary.

B't—56 to 65 inches; red (2.5YR 4/6) sandy clay loam; common coarse distinct brownish yellow (10YR 6/6) and few medium distinct pale brown (10YR 6/3) mottles; weak coarse subangular blocky structure; friable; many faint clay films on faces of peds; strongly acid.

The solum is 60 to more than 80 inches thick. It is very strongly acid or strongly acid throughout, except where the soil has been limed. The depth to horizons that are more than 5 percent nodules of plinthite ranges from 28 to 50 inches. The content of nodules of ironstone in the A horizon and the upper part of the Bt horizon ranges from 0 to 5 percent.

The Ap or A horizon has hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 2 to 4.

The E horizon has hue of 10YR or 2.5Y, value of 6 or 7, and chroma of 3 or 4. In some pedons there is no E horizon.

The upper part of the B horizon has hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 6 or 8. In some pedons it has red, yellow, or brown mottles. The lower part of the B horizon has hue of 2.5YR to 7.5YR, value of 4 to 6, and chroma of 6 or 8. Mottles of strong brown, red, and yellowish red are common. Gray mottles are in the lower part of the B horizon in some pedons. Below a depth of about 28 inches, the content of plinthite ranges from 5 to 15 percent by volume.

Eunola Series

The Eunola series consists of moderately well drained, moderately permeable soils that formed in loamy marine sediment on the Coastal Plain. The slopes are 0 to 2 percent. Eunola soils are classified as fine-loamy, siliceous, thermic Aquic Hapludults.

Eunola soils are on the same general landscape with Williman, Ocilla Variant, Ogeechee, and Dothan soils. Williman and Ogeechee soils are not so well drained as Eunola soils. Ocilla Variant soils are sandy to a depth of 20 to 40 inches. Dothan soils are well drained.

Typical pedon of Eunola loamy sand, 17 miles southwest of Aiken on S.C. Highway 302 and S.C. Highway 32 to Seaboard Coastline Railroad, 0.5 mile northwest along railroad from S.C. Highway 32, in a cultivated field:

Ap—0 to 8 inches; dark gray (10YR 4/1) loamy sand; weak fine granular structure; very friable; common fine roots; very strongly acid; abrupt smooth boundary.

E—8 to 15 inches; very pale brown (10YR 7/3) loamy sand; weak fine granular structure; very friable; few fine roots; many coarse sand grains; strongly acid; clear wavy boundary.

Bt1—15 to 20 inches; light yellowish brown (10YR 6/4) sandy clay loam; few fine distinct brownish yellow and few medium distinct light gray (N 7/0) mottles; weak fine subangular blocky structure; friable; common faint clay films on faces of peds; few fine roots; common coarse sand grains; very strongly acid; clear wavy boundary.

Bt2—20 to 30 inches; reddish yellow (7.5YR 6/6) sandy clay loam; many coarse prominent light gray (10YR 6/1) and common medium distinct red (2.5YR 4/6) mottles; moderate fine subangular blocky structure; friable; many distinct clay films on faces of peds; common medium pores; common clean sand grains; very strongly acid; gradual wavy boundary.

Bt3—30 to 55 inches; coarsely mottled strong brown (7.5YR 5/8) and light brownish gray (2.5Y 6/2) sandy clay; weak medium subangular blocky structure; strong brown part is firm, light brownish gray part is friable; many distinct clay films on faces of peds; few fine pores in strong brown peds; many clean sand grains; very strongly acid; gradual wavy boundary.

BC—55 to 70 inches; brownish yellow (10YR 6/8) sandy loam; common medium distinct light gray (10YR 7/1) mottles; moderate medium subangular blocky structure; friable; common faint clay films on faces of peds; about 2 percent of mass is brittle; strongly acid.

The solum is 60 to more than 70 inches thick. Reaction is very strongly acid or strongly acid, except in the surface layer in areas where lime has been applied.

The Ap or A horizon has hue of 10YR, value of 4, and chroma of 1 to 3.

The E horizon has hue of 10YR, value of 4 to 7, and chroma of 3 or 4.

The Bt horizon commonly is sandy clay loam but ranges to sandy loam in some pedons. The content of silt is 5 to 20 percent. The Bt horizon commonly has hue of 10YR but ranges to 7.5YR and to 2.5Y in some pedons. It has value of 4 to 7 and chroma of 1 to 8; if the hue is 10YR, the value is 5 or higher. It has mottles that have chroma of 2 or less below a depth ranging from 15 to 30 inches.

The BC horizon has colors similar to those of the lower part of the Bt horizon.

Faceville Series

The Faceville series consists of well drained, moderately permeable soils that formed in clayey deposits on the Coastal Plain. These soils are on broad ridgetops and the adjacent side slopes. The slopes range from 0 to 10 percent. Faceville soils are classified as clayey, kaolinitic, thermic Typic Paleudults.

Faceville soils are on the same landscape with Dothan, Greenville, Orangeburg, and Vaucluse soils. Unlike Faceville soils, Dothan soils have a subsoil that is more than 5 percent nodules of plinthite. Orangeburg and Vaucluse soils have a sandy clay loam subsoil; in addition, Vaucluse soils are firm, compact, and slightly brittle in the lower part of the subsoil. Greenville soils have a dark red subsoil.

Typical pedon of Faceville sandy loam, 2 to 6 percent slopes, 2.6 miles south of Aiken on S.C. Highway 19, 1.9 miles east on S.C. Highway 302, 1.0 mile south on S.C. Highway 79 to intersection with S.C. Highway 1163, 0.5 mile northeast of intersection, in a cultivated field:

Ap—0 to 6 inches; brown (7.5YR 4/4) sandy loam; moderate medium granular structure; very friable; common fine and medium roots; 3 percent nodules of ironstone; strongly acid; abrupt wavy boundary.

Bt1—6 to 16 inches; yellowish red (5YR 4/6) clay; few fine and medium distinct red (2.5YR 4/6) mottles; moderate medium subangular blocky structure; friable; sticky; many faint clay films on faces of peds; common fine roots; few nodules of ironstone; moderately acid; clear smooth boundary.

Bt2—16 to 21 inches; red (2.5YR 4/6) clay; many medium and coarse distinct yellowish brown (10YR 5/6) mottles; coarse mottles are in vertical streaks 0.1 to 0.5 inch wide; moderate medium subangular blocky structure; friable; many distinct clay films on faces of peds; few fine roots; few medium nodules of ironstone; moderately acid; clear wavy boundary.

Bt3—21 to 41 inches; red (2.5YR 4/6) clay; common coarse distinct yellowish brown (10YR 5/6) mottles in vertical streaks 0.1 to 0.5 inch wide; moderate medium subangular blocky structure; friable; many faint clay films on faces of peds; few fine roots; few fine nodules of ironstone; moderately acid; gradual wavy boundary.

Bt4—41 to 75 inches; red (10YR 4/6) clay; few fine distinct yellowish red mottles; weak coarse subangular blocky structure; firm; common faint clay films on faces of peds; few fine nodules of ironstone; strongly acid.

The solum is 65 to more than 75 inches thick. The soil is very strongly acid to moderately acid throughout, except in the surface layer in areas where lime has been added.

The A horizon has hue of 5YR to 10YR, value of 4 or 5, and chroma of 2 to 4.

The Bt horizon has hue of 10R to 5YR, value of 4 or 5, and chroma of 4 to 8. It is clay, clay loam, or sandy clay. There are common to many medium or coarse mottles in shades of brown or red in the lower part. The content of nodules of ironstone ranges from 1 to 4 percent.

Foxworth Series

The Foxworth series consists of well drained soils that formed in sandy marine sediment. The slopes range from 0 to 6 percent. Foxworth soils are classified as thermic, coated Typic Quartzipsamments.

Foxworth soils are closely associated with Fuquay, Johnston, Troup, and Lakeland soils. Unlike Foxworth soils, Lakeland soils do not have evidence of a water table within 80 inches of the surface. Johnston soils are very poorly drained. Fuquay and Troup soils have a loamy subsoil.

Typical pedon of Foxworth sand, 0 to 6 percent slopes, 16 miles east of Aiken, from the entrance to Aiken State Park on S.C. Highway 53 east about 0.7 mile to lake, about 1,200 feet south of dam, in a wooded area:

A—0 to 4 inches; dark grayish brown (10YR 4/2) sand; weak medium granular structure; very friable; many fine and medium roots; strongly acid; clear wavy boundary.

C1—4 to 10 inches; yellowish brown (10YR 5/4) sand; single grained; loose; few fine roots; strongly acid; clear wavy boundary.

C2—10 to 37 inches; yellowish brown (10YR 5/8) sand; single grained; loose; few fine roots; strongly acid; gradual wavy boundary.

C3—37 to 47 inches; yellowish brown (10YR 5/6) sand; single grained; loose; common fine and medium roots; strongly acid; gradual wavy boundary.

C4—47 to 62 inches; light gray (10YR 7/2) sand; common fine prominent strong brown (7.5YR 5/6) mottles; single grained; loose; many uncoated sand grains; few fine and medium roots; strongly acid; gradual wavy boundary.

C5—62 to 80 inches; light gray (10YR 7/2) sand; single grained; loose; many uncoated sand grains; few coarse sand grains; strongly acid.

The sand is more than 80 inches thick. The soil is very strongly acid to moderately acid throughout except in the surface layer where lime has been added.

The A horizon has hue of 10YR, value of 3 to 5, and chroma of 1 to 3.

The C1, C2, and C3 horizons have hue of 10YR, value of 5 to 7, and chroma of 3 to 8. The C4 and C5 horizons have hue of 10YR, value of 6 to 8, and chroma of 1 to 4. Below a depth of about 45 inches there are few to many uncoated sand grains.

Fuquay Series

The Fuquay series consists of well drained soils that formed in loamy marine sediment on the Coastal Plain. These soils are on broad ridges and the adjoining side slopes. The slopes range from 0 to 15 percent. Fuquay soils are classified as loamy, siliceous, thermic Arenic Plinthic Paleudults.

Fuquay soils are on the same landscape as Dothan, Marlboro, Troup, and Lakeland soils. Unlike Fuquay soils, Dothan and Marlboro soils have less than 20 inches of sand or loamy sand above the subsoil. Troup and Lakeland soils are sandy to a depth of more than 40 inches and do not have soil material that restricts roots or the movement of water.

Typical pedon of Fuquay sand, 2 to 6 percent slopes, 7 miles south of Aiken on S.C. Highway 19, 1.8 miles southwest on S.C. Highway 816, 250 feet east on private farm road, 100 feet north of road, in a cultivated area:

Ap—0 to 8 inches; grayish brown (10YR 5/2) sand; weak fine granular structure; very friable; common fine roots; few fine nodules of ironstone; slightly acid; abrupt wavy boundary.

E1—8 to 22 inches; pale yellow (2.5Y 7/4) loamy sand; weak fine granular structure; very friable; few fine nodules of ironstone; neutral; clear wavy boundary.

E2—22 to 26 inches; light yellowish brown (10YR 6/4) loamy sand; weak fine granular structure; very friable; neutral; clear wavy boundary.

Bt—26 to 35 inches; brownish yellow (10YR 6/6) sandy loam; few medium distinct reddish yellow (5YR 6/6) mottles; moderate medium subangular blocky structure; friable; many faint clay films on faces of peds; about 2 percent nodules of plinthite; few nodules of ironstone; slightly acid; gradual wavy boundary.

Btv1—35 to 55 inches; brownish yellow (10YR 6/6) sandy clay loam; common medium faint strong brown (10YR 5/8) mottles around red (2.5YR 4/6) centers and common medium distinct very pale brown (10YR 7/3) mottles; weak medium subangular blocky structure; friable with 30 percent of the mass cemented and brittle; common distinct clay films on faces of peds; few fine pores; about 18 percent nodules of plinthite; strongly acid; gradual wavy boundary.

Btv2—55 to 70 inches; brownish yellow (10YR 6/6) sandy clay loam; many coarse distinct strong brown (7.5YR 5/8) and yellowish brown (10YR 5/6) and common medium distinct light gray (10YR 7/2) mottles; weak coarse subangular blocky structure; firm with 35 percent of the mass cemented and brittle; common faint clay films on vertical faces of peds; about 10 percent nodules of plinthite; very strongly acid.

The solum is more than 60 inches thick. It is very strongly acid to moderately acid throughout except in the surface layer where lime has been added.

The Ap or A horizon has hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 2 or 3.

The E horizon has hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 3 to 6. It is sand or loamy sand.

The B horizon has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 4 or 6. There are many or common medium or coarse mottles in shades of brown, red, and gray in the lower part. The B horizon is dominantly sandy clay loam but ranges to sandy loam.

Greenville Series

The Greenville series consists of well drained, moderately permeable soils that formed in clayey sediment on the Coastal Plain. The soils are on broad ridges and the accompanying side slopes. The slopes range from 0 to 10 percent. Greenville soils are classified as clayey, kaolinitic, thermic Rhodic Paleudults.

Greenville soils are on the same landscape with Hiwassee, Faceville, Orangeburg, Lucy, Vaucluse, Ailey, Dothan, and Marlboro soils. Unlike Greenville soils, Orangeburg, Dothan, and Vaucluse soils have a sandy clay loam subsoil; Faceville soils have a red subsoil; and Marlboro soils have a yellowish brown subsoil. Lucy and Ailey soils are sandy to a depth of 20 to 40 inches. Hiwassee soils are loam, sandy loam, or sandy clay loam in the lower part of the subsoil.

Typical pedon of Greenville sandy loam, 2 to 6 percent slopes, about 11 miles southwest of Aiken; 3 miles south from Aiken on S.C. Highway 19, 5 miles mostly west on S.C. Highway 87, about 4 miles mostly south on S.C. Highway 65, 1.5 miles west and south on S.C. Highway 781, 0.3 mile east on farm road near powerline, 200 feet north of road, under powerline:

Ap—0 to 7 inches; dark reddish brown (5YR 3/4) sandy loam; weak fine granular structure; very friable; many fine roots; moderately acid; abrupt smooth boundary.

AB—7 to 12 inches; yellowish red (5YR 5/6) sandy loam; weak fine granular structure; very friable; moderately acid; clear smooth boundary.
Bt—12 to 60 inches; dark red (2.5YR 3/6) sandy clay; moderate medium subangular blocky structure; friable and sticky; common faint clay films on faces of peds; few fine roots; common coarse sand grains; moderately acid.

The solum is 60 inches or more thick. Reaction ranges from very strongly acid to moderately acid, except in the surface layer where lime has been added.

The Ap or A horizon has hue of 2.5YR or 5YR, value of 3 or 4, and chroma of 2 or 4.

The AB horizon has hue of 2.5YR or 5YR, value of 4 or 5, and chroma of 4 or 6.

The Bt horizon has hue of 10R or 2.5YR, value of 3, and chroma of 4 or 6.

Gundy Series

The Gundy series consists of well drained, moderately permeable soils that formed in residuum of slatelike rock. The slopes range from 10 to 25 percent. Gundy soils are classified as fine, mixed, thermic Ultic Hapludalfs.

Gundy soils are on the same landscape as Hiwassee soils and are closely associated with Wateree and Vaucluse soils. Hiwassee soils are deeper than Gundy soils and have fewer rock fragments in the surface layer and subsoil; unlike Gundy soils, they have a dark red subsoil. Wateree soils are on steeper slopes, and they have a more weakly developed subsoil than that of Gundy soils. Vaucluse soils are relatively free of rocks; have more sand throughout than Gundy soils; and have a dense, slightly brittle layer in the subsoil.

Typical pedon of Gundy loam, 10 to 25 percent slopes, about 18 miles west of Aiken, about 0.4 mile east of the Savannah River, 0.5 mile west of S.C. Highway 230, 200 feet north of frontage road, in a wooded area:

A—0 to 3 inches; reddish brown (5YR 4/4) loam; weak medium granular structure; very friable; many fine and medium roots; few pebbles of quartz; few fragments of rock; moderately acid; abrupt smooth boundary.
Bt1—3 to 7 inches; yellowish red (5YR 4/6) clay loam; moderate medium subangular blocky structure; friable; many faint clay films on faces of peds; common fine roots; few pebbles of quartz; about 10 percent fragments of slate; strongly acid; clear wavy boundary.
Bt2—7 to 26 inches; red (2.5YR 4/8) clay loam; moderate medium subangular blocky structure; friable; many distinct clay films on faces of peds; few fine roots; about 15 percent fragments of slate; strongly acid; gradual wavy boundary.
C1—26 to 38 inches; reddish yellow (7.5YR 7/6) slaty loam; veins of dark red (2.5YR 3/6) clay loam between the fragments of soft slate rock; about 80 percent, by volume, weathered (disintegrated) rock; massive; friable; strongly acid; gradual irregular boundary.
C2—38 to 54 inches; yellowish brown (10YR 5/4) slaty silt loam; seams 2 to 6 inches across of grayish brown (2.5Y 5/2) clay; many fine olive, brown, and light yellowish brown mottles; about 80 percent, by volume, weathered rock; massive; friable; clay in seams is firm and plastic; moderately acid; clear irregular boundary.
Cr—54 to 60 inches; yellowish brown (10YR 5/4) slate rock material that crushes to very slaty silt loam; massive; very firm; moderately acid.

The solum is 20 to 40 inches thick. The depth to soft bedrock ranges from 40 to 60 inches. The soil is strongly acid to slightly acid throughout. Fragments of rock range from 10 to 30 percent, by volume, in the A horizon and from 10 to 15 percent in the Bt horizon.

The A horizon has hue of 5YR to 10YR, value of 4 to 6, and chroma of 2 to 4.

The Bt horizon has hue of 2.5YR to 10YR, value of 4 to 6, and chroma of 3 to 8. It is clay loam but ranges to clay in some pedons.

The C horizon has hue of 5YR to 10YR, value of 4 to 7, and chroma of 3 to 8. It is slaty loam or slaty silt loam. Fragments of rock, which ordinarily can be cut with a spade, make up 40 to 60 percent of the volume.

The Cr horizon is soft slaty bedrock that crushes to slaty or very slaty loam or slaty or very slaty silt loam.

Hiwassee Series

The Hiwassee series consists of well drained, moderately permeable Piedmont soils. The soils are in the northwest corner of Aiken County near the Savannah River. The slopes range from 6 to 25 percent. Hiwassee soils are classified as clayey, kaolinitic, thermic Typic Rhodudults.

Hiwassee soils are on the same general landscape as Gundy, Vaucluse, and Ailey soils. They are adjacent to Orangeburg, Fuquay, and Troup soils on the less sloping broad ridgetops and to Wateree soils on the steep or very steep slopes adjacent to major drainageways. Unlike Hiwassee soils, all of the associated soils do not have a dark red subsoil. In addition, Gundy and Wateree soils are not so deep as Hiwassee soils. Vaucluse and Ailey soils have a firm, brittle layer in the subsoil. Fuquay, Ailey, and Troup soils are sandy to a depth of more than 20 inches. Orangeburg soils have a red sandy clay loam subsoil that is less than 35 percent clay.

Typical pedon of Hiwassee sandy loam, 6 to 10 percent slopes, 2 miles north of North Augusta, 1 mile south-southwest of S.C. Highway 230, about 0.5 mile

southeast of Welcome Center on Interstate 20, 0.6 mile east of Savannah River, in a stand of pines:

Ap—0 to 4 inches; dusky red (2.5YR 3/2) sandy loam; moderate medium granular structure; friable; many fine and medium roots; very strongly acid; clear smooth boundary.
Bt1—4 to 7 inches; dark red (10R 3/6) clay loam; weak fine subangular blocky structure; friable; many faint clay films on faces of peds; few fine roots; very strongly acid; clear smooth boundary.
Bt2—7 to 35 inches; dark red (10R 3/6) clay; moderate medium subangular blocky structure; friable; many faint clay films on faces of peds; common medium roots; very strongly acid; gradual wavy boundary.
Bt3—35 to 45 inches; dark red (10R 3/6) clay loam; weak medium subangular blocky structure; friable; common faint clay films on faces of peds; very strongly acid; gradual smooth boundary.
BC—45 to 65 inches; dark red (2.5YR 3/6) sandy loam; weak coarse subangular blocky structure; friable; few small pebbles of quartz; very strongly acid.

The solum is 40 to more than 60 inches thick. Reaction ranges from very strongly acid to slightly acid, except in the surface layer where lime has been added.

The A horizon has hue of 5YR to 10R, value of 3 to 6, and chroma of 2 to 6.

The Bt horizon has hue of 10R or 2.5R, value of 3, and chroma of 3 to 6 to a depth of 40 inches. Below this depth, value ranges to 4. The Bt horizon is sandy clay, clay, or clay loam.

In some pedons there is a C horizon. The BC and C horizons have hue of 10R to 5YR, value of 3 to 6, and chroma of 3 to 8. They are sandy loam, sandy clay loam, or clay loam.

Johnston Series

The Johnston series consists of very poorly drained, nearly level soils on flood plains on the Coastal Plain. The slopes are less than 2 percent. Johnston soils are classified as coarse-loamy, siliceous, acid, thermic Cumulic Humaquepts.

Johnston soils are closely associated with Bibb soils. Bibb soils are poorly drained, and they have less organic matter in the surface horizon than Johnston soils and have less silt and clay in the underlying horizons.

Typical pedon of Johnston mucky loam, 8 miles west of Aiken on U.S. Highway 1, 100 feet south of highway, in a low, wet area:

A1—0 to 19 inches; black (10YR 2/1) mucky loam; massive; many fine and medium roots; about 10 percent organic material; very strongly acid; gradual smooth boundary.
A2—19 to 34 inches; black (10YR 2/1) loamy sand; massive; friable; common fine and medium roots; less than 5 percent fibrous material; very strongly acid; gradual smooth boundary.
Cg—34 to 60 inches; light gray (10YR 6/1) sandy loam; massive; friable; strongly acid.

