United States Department of Agriculture

Natural Resources Conservation Service

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

Soil Survey of Emanuel County, Georgia

How to Use This Soil Survey

General Soil Map

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

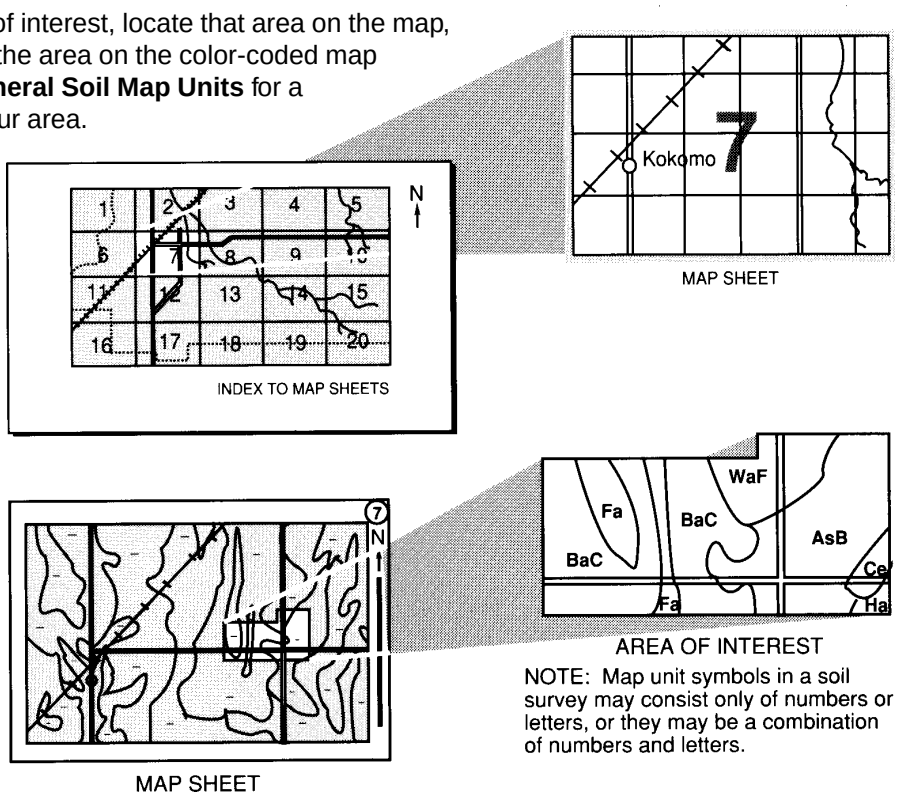
To find information about your area of interest, locate that area on the map, identify the name of the map unit in the area on the color-coded map legend, then refer to the section **General Soil Map Units** for a general description of the soils in your area.

Detailed Soil Maps

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

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

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



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

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

This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (formerly the Soil Conservation Service) has leadership for the Federal part of the National Cooperative Soil Survey.

Major fieldwork for this soil survey was completed in 1992. Soil names and descriptions were approved in 1993. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1993. This survey was made cooperatively by the Natural Resources Conservation Service and the University of Georgia College of Agricultural and Environmental Sciences, Agricultural Experiment Stations. The survey is part of the technical assistance furnished to the Ohoophe River 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.

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Cover: An area of Tifton loamy sand, 2 to 5 percent slopes, in Emanuel County. Soybeans are planted on the contour.

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

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Foreword

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

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

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

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

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

Earl Cosby
State Conservationist
Natural Resources Conservation Service

Soil Survey of
Emanuel County, Georgia

By Mack Thomas, Jr., Natural Resources Conservation Service

Fieldwork by Mack Thomas, Jr., Ernest H. Smith, Timothy D. Kring, Hershel L. Paulk, Jon D. Jones, and Erwin E. Iseley, Natural Resources Conservation Service

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

EMANUEL COUNTY is in the east-central part of Georgia (fig. 1). It covers an area of 689.6 square miles, or about 441,300 acres. Swainsboro is the county seat.

Emanuel County is in the Southern Coastal Plain Major Land Resource Area. The survey area is primarily made up of nearly level to moderately steep soils in the uplands and nearly level soils on flood plains near the Ogeechee and Ohoophe Rivers and large creeks. These soils have a sandy or loamy surface layer and a loamy or clayey subsoil. The soils on flood plains, in broad, smooth, upland areas, or near drainageways range from very poorly drained to well drained. They have a loamy or sandy surface layer and a predominantly loamy subsoil, substratum, or underlying layer. Most of the soils on the upland ridges are essentially uneroded; however, the soils on hillsides commonly are eroded. Most of the soils that are better drained, are nearly level to gently sloping, and have a loamy or clayey subsoil are well suited to field crops, hay, pasture, and many other nonagricultural uses.

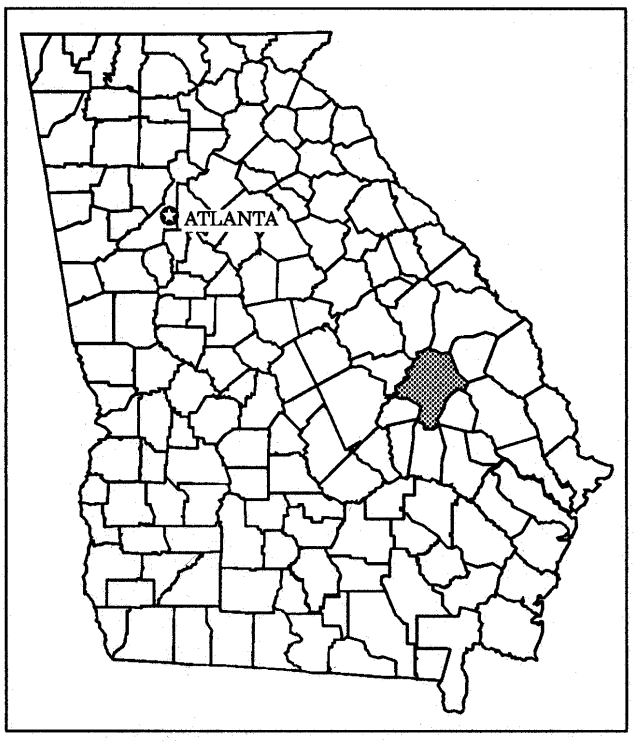

Figure 1.—Location of Emanuel County in Georgia.

General Nature of the County

This section provides general information about the county. It includes a discussion of climate; settlement; geology; water resources; farming; physiography, relief, and drainage; and industries, utilities, and transportation.

Climate

Table 1 gives data on temperature and precipitation for the survey area as recorded at Swainsboro, Georgia, in the period 1951 to 1988. Table 2 shows probable dates of the first freeze in fall and the last freeze in spring. Table 3 provides data on length of the growing season.

In winter, the average temperature is 49 degrees F and the average daily minimum temperature is 38 degrees. The lowest temperature on record, which occurred at Swainsboro on January 21, 1985, is -3

degrees. In summer, the average temperature is 80 degrees and the average daily maximum temperature is 92 degrees. The highest recorded temperature, which occurred at Swainsboro on June 27, 1954, is 107 degrees.

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

The total average annual precipitation is about 44 inches. Of this, 24 inches, or 56 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 from April through September is less than 18 inches. The heaviest 1-day rainfall during the period of record was 6.84 inches at Swainsboro on October 4, 1962. Thunderstorms occur on about 54 days each year, and most occur in summer.

Snowfall is rare. In 99 percent of the winters, there is no measurable snowfall.

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

Settlement

Sidney C. Lanier, district conservationist, Natural Resources Conservation Service, assisted in preparing this section.

Emanuel County was established by an act of the Georgia Legislature on December 10, 1812. It was formed from parts of Bulloch and Montgomery Counties. The county was named to honor David Emanuel, a soldier in the Revolutionary War, who traveled from Pennsylvania in 1744 to make his home in Burke County. Following the war, Emanuel represented Georgia at two conventions, served three terms as president of the State Senate, and was made governor of the state in 1801.

Once called the "State of Emanuel" because of its size, the county formerly included parts of what are now Jenkins, Johnson, and Toombs Counties. At present, with a land area of 689.6 square miles, Emanuel County is the sixth largest county in Georgia. Swainsboro, the county seat, was named to honor Stephen Swain of the State legislature. It was established as the county seat on February 18, 1854, at which time the name was changed from Swainsboro to Paris. The name was then changed back to Swainsboro on December 22, 1857. Swainsboro is known as "Pine Tree Country" or as the "Crossroads of the South" because Highways 1 and 80 intersect in Swainsboro.

The city of Swainsboro is the main urban center in the county. Since 1960, the population and industrial growth rates have increased dramatically. In 1967, Swainsboro was designated as the first secondary growth center in the nation by the Economic Development Administration. As such, it is a major focal point for public and private investment in the southern portion of the region.

Geology

Emanuel County is within the Southern Coastal Plain Major Land Resource Area and in the Vidalia Upland Physiographic District. The area is moderately dissected by well developed, dendritic streams over gravelly, clayey sand. Flood plains are generally narrow, except along the main streams and rivers in the area. Relief ranges from 400 feet above mean sea level at the northern end of the county to 130 feet above mean sea level in the vicinity of Oak Park near the Ohoopee River.

Typically, the landforms that make up Emanuel County were developed from fluvial and upper estuary sediments deposited during the early to middle Miocene 10 to 20 million years ago. The surface soils were derived from the weathering of these thick-bedded to massive and structureless sandy clays and clayey sands that make up the Altamaha Formation. The Altamaha Formation crops out over the entire county, with middle Miocene sediments in the southern part of the county and lower Miocene materials in the northern half. Beds or lenses of clay or claystone occur infrequently in lower Miocene deposits. In some areas of outcrops, small exposures of unweathered sandstone strata are enclosed or surrounded by weathered sand or clay. Old channel fill structures of cross-bedded sands and gravels may be encountered at random locations throughout the northern part of Emanuel County.

Underlying the Altamaha Formation, members of the Barnwell Group crop out at lower elevations along the Ogeechee River, where erosion and development of the stream valley have exposd the Cooper Marl and the underlying Twiggs Clay.

Water Resources

The Ogeechee River, Ohoopee River, Little Ohoopee River, Canoochee Creek, and Little Canoochee Creek and their tributaries provide water to Emanuel County.

Also, many ponds throughout the county are used for livestock, irrigation, and recreational uses.

Most of the domestic wells in the county have a diameter of 3 to 6 inches and are between 100 and 500 feet deep. These deep wells produce an adequate supply of water, even during dry periods. In recent years, wells that are 8 to 16 inches in diameter and range from 250 to 600 feet deep have been used to supply water for irrigation.

Farming

The early settlers of Emanuel County were mostly farmers, and farming has been the main enterprise throughout the history of the county. Most of the farm income is derived from cultivated crops, mainly soybeans, corn, peanuts, cotton, small grain, and tobacco. In recent years, the amount of land used for cotton has increased, and a sizeable acreage of cropland has been planted with pine trees and grasses through the Conservation Reserve Program. Beef cattle and hogs are also important sources of income. About 75 percent of the county is wooded, and forest products contribute significantly to the income of the county.

Since about 1950, the number of the farms in the survey area has decreased. Improved farming practices, such as conservation tillage and irrigation, have increased crop yields.

Throughout the history of the county, soil erosion and low soil fertility have been the most important management concerns for areas of cropland. During the early 1900s, farming increased and tenant-type farming was widespread. Misuse of the land was common, and soil erosion increased dramatically. The land ownership commonly changed, and efforts to maintain soil fertility were not undertaken in most areas. The economic depression in the early 1920s marked the climax of man's misuse of the land.

Conservationists noted a definite need to protect the land against depletion. The enactment of legislation that established soil conservation districts in 1937 by the State of Georgia was supported by leading farmers in Emanuel County. Farmers in the county began using terraces, grassed waterways, improved pastures, and ponds to control erosion and increase productivity. They used the soil according to its capability and treated it in accordance with the needs of the crop. The soil survey maps made by the Natural Resources Conservation Service became the basis for determining the capability of the soil. Many sloping, seriously eroded fields that once had been cultivated were used for grasses or trees.

In the 1960s and early 1970s, public concern about the productive capacity of American agriculture prompted a national inventory of important farmlands. The best land areas in Emanuel County that are available for producing food, fiber, and oilseed crops are identified in the section "Important Farmland."

Physiography, Relief, and Drainage

Emanuel County is in the Southern Coastal Plain Major Land Resource Area. Elevation ranges from 150 feet above mean sea level near Stillmore to about 400 feet above mean sea level near Blundale in the northern part of the county.

The soils in the uplands are mainly well drained. The survey area consists mostly of broad, nearly level soils on ridges and hillsides. The landscape is dissected by numerous small drainageways. The slopes on the ridges are generally smooth and convex, and the slopes on the hillsides commonly are generally irregular and convex.

The nearly level soils on flood plains are generally poorly drained. These soils are located near the Ogeechee River, Ohoopee River, Little Ohoopee River, Canoochee Creek, Little Canoochee Creek, and Fifteen Mile Creek and their tributaries. In most areas, the flood plains are somewhat narrow, but they are wider near the Ogeechee River, Ohoopee River, Little Ohoopee River and the lower part of Canoochee Creek. The soils near the major streams and tributaries are subject to overflow during winter and spring. The soils drain slowly and remain wet for long periods.

The major drainage systems for Emanuel County include the Ogeechee, Little Ohoopee, and Ohoopee Rivers and their tributaries. The Ogeechee River flows on the northern side of Emanuel County and forms the northeastern boundary. The Ohoopee River flows on the southern side of the county and forms the southeastern boundary of the county. The Little Ohoopee River flows on the western side of the county. Important tributaries include Yam Grande Creek, Jacks Creek, Canoochee Creek, Fifteen Mile Creek, Pendleton Creek, and Big Long Creek. Each of the tributaries of the major streams has its own small tributaries that branch into the uplands and form a well defined dendritic pattern.

Industries, Utilities, and Transportation

The soils in Emanuel County are used mainly for farming and woodland. Most farm products can be marketed locally. Industrial plants that produce or process wearing apparel, lawn and garden products, electric components, woodland products, and

aluminium products employ several hundred people in the county.

Electric power and telephone service are available throughout the county. Natural gas is supplied to the major towns and cities. Railroads, truck lines, and buses are available for shipping and transportation, and air service is available. The county contains a network of state highways and county roads. U.S. Highway 1 runs north and south through Emanuel County, and U.S. Highway 80 runs east and west. Interstate 16 extends to the east and west through the southern part of the county.

How This Survey Was Made

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

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

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

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

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

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

After soil scientists located and identified the significant natural bodies of soil in the survey area,

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

Map Unit Composition

A map unit delineation on a soil map represents an area dominated by one major kind of soil or an area dominated by two or three kinds of soil. A map unit is identified and named according to the taxonomic classification of the dominant soil or soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural objects. In common with other natural objects, they have a characteristic variability in their properties. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of soils of other taxonomic classes. Consequently, every map unit is made up of the soil or soils for which it is named and some soils that belong to other taxonomic classes. In the detailed soil map units, these latter soils are called inclusions or included soils. In the general soil map units, they are called soils of minor extent.