The soil is very strongly acid or strongly acid throughout.

The A horizon is about 8 to 18 percent organic matter. It has hue of 10YR or 2.5Y, or it is neutral; it has value of 2 or 3 and chroma of 0 to 2.

In some pedons there is an AC horizon. It has about the same color range as that of the A horizon. It is sandy loam or loamy sand.

The Cg horizon has hue of 10YR or 2.5Y, or it is neutral; it has value of 5 or 6 and chroma of 0 to 2. The Cg horizon is fine sandy loam, sandy loam, loamy sand, or sand, but some pedons have thin strata (1/2 inch to 2 inches thick) of loam, sandy clay loam, sandy clay, or clay loam.

Lakeland Series

The Lakeland series consists of excessively drained, rapidly permeable soils that formed in marine sediment on the Coastal Plain. The soils are on ridgetops and the adjacent side slopes. The slopes range from 0 to 25 percent. Lakeland soils are classified as thermic, coated Typic Quartzipsamments.

Lakeland soils are on the same landscape with Troup, Fuquay, and Lucy soils, all of which, unlike Lakeland soils, have a loamy subsoil.

Typical pedon of Lakeland sand, 0 to 6 percent slopes, about 6 miles southeast of Aiken on S.C. Highway 79 (Banks Mill Road), about 800 feet northwest of junction of S.C. Highways 729 and 79 and 105 feet west of S.C. Highway 79:

A1—0 to 3 inches; dark gray (10YR 4/1) sand; weak fine granular structure; very friable; many fine roots; strongly acid; clear wavy boundary.
A2—3 to 8 inches; grayish brown (10YR 5/2) sand; weak fine granular structure; very friable; many fine roots; strongly acid; clear smooth boundary.
C1—8 to 36 inches; yellow (10YR 7/6) sand; single grained; loose; common fine and medium roots; strongly acid; diffuse smooth boundary.
C2—36 to 66 inches; brownish yellow (10YR 6/8) sand; very few fine pockets of clean sand grains; single grained; loose; few fine and medium roots; strongly acid; gradual smooth boundary.
C3—66 to 80 inches; reddish yellow (7.5YR 6/8) sand; common medium distinct light gray (10YR 7/1) mottles; single grained; loose; few medium roots; strongly acid.

The sand is more than 80 inches thick. The soil is very strongly acid to moderately acid throughout, except in the surface layer where lime has been applied.

The A horizon has hue of 10YR, value of 3 to 5, and chroma of 1 to 3.

The C horizon has hue of 7.5YR or 10YR, value of 5 to 7, and chroma of 4 to 8. There are few to common mottles in shades of yellow, brown, or gray in the lower part of some pedons.

Lucy Series

The Lucy series consists of well drained, moderately permeable soils that formed in beds of sandy marine sediment. The soils are on fairly high ridgetops and the adjacent side slopes in the Sand Hills and on the Coastal Plain. The slopes range from 0 to 6 percent. Lucy soils are classified as loamy, siliceous, thermic Arenic Paleudults.

Lucy soils are near Orangeburg, Troup, Faceville, and Greenville soils. Unlike Lucy soils, Orangeburg, Faceville, and Greenville soils are sandy to a depth of less than 20 inches, and Troup soils are sandy to a depth of more than 40 inches.

Typical pedon of Lucy sand, 0 to 2 percent slopes, 23 miles north of Aiken on U.S. Highway 1, east on first county road past S.C. Highway 241, about 0.8 mile southeast of drive-in theater, 37 feet southeast of electric line pole number 154, 50 feet north of farm road:

Ap—0 to 9 inches; dark grayish brown (10YR 4/2) sand; weak fine granular structure; very friable; many fine roots; strongly acid; abrupt wavy boundary.

E—9 to 26 inches; very pale brown (10YR 7/4) sand; few medium distinct reddish yellow (7.5YR 6/6) mottles; single grained; very friable; few fine roots; common medium pockets of clean sand grains; strongly acid; clear irregular boundary.

Bt1—26 to 31 inches; strong brown (7.5YR 5/6) sandy loam; weak fine subangular blocky structure; very friable; clay coatings on most sand grains; few fine roots; few pockets of loamy sand; very strongly acid; gradual wavy boundary.

Bt2—31 to 70 inches; yellowish red (5YR 5/6) sandy clay loam; few fine distinct yellowish brown mottles; weak medium subangular blocky structure; friable; common faint clay films on faces of peds; many sand grains coated; few fine roots; common clean sand grains; very strongly acid.

The solum is 60 to more than 80 inches thick. It is very strongly acid or strongly acid, except in the surface layer in areas where lime has been applied.

The Ap or A horizon has hue of 10YR or 7.5YR, value of 3 to 5, and chroma of 2 or 3.

The E horizon is 15 to 35 inches thick and has hue of 10YR or 7.5YR, value of 5 to 7, and chroma of 3 to 6. It is sand or loamy sand.

The Bt horizon has hue of 2.5YR to 7.5YR, value of 4 or 5, and chroma of 6 or 8. It is sandy loam or sandy clay loam.

Marlboro Series

The Marlboro series consists of well drained, moderately permeable soils that formed in thick deposits of clayey marine sediment on the Coastal Plain. The soils are on relatively high, broad ridges. The slopes range from 0 to 6 percent. Marlboro soils are classified as clayey, kaolinitic, thermic Typic Paleudults.

Marlboro soils are on the same landscape as Dothan, Fuquay, Faceville, Orangeburg, and Rembert soils. Dothan, Fuquay, and Orangeburg soils have less clay in the subsoil than Marlboro soils have. Faceville soils, unlike Marlboro soils, are red throughout the subsoil. Rembert soils are poorly drained.

Typical pedon of Marlboro loamy sand, 0 to 2 percent slopes, about 1 mile east of Aiken, 60 feet north of Park Avenue, in a cultivated field:

Ap—0 to 7 inches; dark grayish brown (10YR 4/2) loamy sand; moderate fine granular structure; very friable; few fine roots; few nodules of ironstone; moderately acid; abrupt smooth boundary.

Bt1—7 to 10 inches; yellowish brown (10YR 5/6) sandy clay loam; moderate medium subangular blocky structure; friable; many faint clay films on faces of peds; few fine roots; common fine pores; moderately acid; clear smooth boundary.

Bt2—10 to 37 inches; yellowish brown (10YR 5/6) sandy clay; moderate medium subangular blocky structure; friable; many faint clay films on faces of peds; strongly acid; gradual wavy boundary.

Bt3—37 to 55 inches; brownish yellow (10YR 6/8) sandy clay; common medium prominent red (2.5YR 5/8) and few medium faint pale brown (10YR 6/3) mottles; moderate medium subangular blocky structure; friable; many faint clay films on faces of peds; 3 percent nodules of plinthite; strongly acid; gradual wavy boundary.

Bt4—55 to 70 inches; brownish yellow (10YR 6/8) sandy clay; many medium prominent red (2.5YR 5/8) and few fine faint very pale brown mottles; weak coarse subangular blocky structure; friable; common faint clay films on faces of peds; 3 percent nodules of ironstone and 4 percent nodules of plinthite; very strongly acid.

The solum is 60 to more than 80 inches thick. It is very strongly acid to moderately acid, except in the surface layer where lime has been applied.

The Ap or A horizon has hue of 10YR, value of 4 or 5, and chroma of 2 to 4. Nodules of ironstone make up 0 to 2 percent by volume.

The upper part of the Bt horizon has hue of 10YR or 7.5YR, value of 5 or 6, and chroma of 6 or 8. The lower part of the Bt horizon, below a depth of 35 to 50 inches, has red, very pale brown, brown, or pale brown mottles. Below a depth of 50 inches, some pedons also have light gray mottles. Below a depth of about 35 to 55 inches, some pedons are as much as 4 percent nodules of plinthite and 0 to 3 percent nodules of ironstone.

Ochlockonee Series

The Ochlockonee series consists of well drained, moderately permeable soils that formed in long, narrow valley depressions along the drainageways of intermittent streams. These soils are subject to occasional, very brief flooding. Ochlockonee soils are classified as coarse-loamy, siliceous, acid, thermic Typic Udifluvents.

Bibb soils are in valley depressions, as are Ochlockonee soils; however, Bibb soils are poorly drained and are in slightly lower positions than Ochlockonee soils. Troup, Fuquay, Ailey, and Orangeburg soils are on the side slopes adjacent to Ochlockonee soils. Troup, Fuquay, and Ailey soils are sandy to a depth of more than 20 inches over a sandy clay loam subsoil. Orangeburg soils have a red sandy clay loam subsoil within 20 inches of the surface.

Typical pedon of Ochlockonee sandy loam, from Aiken southeast about 3 miles on U.S. Highway 78, west 0.3 mile on S.C. Highway 302, southeast about 1.3 miles on S.C. Highway 721, east about 0.3 mile on county road, 150 feet northeast of county road, in an area of pine trees and honeysuckle:

Ap—0 to 6 inches; dark brown (7.5YR 4/4) sandy loam; moderate coarse granular structure; friable; many fine and medium roots; strongly acid; gradual wavy boundary.

C1—6 to 10 inches; dark reddish brown (5YR 3/4) sandy loam; weak fine granular structure; very friable; few fine and medium roots; strongly acid; gradual wavy boundary.

C2—10 to 21 inches; reddish brown (5YR 5/4) loamy sand; weak fine granular structure; loose; few fine roots; thin strata of reddish brown (5YR 4/4) clay loam; strongly acid; gradual wavy boundary.

C3—21 to 27 inches; reddish brown (5YR 4/4) clay loam; many coarse distinct dark grayish brown (10YR 4/2) and few medium distinct red (2.5YR 5/8) mottles; weak fine subangular blocky structure; very friable; few fine roots; strongly acid; gradual wavy boundary.

C4—27 to 33 inches; dark brown (10YR 4/3) loamy sand; weak fine granular structure; loose; few fine roots; strongly acid; gradual wavy boundary.

Ab—33 to 38 inches; dark grayish brown (10YR 4/2) sandy loam; few medium distinct strong brown (7.5YR 5/6) mottles; moderate medium granular structure; very friable; few medium roots; strongly acid; clear wavy boundary.

2C1—38 to 45 inches; dark reddish gray (5YR 4/2) loamy sand; weak fine granular structure; loose; strongly acid; diffuse irregular boundary.

2C2—45 to 63 inches; dark brown (7.5YR 4/4) loamy sand; weak fine granular structure; loose; strongly acid.

This soil is very strongly acid or strongly acid, except in the surface layer where lime has been applied.

The Ap or A horizon and the Ab horizon have hue of 7.5YR or 10YR, value of 3 to 6, and chroma of 2 to 4. They are loamy sand or sandy loam that commonly is stratified.

The C horizon has hue of 5YR to 10YR, value of 4 to 6, and chroma of 3 to 6. In the lower part of this horizon, the range of chroma is 2 to 6. In some pedons there are mottles that have chroma of 2 or less below a depth of 20 inches. The C horizon ranges from sand to clay loam. In the 10- to 40-inch control section it averages less than 18 percent clay and more than 15 percent fine sand or coarser sand.

Ocilla Variant

The Ocilla Variant consists of moderately well drained soils that formed in loamy marine sediment on the Coastal Plain. The soils are in nearly level areas and slightly concave depressions. The slopes are less than 2 percent. Ocilla Variant soils are classified as loamy, siliceous, thermic Aquic Arenic Paleudults.

Ocilla Variant soils are on the same general landscape as Eunola, Fuquay, Dothan, Williman, and Ogeechee soils. Fuquay and Dothan soils are better drained than Ocilla Variant soils. Eunola soils are sandy to a depth of less than 20 inches. Williman and Ogeechee soils are not so well drained as Ocilla Variant soils.

Typical pedon of Ocilla Variant loamy sand, 17 miles southwest of Aiken on S.C. Highways 302 and 32 to Seaboard Coastline Railroad, south about 1.6 miles from railroad; northeast for about 0.5 mile, 145 degrees southeast for about 100 feet, in a pine forest, beside a fire lane:

Ap—0 to 7 inches; grayish brown (10YR 5/2) loamy sand; weak fine granular structure; very friable; many fine and common medium roots; very strongly acid; abrupt wavy boundary.

E—7 to 24 inches; very pale brown (10YR 7/4) sand; weak fine granular structure; very friable; common fine roots; very strongly acid; clear smooth boundary.

Bt1—24 to 27 inches; brownish yellow (10YR 6/6) sandy loam; common medium distinct strong brown (7.5YR 5/6) and few medium prominent yellowish red (5YR 5/6) mottles; weak medium subangular blocky

structure; friable; common faint clay films on faces of peds; few fine roots; few fine pores; very strongly acid; clear wavy boundary.

Bt2—27 to 40 inches; brownish yellow (10YR 6/6) sandy loam; few medium distinct light gray (10YR 7/2) and few medium prominent yellowish red (5YR 5/6) mottles; weak medium subangular blocky structure; friable; common faint clay films on faces of peds; few fine roots; few fine pores; very strongly acid; clear wavy boundary.

Bt3—40 to 52 inches; coarsely mottled brownish yellow (10YR 6/6), light yellowish brown (10YR 6/4), light gray (10YR 7/2), and yellowish red (5YR 5/6) sandy clay loam; weak medium subangular blocky structure; friable; common faint clay films on faces of peds; very strongly acid; clear wavy boundary.

Btg1—52 to 58 inches; light gray (5Y 7/1) clay; few medium prominent brownish yellow (10YR 6/6) and few fine prominent reddish brown (5YR 5/4) mottles; moderate coarse subangular blocky structure; firm; very sticky; many distinct clay films on faces of peds; very strongly acid; gradual wavy boundary.

Btg2—58 to 65 inches; gray (N 6/0) clay; few fine prominent red (2.5YR 4/6) and strong brown (7.5YR 5/6) mottles; moderate coarse subangular blocky structure; firm; very sticky; many distinct clay films on faces of peds; very strongly acid.

The solum is 60 to more than 80 inches thick. It is very strongly acid or strongly acid, except in the surface layer where lime has been applied.

The Ap or A horizon has hue of 10YR, value of 5 or 6, 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. It commonly is sand but ranges to loamy sand in some pedons.

The Bt horizon has hue of 10YR, value of 5 or 6, and chroma of 4 to 8 and has mottles in shades of brown, red, yellow, and gray, or it is mottled in these colors. The Bt horizon ranges from sandy loam to sandy clay loam. The Btg horizon, at a depth of 50 inches or more, has hue of 10YR or 5Y or is neutral; it has value of 5 to 7 and chroma of 0 or 1.

Ogeechee Series

The Ogeechee series consists of poorly drained, moderately permeable soils that formed in loamy marine sediment on the Coastal Plain. The soils are in depressions and on nearly level flats on the lower part of the landscape. The slopes range from 0 to 2 percent. Ogeechee soils are classified as fine-loamy, siliceous, thermic Typic Ochraquults.

Ogeechee soils are on the same landscape as Dothan, Marlboro, Fuquay, Williman, Eunola, and Ocilla Variant soils. Dothan, Marlboro, and Fuquay soils are well drained and are in higher positions than Ogeechee soils. Eunola and Ocilla Variant soils are moderately well drained. Unlike Ogeechee soils, Williman soils have thick sandy surface and subsurface layers.

Typical pedon of Ogeechee sandy loam, 17 miles southwest of Aiken on S.C. Highway 302 and S.C. Highway 32 to Seaboard Coastline Railroad; 1.5 miles west on west fork of county road; 250 feet southwest on field road; 60 feet south of field road, in a pine forest:

Ap—0 to 8 inches; dark grayish brown (10YR 4/2) sandy loam; moderate fine granular structure; very friable; common fine and medium roots; very strongly acid; clear wavy boundary.

E—8 to 15 inches; light gray (10YR 7/1) loamy fine sand; weak medium granular structure; very friable; common fine and medium roots; very strongly acid; clear wavy boundary.

Btg1—15 to 19 inches; light gray (10YR 7/1) sandy loam; common fine distinct yellowish brown (10YR 5/6) mottles; moderate medium subangular blocky structure; friable; few fine roots; few fine pores; few coarse sand grains; very strongly acid; clear smooth boundary.

Btg2—19 to 30 inches; gray (10YR 6/1) sandy clay loam; common coarse distinct strong brown (7.5YR 5/6) and few medium prominent red (2.5YR 4/6) mottles; moderate medium subangular blocky structure; friable; many distinct clay films on faces of peds; few fine roots; few fine and medium pores; very strongly acid; clear wavy boundary.

Btg3—30 to 45 inches; light gray (10YR 7/1) sandy clay loam; many coarse distinct strong brown (7.5YR 5/6) and few fine distinct yellowish red (5YR 5/6) mottles; weak coarse subangular blocky structure; friable; many distinct clay films on faces of peds; few fine roots; common fine and medium pores; strongly acid; gradual wavy boundary.

BCg—45 to 65 inches; light gray (10YR 7/1) sandy loam; common fine distinct red (2.5YR 4/6) mottles; weak coarse subangular blocky structure; friable; few medium pores; very strongly acid.

The solum is more than 60 inches thick. It is very strongly acid or strongly acid, except in the surface layer in areas where lime has been added.

The Ap or A horizon has hue of 10YR or 2.5Y, 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 1 or 2.

The Btg horizon has hue of 10YR or 2.5Y or is neutral; it has value of 4 to 7 and chroma of 0 to 2. It has few to many mottles in shades of yellow, brown, or red. It is dominantly sandy clay loam but ranges to sandy loam.

The BCg horizon has hue of 10YR or 2.5Y, value of 4 to 7, and chroma of 0 to 2. It is sandy loam, but some pedons have strata of sand and clay at a depth below 45 inches.

Orangeburg Series

The Orangeburg series consists of well drained, moderately permeable soils that formed in loamy marine sediment on the Coastal Plain. The soils are on broad ridgetops and fairly long side slopes. The slopes range from 0 to 10 percent. Orangeburg soils are classified as fine-loamy, siliceous, thermic Typic Paleudults.

Orangeburg soils are on the same landscape as Faceville, Dothan, Vaucluse, Fuquay, Troup, and Ailey soils. Unlike Orangeburg soils, Fuquay, Troup, and Ailey soils have thick sandy surface and subsurface layers. Faceville soils have more clay in the subsoil than Orangeburg soils have. Dothan and Fuquay soils have a subsoil that is more than 5 percent nodules of plinthite, and Vaucluse soils have a dense, brittle subsoil.

Typical pedon of Orangeburg loamy sand, 0 to 2 percent slopes, about 14 miles west of Aiken; from Graniteville, 6 miles west on S.C. Highway 33 to 1.0 mile beyond intersection with S.C. Highway 254; 300 yards north of S.C. Highway 33, in a pasture:

Ap—0 to 6 inches; very dark grayish brown (10YR 3/2) loamy sand; few medium distinct yellowish red (5YR 4/8) mottles; weak fine granular structure; very friable; common fine roots; moderately acid; abrupt smooth boundary.

Bt1—6 to 15 inches; yellowish red (5YR 4/6) sandy clay loam; weak medium subangular blocky structure; friable; slightly sticky; few faint clay films on faces of peds; common fine roots; few fine and medium pores; strongly acid; gradual wavy boundary.

Bt2—15 to 20 inches; yellowish red (5YR 4/8) sandy clay loam; weak medium subangular blocky structure; friable; slightly sticky; common faint clay films on faces of peds; common fine and medium roots; common fine pores; strongly acid; gradual wavy boundary.

Bt3—20 to 24 inches; red (2.5YR 5/6) sandy clay loam; weak medium subangular blocky structure; friable; slightly sticky; common faint clay films on faces of peds; common fine roots; common fine pores; strongly acid; gradual wavy boundary.

Bt4—24 to 34 inches; red (2.5YR 4/8) sandy clay; weak medium subangular blocky structure; friable; sticky; common distinct clay films on faces of peds; few fine roots; few fine pores; strongly acid; gradual wavy boundary.

Bt5—34 to 60 inches; red (2.5YR 4/6) sandy clay; weak medium subangular blocky structure; friable; common faint clay films on faces of peds; very strongly acid.

The solum is 60 to more than 80 inches thick. It is very strongly acid or strongly acid throughout, except in the surface layer in areas where lime has been added.

The A or Ap horizon has hue of 10YR, value of 3 or 4, and chroma of 2 to 4; or it has hue of 7.5YR, value of 4, and chroma of 2. It is dominantly loamy sand but ranges to sandy loam.

In some pedons there is an AB horizon. It has hue of 5YR or 7.5YR, value of 4 or 5, and chroma of 4 or 6.

The Bt horizon has hue of 2.5YR or 5YR, value of 4 or 5, and chroma of 6 or 8. It commonly is sandy clay loam and ranges to sandy loam and to sandy clay in the lower part. There are few to common mottles in shades of brown in the lower part of the horizon in some pedons.

Pacolet Series

The Pacolet series consists of well drained, moderately permeable soils that formed in residuum of weathered granite, gneiss, or schist on the Piedmont. The soils are near the headwaters of South Fork Edisto River and along Chinquapin Creek. The slopes range from 2 to 25 percent. Pacolet soils are classified as clayey, kaolinitic, thermic Typic Hapludults.

Pacolet soils are on the same landscape as Fuquay, Vaucluse, Ailey, and Dothan soils. All of the associated soils formed in sandy or loamy marine sediment of the Coastal Plain. All have more sand in the profile than Pacolet soils have. Unlike Pacolet soils, Vaucluse and Ailey soils have a dense, slightly brittle layer in the subsoil. Dothan and Fuquay soils have horizons in the subsoil that are more than 5 percent nodules of plinthite.

Typical pedon of Pacolet sandy loam, 6 to 15 percent slopes, about 11 miles north of Aiken on U.S. Highway 1 to S.C. Highway 1725, about 2 miles north on county road, west on first county road (0.4 mile west of Edisto River), 500 feet northwest from old house site on hill at curve in road, in a cultivated field:

Ap—0 to 4 inches; reddish brown (5YR 4/4) sandy loam; moderate medium granular structure; friable; common fine roots; few (less than 1 percent) angular pebbles of quartz; strongly acid; abrupt smooth boundary.

Bt1—4 to 14 inches; red (2.5YR 4/6) clay loam; common fine distinct reddish yellow (7.5YR 6/6) mottles of highly weathered feldspar particles; moderate medium subangular blocky structure; few pebbles of quartz; many distinct clay films on faces of peds; few fine roots; few medium pores; moderately acid; gradual wavy boundary.

Bt2—14 to 24 inches; red (2.5YR 4/6) clay loam; common fine distinct reddish yellow (7.5YR 6/6) mottles; moderate medium subangular blocky structure; friable; many faint clay films on faces of peds; few fine roots; few fine pores; few very fine flakes of mica; strongly acid; gradual wavy boundary.

BC—24 to 38 inches; reddish yellow (5YR 6/6) sandy clay loam; strong thick and very thick platy structure; friable; common faint coatings of dark red material on most horizontal fracture planes; few fine roots

along fracture planes; few very fine flakes of mica; strongly acid; clear wavy boundary.
C—38 to 60 inches; yellowish red (5YR 5/6) sandy loam; many fine faint yellowish red (5YR 4/8) mottles; massive; friable; few fine flakes of mica; strongly acid.

The clayey part of the Bt horizon is 12 to 24 inches thick and extends to a depth of 18 to 30 inches. This soil is very strongly acid to moderately acid, except in the surface layer in areas where lime has been added. Most pedons have few to common flakes of mica in one or more horizons.

The Ap or A horizon has hue of 10YR to 5YR, value of 3 to 5, and chroma of 2 to 4.

The Bt horizon has hue of 10R or 2.5YR, value of 4 or 5, and chroma of 6 or 8. Some pedons have brown and yellow mottles in the lower part of the profile. This horizon is clay loam or clay. The clay content ranges from 35 to 65 percent.

The BC horizon has colors similar to those of the Bt horizon. It is loam, clay loam, or sandy loam.

The C horizon is loamy and is as much as 75 percent saprolite in some pedons. It commonly has mottles in shades of red, brown, and yellow.

Rembert Series

The Rembert series consists of poorly drained, slowly permeable soils that formed in clayey sediment on the Coastal Plain, in depressions that do not have a natural outlet. The slopes are less than 2 percent. Rembert soils are classified as clayey, kaolinitic, thermic Typic Ochraquults.

Rembert soils are on the same landscape as Dothan, Marlboro, Orangeburg, Faceville, Fuquay, Greenville, and Ogeechee soils. All of these soils, except Ogeechee soils, are better drained than Rembert soils and are on higher lying, convex ridges. Unlike Rembert soils, Ogeechee soils are less than 35 percent clay.

Typical pedon of Rembert loam, about 6 miles east of Aiken on S.C. Highway 78, 1.7 miles northeast on S.C. Highway 77, 700 feet west along gas line, 300 feet northwest by 13 degrees to depression, in a cultivated field:

Ap—0 to 7 inches; very dark gray (10YR 3/1) loam; moderate medium granular structure; friable; many fine roots; strongly acid; abrupt smooth boundary.
Btg1—7 to 10 inches; light brownish gray (10YR 6/2) clay loam; many fine and medium distinct yellowish brown (10YR 5/4) mottles; weak medium subangular blocky structure; friable; common faint clay films on faces of peds; few fine roots; common fine and medium pores; strongly acid; clear wavy boundary.
Btg2—10 to 30 inches; light brownish gray (10YR 6/2) sandy clay; common medium distinct brownish yellow (10YR 6/6) mottles; moderate medium subangular blocky structure; firm; many distinct clay films on faces of peds; common medium pores; strongly acid; gradual wavy boundary.
BCg—30 to 42 inches; light gray (10YR 7/2) sandy clay loam; few fine faint grayish brown mottles; weak medium subangular blocky structure; friable; few coarse pores; strongly acid; gradual wavy boundary.
Cg1—42 to 50 inches; white (10YR 8/2) sand; single grained; loose; strongly acid; diffuse irregular boundary.
Cg2—50 to 60 inches; white (10YR 8/2) sandy loam that has bands of sandy clay loam; many coarse prominent yellow (10YR 7/6) mottles; massive; friable; streaks or bands of sandy clay loam are yellow and make up about 25 percent of the horizon; strongly acid.

The solum is 40 to more than 70 inches thick. It is very strongly acid or strongly acid throughout, except in the surface layer where lime has been applied.

The A horizon has hue of 10YR, value of 2 to 4, and chroma of 1 or 2.

The Btg horizon has hue of 10YR, value of 5 to 7, and chroma of 1 or 2. It is clay loam, sandy clay, or clay. Mottles in shades of yellow, red, or brown are in most subhorizons.

The BCg horizon has the same color range as the Btg horizon. It is sandy loam or sandy clay loam.

The Cg horizon has hue of 10YR, value of 7 or 8, and chroma of 1 or 2. It is sandy loam, loamy sand, or sand and is mottled in shades of brown, gray, red, or yellow.

Shellbluff Series

The Shellbluff series consists of well drained, moderately permeable soils that formed in silty alluvium on nearly level flood plains along large streams. The soils are subject to frequent flooding for short periods during or after heavy rain. The slopes range from 0 to 2 percent. Shellbluff soils are classified as fine-silty, mixed, thermic Fluventic Dystrochrepts.

Shellbluff soils are on the same landscape with Chewacla and Toccoa soils. Unlike Shellbluff soils, Chewacla soils are somewhat poorly drained. Toccoa soils have more sand in the 10- to 40-inch control section than Shellbluff soils have.

Typical pedon of Shellbluff silty clay loam, about 30 miles southwest of Aiken, 9 miles southwest of Jackson, 4.2 miles southwest of Cowden Plantation Headquarters by Seaboard Coastline Railroad, about 0.2 mile north of Bent Lake, 75 feet west and 35 feet south of intersection of two field roads, in a small cleared area:

Ap—0 to 5 inches; brown (7.5YR 4/4) silty clay loam; moderate medium granular structure; friable; many fine roots; slightly acid; clear wavy boundary.

Bw1—5 to 12 inches; reddish brown (5YR 4/4) silty clay loam; moderate medium subangular blocky structure; friable; common faint coatings on faces of peds; few fine roots; common fine to coarse pores; few very fine flakes of mica; moderately acid; clear smooth boundary.

Bw2—12 to 24 inches; reddish brown (5YR 5/4) silty clay loam; common fine distinct dark red (10R 3/6) mottles; weak fine subangular blocky structure; friable; few faint coatings on faces of peds; few fine and coarse pores; few very fine flakes of mica; moderately acid; gradual smooth boundary.

Bw3—24 to 34 inches; dark brown (7.5YR 4/4) silty clay loam; many medium distinct pale brown (10YR 6/3) mottles; weak fine subangular blocky structure; friable; few very fine flakes of mica; strongly acid; diffuse smooth boundary.

C—34 to 70 inches; light brownish gray (10YR 6/2) silty clay loam; common medium distinct brown (7.5YR 5/4) and few medium distinct very dark gray (10YR 3/1) mottles; massive; friable; common very fine flakes of mica; strongly acid.

The solum is 20 to 40 inches thick. It is very strongly acid to slightly acid throughout. Most horizons have few to many flakes of mica.

The A horizon has hue of 5YR to 10YR, value of 3 to 5, and chroma of 2 to 8.

The Bw horizon has hue of 5YR to 10YR, value of 4 or 5, and chroma of 4 to 8. Mottles that have chroma of 1 or 2 are in some pedons below a depth of 30 inches. The Bw horizon is silty clay loam or silt loam and, in a few pedons, includes subhorizons that are clay loam or loam. The content of clay in the 10- to 40-inch control section averages between 18 and 35 percent, and the content of fine sand or coarser sand is less than 15 percent.

The C horizon has hue of 5YR to 10YR, value of 3 to 8, and chroma of 1 to 8. Mottles in shades of red, brown, yellow, or gray are in most pedons. The C horizon is silt loam, silty clay loam, or loam, or it is stratified silty clay loam to loamy sand.

Toccoa Series

The Toccoa series consists of well drained, moderately permeable soils that formed in loamy alluvial sediment. The soils are on the flood plain of large creeks and rivers. They are subject to frequent flooding for short periods during and after heavy rain. The slopes range from 0 to 2 percent. Toccoa soils are classified as coarse-loamy, mixed, nonacid, thermic Typic Udifluvents.

Toccoa soils are on the same landscape as Chewacla, Johnston, and Shellbluff soils. Chewacla and Johnston soils are more poorly drained than Toccoa soils. Shellbluff soils have a higher content of silt and clay in the control section.

Typical pedon of Toccoa loam, about 20 miles southwest of Aiken, 2 miles south of Beech Island, 2.5 miles southwest on county road (610 feet west of Savannah River), and 80 feet north of field road, in a cultivated area:

Ap—0 to 9 inches; reddish brown (5YR 4/4) loam; weak fine subangular blocky structure; friable; common fine roots; common very fine and fine flakes of mica; slightly acid; clear wavy boundary.

Bw1—9 to 17 inches; dark brown (7.5YR 3/2) loam; weak fine subangular blocky structure; friable; common fine roots; common very fine flakes of mica; slightly acid; clear smooth boundary.

Bw2—17 to 27 inches; dark reddish brown (5YR 3/2) sandy loam; weak fine subangular blocky structure; very friable; few medium roots; few very fine pores; common very fine flakes of mica; slightly acid; gradual wavy boundary.

Bw3—27 to 60 inches; dark brown (7.5YR 3/2) sandy loam; weak fine granular structure; very friable; few fine pores; common fine and very fine flakes of mica; moderately acid; gradual wavy boundary.

Bw4—60 to 72 inches; grayish brown (10YR 5/2) loam; common medium faint dark yellowish brown (10YR 4/4) mottles; moderate fine subangular blocky structure; friable; many fine and medium pores; common fine flakes of mica; moderately acid.

This soil is strongly acid to slightly acid throughout.

The A horizon has hue of 5YR to 10YR, value of 3 to 5, and chroma of 2 to 6. Where the value is 3, the horizon is less than 6 inches thick.

The Bw horizon has colors similar to those of the A horizon. It has mottles caused by wetness at a depth of 30 inches or more. It is dominantly sandy loam but has thin subhorizons of loam, sandy clay loam, silt loam, or loamy sand.

Troup Series

The Troup series consists of well drained soils that formed in sandy marine sediment on the upper Coastal Plain and are on broad, high ridges and long, fairly smooth side slopes. Permeability is rapid in the surface and subsurface layers and moderate in the subsoil. The slopes range from 0 to 25 percent. Troup soils are classified as loamy, siliceous, thermic Grossarenic Paleudults.

Troup soils are on the same landscape as Dothan, Fuquay, and Lakeland soils. Unlike Troup soils, Dothan soils have a subsoil within 20 inches of the surface; Fuquay soils have a subsoil within 20 to 40 inches of the surface; and Lakeland soils do not have a subsoil within a depth of 80 inches. In addition, Dothan and Fuquay soils have nodules of plinthite in the subsoil.

Typical pedon of Troup sand, 6 to 10 percent slopes, 1.8 miles northwest of Aiken on U.S. 1, 0.8 mile north on Valley Road, 0.2 mile east on Hill Top Road, 150 feet north of road, in a wooded area:

A—0 to 2 inches; grayish brown (10YR 5/2) sand; weak fine granular structure; loose; many fine roots; very strongly acid; clear wavy boundary.
E1—2 to 20 inches; brownish yellow (10YR 6/6) sand; weak fine granular structure; loose; about half of sand grains coated; many medium and coarse roots; strongly acid; gradual wavy boundary.
E2—20 to 50 inches; strong brown (7.5YR 5/8) sand; weak fine granular structure; very friable; about 60 percent of sand grains coated; few fine and medium roots; very strongly acid; gradual wavy boundary.
E3—50 to 60 inches; reddish yellow (5YR 6/8) sand; weak fine granular structure; very friable; about 90 percent of sand grains coated; few fine roots; strongly acid; clear wavy boundary.
Bt1—60 to 66 inches; reddish yellow (7.5YR 7/8) sandy loam; common medium distinct red (2.5YR 4/6) and few fine distinct yellowish brown mottles; weak medium subangular blocky structure; very friable; few faint clay films on faces of peds; few fine roots; about 4 percent nodules of plinthite; very strongly acid; clear smooth boundary.
Bt2—66 to 80 inches; red (2.5YR 4/6) sandy clay loam; common coarse prominent yellow (10YR 7/6) and reddish yellow (7.5YR 6/8) mottles; weak very coarse blocky structure; friable; common distinct clay films along ped faces; very strongly acid.

The solum is more than 80 inches thick. The soil is very strongly acid or strongly acid throughout, except in the surface layer where lime has been added.

The A horizon has hue of 10YR, value of 3 to 5, and chroma of 2 or 3.

The Ap and E horizons have hue of 10YR, 7.5YR, or 5YR, value of 3 to 6, and chroma of 4 to 8.

The Bt horizon has hue of 7.5YR or 10YR, value of 5 to 7, and chroma of 4 to 8; or it has hue of 2.5YR or 5YR, value of 4 or 5, and chroma of 6 or 8. It has mottles in shades of brown, yellow, or red. It is dominantly sandy clay loam but ranges to sandy loam. The content of nodules of plinthite ranges from 0 to 4 percent.

Vaucluse Series

The Vaucluse series consists of well drained, moderately slowly or slowly permeable soils that formed in sediments of the Coastal Plain. The soils are on narrow ridges and the adjacent side slopes. The slopes range from 2 to 25 percent. Vaucluse soils are classified as fine-loamy, siliceous, thermic Typic Hapludults.

Vaucluse soils are geographically associated with Ailey, Dothan, Fuquay, Lakeland, and Troup soils. Ailey soils have a subsoil similar to that of the Vaucluse soils, but the combined thickness of their sandy surface and subsurface layers is 20 to 40 inches. Lakeland soils are sandy to a depth of 80 inches or more. Dothan and Fuquay soils have a subsoil that is more than 5 percent nodules of plinthite. Troup soils have sandy surface and subsurface horizons that together are more than 40 inches thick.

Typical pedon of Vaucluse loamy sand, in an area of Vaucluse-Ailey complex, 6 to 15 percent slopes, about 9 miles south-southwest of Aiken; 2.5 miles south of Aiken on S.C. Highway 19, 6.5 miles south-southwest on S.C. Highway 302 to junction with S.C. Highway 146, 500 feet north and 100 feet east of junction, in a wooded area:

A—0 to 3 inches; brown (10YR 5/3) loamy sand; weak fine granular structure; very friable; many fine and medium roots; very strongly acid; clear wavy boundary.
E—3 to 10 inches; brownish yellow (10YR 6/6) loamy sand; weak fine granular structure; very friable; common fine and medium roots; very strongly acid; clear smooth boundary.
Bt1—10 to 22 inches; yellowish brown (10YR 5/6) sandy loam; moderate medium subangular blocky structure; friable; many faint clay films on faces of peds; common fine and medium roots; few medium pores; few medium rounded pebbles of quartz; strongly acid; abrupt wavy boundary.
Bt2—22 to 36 inches; mottled strong brown (7.5YR 5/6), red (2.5YR 5/6), yellowish red (5YR 5/6), and very pale brown (10YR 7/3) sandy clay loam; weak very coarse angular blocky structure; firm, dense, slightly brittle when dry; common distinct clay films on faces of peds; few fine roots; few medium pores; common coarse sand grains; strongly acid; gradual wavy boundary.
Bt3—36 to 59 inches; mottled red (2.5YR 4/6), brownish yellow (10YR 6/6), strong brown (7.5YR 5/6), very pale brown (10YR 7/3), and light gray (10YR 7/2) sandy clay loam; weak very coarse subangular blocky structure; firm, dense, brittle when dry; common faint clay films on faces of peds; common medium pores; few coarse sand grains; strongly acid; gradual wavy boundary.
C—59 to 74 inches; red (2.5YR 5/6) loamy sand; common medium distinct strong brown (7.5YR 5/6) mottles; massive; friable; very strongly acid.

The solum ranges from 48 to more than 80 inches in thickness. It is extremely acid to strongly acid throughout, except in the surface layer in areas where lime has been added. The layer that is dense and brittle in as much as 30 percent of the mass is at a depth of 15 to 32 inches.

The A or Ap horizon has hue of 10YR, value of 4 to 6, and chroma of 2 or 3. The E horizon has hue of 10YR,

value of 5 to 7, and chroma of 3 to 6. The A and E horizons are loamy sand or sand.

The Bt1 horizon has hue of 5YR to 10YR, value of 5 to 7, and chroma of 6 or 8. It is sandy loam or sandy clay loam. There are a few fine or medium, strong brown or yellow mottles in the lower part of the Bt1 horizon in some pedons. The Bt2 and Bt3 horizons are mottled in hue of 2.5YR or 5YR, value of 4 or 5, and chroma of 6 or 8; or they are mottled in hue of 10YR, value of 5 to 7, and chroma of 3 to 6. In some pedons, mottles range to chroma of 1 or 2. The lower part of the Bt horizon is sandy clay loam or sandy loam.

The C horizon has the same colors as the lower part of the Bt horizon. It is loamy sand, sandy loam, or sandy clay loam.

Wateree Series

The Wateree series consists of moderately deep, well drained soils that formed in residuum of Carolina slates on the Piedmont. The soils are steep to very steep and are mainly in the extreme northwest corner of the county on slope breaks of the Savannah River and its major tributaries. The slopes range from 25 to 60 percent. Wateree soils are classified as coarse-loamy, mixed, thermic Typic Dystrochrepts.

Wateree soils generally are on the steeper parts of the landscape and in close association with Gundy, Hiwassee, Vaucluse, and Ailey soils. All of these soils have a better developed subsoil than that of Wateree soils and are deeper to bedrock than Wateree soils.

Typical pedon of Wateree sandy loam, 25 to 60 percent slopes, 18 miles west of Aiken, near North Augusta; 1 mile west of S.C. Highway 230, 0.25 mile northwest of 900 Medie Avenue; on west side of trail, 150 feet east of Savannah River, in a wooded area:

A—0 to 3 inches; brown (10YR 4/3) sandy loam; moderate medium granular structure; friable; many fine and medium roots; moderately acid; clear smooth boundary.

Bw—3 to 20 inches; yellowish brown (10YR 5/4) sandy loam; weak medium subangular blocky structure; friable; few fine and medium roots; few very fine to medium pores; about 15 percent fragments of slate; strongly acid; abrupt wavy boundary.

C—20 to 24 inches; yellowish brown (10YR 5/8) and yellowish red (5YR 5/8) sandy loam; massive; few fine roots along fractures of fragments of fine-grained slate; strongly acid; clear smooth boundary.

Cr—24 to 41 inches; yellowish brown (10YR 5/8) and yellowish red (5YR 5/8) fine-grained fractured slate rock that crushes to sandy loam; rock-controlled structure; massive; strongly acid; clear wavy boundary.

R—41 inches; rippable slate bedrock.

The solum is 14 to 30 inches thick. The soil is very strongly acid to moderately acid in the A and B horizons and ranges to extremely acid in the C horizon. Most pedons have 5 to 25 percent of weathered rock fragments within 10 inches of the surface. The depth to paralithic contact ranges from 20 to 40 inches.

The A horizon has hue of 10YR, value of 4 or 5, and chroma of 3 or 4. In some pedons there is a thin E horizon that has higher value than the A horizon.

The Bw horizon has hue of 10YR, value of 5 or 6, and chroma of 4 to 8.

In some pedons there is no C horizon above the Cr horizon. The C and Cr horizons are mottled in shades of yellow, brown, red, or black. The C horizon is loamy sand, sand, or sandy loam, and the Cr horizon is weathered rock material that crushes to these textures.

Williman Series

The Williman series consists of poorly drained, moderately permeable soils that formed in loamy marine sediment on the Coastal Plain. The soils are in slight depressions. The slope ranges from 0 to 2 percent. Williman soils are classified as loamy, siliceous, thermic Arenic Ochraquults.

Williman soils are on the same general landscape as Eunola, Ogeechee, Ocilla Variant, Dothan, and Fuquay soils. Unlike Williman soils, Eunola and Ocilla Variant soils are moderately well drained. Dothan and Fuquay soils are well drained. Ogeechee soils are similar to Williman soils in drainage but do not have thick sandy surface and subsurface layers.

Typical pedon of Williman sand, 18 miles southwest of Aiken on S.C. Highway 302 and S.C. Highway 32, 2 miles southeast on S.C. Highway 5, west on county road to 0.2 mile beyond Seaboard Coastline Railroad, 0.4 mile south on field road, 133 feet southeast, in a depression in field:

Ap—0 to 8 inches; very dark gray (N 3/0) sand; weak fine granular structure; very friable; common fine and medium roots; common clean sand grains; very strongly acid; abrupt wavy boundary.