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

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

General Soil Map Units

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

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

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

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

1. Meggett-Wahee-Bladen

Poorly drained and somewhat poorly drained soils that have a loamy surface layer and a clayey subsoil

Setting

Landscape characterization: Nearly level soils on the flood plains and terraces of the winding Ogeechee, Ohoopee, and Little Ohoopee Rivers
Slope range: 0 to 2 percent
Flooding: None to frequent
Hydrologic features: Mainly winding intermittent and perennial streams
Land use: Mainly woodland
Cultural features: Few roads and utility lines
Visual diversity: Low

Extent and Composition

Percent of county: 5 percent
Meggett soils—70 percent
Wahee soils—18 percent
Bladen soils—6 percent
Minor soils—6 percent
General location of soils: Meggett—on the flood plains along the Ogeechee River, Ohoopee River, and Little Ohoopee River; Wahee and Bladen—on stream terraces along the Ogeechee River

Typical Profile

Meggett

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

Subsoil:
4 to 26 inches—gray sandy clay that has yellowish brown and strong brown mottles
26 to 40 inches—gray clay that has yellowish brown and strong brown mottles
40 to 52 inches—gray clay that has yellowish brown, strong brown, and brown mottles
52 to 63 inches—gray sandy clay loam that has strong brown and brown mottles

Wahee

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

Subsurface layer:
7 to 11 inches—pale brown fine sandy loam

Subsoil:
11 to 23 inches—yellowish brown clay that has red and light brownish gray mottles
23 to 38 inches—light brownish gray clay that has yellowish brown mottles

38 to 51 inches—light gray clay that has yellowish brown mottles
51 to 60 inches—light gray sandy clay that has yellowish brown mottles

Bladen

Surface layer:
0 to 6 inches—very dark grayish brown fine sandy loam
6 to 9 inches—dark grayish brown fine sandy loam

Subsurface layer:
9 to 14 inches—light gray fine sandy loam

Subsoil:
14 to 27 inches—light brownish gray clay that has strong brown mottles
27 to 38 inches—light gray clay that has strong brown and yellowish red mottles
38 to 54 inches—light gray clay that has strong brown, yellowish red, and yellowish brown mottles
54 to 62 inches—gray sandy clay that has strong brown mottles

Minor Soils

- The poorly drained Bibb and Kinston soils in small drainageways
- The poorly drained Rembert soils in small drainageways and in depressions

Use and Management

Major management concerns: Wetness and flooding
Suitability: Poorly suited to unsuited for field crops; moderately suited to unsuited for hay and pasture; high or very high potential productivity for site-suitable tree species; unsuited for urban uses; poorly suited to unsuited to recreational development

2. Kinston-Pelham-Bibb

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

Setting

Landscape characterization: Nearly level flood plains along the major tributaries of the Ogeechee, Ohoopee, and Little Ohoopee Rivers
Slope range: 0 to 2 percent
Flooding: Occasional to frequent
Hydrologic features: Mainly winding intermittent and perennial streams
Land use: Mainly woodland
Cultural features: Few roads and utility lines
Visual diversity: Low

Extent and Composition

Percent of county: 4 percent
Kinston soils—40 percent
Pelham soils—30 percent
Bibb soils—20 percent
Minor soils—10 percent

Typical Profile

Kinston

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

Underlying material:
6 to 23 inches—gray sandy loam that has yellowish brown and brownish yellow mottles
23 to 48 inches—gray sandy clay loam that has strong brown, yellowish red, and pale brown mottles
48 to 63 inches—grayish brown sandy loam that has yellowish brown and pale brown mottles

Pelham

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

Subsurface layer:
6 to 31 inches—dark grayish brown loamy sand

Subsoil:
31 to 38 inches—grayish brown sandy loam
38 to 52 inches—grayish brown sandy clay loam that has yellowish brown and pale brown mottles
52 to 63 inches—light brownish gray sandy clay loam

Bibb

Surface layer:
0 to 6 inches—very dark grayish brown loam
6 to 14 inches—light brownish gray fine sandy loam

Underlying material:
14 to 25 inches—light brownish gray sandy loam that has yellowish brown and brownish yellow mottles
25 to 43 inches—light brownish gray sandy loam that has strong brown, yellowish brown, and pale brown mottles
43 to 63 inches—gray loamy sand that has yellowish brown and pale brown mottles

Minor Soils

- The somewhat poorly drained Ocilla and moderately well drained Clarendon soils in slightly higher areas

Use and Management

Major management concerns: Wetness and flooding
Suitability: Poorly suited to unsuited for field crops; moderately suited to poorly suited to hay and pasture; high potential productivity for site-suitable tree species; unsuited for urban uses and recreational development

3. Fuquay-Tifton-Dothan

Well drained soils that have a sandy surface layer, a thick sandy subsurface layer, and a loamy subsoil or that have a sandy surface layer and a loamy subsoil; on ridges and hillsides

Setting

Landscape characterization: Nearly level to gently sloping, well drained soils on ridges and hillsides
Slope range: 0 to 8 percent
Hydrologic features: Excess surface water drains into a system of intermittent and perennial streams; areas of open water are common
Land use: Mostly cropland; some areas of pasture and woodland
Cultural features: Roads, utility lines, fences, farmsteads, and associated structures
Visual diversity: Moderate

Extent and Composition

Percent of county: 48 percent
Fuquay soils—23 percent
Tifton soils—17 percent
Dothan soils—15 percent
Minor soils—45 percent

Typical Profile

Fuquay

Surface layer:
0 to 9 inches—grayish brown loamy sand

Subsurface layer:
9 to 27 inches—yellowish brown loamy sand

Subsoil:
27 to 37 inches—brownish yellow sandy loam
37 to 47 inches—yellowish brown sandy clay loam that has strong brown mottles
47 to 58 inches—yellowish brown sandy clay loam that has red and strong brown mottles
58 to 63 inches—yellowish brown sandy clay loam that has red, strong brown, and very pale brown mottles

Distinctive features: Content of plinthite is 5 percent or more below a depth of 47 inches

Tifton

Surface layer:
0 to 11 inches—dark grayish brown loamy sand

Subsoil:
11 to 16 inches—yellowish brown sandy loam
16 to 33 inches—yellowish brown sandy clay loam that has strong brown mottles
33 to 50 inches—yellowish brown sandy clay loam that has strong brown and yellowish red mottles
50 to 63 inches—yellowish brown sandy clay loam that has yellowish red, strong brown, and light gray mottles

Distinctive features: Nodules of ironstone in the surface layer and throughout the upper and middle parts of the subsoil; content of plinthite is 5 percent or more below a depth of 33 inches

Dothan

Surface layer:
0 to 7 inches—brown loamy sand

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

Subsoil:
13 to 18 inches—brownish yellow sandy loam
18 to 42 inches—yellowish brown sandy clay loam
42 to 46 inches—yellowish brown sandy clay loam that has strong brown mottles
46 to 56 inches—yellowish brown sandy clay loam that has yellowish red and strong brown mottles
56 to 63 inches—yellowish brown sandy clay loam that has strong brown, yellowish red, light brownish gray, and brownish yellow mottles

Distinctive features: Content of plinthite is 5 percent or more below a depth of 46 inches

Minor Soils

- Ailey, Bonifay, Carnegie, Cowarts, and Nankin soils in landscape positions similar to those of the major soils
- The poorly drained Bibb, Kinston, and Pelham soils on flood plains and in small drainageways

Use and Management

Major management concerns: Low available water capacity in areas of soils that have sandy surface and subsurface layers; erosion control in areas of very gently sloping and gently sloping soils that have a thin surface layer
Suitability: Well suited to moderately suited for field crops, hay, and pasture; moderately high potential

productivity for site-suitable tree species; well suited to moderately suited for urban uses and recreational development

4. Cowarts-Nankin-Ailey

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

Setting

Landscape characterization: Gently sloping to moderately steep soils on ridges and hillsides
Slope range: 2 to 17 percent
Hydrologic features: Excess surface water drains into a system of intermittent and perennial streams; areas of open water are common
Land use: Mainly woodland; some areas of cropland, hayland, and pasture
Cultural features: Roads and utility lines
Visual diversity: Low

Extent and Composition

Percent of county: 26 percent
Cowarts soils—33 percent
Nankin soils—27 percent
Ailey soils—15 percent
Minor soils—25 percent

Typical Profile

Cowarts

Surface layer:
0 to 5 inches—brown loamy sand

Subsoil:
5 to 11 inches—yellowish brown sandy loam
11 to 21 inches—yellowish brown sandy clay loam that has red and strong brown mottles
21 to 27 inches—yellowish brown sandy clay that has red, light gray, and brownish yellow mottles

Substratum:
27 to 60 inches—mottled brownish yellow, red, light gray, and dusky red coarse sandy loam

Distinctive features: Dense, compact substratum

Nankin

Surface layer:
0 to 7 inches—brown loamy sand

Subsoil:
7 to 13 inches—strong brown sandy clay loam
13 to 23 inches—strong brown sandy clay that has red and light yellowish brown mottles
23 to 33 inches—strong brown sandy clay that has red, brownish yellow, light yellowish brown, and very pale brown mottles
33 to 46 inches—mottled red, light gray, and strong brown sandy clay
46 to 57 inches—mottled red, light gray, strong brown, and light yellowish brown sandy clay loam

Substratum:
57 to 63 inches—mottled red, light gray, strong brown, and light yellowish brown sandy loam

Ailey

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

Subsurface layer:
6 to 25 inches—yellowish brown loamy sand

Subsoil:
25 to 31 inches—yellowish brown sandy loam
31 to 37 inches—yellowish brown sandy clay loam that has yellowish red and light yellowish brown mottles
37 to 48 inches—mottled red, light gray, and light yellowish brown sandy clay loam

Substratum:
48 to 63 inches—mottled red, light gray, yellowish red, and light yellowish brown sandy clay loam

Distinctive features: Dense and brittle properties below a depth of 37 inches; dense, compact substratum

Minor Soils

- Bonifay, Carnegie, Fuquay, and Tifton soils in landscape positions similar to those of the major soils
- The poorly drained Bibb, Kinston, and Pelham soils on flood plains and in small drainageways

Use and Management

Major management concerns: Erosion control and low available water capacity
Suitability: Well suited to unsuited for field crops; well suited to poorly suited for hay and pasture; moderate to moderately high potential productivity for site-suitable tree species; well suited to moderately suited for urban uses and recreational development

5. Bonifay-Blanton

Well drained or moderately well drained to somewhat excessively drained soils that have a sandy surface layer, a thick sandy subsurface layer, and a loamy subsoil

Setting

Landscape characterization: Nearly level to strongly sloping soils on broad flats, ridges, and hillsides
Slope range: 0 to 12 percent
Hydrologic features: Excess surface water drains into a system of intermittent and perennial streams
Land use: Mainly woodland; some areas of cropland, pasture, and hayland
Cultural features: Few roads, utility lines, fences, farmsteads, and associated structures
Visual diversity: Low

Extent and Composition

Percent of county: 12 percent
Bonifay soils—64 percent
Blanton soils—9 percent
Minor soils—27 percent

Typical Profile

Bonifay

Surface layer:
0 to 8 inches—very dark grayish brown sand

Subsurface layer:
8 to 27 inches—light yellowish brown sand
27 to 51 inches—pale yellow sand
51 to 57 inches—brownish yellow fine sand

Subsoil:
57 to 68 inches—yellowish brown sandy loam that has red and strong brown mottles
68 to 80 inches—mottled light brownish gray, red, and strong brown sandy clay loam

Blanton

Surface layer:
0 to 6 inches—very dark grayish brown fine sandy loam
6 to 9 inches—dark grayish brown fine sandy loam

Subsurface layer:
9 to 14 inches—light gray fine sandy loam

Subsoil:
14 to 27 inches—light brownish gray clay that has strong brown mottles
27 to 38 inches—light gray clay that has strong brown and yellowish red mottles
38 to 54 inches—light gray clay that has strong brown, yellowish red, and yellowish brown mottles
54 to 62 inches—gray sandy clay that has strong brown mottles

Minor Soils

- The somewhat poorly drained and moderately well drained Albany and Chipley soils on broad flats
- The poorly drained Kinston, Bibb, and Pelham soils in small drainageways

Use and Management

Major management concerns: Low available water capacity
Suitability: Poorly suited to field crops; moderately suited to poorly suited to hay and pasture; moderately high to high potential productivity for site-suitable tree species; moderately suited to urban uses; poorly suited to recreational development

6. Kershaw-Lakeland-Kureb

Excessively drained soils that are sandy throughout the profile

Setting

Landscape characterization: Nearly level to strongly sloping soils on ridges and hillsides
Slope range: 0 to 12 percent
Flooding: None
Hydrologic features: Excess surface water drains into a system of intermittent and perennial streams
Land use: Mainly woodland
Cultural features: Few roads, utility lines, fences, and farms
Visual diversity: Low

Extent and Composition

Percent of county: 5 percent
Kershaw soils—60 percent
Lakeland soils—13 percent
Kureb soils—12 percent
Minor soils—15 percent

Typical Profile

Kershaw

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

Underlying material:
3 to 7 inches—yellowish brown coarse sand
7 to 58 inches—brownish yellow coarse sand
58 to 85 inches—yellow coarse sand

Lakeland

Surface layer:
0 to 4 inches—very dark grayish brown sand

Underlying material:
4 to 21 inches—yellowish brown sand
21 to 63 inches—brownish yellow sand
63 to 80 inches—very pale brown sand that has yellowish mottles

Kureb

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

Subsurface layer:
3 to 25 inches—grayish brown sand

Underlying material:
25 to 34 inches—yellowish brown sand that has reddish brown and strong brown mottles and common reddish brown organic coats on sand grains
34 to 51 inches—yellowish brown coarse sand
51 to 85 inches—brownish yellow coarse sand that has very pale brown mottles

Minor Soils

- The somewhat excessively drained to moderately well drained Blanton soils and the well drained Bonifay soils; in landscape positions similar to those of the major soils
- The poorly drained Bibb and Kinston soils and the very poorly drained Pickney soils; on flood plains and in depressions

Use and Management

Major management concerns: Low or very low available water capacity
Suitability: Poorly suited to unsuited to field crops; poorly suited to hay and pasture; moderate to low potential productivity for site-suitable tree species; moderately suited to urban uses; poorly suited for recreational development

Detailed Soil Map Units

The map units delineated on the detailed maps at the back of this survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this section, along with the maps, can be used to determine the suitability and potential of a unit for specific uses. They also can be used to plan the management needed for those uses. A soil is considered well suited to a particular use if it has properties that are favorable, moderately suited if it has properties that require special planning and management to obtain satisfactory performance, and poorly suited if it has properties that are unfavorable. A soil is not suited to a particular use if it has properties that are so unfavorable they are impractical to overcome. More information about each map unit is given under the heading "Use and Management of the Soils."

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

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

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

Soils of one series can differ in texture of the surface layer or of the underlying material. They also can differ in slope, 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, Tifton loamy sand, 2 to 5 percent slopes, is a phase of the Tifton series.

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

A *soil association* is made up of two or more geographically associated soils that are shown as one unit on the maps. Because of present or anticipated soil uses in the survey area, it was not considered practical or necessary to map the soils separately. The pattern and relative proportion of the soils are somewhat similar. Centenary-Ridgeland association, 0 to 3 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils in a mapped area are not uniform. An area can be made up of only one of the major soils, or it can be made up of all of them. Albany and Chipley soils, 0 to 3 percent slopes, is an undifferentiated group in this survey area.

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

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

Table 4 gives the acreage and proportionate extent of each map unit. Other tables 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.