E—8 to 28 inches; light brownish gray (10YR 6/2) sand; few fine distinct reddish yellow (7.5YR 6/8) mottles; weak fine granular structure; very friable; common fine and medium roots; very strongly acid; gradual wavy boundary.

Btg—28 to 58 inches; gray (N 6/0) sandy clay loam; many coarse prominent red (2.5YR 4/6) and common coarse distinct strong brown (7.5YR 5/6) mottles; moderate coarse subangular blocky structure; gray matrix is friable, mottles are firm; common faint clay films on faces of peds; common fine and few medium roots; very strongly acid; clear wavy boundary.

BCg—58 to 66 inches; light gray (10YR 7/2) loamy sand; common medium distinct brownish yellow (10YR 6/6) mottles; weak medium subangular blocky structure; very friable; many clean sand grains; very strongly acid.

The solum is 60 to 75 inches thick. It is extremely acid to strongly acid, except in the surface layer where lime has been added.

The A or Ap horizon has hue of 10YR to 5Y or is neutral; it has value of 2 to 4 and chroma of 0 or 1.

The E horizon has hue of 10YR to 5Y, value of 4 to 6, and chroma of 1 or 2. In some pedons it has mottles in shades of brown, red, yellow, or gray.

The Btg horizon has hue of 10YR to 5Y or is neutral; it has value of 5 to 7 and chroma of 0 to 2. It has mottles in shades of red, yellow, or brown. It is dominantly sandy clay loam but ranges to sandy loam in a few pedons.

The BCg horizon has hue of 10YR to 5Y or is neutral; it has value of 6 or 7 and chroma of 0 to 2. It is sandy loam or loamy sand.

Formation of the Soils

In this section the factors of soil formation and the processes of soil horizon differentiation are described.

Factors of Soil Formation

Soil is the natural medium for the growth of plants and is the product of soil-forming processes acting on accumulated or deposited geologic material. The five important factors of soil formation are parent material, climate, living organisms (plants and animals), relief, and time.

Climate and living organisms are the active forces in soil formation. Their effect on the parent material is modified by relief and by the length of time the parent material has been in place. The relative importance of each factor differs from place to place. In some places one factor is dominant and fixes most of the properties of the soil that forms, but normally the interaction of all five factors determines what kind of soil forms at any given place.

Although soil formation is complex, some understanding of the soil-forming processes may be gained by considering each of the five factors separately. Each factor, however, is affected by and also affects each of the other four.

Parent Material

Parent material is the unconsolidated mass in which soil forms. It has much to do with the mineral and chemical composition of the soil. The soils in the Aiken County Area derive from two sources: residuum of parent rocks and alluvium that was deposited by the ocean, by streams, or successively by both stream and ocean.

Residual material is formed in place through the weathering of the underlying rock. Soils that formed in this material make up about 1 percent of the survey area. For the most part, the rocks are Carolina slate, gneiss, schist, and granite. Gundy, Pacolet, and Wateree soils formed in residual material.

About 95 percent of the soils in Aiken County formed in alluvial sediment that was laid down when the ocean was receding eastward. Most of the material of the Sand Hills and Coastal Plain in the county was deposited during the Tertiary period. The age of the Barnwell and McBean Formations, which form the higher parts of the landscape in this area, is in the range of 55 million years. These formations typically have strata of sandy and loamy material that shows many bedding planes. The material is quartz sand and gravel of varying size interbedded with strata of kaolin clay. The nutrients useful to plants have been leached away as the soil particles were transported by moving water.

About 4 percent of the soils in the survey area are on flood plains and river terraces. This soil material has been moved in some areas by both stream and ocean. Some material of the Barnwell and McBean Formations has been eroded, washed downstream, and deposited on the terraces and present flood plains of major streams. The Savannah River in particular has also deposited Piedmont soil material on the flood plains and river terraces close to it. The soils in these areas are younger than other soils in the county. Some soils on the flood plains are only a few hundred years old. The older soils on the flood plains and river terraces range in age from a few thousand to about 5 million years (*5*). They are on the Wicomico, Sunderland, and Coharie Formations at elevations from about 100 feet to about 215 feet above the present sea level (*4*).

Climate

The climate of Aiken County is important in the formation of soils. The county has a temperate climate, and rainfall is well distributed throughout the year. Temperature and precipitation are discussed in the section "Climate" under "General Nature of the County."

Climate, particularly precipitation and temperature, affects the physical, chemical, and biological relationships in the soil. Water dissolves minerals, aids chemical and biological activity, and transports the dissolved mineral and organic material through the soil profile. High annual rainfall promotes leaching of the soluble bases and the translocation of less soluble and colloidal material downward through the soil. A long frost-free season and heavy rainfall result in the downward movement of fine-textured soil material and the loss of plant nutrients.

The amount of water that percolates through the soil depends on the amount of rainfall, the relative humidity, and the length of the frost-free season. Percolation, or the downward movement of water, is also affected by relief and by the permeability of the soil material. Weathering of the parent material takes place more rapidly if the percolation is interrupted by brief periods of

shallow freezing. A high average temperature, therefore, speeds weathering. In addition, a high average temperature helps to increase the number and kinds of living organisms in the soil and lengthens the season in which they are most active, and these organisms affect soil formation.

Living Organisms

The number and kinds of plants and animals that live in and on the soils are determined mainly by the climate and, to a lesser extent, by parent material, relief, and age of the soil.

Bacteria, fungi, and other micro-organisms are indispensable in soil formation. They hasten the weathering of minerals and the decomposing of organic matter. Larger plants alter the soil microclimate, furnish organic matter, and transfer chemical elements from the subsoil to the surface layer.

Most of the fungi, bacteria, and other micro-organisms in the soils of Aiken County are in the uppermost few inches of soil. Earthworms and other small invertebrates are active chiefly in the A horizon and the upper part of the B horizon, where they slowly but continuously mix the soil material. Bacteria and fungi decompose organic matter and release nutrients for plant use. Other animals play a secondary but important role in soil formation. By eating plants, they perform one step in returning plant material to the soil.

In Aiken County, the native vegetation on the uplands is mainly loblolly pine, shortleaf pine, oak, and hickory. On the bottom land, it is mainly sweetgum, black gum, yellow-poplar, maple, tupelo, and ash. Large trees affect soil formation by bringing nutrients from deep in the soil to the upper layers, by bringing soil material from varying depths when a tree is blown over, and by providing large openings to be filled by soil material as large roots decay.

Relief

Relief, or lay of the land, influences soil formation because of its effect on moisture, temperature, and erosion. This influence, however, is modified somewhat by the influence of other soil-forming factors.

In Aiken County, slopes range from 0 to 60 percent. Most soils on uplands that have slopes of less than 25 percent have thick, well developed profiles. Soils that have slopes of 25 to 60 percent have thinner and less developed profiles. The most extensive soils in the county are gently sloping to strongly sloping and have not been affected by relief.

On stream bottoms, slopes range from 0 to 2 percent. The soils in these areas are young and show little profile development.

Time

Time is needed for the formation of soils. The length of time required for a soil to develop depends largely on the intensity of other soil-forming factors. The soils in Aiken County range from young or immature soils that have very little profile development to soils that have well defined horizons.

On the smoother parts of the uplands, the soils generally have developed to maturity. The Dothan soils are mature soils. On the steeper slopes, where geologic erosion has removed the soil material to some extent, the soils tend to be shallower than is typical. Pacolet and Gundy soils are examples of these soils. On the first bottoms of streams, the soils are young because the material has not been in place long enough for soil horizons to form. The Toccoa soils are young soils.

Morphology

When a vertical cut is made into a soil, several distinct layers, or horizons, become evident. Many soil-forming processes have produced this differentiation of horizons: for example, the accumulation of organic matter, the leaching of soluble salts, the reduction and translocation of iron, the formation of soil structure, physical weathering such as freezing and thawing, and chemical weathering of primary minerals or rocks. Some of these processes take place continuously in all soils; however, the number of active processes and the degree of their activity may vary from one soil to another.

Most soils have three major horizons: The A, B, and C horizons (*8*). These horizons are sometimes subdivided by the use of subscripts and letters to indicate changes within one horizon. For example, the Bt horizon represents a layer within the B horizon that has translocated clay illuviated from the A horizon.

The A horizon is the surface layer. If the soils are cleared and plowed, the surface layer is called an Ap horizon. The A horizon normally is the layer that has the largest accumulation of organic matter. The A horizon is also the layer of maximum leaching or eluviation of clay and iron. If considerable leaching or eluviation has taken place, an E horizon forms immediately below the surface layer. Generally, this E horizon is the lightest colored horizon in the soil. Fuquay and Troup soils have a well expressed E horizon.

The B horizon is below the A horizon and is commonly called the subsoil. It is the horizon of maximum accumulation, or illuviation, of clay, iron, aluminum, or other compounds leached from the A horizon. Angie, Hiwassee, and Marlboro soils have a well expressed B horizon.

The C horizon is below the A or B horizon. In some soils, for example, in Lakeland and Toccoa soils, a B horizon has not formed; the C horizon is immediately below the A horizon in these soils. The material of the C horizon is little altered by the soil-forming processes; however, it can be modified by weathering.

Such soils as Vaucluse soils have a dense, brittle layer in the Bt horizon. This horizon has a very low content of

organic matter. It tends to be cemented and is hard or very hard when dry and slightly brittle when moist. This layer generally is mottled; it is slowly or very slowly permeable to water and commonly has few or many bleached fracture planes that form polygons.

Excessively drained soils generally are brownish, yellowish, or reddish and are free of gray (chroma of 2 or less) mottles. They are porous and generally are sandy. Lakeland soils are excessively drained.

Well drained soils in Aiken County have a yellowish brown or reddish subsoil. These colors are the result of a thin coating of iron oxide on the sand, silt, and clay particles. A soil is considered well drained if it is free of gray (chroma of 2 or less) mottles to a depth of at least 30 inches. Most of the soils in Aiken County are well drained.

Moderately well drained soils generally are free of gray mottles to a depth of about 15 to 20 inches. Angie soils are moderately well drained.

Somewhat poorly drained soils have gray mottles near the A horizon. Chewacla soils are somewhat poorly drained.

Poorly drained soils generally are dominantly gray in the B horizon and commonly are mottled. Some poorly drained soils have a gray A horizon. Rembert soils are poorly drained.

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Glossary

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

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—

	Inches
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.

Bedding planes. Fine stratifications, less than 5 millimeters thick, in unconsolidated alluvial, eolian, lacustrine, or marine sediments.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Broad-base terrace. A ridge-type terrace built to control erosion by diverting runoff along the contour at a nonscouring velocity. The terrace is 10 to 20 inches high and 15 to 30 feet wide and has gently sloping sides, a rounded crown, and a dish-shaped channel along the upper side. It may be nearly level or have a grade toward one or both ends.

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.

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.

Coarse fragments. If round, mineral or rock particles 2 millimeters to 25 centimeters (10 inches) in diameter; if flat, mineral or rock particles (flagstone) 15 to 38 centimeters (6 to 15 inches) long.

Coarse textured soil. Sand or loamy sand.

Compressible (in tables). Excessive decrease in volume of soft soil under load.

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.

Contour stripcropping. Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

Control section. The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

Corrosive. High risk of corrosion to uncoated steel or deterioration of concrete.

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.

Deferred grazing. Postponing grazing or resting grazingland for a prescribed period.

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.

Drumlin. A low, smooth, elongated oval hill, mound, or ridge of compact glacial till. The longer axis is parallel to the path of the glacier and commonly has a blunt nose pointing in the direction from which the ice approached.

Eluviation. The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.

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 the activities of man or other animals or of a catastrophe in nature, for example, 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 rapid movement of water into the soil.

Fertility, soil. The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when

light, moisture, temperature, tilth, and other growth factors are favorable.

Fine textured soil. Sandy clay, silty clay, and clay.

Flood plain. A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

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 7.5 centimeters) in diameter. An individual piece is a pebble.

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 upper case letter represents the major horizons. Numbers or lower case 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, alluminum, 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 (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these. 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.

R layer.—Consolidated rock beneath the soil. The rock 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.

Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Large stones (in tables). Rock fragments 3 inches (7.5 centimeters) or more across. Large stones adversely affect the specified use of the soil.

Leaching. The removal of soluble material from soil or other material by percolating water.

Liquid limit. The moisture content at which the soil passes from a plastic to a liquid state.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Low strength. The soil is not strong enough to support loads.

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).

Muck. Dark colored, finely divided, well decomposed organic soil material. (See Sapric soil material.)

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.

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 affecting the specified use.

Permeability. The quality of the soil that enables water to move downward through the profile. Permeability is measured as the number of inches per hour that water moves downward 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.

Piping (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

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.

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

Reaction, soil. A measure of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degree of acidity or alkalinity is expressed as—

	pH
Extremely acid	below 4.5
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Moderately acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
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

Residuum (residual soil material). Unconsolidated, weathered, or partly weathered mineral material that accumulated as consolidated rock disintegrated in place.

Rippable. Bedrock or hardpan can be excavated using a single-tooth ripping attachment mounted on a tractor with a 200-300 draw bar horsepower rating.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

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.

Sapric soil material (muck). The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.

Seepage (in tables). The movement of water through the soil. Seepage 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 insure satisfactory performance of the soil for a specific use.

Slow intake (in tables). The slow movement of water into 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.

Stripcropping. Growing crops in a systematic arrangement of strips or bands which provide vegetative barriers to wind and water erosion.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grained* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Substratum. The part of the soil below the solum.

Subsurface layer. Technically, the E horizon. Generally refers to a leached horizon lighter in color and lower in content of organic matter 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 across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet.

Terrace (geologic). An old alluvial plain, ordinarily flat or undulating, bordering a river, a lake, or the sea.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

Thin layer (in tables). Otherwise suitable soil material too thin for the specified use.

Unstable fill (in tables). Risk of caving or sloughing on banks of fill material.

Weathering. All physical and chemical changes produced in rocks or other deposits at or near the earth's surface by atmospheric agents. These changes result in disintegration and decomposition of the material.

Tables

TABLE 1.--TEMPERATURE AND PRECIPITATION

[Recorded in the period 1951-73 at Aiken, South Carolina]

Month	Temperature						Precipitation				
	Average daily maximum	Average daily minimum	Average	2 years in 10 will have-- Maximum temperature higher than--	2 years in 10 will have-- Minimum temperature lower than--	Average number of growing degree days[1]	Average	2 years in 10 will have-- Less than--	2 years in 10 will have-- More than--	Average number of days with 0.10 inch or more	Average snowfall
	°F	°F	°F	°F	°F	Units	In	In	In		In
January----	57.7	35.5	46.6	77	13	75	4.29	2.34	6.00	7	.3
February---	60.8	37.2	49.0	77	15	101	4.38	2.55	6.00	7	.9
March------	67.7	42.9	55.3	85	23	213	5.20	3.14	7.04	8	.0
April------	76.8	51.6	64.2	90	32	426	4.01	1.98	5.76	6	.0
May--------	83.5	59.6	71.6	96	41	670	3.88	1.99	5.52	6	.0
June-------	88.9	66.2	77.6	101	53	828	4.51	2.23	6.47	7	.0
July-------	90.9	69.4	80.2	100	61	936	4.93	2.69	6.89	8	.0
August-----	89.9	69.1	79.5	99	59	915	4.69	2.69	6.46	7	.0
September--	84.1	64.1	74.2	96	49	726	3.88	1.53	5.84	5	.0
October----	75.6	53.6	64.6	90	33	453	2.22	.47	3.62	4	.0
November---	66.5	43.1	54.9	82	22	167	2.14	.77	3.27	4	.0
December---	59.3	37.3	48.3	79	14	109	3.52	2.06	4.81	6	.4
Yearly:											
Average--	75.1	52.5	63.8	---	---	---	---	---	---	---	---
Extreme--	---	---	---	103	11	---	---	---	---	---	---
Total----	---	---	---	---	---	5,619	47.65	38.71	56.11	75	1.6

[1]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° F).

TABLE 2.--FREEZE DATES IN SPRING AND FALL

[Recorded in the period 1951-73 at Aiken, South Carolina]

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--	March 22	April 1	April 8
2 years in 10 later than--	March 11	March 25	April 3
5 years in 10 later than--	February 19	March 11	March 26
First freezing temperature in fall:			
1 year in 10 earlier than--	November 12	November 3	October 28
2 years in 10 earlier than--	November 20	November 9	November 1
5 years in 10 earlier than--	December 3	November 20	November 9

TABLE 3.--GROWING SEASON

[Recorded in the period 1951-73 at Aiken, South Carolina]

Probability	Length of growing season if daily minimum temperature is--		
	Higher than 24° F	Higher than 28° F	Higher than 32° F
	Days	Days	Days
9 years in 10	249	226	210
8 years in 10	262	236	216
5 years in 10	287	254	227
2 years in 10	312	272	238
1 year in 10	325	282	243

TABLE 4.--ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS

Map symbol	Soil name	Acres	Percent
AeB	Ailey sand, 2 to 6 percent slopes	7,301	1.2
AnA	Angie fine sandy loam, 0 to 2 percent slopes	1,465	0.2
Ba	Bayboro clay loam	1,412	0.2
Bb	Bethera clay loam	2,390	0.4
Bc	Bibb loamy sand	14,348	2.3
Ch	Chewacla loam	9,165	1.5
Da	Dasher mucky peat	1,388	0.2
DoA	Dothan loamy sand, 0 to 2 percent slopes	7,376	1.2
DoB	Dothan loamy sand, 2 to 6 percent slopes	21,588	3.4
DoC	Dothan loamy sand, 6 to 10 percent slopes	1,435	0.2
EuA	Eunola loamy sand, 0 to 2 percent slopes	1,150	0.2
FaA	Faceville sandy loam, 0 to 2 percent slopes	1,792	0.3
FaB	Faceville sandy loam, 2 to 6 percent slopes	2,326	0.4
FaC	Faceville sandy loam, 6 to 10 percent slopes	1,009	0.2
FoB	Foxworth sand, 0 to 6 percent slopes	657	0.1
FuA	Fuquay sand, 0 to 2 percent slopes	13,830	2.2
FuB	Fuquay sand, 2 to 6 percent slopes	54,514	8.6
FuC	Fuquay sand, 6 to 10 percent slopes	6,595	1.0
GrA	Greenville sandy loam, 0 to 2 percent slopes	90	*
GrB	Greenville sandy loam, 2 to 6 percent slopes	574	0.1
GrC	Greenville sandy loam, 6 to 10 percent slopes	234	*
GuD	Gundy loam, 10 to 25 percent slopes	1,042	0.2
HwC	Hiwassee sandy loam, 6 to 10 percent slopes	347	0.1
HwE	Hiwassee sandy loam, 10 to 25 percent slopes	433	0.1
Jo	Johnston mucky loam	24,998	4.0
LaB	Lakeland sand, 0 to 6 percent slopes	75,577	12.0
LaD	Lakeland sand, 6 to 15 percent slopes	29,430	4.7
LaE	Lakeland sand, 15 to 25 percent slopes	2,257	0.4
LuA	Lucy sand, 0 to 2 percent slopes	1,772	0.3
LuB	Lucy sand, 2 to 6 percent slopes	5,687	0.9
MaA	Marlboro loamy sand, 0 to 2 percent slopes	1,287	0.2
MaB	Marlboro loamy sand, 2 to 6 percent slopes	625	0.1
Oc	Ochlockonee sandy loam	6,298	1.0
Od	Ocilla Variant loamy sand	1,613	0.3
Og	Ogeechee sandy loam	3,969	0.6
OrA	Orangeburg loamy sand, 0 to 2 percent slopes	2,513	0.4
OrB	Orangeburg loamy sand, 2 to 6 percent slopes	11,284	1.8
OrC	Orangeburg loamy sand, 6 to 10 percent slopes	3,063	0.5
PaB	Pacolet sandy loam, 2 to 6 percent slopes	165	*
PaD	Pacolet sandy loam, 6 to 15 percent slopes	697	0.1
PaE	Pacolet sandy loam, 15 to 25 percent slopes	288	*
Re	Rembert loam	1,064	0.2
Sh	Shellbluff silty clay loam	7,899	1.3
To	Toccoa loam	837	0.1
TrB	Troup sand, 0 to 6 percent slopes	112,728	17.8
TrC	Troup sand, 6 to 10 percent slopes	46,238	7.3
TrE	Troup sand, 10 to 25 percent slopes	4,012	0.6
UaB	Udorthents-Arents complex, loamy and sandy	2,809	0.4
VaB	Vaucluse loamy sand, 2 to 6 percent slopes	8,745	1.4
VcD	Vaucluse-Ailey complex, 6 to 15 percent slopes	103,420	16.3
VcE	Vaucluse-Ailey complex, 15 to 25 percent slopes	13,968	2.2
VuE	Vaucluse-Udorthents complex, 6 to 25 percent slopes	727	0.1
WaF	Wateree sandy loam, 25 to 60 percent slopes	173	*
Wm	Williman sand	723	0.1
	Water	3,673	0.6
	Total	631,000	100.0

* Less than 0.1 percent.

TABLE 5.--YIELDS PER ACRE OF CROPS AND PASTURE

[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]

Map symbol and soil name	Corn	Soybeans	Cotton lint	Wheat	Peanuts	Improved bermudagrass	Bahiagrass
	Bu	Bu	Lb	Bu	Lb	AUM*	AUM*
AeB---- Ailey	50	20	400	30	2,300	6.0	6.0
AnA---- Angie	95	35	450	40	---	12.0	7.5
Ba---- Bayboro	110	45	450	30	---	---	8.0
Bb---- Bethera	105	35	---	---	---	---	10.0
Bc---- Bibb	---	---	---	---	---	---	6.0
Ch---- Chewacla	80	30	---	---	---	---	---
Da---- Dasher	---	---	---	---	---	---	---
DoA---- Dothan	120	40	900	50	3,800	---	9.0
DoB---- Dothan	110	35	900	45	3,600	---	9.0
DoC---- Dothan	80	25	700	35	2,600	---	6.0
EuA---- Eunola	100	35	---	40	---	---	7.5
FaA---- Faceville	115	45	875	50	4,000	10.0	7.0
FaB---- Faceville	110	40	850	50	4,000	10.0	7.0
FaC---- Faceville	80	25	500	45	2,600	7.0	5.0
FoB---- Foxworth	60	20	---	25	---	---	7.5
FuA, FuB---- Fuquay	80	30	650	35	2,900	7.0	6.5
FuC---- Fuquay	75	25	600	30	2,600	6.5	6.0
GrA---- Greenville	110	45	825	45	3,200	11.0	7.1
GrB---- Greenville	100	35	800	45	3,000	11.0	7.1
GrC---- Greenville	70	25	---	35	---	8.5	5.0
GuD---- Gundy	65	25	---	30	---	5.5	---

TABLE 5.--YIELDS PER ACRE OF CROPS AND PASTURE--Continued

Map symbol and soil name	Corn	Soybeans	Cotton lint	Wheat	Peanuts	Improved bermuda-grass	Bahiagrass
	Bu	Bu	Lb	Bu	Lb	AUM*	AUM*
HwC---------- Hiwassee	85	35	500	35	---	8.1	5.0
HwE---------- Hiwassee	---	---	---	---	---	7.0	5.0
Jo---------- Johnston	---	---	---	---	---	---	---
LaB---------- Lakeland	55	20	---	20	2,000	7.0	7.0
LaD, LaE---------- Lakeland	---	---	---	---	---	6.0	6.0
LuA, LuB---------- Lucy	80	33	650	---	3,000	8.0	8.5
MaA---------- Marlboro	110	45	1,000	45	3,800	10.0	7.1
MaB---------- Marlboro	100	40	900	40	3,600	10.0	7.1
Oc---------- Ochlockonee	110	40	---	30	---	8.0	6.5
Od---------- Ocilla Variant	80	30	---	50	2,000	---	7.5
Og---------- Ogeechee	100	40	---	---	---	---	7.1
OrA---------- Orangeburg	120	45	900	45	4,000	10.5	8.5
OrB---------- Orangeburg	120	45	900	45	4,000	10.5	8.5
OrC---------- Orangeburg	85	30	650	35	2,800	9.0	7.0
PaB---------- Pacolet	80	30	700	---	---	---	6.0
PaD---------- Pacolet	65	---	550	---	---	---	5.5
PaE---------- Pacolet	---	---	---	---	---	---	---
Re---------- Rembert	100	40	450	30	---	---	10.0
Sh---------- Shellbluff	120	40	---	45	---	9.5	9.0
To---------- Toccoa	85	30	---	40	---	7.5	7.5
TrB---------- Troup	60	25	500	35	2,200	7.5	7.2
TrC---------- Troup	50	20	---	30	---	6.5	5.0
TrE---------- Troup	---	---	---	---	---	6.0	5.0

TABLE 5.--YIELDS PER ACRE OF CROPS AND PASTURE--Continued

Map symbol and soil name	Corn	Soybeans	Cotton lint	Wheat	Peanuts	Improved bermuda-grass	Bahiagrass
	Bu	Bu	Lb	Bu	Lb	AUM*	AUM*
UaB---------- Udorthents-Arents	---	---	---	---	---	---	---
VaB---------- Vaucluse	65	25	500	35	---	8.0	7.0
VcD---------- Vaucluse-Ailey	---	---	---	---	---	5.8	5.8
VcE---------- Vaucluse-Ailey	---	---	---	---	---	---	---
VuE---------- Vaucluse-Udorthents	---	---	---	---	---	---	---
WaF---------- Wateree	---	---	---	---	---	---	---
Wm---------- Williman	95	35	---	---	---	---	10.0

* 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 6.--CAPABILITY CLASSES AND SUBCLASSES

[Miscellaneous areas are excluded. Absence of an entry indicates no acreage]

Class	Total acreage	Major management concerns (Subclass)		
		Erosion (e)	Wetness (w)	Soil problem (s)
		Acres	Acres	Acres
I	13,058	---	---	---
II	122,891	36,562	10,526	75,803
III	160,408	6,088	18,294	136,026
IV	235,097	104,117	9,165	121,815
V	14,348	---	14,348	---
VI	45,161	15,731	---	29,430
VII	33,555	900	26,386	6,269
VIII	---	---	---	---

TABLE 7.--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]

Map symbol and soil name	Ordination symbol	Management concerns				Potential productivity		Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Common trees	Site index	
AeB---- Ailey	4s	Slight	Moderate	Moderate	Moderate	Slash pine----	70	Longleaf pine.
						Longleaf pine----	60	
AnA---- Angie	2w	Slight	Moderate	Moderate	Slight	Loblolly pine----	86	Loblolly pine.
Ba---- Bayboro	2w	Slight	Severe	Severe	Slight	Sweetgum----	94	Loblolly pine, sweetgum, water tupelo.
						Yellow-poplar----	---	
						Southern red oak----	---	
						White oak----	---	
Bb---- Bethera	2w	Slight	Severe	Severe	Slight	Loblolly pine----	92	Loblolly pine.
						Slash pine----	90	
						Longleaf pine----	71	
						Blackgum----	---	
						Red maple----	---	
						Sweetgum----	---	
						White oak----	---	
						Baldcypress----	---	
						Water oak----	---	
Bc---- Bibb	2w	Slight	Severe	Severe	Slight	Loblolly pine----	90	Eastern cottonwood, loblolly pine, sweetgum, yellow-poplar.
						Sweetgum----	90	
						Water oak----	90	
						Blackgum----	---	
Ch---- Chewacla	1w	Slight	Moderate	Moderate	Slight	Loblolly pine----	96	Loblolly pine, American sycamore, yellow-poplar, sweetgum, green ash.
						Yellow-poplar----	100	
						American sycamore----	---	
						Sweetgum----	97	
						Water oak----	86	
						Eastern cottonwood----	---	
						Green ash----	---	
						Southern red oak----	---	
Da---- Dasher	4w	Slight	Severe	Severe	Slight	Baldcypress----	---	
						Water tupelo----	---	
						Pond pine----	---	
DoA, DoB, DoC---- Dothan	2o	Slight	Slight	Slight	Slight	Slash pine----	89	Loblolly pine, longleaf pine.
						Longleaf pine----	70	
						Loblolly pine----	---	
EuA---- Eunola	2w	Slight	Moderate	Slight	Slight	Loblolly pine----	90	Loblolly pine, sweetgum, yellow-poplar.
						Slash pine----	90	
						Sweetgum----	90	
FaA, FaB, FaC---- Faceville	3o	Slight	Slight	Slight	Slight	Loblolly pine----	82	Loblolly pine.
						Slash pine----	80	
						Longleaf pine----	65	
FoB---- Foxworth	3s	Slight	Moderate	Moderate	Slight	Slash pine----	80	Loblolly pine.
						Longleaf pine----	65	
FuA, FuB, FuC---- Fuquay	3s	Slight	Moderate	Moderate	Slight	Loblolly pine----	83	Loblolly pine, longleaf pine.
						Slash pine----	83	
						Longleaf pine----	67	
GrA, GrB, GrC---- Greenville	3o	Slight	Slight	Slight	Slight	Loblolly pine----	82	Loblolly pine, longleaf pine.
						Longleaf pine----	70	
						Slash pine----	82	

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Map symbol and soil name	Ordination symbol	Management concerns				Potential productivity		Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Common trees	Site index	
GuD---------- Gundy	4r	Moderate	Moderate	Slight	Slight	Loblolly pine-------	75	Loblolly pine, eastern redcedar, Virginia pine.
						Shortleaf pine------	65	
						Scarlet oak---------	60	
						Southern red oak----	80	
						Sweetgum------------	50	
						Virginia pine-------	70	
						White oak-----------	65	
						Yellow-poplar-------	80	
HwC---------- Hiwassee	3o	Slight	Slight	Slight	Slight	Loblolly pine-------	75	Loblolly pine, yellow-poplar.
						Northern red oak----	70	
						Shortleaf pine------	70	
						White oak-----------	70	
						Yellow-poplar-------	85	
HwE---------- Hiwassee	3r	Slight	Moderate	Slight	Slight	Loblolly pine-------	75	Loblolly pine, yellow-poplar.
						Northern red oak----	70	
						Shortleaf pine------	70	
						White oak-----------	70	
						Yellow-poplar-------	85	
Jo---------- Johnston	1w	Slight	Severe	Severe	Slight	Water tupelo--------	---	Baldcypress, American sycamore, sweetgum, green ash.
						Swamp tupelo--------	---	
						Water oak-----------	---	
						Pond pine-----------	---	
						Baldcypress---------	---	
LaB, LaD, LaE------ Lakeland	4s	Slight	Moderate	Moderate	Slight	Slash pine----------	75	Loblolly pine.
						Loblolly pine-------	75	
						Longleaf pine-------	60	
LuA, LuB---------- Lucy	3s	Slight	Moderate	Moderate	Slight	Slash pine----------	84	Longleaf pine, loblolly pine.
						Longleaf pine-------	70	
						Loblolly pine-------	80	
MaA, MaB---------- Marlboro	3o	Slight	Slight	Slight	Slight	Loblolly pine-------	82	Loblolly pine.
						Slash pine----------	80	
						Longleaf pine-------	62	
Oc---------- Ochlockonee	1o	Slight	Slight	Slight	Slight	Eastern cottonwood--	100	Loblolly pine, yellow-poplar, eastern cottonwood.
						Loblolly pine-------	100	
						Yellow-poplar-------	110	
						Slash pine----------	100	
						Sweetgum------------	90	
						Water oak-----------	80	
Od---------- Ocilla Variant	3w	Slight	Moderate	Moderate	Slight	Loblolly pine-------	85	Loblolly pine, longleaf pine.
						Longleaf pine-------	72	
						Slash pine----------	87	
Og---------- Ogeechee	2w	Slight	Severe	Moderate	Slight	Loblolly pine-------	90	Loblolly pine, sweetgum.
						Slash pine----------	90	
						Pond pine-----------	70	
OrA, OrB, OrC------ Orangeburg	2o	Slight	Slight	Slight	Slight	Loblolly pine-------	80	Loblolly pine.
						Slash pine----------	86	
						Longleaf pine-------	77	
PaB, PaD---------- Pacolet	3o	Slight	Slight	Slight	Slight	Loblolly pine-------	78	Loblolly pine, shortleaf pine, yellow-poplar.
						Shortleaf pine------	70	
						Yellow-poplar-------	90	

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Map symbol and soil name	Ordination symbol	Management concerns				Potential productivity		Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Common trees	Site index	
PaE---------- Pacolet	3r	Moderate	Moderate	Slight	Slight	Loblolly pine------- Shortleaf pine------ Yellow-poplar-------	78 70 90	Loblolly pine, shortleaf pine, yellow-poplar.
Re---------- Rembert	2w	Slight	Moderate	Moderate	Slight	Loblolly pine------- Slash pine---------- Sweetgum----------	90 --- ---	Loblolly pine, sweetgum, eastern cottonwood.
Sh---------- Shellbluff	1o	Slight	Slight	Slight	Slight	Sweetgum---------- Yellow-poplar------- Cherrybark oak------ Eastern cottonwood-- Scarlet oak--------- Black walnut--------	100 105 105 105 100 100	Loblolly pine.
To---------- Toccoa	1o	Slight	Slight	Slight	Slight	Loblolly pine------- Yellow-poplar------- Sweetgum---------- Southern red oak----	90 107 100 ---	Loblolly pine, yellow-poplar, American sycamore, cherrybark oak.
TrB, TrC, TrE------ Troup	3s	Slight	Moderate	Moderate	Slight	Loblolly pine------- Longleaf pine------- Slash pine----------	82 64 84	Loblolly pine, longleaf pine.
VaB---------- Vaucluse	3o	Slight	Slight	Slight	Moderate	Loblolly pine------- Shortleaf pine------ Slash pine---------- Longleaf pine-------	76 56 75 ---	Loblolly pine.
VcD*, VcE*: Vaucluse----------	3o	Slight	Slight	Slight	Moderate	Loblolly pine------- Shortleaf pine------ Slash pine---------- Longleaf pine-------	76 56 75 ---	Loblolly pine.
Ailey----------	4s	Slight	Moderate	Moderate	Moderate	Slash pine---------- Longleaf pine-------	70 60	Longleaf pine.
VuE*: Vaucluse----------	3o	Slight	Moderate	Slight	Moderate	Loblolly pine------- Shortleaf pine------ Slash pine---------- Longleaf pine-------	76 56 75 ---	Loblolly pine.
Udorthents.								
WaF---------- Wateree	3r	Moderate	Moderate	Moderate	Slight	Loblolly pine------- Southern red oak----	77 72	Loblolly pine.
Wm---------- Williman	2w	Slight	Severe	Severe	Slight	Slash pine---------- Loblolly pine------- Longleaf pine------- Sweetgum---------- Blackgum---------- Water oak----------	90 90 74 --- --- ---	Loblolly pine.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 8.--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]

Map symbol and soil name	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.
AnA---- Angie	Moderate: percs slowly.	Moderate: percs slowly.	Moderate: percs slowly.	Severe: erodes easily.	Slight.
Ba---- Bayboro	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
Bb---- Bethera	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
Bc---- Bibb	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.	Severe: wetness, flooding.
Ch---- Chewacla	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.	Severe: wetness, flooding.
Da---- Dasher	Severe: ponding, excess humus.	Severe: ponding, excess humus.	Severe: excess humus, ponding.	Severe: ponding, excess humus.	Severe: ponding, excess humus.
DoA---- Dothan	Slight----	Slight----	Slight----	Slight----	Moderate: droughty.
DoB---- Dothan	Slight----	Slight----	Moderate: slope.	Slight----	Moderate: droughty.
DoC---- Dothan	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight----	Moderate: droughty, slope.
EuA---- Eunola	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.
FaA---- Faceville	Slight----	Slight----	Slight----	Slight----	Slight.
FaB---- Faceville	Slight----	Slight----	Moderate: slope.	Slight----	Slight.
FaC---- Faceville	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight----	Moderate: slope.
FoB---- Foxworth	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: droughty.
FuA, FuB---- Fuquay	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: droughty, too sandy.
FuC---- Fuquay	Severe: too sandy.	Severe: too sandy.	Severe: slope, too sandy.	Severe: too sandy.	Moderate: droughty, slope, too sandy.
GrA---- Greenville	Slight----	Slight----	Slight----	Slight----	Slight.
GrB---- Greenville	Slight----	Slight----	Moderate: slope.	Slight----	Slight.

TABLE 8.--RECREATIONAL DEVELOPMENT--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
GrC---------- Greenville	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight----------	Moderate: slope.
GuD---------- Gundy	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
HwC---------- Hiwassee	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight----------	Moderate: slope.
HwE---------- Hiwassee	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
Jo---------- Johnston	Severe: flooding, ponding, excess humus.	Severe: ponding, excess humus.	Severe: excess humus, ponding, flooding.	Severe: ponding, excess humus.	Severe: ponding, 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.
LuA, LuB---------- Lucy	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: droughty, too sandy.
MaA---------- Marlboro	Slight----------	Slight----------	Slight----------	Slight----------	Slight.
MaB---------- Marlboro	Slight----------	Slight----------	Moderate: slope.	Slight----------	Slight.
Oc---------- Ochlockonee	Severe: flooding.	Slight----------	Moderate: flooding.	Slight----------	Moderate: flooding.
Od---------- Ocilla Variant	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.	Slight----------	Moderate: droughty.
Og---------- Ogeechee	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
OrA---------- Orangeburg	Slight----------	Slight----------	Slight----------	Slight----------	Slight.
OrB---------- Orangeburg	Slight----------	Slight----------	Moderate: slope.	Slight----------	Slight.
OrC---------- Orangeburg	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight----------	Moderate: slope.
PaB---------- Pacolet	Slight----------	Slight----------	Moderate: slope, small stones.	Slight----------	Slight.
PaD---------- Pacolet	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight----------	Moderate: slope.

TABLE 8.--RECREATIONAL DEVELOPMENT--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
PaE---------- Pacolet	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
Re---------- Rembert	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
Sh---------- Shellbluff	Severe: flooding.	Moderate: flooding.	Severe: flooding.	Moderate: flooding.	Severe: flooding.
To---------- Toccoa	Severe: flooding.	Moderate: flooding.	Severe: flooding.	Moderate: flooding.	Severe: flooding.
TrB---------- Troup	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: droughty.
TrC---------- Troup	Severe: too sandy.	Severe: too sandy.	Severe: slope, too sandy.	Severe: too sandy.	Severe: droughty.
TrE---------- Troup	Severe: slope, too sandy.	Severe: slope, too sandy.	Severe: slope, too sandy.	Severe: too sandy.	Severe: droughty, slope.
UaB*: Udorthents.					
Arents.					
VaB---------- Vaucluse	Moderate: percs slowly.	Moderate: percs slowly.	Moderate: slope.	Slight----------	Moderate: droughty.
VcD*: Vaucluse----------	Moderate: slope, percs slowly.	Moderate: slope, percs slowly.	Severe: slope.	Slight----------	Moderate: droughty, slope.
Ailey----------	Severe: too sandy.	Severe: too sandy.	Severe: slope, too sandy.	Severe: too sandy.	Moderate: droughty, slope.
VcE*: Vaucluse----------	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
Ailey----------	Severe: slope.	Severe: slope.	Severe: slope.	Severe: too sandy.	Severe: slope.
VuE*: Vaucluse----------	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
Udorthents.					
WaF---------- Wateree	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Wm---------- Williman	Severe: wetness, too sandy.	Severe: wetness, too sandy.	Severe: wetness, too sandy.	Severe: wetness, too sandy.	Severe: wetness.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 9.--WILDLIFE HABITAT

[See text for definitions of "good," "fair," "poor," and "very poor." Absence of an entry indicates that the soil was not rated]

Map symbol and soil name	Potential for habitat elements								Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Shrubs	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.
AnA---- Angie	Good	Good	Good	---	Good	---	Poor	Poor	Good	Good	Poor.
Ba---- Bayboro	Very poor.	Poor	Poor	Poor	Poor	---	Good	Good	Poor	Poor	Good.
Bb---- Bethera	Fair	Fair	Fair	Good	Good	---	Good	Good	Fair	Good	Good.
Bc---- Bibb	Poor	Fair	Fair	Fair	Fair	---	Good	Good	Fair	Fair	Good.
Ch---- Chewacla	Very poor.	Poor	Poor	Good	Good	---	Fair	Fair	Poor	Good	Fair.
Da---- Dasher	Very poor.	Poor	Poor	Poor	Poor	---	Good	Good	Poor	Poor	Good.
DoA, DoB, DoC---- Dothan	Good	Good	Good	Good	Good	---	Very poor.	Very poor.	Good	Good	Very poor.
EuA---- Eunola	Good	Good	Good	Good	Good	---	Poor	Very poor.	Good	Good	Very poor.
FaA---- Faceville	Good	Good	Good	Good	Good	---	Poor	Very poor.	Good	Good	Very poor.
FaB---- Faceville	Good	Good	Good	Good	Good	---	Very poor.	Very poor.	Good	Good	Very poor.
FaC---- Faceville	Fair	Good	Good	Good	Good	---	Very poor.	Very poor.	Good	Good	Very poor.
FoB---- Foxworth	Poor	Poor	Fair	Fair	Fair	---	Very poor.	Very poor.	Poor	Fair	Very poor.
FuA, 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.
GrA, GrB---- Greenville	Good	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
GrC---- Greenville	Fair	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
GuD---- Gundy	Poor	Fair	Good	Good	Good	---	Very poor.	Very poor.	Good	Good	Very poor.
HwC---- Hiwassee	Fair	Good	Good	Good	Good	---	Very poor.	Very poor.	Good	Good	Very poor.
HwE---- Hiwassee	Poor	Fair	Good	Good	Good	---	Very poor.	Very poor.	Fair	Good	Very poor.
Jo---- Johnston	Very poor.	Poor	Poor	Poor	Poor	---	Good	Good	Poor	Poor	Good.