AeB—Ailey loamy sand, 2 to 5 percent slopes

Setting

Landscape position: Ridges and hillsides
Slope class: Very gently sloping
Slope topography: Smooth and convex

Typical Profile

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

Subsurface layer:
6 to 25 inches—yellowish brown loamy sand

Subsoil:
25 to 31 inches—yellowish brown sandy loam
31 to 37 inches—yellowish brown sandy clay loam that has yellowish red and light yellowish brown mottles
37 to 48 inches—mottled red, light gray, and light yellowish brown sandy clay loam

Substratum:
48 to 63 inches—mottled red, light gray, yellowish red, and light yellowish brown sandy clay loam

Soil Properties and Qualities

Drainage class: Well drained
Natural fertility: Low
Organic matter content: Low
Permeability: Rapid in the surface and subsurface layers; slow in the brittle layers of the subsoil and substratum
Available water capacity: Low
Runoff: Slow
Tilth: Good
Root zone: Moderately deep to a layer that has brittle properties and is somewhat restrictive
Distinctive features: Dense and brittle below a depth of 37 inches; dense, compact substratum

Inclusions

- A few small areas of Bonifay, Cowarts, and Fuquay soils on ridges

Use and Management

Land uses: Cropland, pasture, and woodland

Field crops, hay, and pasture

Suitability for field crops: Moderately suited
Suitability for hay: Moderately suited
Suitability for pasture: Moderately suited
Management concerns: Low available water capacity
Suitable management practices:
- Returning crop residue to the soil increases the available water capacity and decreases leaching of plant nutrients.

Woodland

Potential productivity: Moderate
Trees preferred for planting: Slash pine
Management concerns: Equipment limitation, seedling mortality
Suitable management practices:
- Proper planting procedures, the use of adapted drought-tolerant species, and the reduction of competing vegetation commonly increase the seedling survival rate.
- Performing management and harvesting operations during the wetter seasons helps to overcome the equipment limitation.

Urban uses

Suitability: Well suited to most uses
Limitations:
- Slow permeability in the lower part of the subsoil and substratum limits the use of this soil for septic tank absorption fields.

Suitable management practices:
- Special designs and proper application procedures help to overcome the limitations.

Recreational development

Suitability: Moderately suited for most uses
Limitations: Too sandy

Interpretive Groups

Land capability classification: IIIs
Woodland ordination symbol: 8S

AeC—Ailey loamy sand, 5 to 8 percent slopes

Setting

Landscape position: Ridges and hillsides
Slope class: Gently sloping
Slope topography: Smooth and complex

Typical Profile

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

Subsurface layer:
6 to 25 inches—yellowish brown loamy sand

Subsoil:
25 to 31 inches—yellowish brown sandy loam
31 to 37 inches—yellowish brown sandy clay loam that has yellowish red and light yellowish brown mottles
37 to 48 inches—mottled red, light gray, and light yellowish brown sandy clay loam

Substratum:
48 to 63 inches—mottled red, light gray, yellowish red, and light yellowish brown sandy clay loam

Soil Properties and Qualities

Drainage class: Well drained

Natural fertility: Low
Organic matter content: Low
Permeability: Rapid in the surface and subsurface layers; slow in the brittle layers of the subsoil and substratum
Available water capacity: Low
Runoff: Slow
Tilth: Good
Root zone: Moderately deep to a layer that has brittle properties and is somewhat restrictive
Distinctive features: Dense and brittle below a depth of 37 inches; dense, compact substratum

Inclusions

- A few small areas of Bonifay, Cowarts, and Fuquay soils on hillsides

Use and Management

Land uses: Cropland, pasture, and woodland

Field crops, hay, and pasture

Suitability for field crops: Poorly suited
Suitability for hay: Moderately suited
Suitability for pasture: Moderately suited
Management concerns: Low available water capacity
Suitable management practices:
- Returning crop residue to the soil increases the available water capacity and decreases the leaching of plant nutrients.

Woodland

Potential productivity: Moderate
Trees preferred for planting: Slash pine
Management concerns: Equipment limitation, seedling mortality
Suitable management practices:
- Proper planting procedures, the use of adapted drought-tolerant species, and the reduction of competing vegetation commonly increase the seedling survival rate.
- Performing management and harvesting operations during the wetter seasons helps to overcome the equipment limitation.

Urban uses

Suitability: Well suited to most uses
Limitations:
- Slow permeability in the lower part of the subsoil and substratum limits the use of this soil for septic tank absorption fields.

Suitable management practices:
- Special designs and proper application procedures help to overcome the limitations.

Recreational development

Suitability: Moderately suited for most uses
Limitations: Too sandy

Interpretive Groups

Land capability classification: IVs
Woodland ordination symbol: 8S

AeD—Ailey loamy sand, 8 to 17 percent slopes

Setting

Landscape position: Hillsides
Slope class: Strongly sloping and moderately steep
Slope topography: Irregular and convex

Typical Profile

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

Subsurface layer:
6 to 25 inches—yellowish brown loamy sand

Subsoil:
25 to 31 inches—yellowish brown sandy loam
31 to 37 inches—yellowish brown sandy clay loam that has yellowish red and light yellowish brown mottles
37 to 48 inches—mottled red, light gray, and light yellowish brown sandy clay loam

Substratum:
48 to 63 inches—mottled red, light gray, yellowish red, and light yellowish brown sandy clay loam

Soil Properties and Qualities

Drainage class: Well drained
Natural fertility: Low
Organic matter content: Low
Permeability: Rapid in the surface and subsurface layers; slow in the brittle layers of the subsoil and substratum
Available water capacity: Low
Runoff: Medium
Tilth: Good
Root zone: Moderately deep to a layer that has brittle properties and is somewhat restrictive
Distinctive features: Dense and brittle below a depth of 37 inches; dense, compact substratum

Inclusions

- A few small areas of Bonifay, Cowarts, and Nankin soils in similar landscape positions

Use and Management

Land uses: Pasture and woodland

Field crops, hay, and pasture

Suitability for field crops: Unsuited
Suitability for hay: Poorly suited
Suitability for pasture: Poorly suited
Management concerns: Low available water capacity

Woodland

Potential productivity: Moderate
Trees preferred for planting: Longleaf pine, slash pine
Management concerns: Equipment limitation, seedling mortality
Suitable management practices:
• Proper planting procedures, the use of adapted drought-tolerant species, and the reduction of competing vegetation commonly increase the seedling survival rate.
• Performing management and harvesting operations during the wetter seasons helps to overcome the equipment limitation.

Urban uses

Suitability: Moderately suited
Limitations:
• Slow permeability in the lower part of the subsoil and substratum limits the use of this soil for septic tank absorption fields.
Suitable management practices:
• Special designs and proper application procedures help to overcome the limitations.

Recreational development

Suitability: Moderately suited for most recreational uses
Limitations: Slope, too sandy
Suitable management practices:
• Special designs and proper application procedures help to overcome the limitations.

Interpretive Groups

Land capability classification: VIs
Woodland ordination symbol: 8S

AHA—Albany and Chipley soils, 0 to 3 percent slopes

Setting

Landscape position: Upland flats
Slope class: Nearly level and very gently sloping
Slope topography: Smooth and convex

Composition

Albany soil—generally about 55 percent
Chipley soil—generally about 35 percent
Other soils—generally about 10 percent

Pattern of occurrence: Albany and Chipley soils are associated in an irregular pattern. Each mapped area contains at least one of the soils, although some areas have both. The soils were not mapped separately because of present and predicted uses.

Typical Profile

Albany

Surface layer:
0 to 8 inches—very dark grayish brown sand

Subsurface layer:
8 to 18 inches—light yellowish brown sand
18 to 28 inches—light yellowish brown loamy sand that has yellowish brown mottles
28 to 55 inches—pale brown loamy sand that has yellowish brown and light gray mottles

Subsoil:
55 to 68 inches—light yellowish brown sandy loam that has strong brown, yellowish brown, and light gray mottles
68 to 80 inches—light brownish gray sandy clay loam that has yellowish brown and pale brown mottles

Chipley

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

Underlying material:
6 to 16 inches—yellowish brown sand
16 to 26 inches—light yellowish brown sand that has strong brown and yellowish brown mottles
26 to 42 inches—pale brown sand that has brownish yellow, light gray, and yellowish brown mottles
42 to 66 inches—light gray sand that has light yellowish brown and pale brown mottles
66 to 80 inches—light brownish gray sand that has light yellowish brown and yellowish brown mottles

Soil Properties and Qualities

Albany

Drainage class: Somewhat poorly drained
Seasonal high water table: 1.0 to 2.5 feet deep
Natural fertility: Low
Organic matter content: Moderately low
Permeability: Rapid in the surface and subsurface layers, moderately rapid in the upper part of the subsoil, and moderate or moderately slow in the lower part of the subsoil

Available water capacity: Very low
Runoff rate: Slow
Tilth: Good
Root zone: Very deep

Chipley

Drainage class: Moderately well drained
Seasonal high water table: 2.0 to 3.0 feet deep
Natural fertility: Low
Organic matter content: Moderately low
Permeability: Rapid
Available water capacity: Low
Runoff rate: Slow
Tilth: Good
Root zone: Very deep

Inclusions

- A few small areas of Blanton and Centenary soils in slightly higher landscape positions
- A few small areas of Ocilla soils on broad flats
- A few small areas of Pelham soils in slightly lower landscape positions

Use and Management

Land uses: Cropland, pasture, and woodland

Field crops, hay, and pasture

Suitability for field crops: Moderately suited
Suitability for hay: Moderately suited
Suitability for pasture: Moderately suited
Management concerns: Wetness
Suitable management practices:
- A properly installed and maintained drainage system helps to overcome the wetness.
- Returning crop residue to the soil helps to conserve moisture.

Woodland

Potential productivity: High
Trees preferred for planting: Loblolly pine, slash pine
Management concerns: Equipment limitation, seedling mortality
Suitable management practices:
- Performing management and harvesting operations during dry periods helps to overcome the equipment limitation.
- The use of adapted plants increases the seedling survival rate.

Urban uses

Suitability: Poorly suited
Limitations: Wetness

Recreational development

Suitability: Poorly suited
Limitations: Too sandy, wetness

Interpretive Groups

Land capability classification: Albany—IIIw; Chipley—IIIs
Woodland ordination symbol: Albany 10W; Chipley 11S

Bd—Bladen fine sandy loam

Setting

Landscape position: Fluvial or marine terraces
Slope class: Nearly level
Slope topography: Smooth

Typical Profile

Surface layer:
0 to 6 inches—very dark grayish brown fine sandy loam
6 to 9 inches—dark grayish brown fine sandy loam

Subsurface layer:
9 to 14 inches—light gray fine sandy loam

Subsoil:
14 to 27 inches—light brownish gray clay that has strong brown mottles
27 to 38 inches—light gray clay that has strong brown and yellowish red mottles
38 to 54 inches—light gray clay that has strong brown, yellowish red, and yellowish brown mottles
54 to 62 inches—gray sandy clay that has strong brown mottles

Soil Properties and Qualities

Drainage class: Poorly drained
Seasonal high water table: At the surface to a depth of 1 foot
Natural fertility: Low
Organic matter content: Moderately low or moderate
Permeability: Slow
Available water capacity: Moderate
Runoff rate: Slow
Tilth: Fair to good
Root zone: Very deep

Inclusions

- A few small areas of Meggett soils on broad flood plains
- A few small areas of Wahee soils in slightly higher landscape positions

Use and Management

Land use: Woodland

Field crops, hay, and pasture

Suitability for field crops: Unsuited
Suitability for hay: Unsuited
Suitability for pasture: Unsuited

Woodland

Potential productivity: High
Trees preferred for planting: Loblolly pine, slash pine, American sycamore
Management concerns: Equipment limitation, seedling mortality
Suitable management practices:
• Performing management and harvesting operations during dry periods helps to overcome the equipment limitation.
• The use of adapted plants increases the seedling survival rate.

Urban uses

Suitability: Unsuited

Recreational development

Suitability: Poorly suited
Limitations: Wetness

Interpretive Groups

Land capability classification: VIw
Woodland ordination symbol: 9W

BnB—Blanton sand, 0 to 5 percent slopes

Setting

Landscape position: Broad flats and ridges
Slope class: Nearly level and very gently sloping
Slope topography: Smooth and convex

Typical Profile

Surface layer:
0 to 6 inches—dark brown sand

Subsurface layer:
6 to 40 inches—yellow sand
40 to 54 inches—brownish yellow sand

Subsoil:
54 to 60 inches—pale yellow loamy sand
60 to 64 inches—brownish yellow sandy loam
64 to 75 inches—yellowish brown sandy loam that has weak red, strong brown, and light gray mottles
75 to 82 inches—yellowish brown sandy loam that has light gray and strong brown mottles

Soil Properties and Qualities

Drainage class: Somewhat excessively drained or moderately well drained
Seasonal high water table: Perched at a depth of 4.0 to 6.0 feet
Natural fertility: Low
Organic matter content: Low
Permeability: Rapid in the surface and subsurface layers; moderate or moderately slow in the subsoil
Available water capacity: Low
Runoff rate: Slow
Tilth: Good
Root zone: Very deep

Inclusions

• A few small areas of Albany soils in slightly lower landscape positions
• A few small areas of Bonifay and Fuquay soils in slightly higher landscape positions

Use and Management

Land uses: Cropland, pasture, and woodland

Field crops, hay, and pasture

Suitability for field crops: Poorly suited
Suitability for hay: Moderately suited
Suitability for pasture: Moderately suited
Management concerns: Low available water capacity
Suitable management practices:
• Returning crop residue to the soil helps to conserve moisture.
• Irrigation can increase yields of commonly grown crops.

Woodland

Potential productivity: High
Trees preferred for planting: Loblolly pine, slash pine, longleaf pine
Management concerns: Equipment limitation, seedling mortality
Suitable management practices:
• Proper planting procedures, the use of adapted drought-tolerant species, and the reduction of competing vegetation commonly increase the seedling survival rate.
• Performing management and harvesting operations during the wetter seasons helps to overcome the equipment limitation.

Urban uses

Suitability: Moderately suited
Limitations:
• Seepage and wetness limit the use of this soil for most sanitary facilities.
Suitable management practices:
• Special designs and proper application procedures help to overcome the limitations.

Recreational development

Suitability: Poorly suited
Limitations: Too sandy

Interpretive Groups

Land capability classification: IIIs
Woodland ordination symbol: 11S

BoB—Bonifay sand, 1 to 5 percent slopes

Setting

Landscape position: Ridges
Slope class: Nearly level and very gently sloping
Slope topography: Smooth and convex

Typical Profile

Surface layer:
0 to 8 inches—very dark grayish brown sand

Subsurface layer:
8 to 27 inches—light yellowish brown sand
27 to 51 inches—pale yellow sand
51 to 57 inches—brownish yellow fine sand

Subsoil:
57 to 68 inches—yellowish brown sandy loam that has red and strong brown mottles
68 to 80 inches—mottled light brownish gray, red, and strong brown sandy clay loam

Soil Properties and Qualities

Drainage class: Well drained
Seasonal high water table: Perched at a depth of 4.0 to 5.0 feet
Natural fertility: Low
Organic matter content: Low
Permeability: Rapid in the surface and subsurface layers, moderate in the upper part of the subsoil, and moderately slow in the lower part of the subsoil
Available water capacity: Low
Runoff rate: Slow
Tilth: Good
Root zone: Very deep

Inclusions

• A few small areas of Blanton, Fuquay, and Lakeland soils in similar landscape positions

Use and Management

Land uses: Cropland, pasture, and woodland

Field crops, hay, and pasture

Suitability for field crops: Poorly suited
Suitability for hay: Poorly suited
Suitability for pasture: Poorly suited
Management concerns: Low available water capacity
Suitable management practices:
• Returning crop residue to the soil helps to conserve moisture.
• Irrigation can increase yields of commonly grown crops.

Woodland

Potential productivity: Moderately high
Trees preferred for planting: Loblolly pine, slash pine, longleaf pine
Management concerns: Equipment limitation, seedling mortality
Suitable management practices:
• Proper planting procedures, the use of adapted drought-tolerant species, and the reduction of competing vegetation commonly increase the seedling survival rate.
• Performing management and harvesting operations during the wetter seasons helps to overcome the equipment limitation.