TABLE 9.--WILDLIFE HABITAT--Continued

Map symbol and soil name	Potential for habitat elements								Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Shrubs	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
LaB, LaD, LaE------ Lakeland	Poor	Fair	Fair	Poor	Fair	---	Very poor.	Very poor.	Fair	Fair	Very poor.
LuA, LuB---------- Lucy	Poor	Fair	Good	Good	Good	---	Poor	Very poor.	Fair	Good	Very poor.
MaA, MaB---------- Marlboro	Good	Good	Good	Good	Good	---	Very poor.	Very poor.	Good	Good	Very poor.
Oc---------- Ochlockonee	Good	Good	Good	Good	Good	---	Poor	Very poor.	Good	Good	Very poor.
Od---------- Ocilla Variant	Fair	Fair	Good	Fair	Good	---	Poor	Poor	Fair	Good	Poor.
Og---------- Ogeechee	Poor	Fair	Fair	Fair	Fair	---	Good	Good	Fair	Fair	Good.
OrA, OrB---------- Orangeburg	Good	Good	Good	Good	Good	---	Poor	Very poor.	Good	Good	Very poor.
OrC---------- Orangeburg	Fair	Good	Good	Good	Good	---	Very poor.	Very poor.	Good	Good	Very poor.
PaB---------- Pacolet	Fair	Fair	Fair	Good	Good	---	Very poor.	Very poor.	Fair	Good	Very poor.
PaD---------- Pacolet	Poor	Fair	Poor	Fair	Fair	---	Very poor.	Very poor.	Poor	Fair	Very poor.
PaE---------- Pacolet	Very poor.	Poor	Poor	Fair	Fair	---	Very poor.	Very poor.	Poor	Fair	Very poor.
Re---------- Rembert	Poor	Fair	Fair	Fair	Fair	---	Good	Good	Fair	Fair	Good.
Sh---------- Shellbluff	Good	Good	Good	Good	Good	---	Poor	Poor	Good	Good	Poor.
To---------- Toccoa	Poor	Fair	Fair	Good	Good	---	Poor	Very poor.	Fair	Good	Very poor.
TrB, TrC, TrE------ Troup	Poor	Fair	Fair	Poor	Poor	---	Very poor.	Very poor.	Fair	Poor	Very poor.
UaB*: Udorthents. Arents.											
VaB---------- Vaucluse	Fair	Fair	Fair	Fair	Fair	---	Very poor.	Very poor.	Fair	Fair	Very poor.
VcD*: Vaucluse----------	Poor	Fair	Fair	Fair	Fair	---	Very poor.	Very poor.	Fair	Fair	Very poor.
Ailey----------	Poor	Fair	Fair	Poor	Poor	---	Very poor.	Very poor.	Fair	Poor	Very poor.
VcE*: Vaucluse----------	Poor	Fair	Fair	Fair	Fair	---	Very poor.	Very poor.	Fair	Fair	Very poor.
Ailey.											

See footnote at end of table.

TABLE 9.--WILDLIFE HABITAT--Continued

Map symbol and soil name	Potential for habitat elements								Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Shrubs	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
VuE*: Vaucluse----------	Poor	Fair	Fair	Fair	Fair	---	Very poor.	Very poor.	Fair	Fair	Very poor.
Udorthents.											
WaF---------- Wateree	Very poor.	Poor	Poor	Fair	Fair	--- ---	Very poor.	Very poor.	Poor	Fair	Very poor.
Wm---------- Williman	Fair	Fair	Fair	Good	Good	---	Fair	Fair	Fair	Good	Fair.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 10.--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; it does not eliminate the need for onsite investigation]

Map symbol and soil name	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.
AnA---- Angie	Moderate: too clayey, wetness.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: low strength, shrink-swell.	Slight.
Ba---- Bayboro	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: low strength, ponding.	Severe: ponding.
Bb---- Bethera	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: low strength, ponding.	Severe: ponding.
Bc---- Bibb	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.	Severe: wetness, flooding.
Ch---- Chewacla	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, wetness, flooding.	Severe: wetness, flooding.
Da---- Dasher	Severe: excess humus, ponding.	Severe: ponding, low strength.	Severe: ponding, low strength.	Severe: ponding, low strength.	Severe: ponding, low strength.	Severe: ponding, excess humus.
DoA---- Dothan	Moderate: wetness.	Slight----	Moderate: wetness.	Slight----	Slight----	Moderate: droughty.
DoB---- Dothan	Moderate: wetness.	Slight----	Moderate: wetness.	Moderate: slope.	Slight----	Moderate: droughty.
DoC---- Dothan	Moderate: wetness, slope.	Moderate: slope.	Moderate: wetness, slope.	Severe: slope.	Moderate: slope.	Moderate: droughty, slope.
EuA---- Eunola	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.
FaA---- Faceville	Moderate: too clayey.	Slight----	Slight----	Slight----	Moderate: low strength.	Slight.
FaB---- Faceville	Moderate: too clayey.	Slight----	Slight----	Moderate: slope.	Moderate: low strength.	Slight.
FaC---- Faceville	Moderate: too clayey, slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: low strength, slope.	Moderate: slope.
FoB---- Foxworth	Severe: cutbanks cave.	Slight----	Moderate: wetness.	Slight----	Slight----	Moderate: droughty.
FuA---- Fuquay	Slight----	Slight----	Moderate: wetness.	Slight----	Slight----	Moderate: droughty, too sandy.
FuB---- Fuquay	Slight----	Slight----	Moderate: wetness.	Moderate: slope.	Slight----	Moderate: droughty, too sandy.
FuC---- Fuquay	Moderate: slope.	Moderate: slope.	Moderate: wetness, slope.	Severe: slope.	Moderate: slope.	Moderate: droughty, slope, too sandy.

TABLE 10.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
GrA---------- Greenville	Moderate: too clayey.	Slight---------	Slight---------	Slight---------	Moderate: low strength.	Slight.
GrB---------- Greenville	Moderate: too clayey.	Slight---------	Slight---------	Moderate: slope.	Moderate: low strength.	Slight.
GrC---------- Greenville	Moderate: too clayey, slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: low strength, slope.	Moderate: slope.
GuD---------- Gundy	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope.	Severe: slope.
HwC---------- Hiwassee	Moderate: too clayey, slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: low strength, slope.	Moderate: slope.
HwE---------- Hiwassee	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Jo---------- Johnston	Severe: cutbanks cave, excess humus, ponding.	Severe: flooding, ponding, low strength.	Severe: flooding, ponding.	Severe: flooding, ponding, low strength.	Severe: ponding, flooding.	Severe: ponding, 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.
LuA---------- Lucy	Moderate: cutbanks cave.	Slight---------	Slight---------	Slight---------	Slight---------	Moderate: droughty, too sandy.
LuB---------- Lucy	Moderate: cutbanks cave.	Slight---------	Slight---------	Moderate: slope.	Slight---------	Moderate: droughty, too sandy.
MaA---------- Marlboro	Moderate: too clayey.	Slight---------	Slight---------	Slight---------	Moderate: low strength.	Slight.
MaB---------- Marlboro	Moderate: too clayey.	Slight---------	Slight---------	Moderate: slope.	Moderate: low strength.	Slight.
Oc---------- Ochlockonee	Moderate: wetness.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Moderate: flooding.
Od---------- Ocilla Variant	Severe: cutbanks cave, wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: droughty.
Og---------- Ogeechee	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
OrA---------- Orangeburg	Slight---------	Slight---------	Slight---------	Slight---------	Slight---------	Slight.
OrB---------- Orangeburg	Slight---------	Slight---------	Slight---------	Moderate: slope.	Slight---------	Slight.
OrC---------- Orangeburg	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: slope.

TABLE 10.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
PaB---------- Pacolet	Moderate: too clayey.	Slight---------	Slight---------	Moderate: slope.	Severe: low strength.	Slight.
PaD---------- Pacolet	Moderate: too clayey, slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: low strength.	Moderate: slope.
PaE---------- Pacolet	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope.	Severe: slope.
Re---------- Rembert	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: low strength, ponding.	Severe: ponding.
Sh---------- Shellbluff	Moderate: wetness, flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: low strength, flooding.	Severe: flooding.
To---------- Toccoa	Moderate: wetness, flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.
TrB---------- Troup	Severe: cutbanks cave.	Slight---------	Slight---------	Moderate: slope.	Slight---------	Severe: droughty.
TrC---------- Troup	Severe: cutbanks cave.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Severe: droughty.
TrE---------- Troup	Severe: cutbanks cave, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: droughty, slope.
UaB*: Udorthents. Arents.						
VaB---------- Vaucluse	Severe: cutbanks cave.	Slight---------	Slight---------	Moderate: slope.	Slight---------	Moderate: droughty.
VcD*: Vaucluse---------	Severe: cutbanks cave.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: droughty, slope.
Ailey----------	Moderate: cutbanks cave, slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: droughty, slope.
VcE*: Vaucluse---------	Severe: cutbanks cave, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Ailey----------	Severe: cutbanks cave, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
VuE*: Vaucluse---------	Severe: cutbanks cave, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Udorthents.						
WaF---------- Wateree	Severe: cutbanks cave, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.

See footnote at end of table.

TABLE 10.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
Wm---------- Williman	Severe: cutbanks cave, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 11.--SANITARY FACILITIES

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," "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; it does not eliminate the need for onsite investigation]

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
AeB---- Ailey	Severe: percs slowly.	Severe: seepage.	Slight----	Severe: seepage.	Good.
AnA---- Angie	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness, too clayey.	Severe: wetness.	Poor: too clayey, hard to pack.
Ba---- Bayboro	Severe: ponding, percs slowly.	Severe: ponding.	Severe: ponding, too clayey.	Severe: ponding.	Poor: too clayey, hard to pack, ponding.
Bb---- Bethera	Severe: ponding, percs slowly.	Severe: ponding.	Severe: ponding, too clayey.	Severe: ponding.	Poor: too clayey, hard to pack, ponding.
Bc---- Bibb	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
Ch---- Chewacla	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
Da---- Dasher	Severe: ponding.	Severe: excess humus, ponding.	Severe: ponding, seepage.	Severe: seepage, ponding.	Poor: ponding, seepage, excess humus.
DoA---- Dothan	Severe: wetness, percs slowly.	Moderate: seepage.	Moderate: wetness.	Slight----	Good.
DoB---- Dothan	Severe: wetness, percs slowly.	Moderate: seepage, slope.	Moderate: wetness.	Slight----	Good.
DoC---- Dothan	Severe: wetness, percs slowly.	Severe: slope.	Moderate: wetness, slope.	Moderate: slope.	Fair: slope.
EuA---- Eunola	Severe: wetness.	Severe: seepage, wetness.	Severe: seepage, wetness.	Severe: wetness.	Fair: wetness, thin layer.
FaA---- Faceville	Slight----	Moderate: seepage.	Moderate: too clayey.	Slight----	Fair: too clayey.
FaB---- Faceville	Slight----	Moderate: seepage, slope.	Moderate: too clayey.	Slight----	Fair: too clayey.
FaC---- Faceville	Moderate: slope.	Severe: slope.	Moderate: slope, too clayey.	Moderate: slope.	Fair: too clayey, slope.
FoB---- Foxworth	Severe: wetness, poor filter.	Severe: seepage.	Severe: seepage, wetness, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
FuA---- Fuquay	Moderate: percs slowly.	Slight----	Slight----	Slight----	Poor: too sandy.

TABLE 11.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
FuB---- Fuquay	Moderate: percs slowly.	Moderate: slope.	Slight----	Slight----	Poor: too sandy.
FuC---- Fuquay	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope.	Moderate: slope.	Poor: too sandy.
GrA---- Greenville	Slight----	Moderate: seepage.	Moderate: too clayey.	Slight----	Fair: too clayey.
GrB---- Greenville	Slight----	Moderate: seepage, slope.	Moderate: too clayey.	Slight----	Fair: too clayey.
GrC---- Greenville	Moderate: slope.	Severe: slope.	Moderate: slope, too clayey.	Moderate: slope.	Fair: too clayey, slope.
GuD---- Gundy	Severe: slope.	Severe: slope.	Severe: depth to rock, slope, too clayey.	Severe: slope.	Poor: too clayey, hard to pack, slope.
HwC---- Hiwassee	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope, too clayey.	Moderate: slope.	Fair: too clayey, hard to pack, slope.
HwE---- Hiwassee	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
Jo---- Johnston	Severe: flooding, ponding, poor filter.	Severe: seepage, flooding, ponding.	Severe: flooding, seepage, ponding.	Severe: flooding, seepage, ponding.	Poor: seepage, ponding.
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: poor filter, slope.	Severe: seepage, slope.	Severe: seepage, slope, too sandy.	Severe: seepage, slope.	Poor: seepage, too sandy, slope.
LuA, LuB---- Lucy	Slight----	Severe: seepage.	Slight----	Severe: seepage.	Good.
MaA---- Marlboro	Slight----	Moderate: seepage.	Moderate: too clayey.	Slight----	Fair: too clayey.
MaB---- Marlboro	Slight----	Moderate: seepage, slope.	Moderate: too clayey.	Slight----	Fair: too clayey.
Oc---- Ochlockonee	Severe: flooding, wetness.	Severe: seepage, flooding, wetness.	Severe: flooding, seepage, wetness.	Severe: flooding, wetness.	Fair: wetness.
Od---- Ocilla Variant	Severe: wetness.	Moderate: seepage.	Severe: wetness.	Severe: seepage, wetness.	Fair: wetness.
Og---- Ogeechee	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Poor: ponding.

TABLE 11.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
OrA---- Orangeburg	Slight----	Moderate: seepage.	Slight----	Slight----	Good.
OrB---- Orangeburg	Slight----	Moderate: seepage, slope.	Slight----	Slight----	Good.
OrC---- Orangeburg	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
PaB---- Pacolet	Moderate: percs slowly.	Moderate: seepage, slope.	Moderate: too clayey.	Slight----	Fair: too clayey.
PaD---- Pacolet	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope, too clayey.	Moderate: slope.	Fair: too clayey, slope.
PaE---- Pacolet	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
Re---- Rembert	Severe: ponding, percs slowly.	Severe: seepage, ponding.	Severe: seepage, ponding.	Severe: ponding.	Poor: ponding.
Sh---- Shellbluff	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Fair: too clayey, wetness.
To---- Toccoa	Severe: flooding, wetness.	Severe: seepage, flooding, wetness.	Severe: flooding, seepage, wetness.	Severe: flooding, seepage, wetness.	Good.
TrB---- Troup	Slight----	Severe: seepage.	Severe: too sandy.	Severe: seepage.	Poor: too sandy.
TrC---- Troup	Moderate: slope.	Severe: seepage, slope.	Severe: too sandy.	Severe: seepage.	Poor: too sandy.
TrE---- Troup	Severe: slope.	Severe: seepage, slope.	Severe: slope, too sandy.	Severe: seepage, slope.	Poor: too sandy, slope.
UaB*: Udorthents.					
Arents.					
VaB---- Vaucluse	Severe: percs slowly.	Severe: seepage.	Severe: seepage.	Severe: seepage.	Fair: too clayey.
VcD*: Vaucluse----	Severe: percs slowly.	Severe: seepage, slope.	Severe: seepage.	Severe: seepage.	Fair: too clayey, slope.
Ailey----	Severe: percs slowly.	Severe: seepage, slope.	Moderate: slope.	Severe: seepage.	Fair: slope.
VcE*: Vaucluse----	Severe: percs slowly, slope.	Severe: seepage, slope.	Severe: seepage, slope.	Severe: seepage, slope.	Poor: slope.

See footnote at end of table.

TABLE 11.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
VcE*: Ailey	Severe: percs slowly, slope.	Severe: seepage, slope.	Severe: slope.	Severe: seepage, slope.	Poor: slope.
VuE*: Vaucluse	Severe: percs slowly, slope.	Severe: seepage, slope.	Severe: seepage, slope.	Severe: seepage, slope.	Poor: slope.
Udorthents.					
WaF Wateree	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, seepage, slope.	Poor: area reclaim, slope.
Wm Williman	Severe: wetness.	Severe: seepage, wetness.	Severe: wetness.	Severe: seepage, wetness.	Poor: wetness.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 12.--CONSTRUCTION MATERIALS

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "good," "fair," "poor," "probable," and "improbable." Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition; it does not eliminate the need for onsite investigation]

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
AeB---------- Ailey	Good----------	Improbable: excess fines.	Improbable: excess fines.	Poor: too sandy.
AnA---------- Angie	Poor: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
Ba---------- Bayboro	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, wetness.
Bb---------- Bethera	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, wetness.
Bc---------- Bibb	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
Ch---------- Chewacla	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
Da---------- Dasher	Poor: wetness, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: excess humus, wetness.
DoA, DoB, DoC--------- Dothan	Good----------	Improbable: excess fines.	Improbable: excess fines.	Fair: too sandy, thin layer.
EuA---------- Eunola	Fair: wetness.	Improbable: excess fines.	Improbable: too sandy.	Good.
FaA, FaB, FaC--------- Faceville	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
FoB---------- Foxworth	Good----------	Probable----------	Improbable: too sandy.	Poor: too sandy.
FuA, FuB, FuC--------- Fuquay	Good----------	Improbable: excess fines.	Improbable: excess fines.	Poor: too sandy.
GrA, GrB, GrC--------- Greenville	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
GuD---------- Gundy	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
HwC---------- Hiwassee	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
HwE---------- Hiwassee	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, slope.
Jo---------- Johnston	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
LaB, LaD---------- Lakeland	Good----------	Probable----------	Improbable: too sandy.	Poor: too sandy.

TABLE 12.--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
LaE---- Lakeland	Fair: slope.	Probable----	Improbable: too sandy.	Poor: too sandy, slope.
LuA, LuB---- Lucy	Good----	Improbable: excess fines, thin layer.	Improbable: excess fines.	Poor: too sandy.
MaA, MaB---- Marlboro	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
Oc---- Ochlockonee	Good----	Improbable: excess fines.	Improbable: excess fines.	Good.
Od---- Ocilla Variant variant	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: too sandy.
Og---- Ogeechee	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
OrA, OrB---- Orangeburg	Good----	Improbable: excess fines.	Improbable: excess fines.	Fair: too sandy.
OrC---- Orangeburg	Good----	Improbable: excess fines.	Improbable: excess fines.	Fair: too sandy, slope.
PaB, PaD---- Pacolet	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
PaE---- Pacolet	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, slope.
Re---- Rembert	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, wetness.
Sh---- Shellbluff	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
To---- Toccoa	Good----	Improbable: excess fines.	Improbable: excess fines.	Good.
TrB, TrC---- Troup	Good----	Probable----	Improbable: too sandy.	Poor: too sandy.
TrE---- Troup	Fair: slope.	Probable----	Improbable: too sandy.	Poor: too sandy, slope.
UaB*: Udorthents.				
Arents.				
VaB---- Vaucluse	Good----	Improbable: excess fines.	Improbable: excess fines.	Fair: area reclaim, too sandy, small stones.
VcD*: Vaucluse----	Good----	Improbable: excess fines.	Improbable: excess fines.	Fair: area reclaim, too sandy, small stones.

See footnote at end of table.

TABLE 12.--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
VcD*:				
Ailey	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: slope, too sandy.
VcE*:				
Vaucluse	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Fair: area reclaim, too sandy, small stones.
Ailey	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
VuE*:				
Vaucluse	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Fair: area reclaim, too sandy, small stones.
Udorthents.				
WaF	Poor: area reclaim, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Wateree				
Wm	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
Williman				

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 13.--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; it does not eliminate the need for onsite investigation]

Map symbol and soil name	Limitations for--		Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Drainage	Irrigation	Terraces and diversions	Grassed waterways
AeB---- Ailey	Severe: seepage.	Moderate: piping.	Deep to water	Droughty, percs slowly, slope.	Rooting depth, percs slowly.	Droughty, rooting depth.
AnA---- Angie	Slight----	Moderate: hard to pack, wetness.	Deep to water	Percs slowly, erodes easily.	Erodes easily, percs slowly.	Erodes easily, percs slowly.
Ba---- Bayboro	Slight----	Severe: ponding.	Ponding, percs slowly.	Ponding, percs slowly.	Ponding, percs slowly.	Wetness, percs slowly.
Bb---- Bethera	Slight----	Severe: ponding.	Ponding, percs slowly.	Ponding, percs slowly.	Ponding, percs slowly.	Wetness, percs slowly.
Bc---- Bibb	Moderate: seepage.	Severe: piping, wetness.	Flooding----	Wetness, flooding.	Wetness----	Wetness.
Ch---- Chewacla	Moderate: seepage.	Severe: piping, wetness.	Flooding----	Wetness, flooding.	Wetness----	Wetness.
Da---- Dasher	Severe: seepage.	Severe: seepage, excess humus, ponding.	Ponding, subsides.	Ponding----	Ponding----	Wetness.
DoA---- Dothan	Moderate: seepage.	Slight----	Deep to water	Fast intake, droughty.	Favorable----	Droughty.
DoB---- Dothan	Moderate: seepage, slope.	Slight----	Deep to water	Fast intake, slope, droughty.	Favorable----	Droughty.
DoC---- Dothan	Severe: slope.	Slight----	Deep to water	Fast intake, slope, droughty.	Slope----	Slope, droughty.
EuA---- Eunola	Moderate: seepage.	Severe: piping, wetness.	Favorable----	Wetness, fast intake.	Wetness----	Favorable.
FaA---- Faceville	Moderate: seepage.	Slight----	Deep to water	Favorable----	Favorable----	Favorable.
FaB---- Faceville	Moderate: seepage.	Slight----	Deep to water	Slope----	Favorable----	Favorable.
FaC---- Faceville	Severe: slope.	Slight----	Deep to water	Slope----	Slope----	Slope.
FoB---- Foxworth	Severe: seepage.	Severe: seepage.	Deep to water	Droughty, fast intake, soil blowing.	Too sandy, soil blowing.	Droughty.
FuA---- Fuquay	Slight----	Slight----	Deep to water	Droughty, fast intake.	Too sandy----	Droughty.
FuB---- Fuquay	Slight----	Slight----	Deep to water	Droughty, fast intake, slope.	Too sandy----	Droughty.
FuC---- Fuquay	Slight----	Slight----	Deep to water	Droughty, fast intake, slope.	Slope, too sandy.	Slope, droughty.

TABLE 13.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--		Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Drainage	Irrigation	Terraces and diversions	Grassed waterways
GrA---------- Greenville	Moderate: seepage.	Moderate: piping.	Deep to water	Favorable------	Favorable------	Favorable.
GrB---------- Greenville	Moderate: seepage, slope.	Moderate: piping.	Deep to water	Slope----------	Favorable------	Favorable.
GrC---------- Greenville	Severe: slope.	Moderate: piping.	Deep to water	Slope----------	Slope----------	Slope.
GuD---------- Gundy	Severe: slope.	Severe: hard to pack.	Deep to water	Slope----------	Slope----------	Slope.
HwC---------- Hiwassee	Moderate: seepage.	Moderate: hard to pack.	Deep to water	Slope----------	Slope----------	Slope.
HwE---------- Hiwassee	Severe: slope.	Moderate: hard to pack.	Deep to water	Slope----------	Slope----------	Slope.
Jo---------- Johnston	Severe: seepage.	Severe: seepage, piping, ponding.	Ponding, flooding, cutbanks cave.	Ponding, flooding.	Ponding--------	Wetness.
LaB---------- Lakeland	Severe: seepage.	Severe: seepage.	Deep to water	Droughty, fast intake, soil blowing.	Too sandy, soil blowing.	Droughty.
LaD, LaE---------- Lakeland	Severe: seepage, slope.	Severe: seepage.	Deep to water	Droughty, fast intake, soil blowing.	Slope, too sandy, soil blowing.	Slope, droughty.
LuA---------- Lucy	Severe: seepage.	Moderate: piping.	Deep to water	Droughty, fast intake.	Too sandy------	Droughty.
LuB---------- Lucy	Severe: seepage.	Moderate: piping.	Deep to water	Droughty, fast intake, slope.	Too sandy------	Droughty.
MaA---------- Marlboro	Moderate: seepage.	Severe: piping.	Deep to water	Fast intake, soil blowing.	Favorable------	Favorable.
MaB---------- Marlboro	Moderate: seepage, slope.	Severe: piping.	Deep to water	Fast intake, soil blowing, slope.	Favorable------	Favorable.
Oc---------- Ochlockonee	Severe: seepage.	Severe: piping.	Deep to water	Flooding-------	Favorable------	Favorable.
Od---------- Ocilla Variant	Severe: seepage.	Severe: piping.	Favorable------	Wetness, droughty, fast intake.	Wetness--------	Droughty.
Og---------- Ogeechee	Moderate: seepage.	Severe: ponding.	Ponding--------	Ponding--------	Ponding--------	Wetness.
OrA---------- Orangeburg	Moderate: seepage.	Moderate: piping.	Deep to water	Fast intake----	Favorable------	Favorable.
OrB---------- Orangeburg	Moderate: seepage.	Moderate: piping.	Deep to water	Fast intake, slope.	Favorable------	Favorable.
OrC---------- Orangeburg	Moderate: seepage.	Moderate: piping.	Deep to water	Fast intake, slope.	Slope----------	Slope.
PaB---------- Pacolet	Moderate: seepage, slope.	Severe: hard to pack.	Deep to water	Slope----------	Favorable------	Favorable.
PaD, PaE---------- Pacolet	Severe: slope.	Severe: hard to pack.	Deep to water	Slope----------	Slope----------	Slope.

TABLE 13.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--		Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Drainage	Irrigation	Terraces and diversions	Grassed waterways
Re---------- Rembert	Moderate: seepage.	Severe: ponding.	Ponding, percs slowly.	Ponding, percs slowly.	Ponding, percs slowly.	Wetness, percs slowly.
Sh---------- Shellbluff	Moderate: seepage.	Severe: piping.	Deep to water	Flooding-------	Favorable------	Favorable.
To---------- Toccoa	Severe: seepage.	Severe: piping.	Flooding-------	Flooding-------	Favorable------	Favorable.
TrB---------- Troup	Severe: seepage.	Severe: seepage, piping.	Deep to water	Droughty, fast intake, slope.	Too sandy------	Droughty.
TrC, TrE---------- Troup	Severe: seepage, slope.	Severe: seepage, piping.	Deep to water	Droughty, fast intake, slope.	Slope, too sandy.	Slope, droughty.
UaB*: Udorthents.						
Arents.						
VaB---------- Vaucluse	Severe: seepage.	Severe: piping.	Deep to water	Droughty, fast intake, percs slowly.	Soil blowing, percs slowly.	Droughty, rooting depth.
VcD*, VcE*: Vaucluse---------	Severe: seepage, slope.	Severe: piping.	Deep to water	Droughty, fast intake, percs slowly.	Slope, soil blowing.	Slope, droughty, rooting depth.
Ailey----------	Severe: seepage.	Moderate: piping.	Deep to water	Droughty, percs slowly, slope.	Slope, rooting depth, percs slowly.	Slope, droughty, rooting depth.
VuE*: Vaucluse---------	Severe: seepage, slope.	Severe: piping.	Deep to water	Droughty, fast intake, percs slowly.	Slope, soil blowing.	Slope, droughty, rooting depth.
Udorthents.						
WaF---------- Wateree	Severe: seepage.	Severe: piping.	Deep to water	Droughty, depth to rock.	Slope, depth to rock, soil blowing.	Slope, droughty, depth to rock.
Wm---------- Williman	Severe: seepage.	Severe: piping, wetness.	Cutbanks cave	Wetness, droughty, fast intake.	Wetness, soil blowing.	Wetness, droughty.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 14.--ENGINEERING INDEX PROPERTIES

[The symbol < means less than. Absence of an entry indicates that data were not estimated. Some soils may have Unified classifications and USDA textures in addition to those shown. In general, the dominant classifications and textures are shown]

Map symbol and soil name	Depth	USDA texture	Classification		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	4	10	40	200		
	In								Pct	
AeB---------- Ailey	0-23	Sand----------	SP-SM	A-2, A-3	85-100	75-95	50-75	5-12	---	NP
	23-30	Sandy loam, sandy clay loam.	SM, SC	A-2, A-4, A-6	90-100	75-100	60-90	30-40	23-40	8-16
	30-72	Sandy loam, sandy clay loam.	SM, SC	A-2, A-4, A-6	90-100	75-100	55-90	20-40	28-40	8-15
AnA---------- Angie	0-11	Fine sandy loam	SM, ML, CL-ML, SM-SC	A-4, A-2	95-100	90-100	60-85	30-55	<28	NP-10
	11-74	Silty clay loam, silty clay, clay.	CH, CL	A-7-6	95-100	90-100	85-100	75-95	41-55	18-29
Ba---------- Bayboro	0-8	Clay loam--------	CL, ML, CL-ML	A-6, A-7, A-4	100	100	85-100	60-80	25-42	4-20
	8-65	Clay loam, sandy clay, clay.	CL, CH	A-7	100	100	85-100	55-95	41-70	20-40
Ba---------- Bethera	0-5	Clay loam--------	CL, CH	A-6, A-7	100	95-100	90-100	70-80	30-55	12-26
	5-64	Clay, clay loam, sandy clay.	CL, CH, ML, MH	A-6, A-7	100	98-100	93-100	55-95	37-55	12-30
Bc---------- Bibb	0-7	Loamy sand-------	SM	A-2, A-4	95-100	90-100	60-90	12-25	000	NP
	7-60	Sandy loam, sand, loamy sand.	SM, SM-SC, ML, CL-ML	A-2, A-4	60-100	50-100	40-100	30-90	<30	NP-7
Ch---------- Chewacla	0-10	Loam----------	ML, CL, CL-ML	A-4, A-6, A-7	98-100	95-100	70-100	55-90	25-49	4-20
	10-65	Sandy clay loam, loam, sandy loam.	SM, CL-ML, SM-SC, ML	A-4	96-100	95-100	60-80	36-70	<35	NP-7
Da---------- Dasher	0-6	Mucky peat-------	PT	---	---	---	---	---	---	NP
	6-60	Mucky peat-------	PT	---	---	---	---	---	---	NP
DoA, DoB, DoC---- Dothan	0-11	Loamy sand-------	SM	A-2	95-100	92-100	60-80	13-30	---	NP
	11-31	Sandy clay loam, sandy loam.	SM-SC, SC, SM	A-2, A-4, A-6	95-100	92-100	68-90	23-49	<40	NP-16
	31-65	Sandy clay loam, sandy clay.	SM-SC, SC, SM, CL	A-2, A-4, A-6, A-7	95-100	92-100	70-95	30-53	25-45	4-23
EuA---------- Eunola	0-15	Loamy sand-------	SM	A-2	100	98-100	50-80	15-35	---	NP
	15-30	Sandy clay loam	SM, SC, SM-SC	A-4, A-2	100	98-100	75-95	30-45	<30	NP-10
	30-55	Sandy clay loam, sandy clay.	SM, SC, ML, CL	A-4, A-6	100	98-100	80-95	36-60	<30	2-15
	55-70	Sandy loam-------	SM	A-2, A-4	100	98-100	60-70	30-40	---	NP
FaA, FaB, FaC---- Faceville	0-6	Sandy loam-------	SM, SM-SC	A-2, A-4	90-100	85-100	72-97	17-38	<25	NP-7
	6-75	Sandy clay, clay, clay loam.	CL, SC, CH	A-6, A-7	98-100	95-100	75-99	45-72	25-52	11-25
FoB---------- Foxworth	0-47	Sand----------	SP-SM	A-3, A-2-4	100	100	60-100	5-12	---	NP
	47-80	Sand, fine sand	SP, SP-SM	A-3, A-2-4	100	100	50-100	1-12	---	NP
FuA, FuB, FuC---- Fuquay	0-26	Sand----------	SP-SM, SM	A-1, A-2, A-3	95-100	90-100	45-80	5-20	---	NP
	26-35	Sandy loam, sandy clay loam.	SM, SC, SM-SC	A-2, A-4, A-6	85-100	85-100	70-90	23-45	<25	NP-13
	35-70	Sandy clay loam	SC	A-2, A-4, A-6, A-7-6	95-100	90-100	60-93	28-49	20-49	8-25

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	4	10	40	200		
	In								Pct	
GrA, GrB, GrC---- Greenville	0-12	Sandy loam-------	SM, SC, SM-SC, CL-ML	A-2, A-4	95-100	90-100	65-85	30-55	<25	NP-10
	12-60	Sandy 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
GuD---------- Gundy	0-3	Loam----------	ML, SM	A-4	80-100	75-100	60-100	40-90	<40	NP-10
	3-26	Clay, clay loam, silty clay.	MH, CH, ML, CL	A-6, A-7	75-100	70-100	60-100	55-95	35-60	11-25
	26-54	Slaty clay loam, slaty silty clay loam, slaty silt loam.	SM, ML, GM	A-2, A-4, A-6, A-7-6	65-100	55-90	45-90	30-85	30-50	5-20
	54-60	Weathered bedrock	---	---	---	---	---	---	---	---
HwC, HwE--------- Hiwassee	0-4	Sandy loam-------	SM, SM-SC	A-4, A-2	95-100	90-100	70-95	30-50	<35	NP-7
	4-45	Clay, silty clay, clay loam.	CL, ML, MH	A-7-5, A-7-6, A-6	95-100	95-100	80-100	51-95	40-80	12-36
	45-65	Sandy loam, loam, sandy clay loam.	SM, ML, SM-SC, CL-ML	A-4, A-5, A-6, A-7	93-100	90-98	60-90	36-60	20-49	4-20
Jo---------- Johnston	0-19	Mucky loam-------	OL, ML, CL-ML	A-8, A-4, A-5	100	100	90-100	51-75	20-45	2-14
	19-34	Stratified loamy sand to sand.	SM, SP-SM	A-2, A-3	100	100	50-100	5-30	---	NP
	34-60	Stratified fine sandy loam to sandy loam.	SM	A-2, A-4	100	100	50-100	25-49	<35	NP-10
LaB, LaD, LaE---- Lakeland	0-66	Sand----------	SP-SM	A-3, A-2-4	90-100	90-100	60-100	5-12	---	NP
	66-80	Sand, fine sand	SP, SP-SM	A-3, A-2-4	90-100	90-100	50-100	1-12	---	NP
LuA, LuB--------- Lucy	0-26	Sand----------	SM, SP-SM	A-2	98-100	95-100	50-87	10-30	---	NP
	26-31	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	<30	NP-15
	31-70	Sandy loam, sandy clay loam, clay loam.	SC, SM-SC, SM	A-2, A-6, A-4	100	95-100	60-95	20-50	20-40	3-20
MaA, MaB--------- Marlboro	0-7	Loamy sand-------	SM	A-2	98-100	95-100	70-100	15-35	<25	NP-4
	7-70	Sandy clay, clay loam, clay.	CL, ML, CL-ML	A-4, A-6, A-7	98-100	95-100	78-100	51-70	25-48	6-20
Oc---------- Ochlockonee	0-6	Sandy loam-------	SM, ML, SM-SC, CL-ML	A-4	100	95-100	95-100	36-80	<26	NP-5
	6-38	Fine sandy loam, sandy loam, silt loam.	SM, ML, SC, CL	A-4	100	95-100	95-100	36-75	<32	NP-9
	38-63	Loamy sand, sandy loam, silt loam.	SM, ML, CL, SC	A-4, A-2	100	95-100	85-99	13-80	<32	NP-9
Od---------- Ocilla Variant	0-24	Loamy sand-------	SM, SP-SM	A-2, A-3	100	95-100	75-100	8-35	---	NP
	24-52	Sandy loam, sandy clay loam.	SM, CL, SC, ML	A-2, A-4, A-6	100	95-100	80-100	30-55	<40	NP-18
	52-65	Sandy clay, clay	CL, CH	A-7	100	98-100	75-100	55-85	45-67	23-45
Og---------- Ogeechee	0-15	Sandy loam-------	SM	A-2, A-1	100	95-100	48-70	15-25	<30	NP-5
	15-45	Sandy clay loam, clay loam.	SC, CL	A-6	100	95-100	65-85	40-55	32-40	16-23
	45-65	Sandy clay loam, sandy loam.	SC	A-6, A-2	100	90-100	50-65	25-45	30-40	15-25

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	4	10	40	200		
	In								Pct	
OrA, OrB, OrC---- Orangeburg	0-6	Loamy sand-------	SM	A-2	98-100	95-100	60-87	14-28	---	NP
	6-24	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
	24-60	Sandy clay loam, sandy clay, sandy loam.	SC, CL	A-6, A-4, A-7	98-100	95-100	70-97	40-65	24-46	8-21
PaB, PaD, PaE---- Pacolet	0-4	Sandy loam-------	SM, SM-SC	A-2, A-1-B	85-100	80-100	42-80	16-35	<28	NP-7
	4-24	Sandy clay, clay loam, clay.	ML, MH, CL	A-6, A-7	80-100	80-100	60-95	51-75	38-65	11-30
	24-38	Clay loam, sandy clay loam, sandy loam.	CL, CL-ML, SM-SC, SC	A-2, A-4, A-6	80-100	70-100	60-80	30-60	20-35	5-15
	38-60	Sandy loam, fine sandy loam, loam.	SM, SM-SC	A-4, A-2-4	80-100	70-100	60-80	30-50	<28	NP-6
Re---------- Rembert	0-7	Loam----------	CL, CL-ML	A-4, A-6	100	95-100	70-98	51-80	20-40	5-15
	7-30	Clay, sandy clay, clay loam.	CL	A-6, A-7	100	98-100	85-98	55-85	35-50	15-25
	30-42	Sandy clay loam, clay loam, sandy clay.	SC, SM-SC, CL, CL-ML	A-2, A-4, A-6	100	95-100	80-98	30-60	15-35	4-15
	42-60	Sandy clay loam, sandy loam, loamy sand.	SC, SM, SM-SC	A-2, A-4	100	98-100	60-90	20-50	<30	NP-10
Sh---------- Shellbluff	0-5	Silty clay loam	ML, CL, CL-ML	A-4, A-6	98-100	95-100	90-100	75-95	18-38	3-15
	5-70	Silty clay loam, silt loam, loam.	CL, CL-ML	A-4, A-6	98-100	95-100	70-100	70-95	20-40	4-22
To---------- Toccoa	0-9	Loam----------	SM, ML	A-2, A-4	98-100	95-100	85-100	20-60	<30	NP-4
	9-72	Sandy loam, loam	SM, ML	A-2, A-4	95-100	90-100	60-100	30-55	<30	NP-4
TrB, TrC, TrE---- Troup	0-60	Sand----------	SM, SP-SM	A-2	100	100	50-75	10-30	---	NP
	60-80	Sandy clay loam, sandy loam, fine sandy loam.	SC, SM-SC, CL-ML, CL	A-4, A-2	95-100	95-100	60-90	24-55	19-40	4-13
UaB*: Udorthents.										
Arents.										
VaB---------- Vaucluse	0-10	Loamy sand-------	SM, SP-SM	A-2, A-3	90-100	90-100	51-75	8-30	---	NP
	10-22	Sandy clay loam, sandy loam.	SC, SM-SC	A-2, A-4, A-6	90-100	90-100	51-75	25-50	20-40	5-18
	22-59	Sandy clay loam, sandy loam, sandy clay.	SC, SM-SC, SM	A-2, A-4, A-6	95-100	92-100	51-80	20-50	<40	NP-20
	59-74	Sandy loam, sandy clay loam, loamy sand.	SM, SC, SM-SC	A-2, A-4, A-6	95-100	95-100	51-90	15-50	<30	NP-12
VcD*, VcE*: Vaucluse--------	0-10	Loamy sand-------	SM, SP-SM	A-2, A-3	90-100	90-100	51-75	8-30	---	NP
	10-22	Sandy clay loam, sandy loam.	SC, SM-SC	A-2, A-4, A-6	90-100	90-100	51-75	25-50	20-40	5-18
	22-59	Sandy clay loam, sandy loam, sandy clay.	SC, SM-SC, SM	A-2, A-4, A-6	95-100	92-100	51-80	20-50	<40	NP-20
	59-74	Sandy loam, sandy clay loam, loamy sand.	SM, SC, SM-SC	A-2, A-4, A-6	95-100	95-100	51-90	15-50	<30	NP-12

See footnote at end of table.

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	4	10	40	200		
	In								Pct	
VcD*, VcE*:										
Ailey	0-23	Loamy sand	SM, SP-SM	A-2, A-3	85-100	75-100	50-80	5-20	---	NP
	23-30	Sandy loam, sandy clay loam.	SM, SC	A-2, A-4, A-6	90-100	75-100	60-90	30-40	23-40	8-16
	30-72	Sandy loam, sandy clay loam.	SM, SC	A-2, A-4, A-6	90-100	75-100	55-90	20-40	28-40	8-15
VuE*:										
Vaucluse	0-10	Loamy sand	SM, SP-SM	A-2, A-3	90-100	90-100	51-75	8-30	---	NP
	10-22	Sandy clay loam, sandy loam.	SC, SM-SC	A-2, A-4, A-6	90-100	90-100	51-75	25-50	20-40	5-18
	22-59	Sandy clay loam, sandy loam, sandy clay.	SC, SM-SC, SM	A-2, A-4, A-6	95-100	92-100	51-80	20-50	<40	NP-20
	59-74	Sandy loam, sandy clay loam, loamy sand.	SM, SC, SM-SC	A-2, A-4, A-6	95-100	95-100	51-90	15-50	<30	NP-12
Udorthents.										
WaF	0-3	Sandy loam	SM	A-2	80-100	75-95	45-80	25-35	<30	NP-7
Wateree	3-20	Sandy loam	SM	A-2, A-4	85-100	75-98	50-80	25-40	<30	NP-7
	20-24	Sand, loamy sand, sandy loam.	SP-SM, SM	A-1, A-2, A-3	70-100	65-98	40-80	5-30	---	NP
	24-41	Weathered bedrock	---	---	---	---	---	---	---	---
Wm	0-28	Sand	SP-SM	A-1, A-2, A-3	100	100	50-80	5-15	<25	NP-3
Williman	28-58	Sandy loam, fine sandy loam, sandy clay loam.	SM-SC, CL-ML, SC, CL	A-2, A-4, A-6	100	92-100	75-98	30-65	15-35	3-15
	58-66	Variable	---	---	---	---	---	---	---	---

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 15.--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 "Wind erodibility group" and "Organic matter" apply only to the surface layer. Absence of an entry indicates that data were not available or were not estimated]