Urban uses

Suitability: Well suited to most uses
Limitations:
• Seepage, wetness, and moderate permeability in the subsoil limit the use of this soil for most sanitary facilities.
Suitable management practices:
• Special designs and proper application procedures help to overcome the limitations.

Recreational development

Suitability: Poorly suited
Limitations: Too sandy

Interpretive Groups

Land capability classification: IIIs
Woodland ordination symbol: 10S

BoC—Bonifay sand, 5 to 8 percent slopes

Setting

Landscape position: Hillsides
Slope class: Gently sloping
Slope topography: Undulating and convex

Typical Profile

Surface layer:
0 to 8 inches—very dark grayish brown sand

Subsurface layer:
8 to 27 inches—light yellowish brown sand
27 to 51 inches—pale yellow sand
51 to 57 inches—brownish yellow fine sand

Subsoil:
57 to 68 inches—yellowish brown sandy loam that has red and strong brown mottles
68 to 80 inches—mottled light brownish gray, red, and strong brown sandy clay loam

Soil Properties and Qualities

Drainage class: Well drained
Seasonal high water table: Perched at a depth of 4.0 to 5.0 feet
Natural fertility: Low
Organic matter content: Low
Permeability: Rapid in the surface and subsurface layers, moderate in the upper part of the subsoil, and moderately slow in the lower part of the subsoil
Available water capacity: Low
Runoff rate: Slow
Tilth: Good
Root zone: Very deep

Inclusions

- A few small areas of Fuquay and Lakeland soils in similar landscape positions

Use and Management

Land uses: Cropland, pasture, and woodland

Field crops, hay, and pasture

Suitability for field crops: Poorly suited
Suitability for hay: Poorly suited
Suitability for pasture: Poorly suited
Management concerns: Low available water capacity
Suitable management practices:
- Returning crop residue to the soil helps to conserve moisture.

Woodland

Potential productivity: Moderately high
Trees preferred for planting: Loblolly pine, longleaf pine, slash pine
Management concerns: Seedling mortality, equipment limitation
Suitable management practices:
- Proper planting procedures, the use of adapted drought-tolerant species, and the reduction of competing vegetation commonly increase the seedling survival rate.
- Performing management and harvesting operations during the wetter seasons helps to overcome the equipment limitation.

Urban uses

Suitability: Well suited to most uses
Limitations:
- Seepage, wetness, and moderate permeability in the subsoil limit the use of this soil for most sanitary facilities.

Suitable management practices:
- Special designs and proper application procedures help to overcome the limitations.

Recreational development

Suitability: Poorly suited
Limitations: Too sandy

Interpretive Groups

Land capability classification: IVs
Woodland ordination symbol: 10S

BoD—Bonifay sand, 8 to 12 percent slopes

Setting

Landscape position: Hillsides
Slope class: Strongly sloping
Slope topography: Rolling and convex

Typical Profile

Surface layer:
0 to 8 inches—very dark grayish brown sand

Subsurface layer:
8 to 27 inches—light yellowish brown sand
27 to 51 inches—pale yellow sand
51 to 57 inches—brownish yellow fine sand

Subsoil:
57 to 68 inches—yellowish brown sandy loam that has red and strong brown mottles

68 to 80 inches—mottled light brownish gray, red, and strong brown sandy clay loam

Soil Properties and Qualities

Drainage class: Well drained
Seasonal high water table: Perched at a depth of 4.0 to 5.0 feet
Natural fertility: Low
Organic matter content: Low
Permeability: Rapid in the surface and subsurface layers, moderate in the upper part of the subsoil, and moderately slow in the lower part of the subsoil
Available water capacity: Low
Runoff rate: Medium
Tilth: Good
Root zone: Very deep

Inclusions

- A few small areas of Ailey and Lakeland soils in similar landscape positions

Use and Management

Land uses: Pasture and woodland

Field crops, hay, and pasture

Suitability for field crops: Unsuited
Suitability for hay: Poorly suited
Suitability for pasture: Poorly suited
Management concerns: Low available water capacity, slope

Woodland

Potential productivity: Moderately high
Trees preferred for planting: Loblolly pine, longleaf pine, slash pine
Management concerns: Equipment limitation, seedling mortality
Suitable management practices:
- Proper planting procedures, the use of adapted drought-tolerant species, and the reduction of competing vegetation commonly increase the seedling survival rate.
- Performing management and harvesting operations during the wetter seasons helps to overcome the equipment limitation.

Urban uses

Suitability: Moderately suited
Limitations:
- The slope, seepage, wetness, and moderate permeability in the subsoil limit the use of this soil for most sanitary facilities.

Suitable management practices:
- Special designs and proper application procedures help to overcome the limitations.

Recreational development

Suitability: Poorly suited
Limitations: Too sandy

Interpretive Groups

Land capability classification: VIs
Woodland ordination symbol: 10S

CaB2—Carnegie sandy loam, 2 to 5 percent slopes, eroded

Setting

Landscape position: Ridges and hillsides
Landscape features: Occasional galled spots and shallow gullies
Surface features: Common to many nodules of ironstone
Slope class: Very gently sloping
Slope topography: Irregular

Typical Profile

Surface layer:
0 to 7 inches—brown sandy loam

Subsoil:
7 to 20 inches—strong brown sandy clay loam
20 to 35 inches—strong brown sandy clay that has red, light yellowish brown, and white mottles
35 to 48 inches—mottled strong brown, red, light yellowish brown, and light gray sandy clay
48 to 60 inches—coarsely mottled light gray, dusky red, brownish yellow, and strong brown sandy clay

Soil Properties and Qualities

Drainage class: Well drained
Natural fertility: Low
Organic matter content: Moderately low
Permeability: Moderately slow
Available water capacity: Moderate
Runoff rate: Rapid
Eroded surface layer: Consists of a mixture of the original surface and the upper part of the subsoil
Tilth: Fair
Root zone: Somewhat limited to a depth of about 20 inches; plinthite below this depth is not easily penetrated by plant roots
Distinctive features: Contains nodules of ironstone in the surface layer and throughout the upper part of

the subsoil; contains 5 percent or more plinthite below a depth of about 20 inches

Inclusions

- A few small areas of Cowarts, Dothan, Nankin, and Tifton soils in similar landscape positions
- A few small areas of soils that are not eroded, have a surface layer of loamy sand, and are in similar landscape positions
- A few small areas of soils that have a surface layer of sandy clay loam and are in similar landscape positions

Use and Management

Land uses: Cropland, pasture, and woodland

Field crops, hay, and pasture

Suitability for field crops: Moderately suited
Suitability for hay: Well suited
Suitability for pasture: Well suited
Management concerns: Erosion
Suitable management practices:
- A conservation tillage system, a water management system, or a combination of both help to control runoff and minimize the hazard of erosion.

Woodland

Potential productivity: Moderately high
Trees preferred for planting: Loblolly pine, slash pine
Management concerns: No significant limitations
Suitable management practices:
- Performing management and harvesting operations on the contour minimizes the hazard of erosion.

Urban uses

Suitability: Well suited to most uses
Limitations:
- Moderately slow permeability in the subsoil limits the use of this soil for septic tank absorption fields.

Suitable management practices:
- Special designs and proper application procedures help to overcome the limitations.

Recreational development

Suitability: Moderately suited
Limitations: Moderately slow permeability
Suitable management practices:
- Special designs and proper application procedures help to overcome the limitations.

Interpretive Groups

Land capability classification: IIIe
Woodland ordination symbol: 9A

CaC2—Carnegie sandy loam, 5 to 8 percent slopes, eroded

Setting

Landscape position: Hillsides
Landscape features: Occasional galled spots and gullies
Surface features: Common to many nodules of ironstone
Slope class: Gently sloping
Slope topography: Irregular

Typical Profile

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

Subsoil:
7 to 20 inches—strong brown sandy clay loam
20 to 35 inches—strong brown sandy clay that has red, light yellowish brown, and white mottles
35 to 48 inches—mottled strong brown, red, light yellowish brown, and light gray sandy clay
48 to 60 inches—coarsely mottled light gray, dusky red, brownish yellow, and strong brown sandy clay

Soil Properties and Qualities

Drainage class: Well drained
Natural fertility: Low
Organic matter content: Moderately low
Permeability: Moderately slow
Available water capacity: Moderate
Runoff rate: Rapid
Eroded surface layer: Consists of a mixture of the original surface and the upper part of the subsoil
Tilth: Fair
Root zone: Somewhat limited to a depth of about 20 inches; plinthite below this depth is not easily penetrated by plant roots
Distinctive features: Contains nodules of ironstone in the surface layer and the upper part of the subsoil; contains 5 percent or more plinthite below a depth of about 20 inches

Inclusions

- A few small areas of Cowarts, Nankin, and Tifton soils in similar landscape positions
- A few small areas of soils that have a surface layer of sandy clay loam and are in similar landscape positions

Use and Management

Land uses: Cropland, pasture, and woodland

Field crops, hay, and pasture

Suitability for field crops: Moderately suited
Suitability for hay: Moderately suited
Suitability for pasture: Moderately suited
Management concerns: Erosion
Suitable management practices:
• A conservation tillage system, a water management system, or a combination of both help to control runoff and minimize the hazard of erosion.

Woodland

Potential productivity: Moderately high
Trees preferred for planting: Loblolly pine, slash pine
Management concerns: No significant limitations
Suitable management practices:
• Performing management and harvesting operations on the contour minimizes the hazard of erosion.

Urban uses

Suitability: Well suited to most uses
Limitations:
• Moderately slow permeability in the subsoil limits the use of this soil for septic tank absorption fields.
Suitable management practices:
• Special designs and proper application procedures help to overcome the limitations.

Recreational development

Suitability: Moderately suited
Limitations: Moderately slow permeability
Suitable management practices:
• Special designs and proper application procedures help to overcome the limitations.

Interpretive Groups

Land capability classification: IVe
Woodland ordination symbol: 9A

CDA—Centenary-Ridgeland association, 0 to 3 percent slopes

Setting

Landscape position: Broad ridges and upland flats
Slope class: Nearly level and very gently sloping
Slope topography: Smooth

Composition

Centenary soil—55 percent
Ridgeland soil—35 percent
Other soils—10 percent

Pattern of occurrence: Both soils are normally present in a regular and repeating pattern in areas large enough to separate at the scale mapped; however, they were mapped as one unit because of present and predicted uses.
General location: The Centenary soil is in slightly higher landscape positions than the Ridgeland soil.

Typical Profile

Centenary

Surface layer:
0 to 5 inches—very dark grayish brown fine sand
5 to 10 inches—grayish brown fine sand

Subsurface layer:
10 to 36 inches—yellowish brown fine sand
36 to 50 inches—yellowish brown fine sand that has light brownish gray mottles
50 to 60 inches—pale brown fine sand that has light brownish gray and light yellowish brown mottles

Subsoil:
60 to 80 inches—dark reddish brown fine sand

Ridgeland

Surface layer:
0 to 9 inches—very dark gray fine sand

Upper subsoil:
9 to 17 inches—dark brown sand

Subsurface layer:
17 to 37 inches—grayish brown sand
37 to 42 inches—pale brown sand

Lower subsoil:
42 to 80 inches—dark reddish brown sand

Soil Properties and Qualities

Centenary

Drainage class: Well drained or somewhat excessively drained
Seasonal high water table: 3.5 to 5.0 feet deep
Natural fertility: Low
Organic matter content: Low
Permeability: Moderately rapid
Available water capacity: Very low
Runoff rate: Slow
Tilth: Good
Root zone: Very deep

Ridgeland

Drainage class: Somewhat poorly drained
Seasonal high water table: 1.5 to 2.5 feet deep
Natural fertility: Low
Organic matter content: Low
Permeability: Moderately rapid to moderate
Available water capacity: Low

Runoff rate: Slow
Tilth: Good
Root zone: Very deep

Inclusions

- A few small areas of Albany soils that are on broad flats
- A few small areas of Chipley soils in slightly higher landscape positions
- A few small areas of Pickney soils in depressions and drainageways

Use and Management

Land uses: Pasture and woodland

Field crops, hay, and pasture

Suitability for field crops: Poorly suited
Suitability for hay: Moderately suited
Suitability for pasture: Moderately suited
Management concerns: Low available water capacity

Woodland

Potential productivity: Moderately high
Trees preferred for planting: Loblolly pine, slash pine, longleaf pine
Management concerns: Equipment limitation, seedling mortality
Suitable management practices:
- Proper planting procedures, the use of adapted drought-tolerant species, and the reduction of competing vegetation commonly increase the seedling survival rate.
- Performing management and harvesting operations during the wetter seasons helps to overcome the equipment limitation.

Urban uses

Suitability: Moderately suited
Limitations: Wetness
Suitable management practices:
- Special designs and proper application procedures help to overcome the limitations.

Recreational development

Suitability: Poorly suited
Limitations: Too sandy

Interpretive Groups

Land capability classification: Centenary—IIIs; Ridgeland—IIIw
Woodland ordination symbol: Centenary—11S; Ridgeland—8W

CnA—Clarendon loamy sand, 0 to 2 percent slopes

Setting

Landscape position: Upland flats
Slope class: Nearly level
Slope topography: Smooth and convex

Typical Profile

Surface layer:
0 to 7 inches—dark grayish brown loamy sand

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

Subsoil:
13 to 21 inches—light yellowish brown sandy loam
21 to 28 inches—yellowish brown sandy clay loam that has strong brown mottles
28 to 39 inches—mottled yellowish brown, strong brown, light gray, and yellowish red sandy clay loam
39 to 48 inches—mottled yellowish brown, light gray, strong brown, and red sandy clay loam
48 to 63 inches—light gray sandy clay loam that has yellowish brown, strong brown, and red mottles

Soil Properties and Qualities

Drainage class: Moderately well drained
Seasonal high water table: 2.0 to 3.0 feet deep
Natural fertility: Low
Organic matter content: Low
Permeability: Moderately slow
Available water capacity: Moderate
Runoff rate: Slow
Tilth: Good
Root zone: Very deep

Inclusions

- A few small areas of Dothan, Stilson, and Tifton soils in slightly higher landscape positions
- A few small areas of Ocilla soils in slightly lower landscape positions

Use and Management

Land uses: Mainly woodland and some areas of pasture and cropland

Field crops, hay, and pasture

Suitability for field crops: Well suited (fig. 2)
Suitability for hay: Well suited
Suitability for pasture: Well suited
Management concerns: Wetness

Figure 2.—An area of Clarendon loamy sand, 0 to 2 percent slopes, used as cropland.

Suitable management practices:
• A properly installed and maintained drainage system helps to overcome the wetness.

Woodland

Potential productivity: High
Trees preferred for planting: Loblolly pine, slash pine
Management concerns: No significant limitations

Urban uses

Suitability: Moderately suited
Limitations: Wetness
Suitable management practices:
• Special designs and proper application procedures help to overcome the limitations.

Recreational development

Suitability: Moderately suited
Limitations: Wetness
Suitable management practices:
• Special designs and proper application procedures help to overcome the limitations.

Interpretive Groups

Land capability classification: IIw
Woodland ordination symbol: 9W

CoB—Cowarts loamy sand, 2 to 5 percent slopes

Setting

Landscape position: Ridges and hillsides
Slope class: Very gently sloping
Slope topography: Undulating and convex

Typical Profile

Surface layer:
0 to 5 inches—brown loamy sand

Subsoil:
5 to 11 inches—yellowish brown sandy loam
11 to 21 inches—yellowish brown sandy clay loam that has red and strong brown mottles
21 to 27 inches—yellowish brown sandy clay that has red, light gray, and brownish yellow mottles

Substratum:
27 to 60 inches—mottled brownish yellow, red, light gray, and dusky red coarse sandy loam

Soil Properties and Qualities

Drainage class: Well drained
Natural fertility: Low
Organic matter content: Low
Permeability: Moderate in the solum; moderately slow or slow in the substratum
Available water capacity: Moderate
Runoff rate: Medium
Tilth: Good
Root zone: Moderately deep to a firm, compact horizon
Distinctive features: Substratum is dense and compact

Inclusions

- A few small areas of Ailey and Nankin soils in similar landscape positions

Use and Management

Land uses: Cropland, pasture, and woodland

Field crops, hay, and pasture

Suitability for field crops: Well suited
Suitability for hay: Well suited
Suitability for pasture: Well suited
Management concerns:
- Erosion is a moderate hazard if this soil is cultivated and is not protected.