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors		Wind erodibility group	Organic matter
								K	T		
	In	Pct	G/cm³	In/hr	In/in	pH					Pct
AeB	0-23	3-8	---	6.0-20	0.03-0.05	4.5-6.5	Low	0.10	4	---	<1
Ailey	23-30	14-20	---	0.6-2.0	0.09-0.12	4.5-5.5	Low	0.24			
	30-72	18-35	---	0.06-0.2	0.06-0.10	4.5-5.5	Low	0.17			
AnA	0-11	4-14	1.35-1.65	0.6-6.0	0.10-0.15	4.5-6.5	Low	0.32	5	---	.5-2
Angie	11-74	35-60	1.20-1.60	0.06-0.2	0.12-0.18	3.6-5.5	High	0.32			
Ba	0-8	10-35	1.30-1.50	0.6-2.0	0.15-0.20	4.5-5.5	Low	0.17	---	---	4-15
Bayboro	8-65	35-65	1.20-1.40	0.06-0.2	0.14-0.18	4.5-5.5	Moderate	0.32			
Bb	0-5	27-35	1.20-1.50	0.6-2.0	0.11-0.16	3.6-6.0	Moderate	0.28	5	6	1-6
Bethera	5-64	35-50	1.30-1.50	0.06-0.6	0.14-0.18	3.6-6.0	Moderate	0.32			
Bc	0-7	2-18	---	0.6-2.0	0.12-0.18	4.5-5.5	Low	0.20	5	---	.5-2
Bibb	7-60	2-18	---	0.6-2.0	0.12-0.20	4.5-5.5	Low	0.37			
Ch	0-10	10-27	1.30-1.60	0.6-2.0	0.15-0.24	4.5-6.5	Low	0.28	5	---	1-4
Chewacla	10-65	18-35	1.30-1.60	0.6-2.0	0.12-0.20	4.5-6.5	Low	0.28			
Da	0-6	---	---	2.0-6.0	0.20-0.25	3.6-4.4	Low	-----	---	---	---
Dasher	6-60	---	---	---	---	---		-----			
DoA, DoB, DoC	0-11	5-15	---	2.0-6.0	0.06-0.10	4.5-5.5	Very low	0.15	5	---	<.5
Dothan	11-31	18-35	---	0.6-2.0	0.12-0.16	4.5-5.5	Low	0.28			
	31-65	18-40	---	0.2-0.6	0.08-0.12	4.5-5.5	Low	0.28			
EuA	0-15	3-11	1.45-1.70	2.0-6.0	0.06-0.11	4.5-5.5	Low	0.17	5	---	.5-2
Eunola	15-30	18-35	1.35-1.65	0.6-2.0	0.12-0.17	4.5-5.5	Low	0.28			
	30-55	18-45	1.30-1.60	0.6-2.0	0.12-0.16	4.5-5.5	Low	0.32			
	55-70	8-17	1.35-1.65	2.0-6.0	0.10-0.14	4.5-5.5	Low	0.24			
FaA, FaB, FaC	0-6	5-20	---	6.0-20	0.06-0.09	4.5-5.5	Low	0.28	5	---	.5-2
Faceville	6-75	35-55	---	0.6-2.0	0.12-0.18	4.5-6.0	Low	0.37			
FoB	0-47	2-8	1.35-1.55	>20	0.05-0.10	4.5-6.0	Low	0.10	5	2	>1
Foxworth	47-80	2-6	1.40-1.55	>20	0.03-0.08	4.5-6.0	Low	0.17			
FuA, FuB, FuC	0-26	1-7	1.60-1.70	>6.0	0.03-0.07	4.5-6.0	Low	0.10	5	---	.5-2
Fuquay	26-35	10-35	1.40-1.60	0.6-2.0	0.12-0.15	4.5-6.0	Low	0.20			
	35-70	20-35	1.40-1.60	0.06-0.2	0.10-0.13	4.5-6.0	Low	0.20			
GrA, GrB, GrC	0-12	5-20	1.30-1.65	0.6-6.0	0.07-0.14	4.5-6.0	Low	0.24	5	---	.5-1
Greenville	12-60	35-55	1.35-1.55	0.6-2.0	0.14-0.18	4.5-6.0	Low	0.17			
GuD	0-3	5-27	1.30-1.50	0.6-2.0	0.14-0.20	5.1-6.5	Low	0.37	3	5	.5-2
Gundy	3-26	35-60	1.20-1.50	0.6-2.0	0.10-0.19	5.1-6.5	Moderate	0.32			
	26-54	15-40	1.30-1.50	0.6-2.0	0.12-0.18	5.1-6.5	Low	0.28			
	54-60	---	---	---	---	---		-----			
HwC, HwE	0-4	7-20	1.45-1.65	0.6-2.0	0.10-0.14	4.5-6.5	Low	0.28	5	---	.5-2
Hiwassee	4-45	35-60	1.30-1.45	0.6-2.0	0.12-0.15	4.5-6.5	Low	0.28			
	45-65	7-35	1.45-1.65	0.6-2.0	0.10-0.14	4.5-6.5	Low	0.28			
Jo	0-19	7-18	1.25-1.45	2.0-6.0	0.20-0.26	4.5-5.5	Low	0.17	5	---	8-18
Johnston	19-34	2-12	1.55-1.65	6.0-20	0.02-0.07	4.5-5.5	Low	0.17			
	34-60	5-20	1.45-1.65	6.0-20	0.06-0.12	4.5-5.5	Low	0.17			
LaB, LaD, LaE	0-66	2-8	1.35-1.65	6.0-20	0.05-0.09	4.5-6.0	Low	0.10	5	2	>1
Lakeland	66-80	1-6	1.50-1.60	6.0-20	0.02-0.08	4.5-6.0	Low	0.10			
LuA, LuB	0-26	1-12	---	6.0-20	0.06-0.10	5.1-5.5	Low	0.15	5	---	.5-1
Lucy	26-31	10-30	---	2.0-6.0	0.10-0.12	4.5-5.5	Low	0.24			
	31-70	20-35	---	0.6-2.0	0.12-0.14	4.5-5.5	Low	0.28			

TABLE 15.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors		Wind erodibility group	Organic matter
								K	T		
	In	Pct	G/cm^3	In/hr	In/in	pH					Pct
MaA, MaB--------- Marlboro	0-7 7-70	2-10 35-65	1.40-1.70 1.20-1.50	6.0-20 0.6-2.0	0.06-0.09 0.14-0.18	5.1-6.5 4.5-6.0	Low---------- Low----------	0.15 0.20	5	2	.5-2
Oc--------------- Ochlockonee	0-6 6-38 38-63	3-18 8-18 3-18	--- --- ---	2.0-6.0 0.6-2.0 2.0-6.0	0.07-0.14 0.10-0.20 0.06-0.12	4.5-5.5 4.5-5.5 4.5-5.5	Low---------- Low---------- Low----------	0.20 0.20 0.17	5	---	.5-2
Od--------------- Ocilla Variant	0-24 24-52 52-65	4-10 15-35 35-70	1.30-1.65 1.20-1.45 1.25-1.50	2.0-20 0.6-2.0 0.06-0.2	0.05-0.08 0.10-0.13 0.12-0.16	4.5-6.0 4.5-5.5 4.5-5.5	Low---------- Low---------- Moderate-----	0.15 0.17 0.32	5	---	1-2
Og--------------- Ogeechee	0-15 15-45 45-65	5-10 20-35 15-30	1.30-1.60 1.30-1.50 1.30-1.60	0.6-2.0 0.2-0.6 0.6-2.0	0.10-0.14 0.08-0.14 0.10-0.14	4.5-5.5 4.5-5.5 4.5-5.5	Low---------- Low---------- Low----------	0.10 0.15 0.15	5	---	1-2
OrA, OrB, OrC---- Orangeburg	0-6 6-24 24-60	4-10 18-35 20-45	--- --- ---	2.0-6.0 0.6-2.0 0.6-2.0	0.06-0.09 0.11-0.14 0.11-0.14	4.5-6.0 4.5-5.5 4.5-5.5	Low---------- Low---------- Low----------	0.10 0.24 0.24	5	---	.5-1
PaB, PaD, PaE---- Pacolet	0-4 4-24 24-38 38-60	8-20 35-65 15-30 10-25	1.00-1.50 1.30-1.50 1.20-1.50 1.20-1.50	2.0-6.0 0.6-2.0 0.6-2.0 0.6-2.0	0.08-0.12 0.12-0.15 0.08-0.15 0.08-0.15	4.5-6.5 4.5-6.0 4.5-6.0 4.5-6.0	Low---------- Low---------- Low---------- Low----------	0.20 0.28 0.28 0.28	3	3	.5-2
Re--------------- Rembert	0-7 7-30 30-42 42-60	10-35 35-60 22-45 8-25	1.30-1.50 1.20-1.50 1.30-1.50 1.30-1.60	0.6-2.0 0.06-0.2 0.6-2.0 0.6-6.0	0.12-0.17 0.12-0.16 0.12-0.15 0.07-0.12	4.5-6.5 4.5-5.5 4.5-5.5 4.5-5.5	Low---------- Low---------- Low---------- Low----------	0.24 0.20 0.17 0.17	5	5	1-5
Sh--------------- Shellbluff	0-5 5-70	10-32 18-35	1.20-1.40 1.20-1.50	0.6-2.0 0.6-2.0	0.15-0.20 0.12-0.22	4.5-6.5 4.5-6.5	Low---------- Low----------	0.28 0.28	5	5	.5-3
To--------------- Toccoa	0-9 9-72	3-17 2-19	1.35-1.45 1.40-1.50	2.0-6.0 2.0-6.0	0.09-0.12 0.09-0.12	5.1-6.5 5.1-6.5	Low---------- Low----------	0.24 0.10	5	---	1-2
TrB, TrC, TrE---- Troup	0-60 60-80	1-10 15-35	--- ---	6.0-20 0.6-2.0	0.03-0.10 0.10-0.13	4.5-5.5 4.5-5.5	Very low----- Low----------	0.15 0.20	5	---	<1
UaB*: Udorthents.											
Arents.											
VaB-------------- Vaucluse	0-10 10-22 22-60 60-74	2-10 18-35 18-45 5-30	1.30-1.60 1.35-1.75 1.75-1.95 1.55-1.90	6.0-20 0.6-6.0 0.06-0.6 2.0-6.0	0.04-0.08 0.10-0.15 0.04-0.08 0.04-0.08	4.5-6.0 3.6-5.5 3.6-5.5 3.6-5.5	Low---------- Low---------- Low---------- Low----------	0.15 0.24 0.24 0.17	3	2	<1
VcD*, VcE*: Vaucluse-------- Ailey-----------	0-10 10-22 22-59 59-74 0-23 23-30 30-72	2-10 18-35 18-45 5-30 5-10 15-30 18-32	1.30-1.60 1.35-1.75 1.75-1.95 1.55-1.90 --- --- ---	6.0-20 0.6-6.0 0.06-0.6 2.0-6.0 6.0-20 0.6-2.0 0.06-0.2	0.04-0.08 0.10-0.15 0.04-0.08 0.04-0.08 0.03-0.05 0.09-0.12 0.06-0.10	4.5-6.0 3.6-5.5 3.6-5.5 3.6-5.5 4.5-6.5 4.5-5.5 4.5-5.5	Low---------- Low---------- Low---------- Low---------- Low---------- Low---------- Low----------	0.15 0.24 0.24 0.17 0.15 0.24 0.17	3 4 	2 --- 	<1 <1
VuE*: Vaucluse-------- Udorthents.	0-10 10-22 22-59 59-74	2-10 18-35 18-45 5-30	1.30-1.60 1.35-1.75 1.75-1.95 1.55-1.90	6.0-20 0.6-6.0 0.06-0.6 2.0-6.0	0.04-0.08 0.10-0.15 0.04-0.08 0.04-0.08	4.5-6.0 3.6-5.5 3.6-5.5 3.6-5.5	Low---------- Low---------- Low---------- Low----------	0.15 0.24 0.24 0.17	3	2	<1

See footnote at end of table.

TABLE 15.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors		Wind erodibility group	Organic matter
								K	T		
	In	Pct	G/cm³	In/hr	In/in	pH					Pct
WaF	0-3	5-18	1.40-1.60	2.0-6.0	0.08-0.12	4.5-6.0	Low	0.20	3	3	<1
Wateree	3-20	5-18	1.30-1.60	2.0-6.0	0.08-0.12	3.6-6.0	Low	0.20			
	20-24	2-15	1.40-1.70	2.0-6.0	0.04-0.12	3.6-6.0	Low	0.17			
	24-41	---	---	---	---	---	---	---			
Wm	0-28	1-7	1.50-1.70	6.0-20.0	0.03-0.07	3.6-6.5	Low	0.10	5	2	.5-3
Williman	28-58	18-35	1.30-1.50	0.6-2.0	0.10-0.16	3.6-5.5	Low	0.15			
	58-66	---	---	---	---	---	---	---			

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 16.--SOIL AND WATER FEATURES

["Flooding," "water table," "subsidence," and terms such as "rare," "brief," "apparent," and "perched" are explained in the text. The symbol > means more than. Absence of an entry indicates that the feature is not a concern]

Map symbol and soil name	Hydrologic group	Flooding			High water table			Subsidence		Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Initial	Total	Uncoated steel	Concrete
					Ft			In	In		
AeB---------- Ailey	B	None------	---	---	>6.0	---	---	---	---	Moderate	Moderate.
AnA---------- Angie	D	None------	---	---	3.0-5.0	Appar	Dec-Apr	---	---	High-----	Moderate.
Ba*---------- Bayboro	D	None------	---	---	+1-1.0	Appar	Dec-May	---	---	High-----	High.
Bb*---------- Bethera	D	None------	---	---	+1-1.5	Appar	Dec-Apr	---	---	High-----	High.
Bc---------- Bibb	C	Frequent	Brief----	Dec-May	0.5-1.5	Appar	Dec-Apr	---	---	High-----	Moderate.
Ch---------- Chewacla	C	Frequent	Brief----	Nov-Apr	0.5-1.5	Appar	Nov-Apr	---	---	High-----	Moderate.
Da*---------- Dasher	D	None------	---	---	+3-0.5	Appar	Nov-Aug	16-20	36-60	High-----	High.
DoA, DoB, DoC----- Dothan	B	None------	---	---	3.0-5.0	Perch	Jan-Apr	---	---	Moderate	Moderate.
EuA---------- Eunola	C	None------	---	---	1.5-2.5	Appar	Nov-Mar	---	---	Low------	High.
FaA, FaB, FaC----- Faceville	B	None------	---	---	>6.0	---	---	---	---	Low------	Moderate.
FoB---------- Foxworth	A	None------	---	---	3.5-6.0	Appar	Jun-Oct	---	---	Low------	High.
FuA, FuB, FuC----- Fuquay	B	None------	---	---	4.0-6.0	Perch	Jan-Mar	---	---	Low------	High.
GrA, GrB, GrC----- Greenville	B	None------	---	---	>6.0	---	---	---	---	Moderate	High.
GuD---------- Gundy	C	None------	---	---	>6.0	---	---	---	---	High-----	High.
HwC, HwE---------- Hiwassee	B	None------	---	---	>6.0	---	---	---	---	Moderate	Moderate.

See footnote at end of table.

TABLE 16.--SOIL AND WATER FEATURES--Continued

Map symbol and soil name	Hydrologic group	Flooding			High water table			Subsidence		Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Initial	Total	Uncoated steel	Concrete
					Ft			In	In		
Jo*---------- Johnston	D	Frequent	Brief to long.	Nov-Jul	+1-1.5	Appar	Nov-Jun	---	---	High-----	High.
LaB, LaD, LaE----- Lakeland	A	None-----	---	---	>6.0	---	---	---	---	Low------	Moderate.
LuA, LuB---------- Lucy	A	None------	---	---	>6.0	---	---	---	---	Low------	High.
MaA, MaB---------- Marlboro	B	None------	---	---	>6.0	---	---	---	---	High-----	High.
Oc---------- Ochlockonee	B	Occasional	Very brief.	Dec-Apr	3.0-4.0	Appar	Dec-Apr	---	---	Low------	High.
Od---------- Ocilla Variant	B	None------	---	---	2.0-3.0	Appar	Dec-Mar	---	---	High-----	Moderate.
Og*---------- Ogeechee	B/D	None------	---	---	+1.-0.5	Appar	Dec-May	---	---	High-----	High.
OrA, OrB, OrC----- Orangeburg	B	None------	---	---	>6.0	---	---	---	---	Moderate	Moderate.
PaB, PaD, PaE----- Pacolet	B	None------	---	---	>6.0	---	---	---	---	High-----	High.
Re*---------- Rembert	D	None------	---	---	+1-1.0	Appar	Nov-Apr	---	---	High-----	High.
Sh---------- Shellbluff	B	Frequent	Brief----	Dec-Apr	3.0-5.0	Appar	Dec-Apr	---	---	Moderate	Moderate.
To---------- Toccoa	B	Frequent	Brief----	Jan-Dec	2.5-5.0	Appar	Dec-Apr	---	---	Low------	Moderate.
TrB, TrC, TrE----- Troup	A	None------	---	---	>6.0	---	---	---	---	Low------	Moderate.
UaB: Udorthents. Arents.											
VaB---------- Vaucluse	C	None------	---	---	>6.0	---	---	---	---	Low------	High.

See footnote at end of table.

TABLE 16.--SOIL AND WATER FEATURES--Continued

Map symbol and soil name	Hydrologic group	Flooding			High water table			Subsidence		Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Initial	Total	Uncoated steel	Concrete
					Ft			In	In		
VcD, VcE:											
Vaucluse	C	None	---	---	>6.0	---	---	---	---	Low	High.
Ailey	B	None	---	---	>6.0	---	---	---	---	Moderate	Moderate.
VuE:											
Vaucluse	C	None	---	---	>6.0	---	---	---	---	Low	High.
Udorthents.											
WaF Wateree	B	None	---	---	>6.0	---	---	---	---	Low	High.
Wm Williman	B/D	None	---	---	0-1.0	Appar	Dec-Apr	---	---	High	High.

* In the "High water table--Depth" column, a plus sign preceding the range in depth indicates that the water table is above the surface of the soil. The first numeral in the range indicates how high the water rises above the surface. The second numeral indicates the depth below the surface.

TABLE 17.--ENGINEERING INDEX TEST DATA

[Dashes indicate data were not available. NP means nonplastic]

Soil name, sample number, horizon, and depth in inches	Classification		Grain size distribution				Liquid limit	Plasticity index
			Percentage passing sieve			Percentage smaller than .005 mm		
	AASHTO	Unified	No. 10	No. 60	No. 200			
							Pct	
Ailey sand:[1] (S75SC-3-1)								
E----------3 to 23	A-2-4(0)	SP-SM	100	54	11	6	---	NP
Bt1----------23 to 30	A-2-4(0)	SM-SC	100	54	26	22	24	7
Bt2----------30 to 50	A-2-6(1)	SC	100	57	32	28	35	14
Faceville sandy loam:[2] (S75SC-3-6)								
Ap----------0 to 6	A-4(0)	SM-SC	95	71	37	30	21	7
Bt3----------21 to 41	A-7-6(9)	ML	98	83	66	60	45	16
Fuquay sand:[2] (S76SC-3-1)								
Ap----------0 to 8	A-2-4(0)	SP-SM	100	51	11	5	---	NP
Btv1----------35 to 55	A-2-4(0)	SC	90	57	32	27	31	10
Orangeburg loamy sand:[3] (S75SC-3-4)								
Ap----------0 to 7	A-2-4(0)	SM	100	58	27	21	---	NP
Bt2----------28 to 60	A-6(4)	SC	100	70	46	41	34	15
Bt3----------60 to 76	A-4(2)	SC	100	69	46	41	36	10
Troup sand:[2] (S75SC-3-2)								
E2----------20 to 50	A-2-4(0)	SM	99	36	12	9	---	NP
Bt2----------66 to 80	A-2-6(1)	SC	100	51	34	32	40	13
Vaucluse loamy sand:[2] (S76SC-3-2)								
Bt1----------10 to 22	A-2-4(0)	SC	95	44	24	20	28	10
Bt2----------22 to 36	A-2-4(0)	SM-SC	92	39	24	20	35	7

1 Typical pedon for the series. The percentage passing the number 200 sieve and the plasticity index are slightly lower than the official range of the Ailey series.

2 Typical pedon for the series.

3 Sample pedon located 0.25 mile south of county highway 65 and 0.5 mile north of county highway 778, 500 feet east of depression.

TABLE 18.--CLASSIFICATION OF THE SOILS

Soil name	Family or higher taxonomic class
*Ailey	Loamy, siliceous, thermic Arenic Hapludults
Angie	Clayey, mixed, thermic Aquic Paleudults
Bayboro	Clayey, mixed, thermic Umbric Paleaquults
Bethera	Clayey, mixed, thermic Typic Paleaquults
Bibb	Coarse-loamy, siliceous, acid, thermic Typic Fluvaquents
Chewacla	Fine-loamy, mixed, thermic Fluvaquentic Dystrochrepts
Dasher	Dysic, thermic Typic Medihemists
Dothan	Fine-loamy, siliceous, thermic Plinthic Paleudults
Eunola	Fine-loamy, siliceous, thermic Aquic Hapludults
Faceville	Clayey, kaolinitic, thermic Typic Paleudults
Foxworth	Thermic, coated Typic Quartzipsamments
Fuquay	Loamy, siliceous, thermic Arenic Plinthic Paleudults
Greenville	Clayey, kaolinitic, thermic Rhodic Paleudults
Gundy	Fine, mixed, thermic Ultic Hapludalfs
Hiwassee	Clayey, kaolinitic, thermic Typic Rhodudults
Johnston	Coarse-loamy, siliceous, acid, thermic Cumulic Humaquepts
Lakeland	Thermic, coated Typic Quartzipsamments
Lucy	Loamy, siliceous, thermic Arenic Paleudults
Marlboro	Clayey, kaolinitic, thermic Typic Paleudults
Ochlockonee	Coarse-loamy, siliceous, acid, thermic Typic Udifluvents
Ocilla Variant	Loamy, siliceous, thermic Aquic Arenic Paleudults
Ogeechee	Fine-loamy, siliceous, thermic Typic Ochraquults
Orangeburg	Fine-loamy, siliceous, thermic Typic Paleudults
Pacolet	Clayey, kaolinitic, thermic Typic Hapludults
Rembert	Clayey, kaolinitic, thermic Typic Ochraquults
Shellbluff	Fine-silty, mixed, thermic Fluventic Dystrochrepts
Toccoa	Coarse-loamy, mixed, nonacid, thermic Typic Udifluvents
Troup	Loamy, siliceous, thermic Grossarenic Paleudults
Vaucluse	Fine-loamy, siliceous, thermic Typic Hapludults
Wateree	Coarse-loamy, mixed, thermic Typic Dystrochrepts
Williman	Loamy, siliceous, thermic Arenic Ochraquults

* 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.

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