Suitable management practices:
- Returning crop residue to the soil helps to maintain tilth.
- A conservation tillage system, a water management system, or a combination of both help to control runoff and minimize the hazard of erosion.

Woodland

Potential productivity: Moderately high
Trees preferred for planting: Loblolly pine, slash pine, longleaf pine
Management concerns: No significant limitations
Suitable management practices:
- Performing management and harvesting operations on the contour minimizes the hazard of erosion.

Urban uses

Suitability: Well suited to most uses
Limitations:
- Slow permeability in the substratum limits the use of this soil for septic tank absorption fields.

Suitable management practices:
- Special designs and proper application procedures help to overcome the limitations.

Recreational development

Suitability: Moderately suited
Limitations: Slow permeability in the substratum
Suitable management practices:
- Special designs and proper application procedures help to overcome the limitations.

Interpretive Groups

Land capability classification: IIe
Woodland ordination symbol: 9A

CoC—Cowarts loamy sand, 5 to 8 percent slopes

Setting

Landscape position: Hillsides
Slope class: Gently sloping
Slope topography: Undulating and convex

Typical Profile

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

Subsoil:
5 to 11 inches—yellowish brown sandy loam
11 to 21 inches—yellowish brown sandy clay loam that has red and strong brown mottles
21 to 27 inches—yellowish brown sandy clay that has red, light gray, and brownish yellow mottles

Substratum:
27 to 60 inches—mottled brownish yellow, red, light gray, and dusky red coarse sandy loam

Soil Properties and Qualities

Drainage class: Well drained
Natural fertility: Low
Organic matter content: Low
Permeability: Moderate in the solum; moderately slow or slow in the substratum
Available water capacity: Moderate
Runoff rate: Medium to rapid
Tilth: Good
Root zone: Moderately deep over a firm, compact horizon
Distinctive features: Dense, compact substratum

Inclusions

• A few small areas of Ailey and Nankin soils in similar landscape positions

Use and Management

Land uses: Cropland, pasture, and woodland

Field crops, hay, and pasture

Suitability for field crops: Moderately suited
Suitability for hay: Well suited
Suitability for pasture: Well suited
Management concerns:
• Erosion is a moderate hazard if this soil is cultivated and is not protected.
Suitable management practices:
• A conservation tillage system, a water management system, or a combination of both help to control runoff and minimize the hazard of erosion.
• Returning crop residue to the soil helps to maintain tilth.

Woodland

Potential productivity: Moderately high
Trees preferred for planting: Loblolly pine, slash pine, longleaf pine
Management concerns: No significant limitations
Suitable management practices:
• Performing management and harvesting operations on the contour minimizes the hazard of erosion.

Urban uses

Suitability: Well suited to most uses
Limitations:
• Slow permeability in the substratum limits the use of this soil for septic tank absorption fields.
Suitable management practices:
• Special designs and proper application procedures help to overcome the limitations.

Recreational development

Suitability: Moderately suited
Limitations: Slow permeability in the substratum
Suitable management practices:
• Special designs and proper application procedures help to overcome the limitations.

Interpretive Groups

Land capability classification: IIIe
Woodland ordination symbol: 9A

CtC2—Cowarts sandy loam, 5 to 8 percent slopes, eroded

Setting

Landscape position: Hillsides
Landscape features: Few galled spots and an occasional gully
Slope class: Gently sloping
Slope topography: Irregular

Typical Profile

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

Subsoil:
5 to 16 inches—yellowish brown sandy clay loam
16 to 24 inches—yellowish brown sandy clay loam that has strong brown and yellowish red mottles
24 to 29 inches—yellowish brown sandy clay loam that has yellowish red and light brownish gray mottles

Substratum:
29 to 63 inches—mottled yellowish red, yellowish brown, and light gray, compact sandy clay loam and sandy loam

Soil Properties and Qualities

Drainage class: Well drained
Natural fertility: Low
Organic matter content: Low
Permeability: Moderate in the solum; moderately slow or slow in the substratum
Available water capacity: Moderate
Runoff rate: Medium to rapid
Eroded surface layer: Consists of a mixture of the original surface soil and the upper part of the subsoil
Tilth: Fair
Root zone: Moderately deep over a firm, compact horizon
Distinctive features: Dense, compact substratum

Inclusions

• A few small areas of Ailey, Carnegie, and Nankin soils in similar landscape positions
• A few small areas of Susquehanna soils in similar landscape positions

Use and Management

Land uses: Cropland, pasture, and woodland

Field crops, hay, and pasture

Suitability for field crops: Moderately suited

Suitability for hay: Moderately suited
Suitability for pasture: Moderately suited
Management concerns:
• Erosion is a severe hazard if cultivated crops are grown.
Suitable management practices:
• A conservation tillage system, a water management system, or a combination of both help to control runoff and minimize the hazard of erosion.
• Returning crop residue to the soil helps to maintain tilth.

Woodland

Potential productivity: Moderately high
Trees preferred for planting: Loblolly pine, slash pine
Management concerns: No significant limitations
Suitable management practices:
• Performing management and harvesting operations on the contour minimizes the hazard of erosion.

Urban uses

Suitability: Well suited to most uses
Limitations:
• Slow permeability in the substratum limits the use of this soil for septic tank absorption fields.
Suitable management practices:
• Special designs and proper application procedures help to overcome the limitations.

Recreational development

Suitability: Moderately suited
Limitations: Slow permeability in the substratum
Suitable management practices:
• Special designs and proper application procedures help to overcome the limitations.

Interpretive Groups

Land capability classification: IVe
Woodland ordination symbol: 9A

CtD2—Cowarts sandy loam, 8 to 15 percent slopes, eroded

Setting

Landscape position: Hillsides
Landscape features: Few galled spots and an occasional gully
Slope class: Strongly sloping and moderately steep
Slope topography: Irregular and choppy

Typical Profile

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

Subsoil:
5 to 16 inches—yellowish brown sandy clay loam
16 to 24 inches—yellowish brown sandy clay loam that has strong brown and yellowish red mottles
24 to 29 inches—yellowish brown sandy clay loam that has yellowish red and light brownish gray mottles

Substratum:
29 to 63 inches—mottled yellowish red, yellowish brown, and light gray, compact sandy clay loam and sandy loam

Soil Properties and Qualities

Drainage class: Well drained
Natural fertility: Low
Organic matter content: Low
Permeability: Moderate in the solum; moderately slow or slow in the substratum
Available water capacity: Moderate
Runoff rate: Rapid
Eroded surface layer: Consists of a mixture of the original surface soil and the upper part of the subsoil
Tilth: Fair
Root zone: Moderately deep over a firm, compact horizon
Distinctive features: Dense, compact substratum

Inclusions

• A few small areas of Nankin soils in similar landscape positions

Use and Management

Land uses: Pasture and woodland

Field crops, hay, and pasture

Suitability for field crops: Unsuited
Suitability for hay: Moderately suited
Suitability for pasture: Moderately suited
Management concerns:
• Erosion is a severe hazard if this soil is cultivated.

Woodland

Potential productivity: Moderately high
Trees preferred for planting: Loblolly pine, slash pine
Management concerns: No significant limitations
Suitable management practices:
• Performing management and harvesting operations on the contour minimizes the hazard of erosion.

Urban uses

Suitability: Moderately suited
Limitations:
• The slope is a limitation.
• Moderately slow permeability in the substratum

limits the use of this soil for septic tank absorption fields.
Suitable management practices:
• Special designs and proper application procedures help to overcome the limitations.

Recreational development

Suitability: Moderately suited
Limitations: Slope, slow permeability in the substratum
Suitable management practices:
• Special designs and proper application procedures help to overcome the limitations.

Interpretive Groups

Land capability classification: VIe
Woodland ordination symbol: 9A

DoA—Dothan loamy sand, 0 to 2 percent slopes

Setting

Landscape position: Ridges
Slope class: Nearly level
Slope topography: Smooth and convex

Typical Profile

Surface layer:
0 to 7 inches—brown loamy sand

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

Subsoil:
13 to 18 inches—brownish yellow sandy loam
18 to 42 inches—yellowish brown sandy clay loam
42 to 46 inches—yellowish brown sandy clay loam that has strong brown mottles
46 to 56 inches—yellowish brown sandy clay loam that has yellowish red and strong brown mottles
56 to 63 inches—yellowish brown sandy clay loam that has strong brown, yellowish red, light brownish gray, and brownish yellow mottles

Soil Properties and Qualities

Drainage class: Well drained
Seasonal high water table: Perched at a depth of 3.0 to 5.0 feet
Natural fertility: Low
Organic matter content: Low
Permeability: Moderate in the upper part of the subsoil; moderately slow in the lower part of the subsoil
Available water capacity: Moderate
Runoff rate: Medium
Tilth: Good
Root zone: Very deep
Distinctive features: Contains 5 percent or more plinthite below a depth of 46 inches

Inclusions

• A few small areas of Fuquay and Tifton soils on ridges
• A few small areas of Clarendon soils in slightly lower landscape positions

Use and Management

Land uses: Cropland, pasture, and woodland

Field crops, hay, and pasture

Suitability for field crops: Well suited
Suitability for hay: Well suited
Suitability for pasture: Well suited
Management concerns: No significant concerns
Suitable management practices:
• A conservation tillage system helps to maintain the content of organic matter and conserves moisture.

Woodland

Potential productivity: Moderately high
Trees preferred for planting: Loblolly pine, slash pine, longleaf pine
Management concerns: No significant limitations

Urban uses

Suitability: Well suited to most uses
Limitations:
• The wetness is a limitation.
• Moderately slow permeability in the lower part of the subsoil limits the use of this soil for septic tank absorption fields.
Suitable management practices:
• Special designs and proper application procedures help to overcome the limitations.

Recreational development

Suitability: Well suited

Interpretive Groups

Land capability classification: I
Woodland ordination symbol: 9A

DoB—Dothan loamy sand, 2 to 5 percent slopes

Setting

Landscape position: Ridges and hillsides
Slope class: Very gently sloping
Slope topography: Smooth and convex

Typical Profile

Surface layer:
0 to 7 inches—brown loamy sand

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

Subsoil:
13 to 18 inches—brownish yellow sandy loam
18 to 42 inches—yellowish brown sandy clay loam
42 to 46 inches—yellowish brown sandy clay loam that has strong brown mottles
46 to 56 inches—yellowish brown sandy clay loam that has yellowish red and strong brown mottles
56 to 63 inches—yellowish brown sandy clay loam that has strong brown, yellowish red, light brownish gray, and brownish yellow mottles

Soil Properties and Qualities

Drainage class: Well drained
Seasonal high water table: Perched at a depth of 3.0 to 5.0 feet
Natural fertility: Low
Organic matter content: Low
Permeability: Moderate in the upper part of the subsoil; moderately slow in the lower part of the subsoil
Available water capacity: Moderate
Runoff rate: Medium
Tilth: Good
Root zone: Very deep
Distinctive features: Contains 5 percent or more plinthite below a depth of 46 inches

Inclusions

- A few small areas of Fuquay and Tifton soils in similar landscape positions

Use and Management

Land uses: Cropland, pasture, and woodland

Field crops, hay, and pasture

Suitability for field crops: Well suited
Suitability for hay: Well suited
Suitability for pasture: Well suited
Management concerns:
- Erosion is a moderate hazard if this soil is cultivated and is not protected.

Suitable management practices:
- A conservation tillage system, a water management system, or a combination of both help to control runoff and minimize the hazard of erosion.
- Returning crop residue to the soil helps to maintain tilth.

Woodland

Potential productivity: Moderately high
Trees preferred for planting: Loblolly pine, slash pine, longleaf pine
Management concerns: No significant limitations
Suitable management practices:
- Performing management and harvesting operations on the contour minimizes the hazard of erosion.

Urban uses

Suitability: Well suited to most uses
Limitations:
- The wetness is a limitation.
- Moderately slow permeability in the lower part of the subsoil limits the use of this soil for septic tank absorption fields.

Suitable management practices:
- Special designs and proper application procedures help to overcome the limitations.

Recreational development

Suitability: Well suited for most uses

Interpretive Groups

Land capability classification: IIe
Woodland ordination symbol: 9A

DtC2—Dothan sandy loam, 5 to 8 percent slopes, eroded

Setting

Landscape position: Hillsides
Landscape features: Few galled spots and an occasional shallow gully
Slope class: Gently sloping
Slope topography: Short and irregular

Typical Profile

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

Subsoil:
5 to 12 inches—yellowish brown sandy loam
12 to 29 inches—strong brown sandy clay loam
29 to 46 inches—strong brown sandy clay loam that has yellowish brown and yellowish red mottles
46 to 63 inches—mottled strong brown, red, and light gray sandy clay loam

Soil Properties and Qualities

Drainage class: Well drained
Seasonal high water table: Perched at a depth of 3.0 to 5.0 feet

Natural fertility: Low
Organic matter content: Low
Permeability: Moderate in the upper part of the subsoil; moderately slow in the lower part of the subsoil
Available water capacity: Moderate
Runoff rate: Medium
Eroded surface layer: Consists of a mixture of the original surface soil and the upper part of the subsoil
Tilth: Good
Root zone: Very deep
Distinctive features: Contains 5 percent or more plinthite below a depth of 29 inches

Inclusions

- A few small areas of Cowarts, Fuquay, and Tifton soils in similar landscape positions

Use and Management

Land uses: Cropland, pasture, and woodland

Field crops, hay, and pasture

Suitability for field crops: Moderately suited
Suitability for hay: Well suited
Suitability for pasture: Well suited
Management concerns:
- Erosion is a severe hazard if cultivated crops are grown.

Suitable management practices:
- A conservation tillage system, a water management system, or a combination of both help to control runoff and minimize the hazard of erosion.
- Returning crop residue to the soil helps to maintain tilth.

Woodland

Potential productivity: Moderately high
Trees preferred for planting: Slash pine, loblolly pine, longleaf pine
Management concerns: No significant limitations
Suitable management practices:
- Performing management and harvesting operations on the contour minimizes the hazard of erosion.

Urban uses

Suitability: Well suited to most uses
Limitations:
- Moderately slow permeability in the lower part of the subsoil limits the use of this soil for septic tank absorption fields.

Suitable management practices:
- Special designs and proper application procedures help to overcome the limitations.

Recreational development

Suitability: Moderately suited
Limitations: Slope
Suitable management practices:
- Special designs and proper application procedures help to overcome the limitations.

Interpretive Groups

Land capability classification: IVe
Woodland ordination symbol: 9A

FuB—Fuquay loamy sand, 1 to 5 percent slopes

Setting

Landscape position: Ridges
Slope class: Nearly level and very gently sloping
Slope topography: Smooth and convex

Typical Profile

Surface layer:
0 to 9 inches—grayish brown loamy sand

Subsurface layer:
9 to 27 inches—yellowish brown loamy sand

Subsoil:
27 to 37 inches—brownish yellow sandy loam
37 to 47 inches—yellowish brown sandy clay loam that has strong brown mottles
47 to 58 inches—yellowish brown sandy clay loam that has red and strong brown mottles
58 to 63 inches—yellowish brown sandy clay loam that has red, strong brown, and very pale brown mottles

Soil Properties and Qualities

Drainage class: Well drained
Seasonal high water table: Perched at a depth of 4.0 to 6.0 feet
Natural fertility: Low
Organic matter content: Low
Permeability: Rapid in the surface and subsurface layers, moderate in the upper part of the subsoil, and slow in the lower part of the subsoil
Available water capacity: Low
Runoff rate: Slow to medium
Tilth: Good
Root zone: Very deep
Distinctive features: Contains 5 percent or more plinthite below a depth of 47 inches

Inclusions

- A few small areas of Bonifay, Dothan, and Tifton soils in similar landscape positions
- A few small areas of Stilson soils in slightly lower landscape positions

Use and Management

Land uses: Cropland, pasture, and woodland

Field crops, hay, and pasture

Suitability for field crops: Moderately suited
Suitability for hay: Moderately suited
Suitability for pasture: Moderately suited
Management concerns: Low available water capacity
Suitable management practices:
- Returning crop residue to the soil increases the available water capacity.

Woodland

Potential productivity: Moderately high
Trees preferred for planting: Loblolly pine, longleaf pine, slash pine
Management concerns: Equipment limitation, seedling mortality
Suitable management practices:
- Proper planting procedures, the use of adapted drought-tolerant species, and the reduction of competing vegetation commonly increase the seedling survival rate.
- Performing management and harvesting operations during the wetter seasons helps to overcome the equipment limitation.

Urban uses

Suitability: Well suited to most uses
Limitations:
- Slow permeability in the lower part of the subsoil limits the use of this soil for septic tank absorption fields.

Suitable management practices:
- Special designs and proper application procedures help to overcome the limitations.

Recreational development

Suitability: Moderately suited
Limitations: Too sandy
Suitable management practices:
- Special designs and proper application procedures help to overcome the limitations.

Interpretive Groups

Land capability classification: IIs
Woodland ordination symbol: 8S

FuC—Fuquay loamy sand, 5 to 8 percent slopes

Setting

Landscape position: Hillsides
Slope class: Gently sloping
Slope topography: Smooth and convex

Typical Profile

Surface layer:
0 to 9 inches—grayish brown loamy sand

Subsurface layer:
9 to 27 inches—yellowish brown loamy sand

Subsoil:
27 to 37 inches—brownish yellow sandy loam
37 to 47 inches—yellowish brown sandy clay loam that has strong brown mottles
47 to 58 inches—yellowish brown sandy clay loam that has red and strong brown mottles
58 to 63 inches—yellowish brown sandy clay loam that has red, strong brown, and very pale brown mottles

Soil Properties and Qualities

Drainage class: Well drained
Seasonal high water table: Perched at a depth of 4.0 to 6.0 feet
Natural fertility: Low
Organic matter content: Low
Permeability: Rapid in the surface and subsurface layers, moderate in the upper part of the subsoil, and slow in the lower part of the subsoil
Available water capacity: Low
Runoff rate: Medium
Tilth: Good
Root zone: Very deep
Distinctive features: Contains 5 percent or more plinthite below a depth of 47 inches

Inclusions

- A few small areas of Ailey, Bonifay, and Dothan soils in similar landscape positions

Use and Management

Land uses: Cropland, pasture, and woodland

Field crops, hay, and pasture

Suitability for field crops: Moderately suited

Suitability for hay: Moderately suited
Suitability for pasture: Moderately suited
Management concerns: Low available water capacity
Suitable management practices:
• Returning crop residue to the soil increases the available water capacity.

Woodland

Potential productivity: Moderately high
Trees preferred for planting: Loblolly pine, longleaf pine, slash pine
Management concerns: Equipment limitation, seedling mortality
Suitable management practices:
• Proper planting procedures, the use of adapted drought-tolerant species, and the reduction of competing vegetation commonly increase the seedling survival rate.
• Performing management and harvesting operations during the wetter seasons helps to overcome the equipment limitation.

Urban uses

Suitability: Well suited to most uses
Limitations:
• Slow permeability in the lower part of the subsoil limits the use of this soil for septic tank absorption fields.
Suitable management practices:
• Special designs and proper application procedures help to overcome the limitations.

Recreational development

Suitability: Moderately suited
Limitations: Too sandy
Suitable management practices:
• Special designs and proper application procedures help to overcome the limitations.

Interpretive Groups

Land capability classification: IIIs
Woodland ordination symbol: 8S

KeC—Kershaw coarse sand, 2 to 12 percent slopes

Setting

Landscape position: Ridges and hillsides
Landscape features: Dune-like landscape appearance
Slope class: Very gently sloping to strongly sloping
Slope topography: Undulating and convex

Typical Profile

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

Underlying material:
3 to 7 inches—yellowish brown coarse sand
7 to 58 inches—brownish yellow coarse sand
58 to 85 inches—yellow coarse sand

Soil Properties and Qualities

Drainage class: Excessively drained
Natural fertility: Low
Organic matter content: Low
Permeability: Very rapid
Available water capacity: Very low
Runoff rate: Slow
Tilth: Good
Root zone: Very deep

Inclusions

• A few small areas of Blanton soils in slightly lower landscape positions
• A few small areas of Kureb and Lakeland soils in similar landscape positions

Use and Management

Land uses: Mainly woodland; some areas of pasture

Field crops, hay, and pasture

Suitability for field crops: Unsuited
Suitability for hay: Poorly suited
Suitability for pasture: Poorly suited
Management concerns: Very low available water capacity

Woodland

Potential productivity: Low
Trees preferred for planting: Sand pine
Management concerns: Equipment limitation, seedling mortality
Suitable management practices:
• Leaving additional seed trees decreases the seedling mortality rate.
• Performing management and harvesting operations during the wetter seasons helps to overcome the equipment limitation.

Urban uses

Suitability: Moderately suited to most uses
Limitations:
• Seepage is a limitation for most sanitary facilities.

Recreational development

Suitability: Poorly suited

Limitations: Too sandy

Interpretive Groups

Land capability classification: VIIs
Woodland ordination symbol: 8S

KFA—Kinston and Bibb soils, frequently flooded

Setting

Landscape position: Flood plains
Hazard of flooding: Frequently flooded
Slope class: Nearly level

Composition

Kinston soil—generally about 50 percent
Bibb soil—generally about 35 percent
Other soils—generally about 15 percent

Pattern of occurrence: Kinston and Bibb soils are closely associated in an irregular pattern. Each mapped area contains at least one of the soils, although some areas have both. The soils were not mapped separately because of present and predicted uses.
General location: The Bibb soil is generally in areas that are closer to stream channels than the Kinston soil.

Typical Profile

Kinston

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

Underlying material:
6 to 23 inches—gray sandy loam that has yellowish brown and brownish yellow mottles
23 to 48 inches—gray sandy clay loam that has strong brown, yellowish red, and pale brown mottles
48 to 63 inches—grayish brown sandy loam that has yellowish brown and pale brown mottles

Bibb

Surface layer:
0 to 6 inches—very dark grayish brown loam
6 to 14 inches—light brownish gray fine sandy loam

Underlying material:
14 to 25 inches—light brownish gray sandy loam that has yellowish brown and brownish yellow mottles
25 to 43 inches—light brownish gray sandy loam that has strong brown, yellowish brown, and pale brown mottles
43 to 63 inches—gray loamy sand that has yellowish brown and pale brown mottles

Soil Properties and Qualities

Kinston

Drainage class: Poorly drained
Seasonal high water table: At the surface to a depth of 1 foot
Natural fertility: Low
Organic matter content: Moderate
Permeability: Moderate
Available water capacity: High
Runoff rate: Very slow
Tilth: Poor
Root zone: Very deep

Bibb

Drainage class: Poorly drained
Seasonal high water table: 0.5 to 1.0 foot deep
Natural fertility: Moderately low or moderate
Organic matter content: Low
Permeability: Moderate
Available water capacity: High
Runoff rate: Very slow
Tilth: Poor
Root zone: Very deep

Inclusions

- A few small areas of Pelham soils in drainageways and on broad flats adjacent to drainageways
- A few small areas of soils that are sandy throughout and are in similar landscape positions
- A few small areas of soils that have a clayey control section and are in similar landscape positions

Use and Management

Land uses: Pasture and woodland

Field crops, hay, and pasture

Suitability for field crops: Unsuited
Suitability for hay: Moderately suited
Suitability for pasture: Moderately suited
Management concerns: Flooding, wetness

Woodland

Potential productivity: High
Trees preferred for planting: Loblolly pine, slash pine, eastern cottonwood, yellow poplar
Management concerns: Equipment limitation, seedling mortality resulting from flooding and wetness
Suitable management practices:
- Performing management and harvesting operations

during dry periods helps to overcome the equipment limitation.
• Bedding and using adapted plants generally increase the seedling survival rate.

Urban uses

Suitability: Unsuited
Limitations: Flooding, wetness

Recreational development

Suitability: Unsuited
Limitations: Flooding, wetness

Interpretive Groups

Land capability classification: Bibb—Vw; Kinston—VIw
Woodland ordination symbol: Bibb—11W; Kinston—8W

KuC—Kureb sand, 5 to 12 percent slopes

Setting

Landscape position: Ridges and hillsides
Slope class: Gently sloping and strongly sloping
Slope topography: Undulating and convex

Typical Profile

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

Subsurface layer:
3 to 25 inches—grayish brown sand

Underlying material:
25 to 34 inches—yellowish brown sand that has reddish brown and strong brown mottles and common reddish brown organic coats on sand grains
34 to 51 inches—yellowish brown coarse sand
51 to 85 inches—brownish yellow coarse sand that has very pale brown mottles

Soil Properties and Qualities

Drainage class: Excessively drained
Natural fertility: Low
Organic matter content: Low
Permeability: Rapid
Available water capacity: Very low
Runoff rate: Slow
Tilth: Good
Root zone: Very deep

Inclusions

• A few small areas of Lakeland and Kershaw soils in similar landscape positions

Use and Management

Land uses: Pasture and woodland

Field crops, hay, and pasture

Suitability for field crops: Unsuited
Suitability for hay: Poorly suited
Suitability for pasture: Poorly suited
Management concerns: Very low available water capacity

Woodland

Potential productivity: Low
Trees preferred for planting: Slash pine
Management concerns: Seedling mortality resulting from a very low available water capacity; equipment limitation
Suitable management practices:
• Leaving additional seed trees decreases the seedling mortality rate.
• Performing management and harvesting operations during the wetter seasons helps to overcome the equipment limitation.

Urban uses

Suitability: Moderately suited to most uses
Limitations:
• Seepage is a limitation for most sanitary facilities.

Recreational development

Suitability: Poorly suited
Limitations: Too sandy

Interpretive Groups

Land capability classification: VIIs
Woodland ordination symbol: 6S

LaB—Lakeland sand, 0 to 8 percent slopes

Setting

Landscape position: Broad ridges and hillsides
Slope class: Nearly level to gently sloping
Slope topography: Smooth and convex

Typical Profile

Surface layer:
0 to 4 inches—very dark grayish brown sand

Underlying material:
4 to 21 inches—yellowish brown sand
21 to 63 inches—brownish yellow sand
63 to 80 inches—very pale brown sand that has yellow mottles

Soil Properties and Qualities

Drainage class: Excessively drained
Natural fertility: Low
Organic matter content: Low
Permeability: Rapid
Available water capacity: Low
Runoff rate: Slow
Tilth: Good
Root zone: Very deep

Inclusions

- A few small areas of Bonifay and Kershaw soils in similar landscape positions
- A few small areas of Kureb soils on hillsides

Use and Management

Land uses: Cropland, pasture, and woodland

Field crops, hay, and pasture

Suitability for field crops: Poorly suited
Suitability for hay: Poorly suited
Suitability for pasture: Poorly suited
Management concerns: Low available water capacity, low fertility
Suitable management practices:
- Irrigation can increase yields of commonly grown crops.
- Returning crop residue to the soil increases the available water capacity and decreases the leaching of plant nutrients.

Woodland

Potential productivity: Moderate
Trees preferred for planting: Loblolly pine, slash pine
Management concerns: Equipment limitation, seedling mortality
Suitable management practices:
- Proper planting procedures, the use of adapted drought-tolerant species, and the reduction of competing vegetation commonly increase the seedling survival rate.
- Performing management and harvesting operations during the wetter seasons helps to overcome the equipment limitation.

Urban uses

Suitability: Moderately suited
Limitations:
- Seepage limits the use of this soil for most sanitary facilities.

Suitable management practices:
- Special designs and proper application procedures help to overcome the limitations.

Recreational development

Suitability: Poorly suited
Limitations: Too sandy
Suitable management practices:
- Special designs and proper application procedures help to overcome the limitations.

Interpretive Groups

Land capability classification: IVs
Woodland ordination symbol: 9s

Me—Meggett loam, frequently flooded

Setting

Landscape position: Broad flood plains
Hazard of flooding: Frequently flooded
Slope class: Nearly level
Slope topography: Smooth

Typical Profile

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

Subsoil:
4 to 26 inches—gray sandy clay that has yellowish brown and strong brown mottles
26 to 40 inches—gray clay that has yellowish brown and strong brown mottles
40 to 52 inches—gray clay that has yellowish brown, strong brown, and brown mottles
52 to 63 inches—gray sandy clay loam that has strong brown and brown mottles

Soil Properties and Qualities

Drainage class: Poorly drained
Seasonal high water table: At the surface to a depth of 1 foot
Natural fertility: Moderate
Organic matter content: Moderate or high
Permeability: Slow
Available water capacity: Moderate
Runoff rate: Very slow
Root zone: Very deep

Inclusions

- A few small areas of Bibb and Kinston soils on flood plains
- A few small areas of Bladen soils in slight depressions and on broad flats

Use and Management

Land use: Woodland

Field crops, hay, and pasture

Suitability for field crops: Unsuited
Suitability for hay: Poorly suited
Suitability for pasture: Poorly suited
Management concerns: Wetness, flooding

Woodland

Potential productivity: Very high
Trees preferred for planting: Slash pine, loblolly pine
Management concerns: Equipment limitation, seedling mortality
Suitable management practices:
• Performing management and harvesting operations during dry periods helps to overcome the equipment limitation.
• Proper drainage, bedding, reducing the number of competing plants, and using adapted species increase the seedling survival rate.

Urban uses

Suitability: Unsuited
Limitations: Wetness, flooding

Recreational development

Suitability: Unsuited
Limitations: Wetness, flooding

Interpretive Groups

Land capability classification: VIw
Woodland ordination symbol: 13W

NaB—Nankin loamy sand, 2 to 5 percent slopes

Setting

Landscape position: Ridges
Slope class: Very gently sloping
Slope topography: Irregular

Typical Profile

Surface layer:
0 to 7 inches—brown loamy sand

Subsoil:
7 to 13 inches—strong brown sandy clay loam
13 to 23 inches—strong brown sandy clay that has red and light yellowish brown mottles
23 to 33 inches—strong brown sandy clay that has red, brownish yellow, light yellowish brown, and very pale brown mottles
33 to 46 inches—mottled red, light gray, and strong brown sandy clay
46 to 57 inches—mottled red, light gray, strong brown, and light yellowish brown sandy clay loam

Substratum:
57 to 63 inches—mottled red, light gray, strong brown, and light yellowish brown sandy loam

Soil Properties and Qualities

Drainage class: Well drained
Natural fertility: Low
Organic matter content: Low
Permeability: Moderately slow
Available water capacity: Moderate
Runoff rate: Medium to rapid
Tilth: Good
Root zone: Very deep

Inclusions

• A few small areas of Cowarts and Dothan soils in similar landscape positions
• A few small areas of Susquehanna soils in similar landscape positions

Use and Management

Land uses: Cropland, pasture, and woodland

Field crops, hay, and pasture

Suitability for field crops: Well suited
Suitability for hay: Well suited
Suitability for pasture: Well suited
Management concerns:
• Erosion is a moderate hazard if this soil is cultivated and is not protected.
Suitable management practices:
• A conservation tillage system, a water management system, or a combination of both help to control runoff and minimize the hazard of erosion.
• Returning crop residue to the soil helps to maintain tilth.

Woodland

Potential productivity: Moderately high
Trees preferred for planting: Loblolly pine, slash pine
Management concerns: No significant limitations
Suitable management practices:
• Performing management and harvesting operations on the contour minimizes the hazard of erosion.

Urban uses

Suitability: Well suited to most uses
Limitations:
• Moderately slow permeability in the subsoil limits the use of this soil for septic tank absorption fields.

Suitable management practices:
• Special designs and proper application procedures help to overcome the limitations.

Recreational development

Suitability: Moderately suited
Limitations: Moderately slow permeability
Suitable management practices:
• Special designs and proper application procedures help to overcome the limitations.

Interpretive Groups

Land capability classification: IIe
Woodland ordination symbol: 8A

NkB2—Nankin sandy loam, 2 to 5 percent slopes, eroded

Setting

Landscape position: Ridges and hillsides
Landscape features: Few galled spots or shallow gullies or both
Slope class: Very gently sloping
Slope topography: Choppy and irregular

Typical Profile

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

Subsoil:
4 to 9 inches—yellowish brown sandy clay loam
9 to 18 inches—strong brown sandy clay
18 to 32 inches—strong brown sandy clay that has yellowish red, yellowish brown, and pale brown mottles
32 to 53 inches—mottled strong brown, yellowish red, pale brown, and light gray sandy clay loam

Substratum:
53 to 63 inches—mottled yellowish red, yellowish brown, strong brown, and light gray sandy clay loam that has thin strata of sandy loam

Soil Properties and Qualities

Drainage class: Well drained
Natural fertility: Low
Organic matter content: Low
Permeability: Moderately slow
Available water capacity: Moderate
Runoff rate: Medium to rapid
Eroded surface layer: Consists of a mixture of the original surface layer and the upper part of the subsoil
Tilth: Fair
Root zone: Very deep

Inclusions

• A few small areas of Carnegie, Cowarts, and Susquehanna soils in similar landscape positions

Use and Management

Land uses: Cropland, pasture, and woodland

Field crops, hay, and pasture

Suitability for field crops: Moderately suited
Suitability for hay: Moderately suited
Suitability for pasture: Moderately suited
Management concerns:
• Erosion is a severe hazard if cultivated crops are grown.
Suitable management practices:
• A conservation tillage system, a water management system, or a combination of both help to control runoff and minimize the hazard of erosion.

Woodland

Potential productivity: Moderately high
Trees preferred for planting: Loblolly pine and slash pine
Management concerns: No significant limitations
Suitable management practices:
• Performing management and harvesting operations on the contour minimizes the hazard of erosion.

Urban uses

Suitability: Well suited to most urban uses
Limitations:
• Moderately slow permeability in the subsoil limits the use of this soil for septic tank absorption fields.
Suitable management practices:
• Special designs and proper application procedures help to overcome the limitations.

Recreational development

Suitability: Moderately suited
Limitations: Moderately slow permeability
Suitable management practices:
• Special designs and proper application procedures help to overcome the limitations.

Interpretive Groups

Land capability classification: IIIe
Woodland ordination symbol: 8A

NkC2—Nankin sandy loam, 5 to 8 percent slopes, eroded

Setting

Landscape position: Hillsides
Landscape features: Few galled spots and shallow gullies
Slope class: Gently sloping
Slope topography: Choppy and irregular

Typical Profile

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

Subsoil:
4 to 9 inches—yellowish brown sandy clay loam
9 to 18 inches—strong brown sandy clay
18 to 32 inches—strong brown sandy clay that has yellowish red, yellowish brown, and pale brown mottles
32 to 53 inches—mottled strong brown, yellowish red, pale brown, and light gray sandy clay loam

Substratum:
53 to 63 inches—mottled yellowish red, yellowish brown, strong brown, and light gray sandy clay loam that has thin strata of sandy loam

Soil Properties and Qualities

Drainage class: Well drained
Natural fertility: Low
Organic matter content: Low
Permeability: Moderately slow
Available water capacity: Moderate
Runoff rate: Medium to rapid
Eroded surface layer: Consists of a mixture of the original surface layer and the upper part of the subsoil
Tilth: Fair
Root zone: Very deep

Inclusions

- A few small areas of Cowarts and Susquehanna soils in similar landscape positions

Use and Management

Land uses: Cropland, pasture, and woodland

Field crops, hay, and pasture

Suitability for field crops: Moderately suited
Suitability for hay: Moderately suited
Suitability for pasture: Moderately suited
Management concerns:
- Erosion is a severe hazard if cultivated crops are grown.

Suitable management practices:
- A conservation tillage system, a water management system, or a combination of both help to control runoff and minimize the hazard of erosion.

Woodland

Potential productivity: Moderately high
Trees preferred for planting: Loblolly pine and slash pine
Management concerns: No significant limitations
Suitable management practices:
- Performing management and harvesting operations on the contour minimizes the hazard of erosion.

Urban uses

Suitability: Well suited to most uses
Limitations:
- Moderately slow permeability in the subsoil limits the use of this soil for septic tank absorption fields.

Suitable management practices:
- Special designs and proper application procedures help to overcome the limitations.

Recreational development

Suitability: Moderately suited
Limitations: Moderately slow permeability
Suitable management practices:
- Special designs and proper application procedures help to overcome the limitations.

Interpretive Groups

Land capability classification: IVe
Woodland ordination symbol: 8A

OdA—Ocilla loamy sand, 0 to 2 percent slopes

Setting

Landscape position: Broad upland flats and toe slopes
Slope class: Nearly level
Slope topography: Concave or linear

Typical Profile

Surface layer:
0 to 6 inches—very dark grayish brown loamy sand
6 to 10 inches—dark grayish brown loamy sand

Subsurface layer:
10 to 22 inches—light yellowish brown loamy sand
22 to 28 inches—very pale brown loamy sand

Subsoil:
28 to 33 inches—light yellowish brown sandy loam that has yellowish brown, light gray, and pale brown mottles
33 to 42 inches—light yellowish brown sandy clay loam that has red, yellowish brown, and light gray mottles
42 to 63 inches—light brownish gray sandy clay loam that has red, yellowish red, and yellowish brown mottles

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Seasonal high water table: 1.0 to 2.5 feet deep
Natural fertility: Low
Organic matter content: Moderately low
Permeability: Rapid in the surface and subsurface layers; moderate or moderately slow in the subsoil
Available water capacity: Low
Runoff rate: Slow
Tilth: Good
Root zone: Very deep

Inclusions

- A few small areas of Pelham soils in slightly lower landscape positions
- A few small areas of Stilson soils in slightly higher landscape positions

Use and Management

Land uses: Cropland, pasture, and woodland

Field crops, hay, and pasture

Suitability for field crops: Moderately suited
Suitability for hay: Moderately suited
Suitability for pasture: Moderately suited
Management concerns: Wetness
Suitable management practices:
- A properly installed and maintained drainage system helps to overcome the wetness.

Woodland

Potential productivity: Moderately high
Trees preferred for planting: Loblolly pine, slash pine
Management concerns: Wetness
Suitable management practices:
- Performing management and harvesting operations during dry periods helps to overcome the equipment limitation.
- Proper drainage and the reduction of competing plants generally increase the seedling survival rate.

Urban uses

Suitability: Poorly suited to most uses
Limitations: Wetness
Suitable management practices:
- Proper drainage helps to overcome the wetness.

Recreational development

Suitability: Moderately suited
Limitations: Wetness
Suitable management practices:
- Proper drainage helps to overcome the wetness.

Interpretive Groups

Land capability classification: IIIw
Woodland ordination symbol: 8W

PeA—Pelham loamy sand, 0 to 2 percent slopes, occasionally flooded

Setting

Landscape position: Broad flats, depressions, and small drainageways
Hazard of flooding: Occasionally flooded (fig. 3)
Slope class: Nearly level

Typical Profile

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

Subsurface layer:
6 to 31 inches—dark grayish brown loamy sand

Subsoil:
31 to 38 inches—grayish brown sandy loam
38 to 52 inches—grayish brown sandy clay loam that has yellowish brown and pale brown mottles
52 to 63 inches—light brownish gray sandy clay loam

Soil Properties and Qualities

Drainage class: Poorly drained
Seasonal high water table: At the surface to a depth of 1 foot
Natural fertility: Low
Organic matter content: Moderately low
Permeability: Rapid in the surface and subsurface layers; moderate in the subsoil
Available water capacity: Low
Runoff rate: Slow
Tilth: Good
Root zone: Very deep

Inclusions

- A few small areas of Kinston and Bibb soils on flood plains
- A few small areas of Ocilla soils in slightly higher landscape positions

Figure 3.—Flooding in an area of Pelham loam sand, 0 to 2 percent slopes, occasionally flooded.

Use and Management

Land uses: Cropland, pasture, and woodland

Field crops, hay, and pasture

Suitability for field crops: Poorly suited
Suitability for hay: Poorly suited
Suitability for pasture: Poorly suited
Management concerns: Wetness, flooding

Woodland

Potential productivity: High
Trees preferred for planting: Slash pine, loblolly pine
Management concerns: Equipment limitation, seedling mortality
Suitable management practices:
- Performing management and harvesting operations during dry periods helps to overcome the equipment limitation.
- Proper drainage, bedding, reducing the number of competing plants, and using adapted species increase the seedling survival rate.

Urban uses

Suitability: Unsuited
Limitations: Wetness, flooding

Recreational development

Suitability: Unsuited
Limitations: Wetness, flooding

Interpretive Groups

Land capability classification: Vw
Woodland ordination symbol: 11W

Pk—Pickney sand, frequently flooded

Setting

Landscape position: Drainageways and depressions
Hazard of flooding: Frequently flooded
Slope class: Nearly level
Slope topography: Smooth and concave

Typical Profile

Surface layer:
0 to 25 inches—black sand
25 to 43 inches—very dark brown loamy sand

Underlying material:
43 to 63 inches—very dark grayish brown sand

Soil Properties and Qualities

Drainage class: Very poorly drained
Seasonal high water table: About 1 foot above the surface to a depth of 1.5 feet
Natural fertility: Low
Organic matter content: High
Permeability: Rapid
Available water capacity: Low
Runoff rate: Very slow
Root zone: Very deep

Inclusions

- A few small areas of Centenary and Ridgeland soils in slightly higher landscape positions
- A few small areas of soils that have a very dark gray or black surface layer that is less than 24 inches thick; in similar landscape positions

Use and Management

Land use: Woodland

Field crops, hay, and pasture

Suitability for field crops: Unsuited
Suitability for hay: Unsuited
Suitability for pasture: Unsuited

Woodland

Potential productivity: High
Trees preferred for planting: Baldcypress
Management concerns: Equipment limitation, seedling mortality
Suitable management practices:
- Performing management and harvesting operations during dry periods helps to overcome the equipment limitation.
- Proper drainage, bedding, reducing the number of competing plants, and using adapted species increase the seedling survival rate.

Urban uses

Suitability: Unsuited
Limitations: Wetness, frequent flooding

Recreational development

Suitability: Poorly suited
Limitations: Wetness, frequent flooding

Interpretive Groups

Land capability classification: VIIw
Woodland ordination symbol: 7W

Re—Rembert sandy loam, ponded

Setting

Landscape position: Upland depressions
Slope class: Nearly level
Slope topography: Smooth and concave

Typical Profile

Surface layer:
0 to 4 inches—very dark gray sandy loam

Subsoil:
4 to 10 inches—light brownish gray sandy clay loam that has brownish yellow mottles
10 to 28 inches—light brownish gray sandy clay that has strong brown and yellowish red mottles
28 to 43 inches—light gray sandy clay that has strong brown and very pale brown mottles
43 to 55 inches—light brownish gray sandy clay loam that has very pale brown and yellowish brown mottles

Substratum:
55 to 63 inches—light brownish gray sandy loam that has very pale brown, brownish yellow, and yellowish brown mottles

Soil Properties and Qualities

Drainage class: Poorly drained
Seasonal high water table: About 1 foot above the surface to a depth of 1 foot
Natural fertility: Low
Organic matter content: Moderate
Permeability: Slow
Available water capacity: Moderate
Runoff rate: Runoff received from surrounding areas and ponded
Tilth: Good
Root zone: Very deep

Inclusions

- A few small areas of Bladen soils on terraces
- A few small areas of poorly drained, fine-loamy soils on broad flats and in slight depressions

Use and Management

Land use: Woodland

Field crops, hay, and pasture

Suitability for field crops: Unsuited
Suitability for hay: Unsuited
Suitability for pasture: Unsuited

Woodland

Potential productivity: High
Trees preferred for planting: Baldcypress, water tupelo
Management concerns: Equipment limitation, seedling mortality
Suitable management practices:
- Performing management and harvesting operations during dry periods helps to overcome the equipment limitation.

Urban uses

Suitability: Unsuited
Limitations: Wetness, ponding

Recreational development

Suitability: Unsuited
Limitations: Wetness, ponding

Interpretive Groups

Land capability classification: VIw
Woodland ordination symbol: 7W

SeA—Stilson loamy sand, 0 to 2 percent slopes

Setting

Landscape position: Upland flats
Slope class: Nearly level
Slope topography: Smooth and linear

Typical Profile

Surface layer:
0 to 9 inches—dark grayish brown loamy sand

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

Subsoil:
22 to 29 inches—brownish yellow sandy loam
29 to 36 inches—light yellowish brown sandy clay loam that has strong brown, yellowish brown, and pale brown mottles
36 to 50 inches—light yellowish brown sandy clay loam that has strong brown, red, and light brownish gray mottles
50 to 65 inches—light yellowish brown sandy clay loam that has strong brown and yellowish brown mottles

Soil Properties and Qualities

Drainage class: Moderately well drained
Seasonal high water table: 2.5 to 3.0 feet deep
Natural fertility: Low
Organic matter content: Low
Permeability: Rapid in the surface and subsurface layers; moderate in the subsoil
Available water capacity: Low
Runoff rate: Slow to medium
Tilth: Good
Root zone: Very deep
Distinctive features: Contains 5 percent or more plinthite below a depth of 36 inches

Inclusions

- A few small areas of Fuquay soils in slightly higher landscape positions

Use and Management

Land uses: Cropland, pasture, and woodland

Field crops, hay, and pasture

Suitability for field crops: Moderately suited
Suitability for hay: Moderately suited
Suitability for pasture: Moderately suited
Management concerns: Wetness
Suitable management practices:
- A properly installed and maintained drainage system helps to overcome the wetness.
- Irrigation during drier periods can increase yields of commonly grown crops.

Woodland

Potential productivity: High
Trees preferred for planting: Loblolly pine, slash pine
Management concerns: Wetness
Suitable management practices:
- Performing management and harvesting operations during dry periods helps to overcome the equipment limitation.

Urban uses

Suitability: Well suited to most uses
Limitations:
- The seasonal high water table limits the use of this soil for septic tank absorption fields.

Suitable management practices:
• Special designs and proper application procedures help to overcome the limitations.

Recreational development

Suitability: Well suited
Limitations: Wetness
Suitable management practices:
• Special designs and proper application procedures help to overcome the limitations.

Interpretive Groups

Land capability classification: IIw
Woodland ordination symbol: 9W

SuC—Susquehanna sandy loam, 2 to 8 percent slopes

Setting

Landscape position: Ridges, hillsides, and toeslopes
Slope class: Very gently sloping and gently sloping
Slope topography: Undulating and convex

Typical Profile

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

Subsoil:
3 to 8 inches—red clay
8 to 19 inches—red clay that has light brownish gray mottles
19 to 38 inches—light brownish gray clay that has dark red and yellowish brown mottles
38 to 50 inches—light brownish gray clay that has strong brown, red, and yellowish brown mottles
50 to 63 inches—mottled light brownish gray, pale brown, and red clay

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Natural fertility: Low
Organic matter content: Low
Permeability: Very slow
Available water capacity: High
Runoff rate: Moderate to very rapid
Tilth: Poor
Root zone: Very deep

Inclusions

• A few small areas of Cowarts and Nankin soils on ridges and hillsides
• A few small areas of soils that have gray sandstone between a depth of 40 and 60 inches; in similar landscape positions

Use and Management

Land uses: Cropland, pasture, and woodland

Field crops, hay, and pasture

Suitability for field crops: Unsuited
Suitability for hay: Moderately suited
Suitability for pasture: Moderately suited
Management concerns:
• Erosion is a severe hazard if cultivated crops are grown.

Woodland

Potential productivity: Moderate
Trees preferred for planting: Loblolly pine, shortleaf pine
Management concerns: Equipment limitation
Suitable management practices:
• Subsoiling or chiseling after harvest operations improves revegetation efforts or improves the soil for replanting.
• Performing management and harvesting operations on the contour minimizes the hazard of erosion.

Urban uses

Suitability: Poorly suited
Limitations: Very slow permeability, high shrink-swell potential
Suitable management practices:
• Special designs and proper application procedures help to overcome the limitations.

Recreational development

Suitability: Poorly suited
Limitations: Very slow permeability
Suitable management practices:
• Minimizing traffic helps to overcome the limitations.
• Special designs and proper application procedures help to overcome the limitations.

Interpretive Groups

Land capability classification: VIe
Woodland ordination symbol: 8C

TfA—Tifton loamy sand, 0 to 2 percent slopes

Setting

Landscape position: Broad ridges
Surface features: Common to many nodules of ironstone

Slope class: Nearly level
Slope topography: Smooth and convex

Typical Profile

Surface layer:
0 to 11 inches—dark grayish brown loamy sand

Subsoil:
11 to 16 inches—yellowish brown sandy loam
16 to 33 inches—yellowish brown sandy clay loam that has strong brown mottles
33 to 50 inches—yellowish brown sandy clay loam that has strong brown and yellowish red mottles
50 to 63 inches—yellowish brown sandy clay loam that has yellowish red, strong brown, and light gray mottles

Soil Properties and Qualities

Drainage class: Well drained
Seasonal high water table: Perched at a depth of 3.5 to 6.0 feet
Natural fertility: Low
Organic matter content: Low
Permeability: Moderate in the upper part of the subsoil; moderately slow in the lower part of the subsoil
Available water capacity: Moderate
Runoff rate: Medium
Tilth: Good
Root zone: Very deep
Distinctive features: Contains nodules of ironstone in the surface layer and throughout the upper and middle parts of the subsoil; contains 5 percent or more plinthite below a depth of 33 inches

Inclusions

- A few small areas of Clarendon soils in slightly lower landscape positions
- A few small areas of Dothan and Fuquay soils in similar landscape positions

Use and Management

Land uses: Cropland, pasture, and woodland

Field crops, hay, and pasture

Suitability for field crops: Well suited (fig. 4)
Suitability for hay: Well suited
Suitability for pasture: Well suited
Suitable management practices:
- A conservation tillage system helps to maintain the content of organic matter and conserves moisture.

Woodland

Potential productivity: Moderately high
Trees preferred for planting: Slash pine, loblolly pine
Management concerns: No significant limitations

Urban uses

Suitability: Well suited
Limitations:
- Moderately slow permeability in the lower part of the subsoil limits the use of this soil for septic tank absorption fields.

Suitable management practices:
- Special designs and proper application procedures help to overcome the limitations.

Recreational development

Suitability: Well suited
Limitations: No significant limitations

Interpretive Groups

Land capability classification: I
Woodland ordination symbol: 9A

TfB—Tifton loamy sand, 2 to 5 percent slopes

Setting

Landscape position: Ridges
Landscape features: Few shallow gullies in some places
Surface features: Common to many nodules of ironstone
Slope class: Very gently sloping
Slope topography: Smooth and convex

Typical Profile

Surface layer:
0 to 11 inches—dark grayish brown loamy sand

Subsoil:
11 to 16 inches—yellowish brown sandy loam
16 to 33 inches—yellowish brown sandy clay loam that has strong brown mottles
33 to 50 inches—yellowish brown sandy clay loam that has strong brown and yellowish red mottles
50 to 63 inches—yellowish brown sandy clay loam that has yellowish red, strong brown, and light gray mottles

Soil Properties and Qualities

Drainage class: Well drained
Seasonal high water table: Perched at a depth of 3.5 to 6.0 feet
Natural fertility: Low
Organic matter content: Low

Figure 4.—Cotton planted in an area of Tifton loamy sand, 0 to 2 percent slopes.

Permeability: Moderate in the upper part of the subsoil; moderately slow in the lower part of the subsoil
Available water capacity: Moderate
Runoff rate: Medium
Tilth: Good
Root zone: Very deep
Distinctive features: Contains nodules of ironstone in the surface layer and throughout the upper and middle parts of the subsoil; contains 5 percent or more plinthite below a depth of 33 inches

Inclusions

- A few small areas of Carnegie soils in slightly more undulating landscape positions
- A few small areas of Clarendon soils in slightly lower landscape positions
- A few small areas of Dothan and Fuquay soils in similar landscape positions

Use and Management

Land uses: Cropland, pasture, and woodland

Field crops, hay, and pasture

Suitability for field crops: Well suited
Suitability for hay: Well suited
Suitability for pasture: Well suited
Management concerns:
- Erosion is a moderate hazard if this soil is cultivated and is not protected.

Suitable management practices:
- A conservation tillage system, a water management system, or a combination of both help to control runoff and minimize the hazard of erosion.
- Returning crop residue to the soil helps to maintain tilth.

Woodland

Potential productivity: Moderately high
Trees preferred for planting: Slash pine, loblolly pine
Management concerns: No significant limitations
Suitable management practices:
- Performing management and harvesting operations on the contour minimizes the hazard of erosion.

Urban uses

Suitability: Well suited
Limitations:
- Moderately slow permeability in the lower part of the subsoil limits the use of this soil for septic tank absorption fields.

Suitable management practices:
• Special designs and proper application procedures help to overcome the limitations.

Recreational development

Suitability: Well suited
Limitations: No significant limitations

Interpretive Groups

Land capability classification: IIe
Woodland ordination symbol: 9A

TnC2—Tifton sandy loam, 5 to 8 percent slopes, eroded

Setting

Landscape position: Hillsides
Landscape features: Few galled spots or shallow gullies or both
Slope class: Gently sloping
Slope topography: Undulating

Typical Profile

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

Subsoil:
5 to 26 inches—yellowish brown sandy clay loam
26 to 35 inches—yellowish brown sandy clay loam that has strong brown mottles
35 to 41 inches—strong brown sandy clay loam that has yellowish red and yellowish brown mottles
41 to 50 inches—strong brown sandy clay loam that has yellowish red, yellowish brown, and light gray mottles
50 to 63 inches—mottled strong brown, yellowish brown, yellowish red, and light gray sandy clay loam

Soil Properties and Qualities

Drainage class: Well drained
Seasonal high water table: Perched at a depth of 3.5 to 6.0 feet
Natural fertility: Low
Organic matter content: Low
Permeability: Moderate in the upper part of the subsoil; moderately slow in the lower part of the subsoil
Available water capacity: Moderate
Runoff rate: Medium
Eroded surface layer: Consists of a mixture of the original surface soil and the upper part of the subsoil
Tilth: Good
Root zone: Very deep
Distinctive features: Contains nodules of ironstone in the surface layer and throughout the upper and middle parts of the subsoil; contains 5 percent or more plinthite below a depth of 33 inches

Inclusions

• A few small areas of Cowarts and Carnegie soils in similar landscape positions
• A few small areas of soils that are not eroded, have a surface layer of loamy sand, and are in similar landscape positions

Use and Management

Land uses: Cropland, pasture, and woodland

Field crops, hay, and pasture

Suitability for field crops: Well suited
Suitability for hay: Well suited
Suitability for pasture: Well suited
Management concerns:
• Erosion is a severe hazard if cultivated crops are grown.
Suitable management practices:
• A conservation tillage system, a water management system, or a combination of both help to control runoff and minimize the hazard of erosion.
• Returning crop residue to the soil helps to maintain tilth.

Woodland

Potential productivity: Moderately high
Trees preferred for planting: Loblolly pine, slash pine
Management concerns: No significant limitations
Suitable management practices:
• Performing management and harvesting operations on the contour minimizes the hazard of erosion.

Urban uses

Suitability: Well suited
Limitations:
• Moderately slow permeability in the lower part of the subsoil limits the use of this soil for septic tank absorption fields.
• The slope is a limitation for the irrigation of lawns and gardens.
Suitable management practices:
• Special designs and proper application procedures help to overcome the limitations.

Recreational development

Suitability: Moderately suited
Limitations: Slope

Suitable management practices:
• Special designs and proper application procedures help to overcome the limitations.

Interpretive Groups

Land capability classification: IIIe
Woodland ordination symbol: 9A

Uc—Udorthents-Pits complex, clayey

Setting

Landscape position: Variable
Landscape features: Areas modified by cutting, filling, and reshaping or by removal of original soil material
Slope class: Very gently sloping to strongly sloping
Slope topography: Variable

Typical Profile

• Clayey and loamy material or remnants of the underlying material

Use and Management

Land uses: Borrow areas, areas of idle land, revegetated areas, or areas that are planted with trees

Urban uses

Suitability: Poorly suited
Limitations: Erosion
Suitable management practices:
• Mulching and establishing permanent cover minimize the hazard of erosion.

Interpretive Groups

Land capability classification: None assigned
Woodland ordination symbol: None assigned

Us—Udorthents-Pits complex, sandy

Setting

Landscape position: Variable
Landscape features: Areas modified by cutting, filling, and reshaping or by removal of original soil material
Slope class: Very gently sloping to strongly sloping
Slope topography: Variable

Typical Profile

• Sandy material or remnants of the underlying material

Use and Management

Land uses: Borrow areas, areas of idle land, revegetated areas, or areas that are planted with trees

Urban uses

Suitability: Poorly suited
Limitations: Erosion
Suitable management practices:
• Mulching and establishing permanent cover minimize the hazard of erosion.

Interpretive Groups

Land capability classification: None assigned
Woodland ordination symbol: None assigned

WaA—Wahee sandy loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landscape position: Low stream terraces
Hazard of flooding: Occasionally flooded
Slope class: Nearly level
Slope topography: Smooth

Typical Profile

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

Subsurface layer:
7 to 11 inches—pale brown fine sandy loam

Subsoil:
11 to 23 inches—yellowish brown clay that has red and light brownish gray mottles
23 to 38 inches—light brownish gray clay that has yellowish brown mottles
38 to 51 inches—light gray clay that has yellowish brown mottles
51 to 60 inches—light gray sandy clay that has yellowish brown mottles

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Seasonal high water table: 0.5 to 1.5 feet deep
Natural fertility: Moderate
Organic matter content: Low
Permeability: Slow
Available water capacity: High
Runoff rate: Slow
Tilth: Fair
Root zone: Very deep

Inclusions

- A few small areas of Bladen and Meggett soils in slightly lower landscape positions
- A few small areas of moderately well drained, fine-loamy soils in similar landscape positions

Use and Management

Land uses: Cropland, pasture, and woodland

Field crops, hay, and pasture

Suitability for field crops: Poorly suited
Suitability for hay: Moderately suited
Suitability for pasture: Moderately suited
Management concerns: Wetness, flooding
Suitable management practices:
- A properly installed and maintained drainage system helps to overcome the wetness.

Woodland

Potential productivity: High
Trees preferred for planting: Loblolly pine, slash pine, sweetgum, American sycamore, water oak
Management concerns: Seasonal wetness
Suitable management practices:
- Performing management and harvesting operations during dry periods helps to overcome the equipment limitation.
- Providing drainage and using adapted plants increase the seedling survival rate.

Urban uses

Suitability: Unsuited

Recreational development

Suitability: Poorly suited
Limitations: Wetness, flooding

Interpretive Groups

Land capability classification: IIw
Woodland ordination symbol: 9W

Important Farmland

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

Prime Farmland

Prime farmland is one of several kinds of important farmland defined by the U.S. Department of Agriculture. It is of major importance in meeting the Nation's short- and long-range needs for food and fiber. The acreage of high-quality farmland is limited, and the U.S. Department of Agriculture recognizes that government at local, State, and Federal levels, as well as individuals, must encourage and facilitate the wise use of our Nation's prime farmland.

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

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

Prime farmland soils usually receive an adequate and dependable supply of moisture from precipitation or irrigation. The temperature and growing season are favorable. The acidity level of the soils is acceptable. The soils have few or no rocks and are permeable to water and air. They are not excessively erodible or saturated with water for long periods and are not frequently flooded during the growing season. The slope ranges mainly from 0 to 8 percent. About 126,860 acres, or about 29 percent of the survey area, meets the soil requirements for prime farmland.

Additional Farmland of Statewide Importance

About 170,530 acres in Emanuel County are considered additional farmland of statewide importance. They are listed in table 5. This farmland is an important part of the agricultural resource base in the area, but it does not meet the requirements for prime farmland. It is seasonally wet, cannot be easily cultivated, is more erodible, or is usually less productive than prime farmland.

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 suitability of natural resources and the environment. Also, it can help to prevent soil-related failures in land uses.

In preparing a soil survey, soil scientists, conservationists, engineers, and others collect extensive field data about the nature and behavioral characteristics of the soils. They collect data on erosion, flooding, and other factors that affect various soil uses and management. Field experience and collected data on soil properties and performance are used as a basis for predicting soil behavior.

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

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

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

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

Crops and Pasture

James E. Dean, conservation agronomist, Holli Kuykendall, grassland water quality specialist, and Sidney C. Lanier, Jr., district conservationist, Natural Resources Conservation Service, helped prepare this section.

The major management concerns in the use of the soils for crops and pasture are described in this section. In addition, the crops or pasture plants best suited to the soil, including some not commonly grown in the survey area, are identified; the system of land capability classification used by the Natural Resources Conservation Service is explained; and the predicted yields of the main crops and hay and pasture plants are listed for each soil.

This section provides information about the overall agricultural potential of the survey area and about the management practices that are needed. The information is useful to land users, equipment dealers, land improvement contractors, fertilizer companies, processing companies, planners, conservationists, and others. For each kind of soil, information about management is presented in the section “Detailed Soil Map Units.”

If the slope is more than 3 percent, soil erosion is a potential hazard in areas of cropland and pasture in the survey area. The loss of the surface layer of soil through erosion is damaging. Soil 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 shallow surface layer or a clayey subsoil, or both. For example, in some areas the Carnegie, Cowarts, and Nankin soils have a shallow surface layer. Carnegie and Nankin soils have a clayey subsoil. Tilling or preparing a good seedbed is difficult in clayey spots on these soils because the original friable surface soil has been lost through erosion. Soil erosion on farmland also results in the sedimentation of streams and wetlands. Controlling erosion minimizes the pollution of streams by sediment and improves water quality for a variety of uses, including use by livestock, recreational uses, and use by fish and wildlife.

Erosion-control measures provide a protective surface cover, reduce the volume and velocity of runoff, and increase the rate of water infiltration. A cropping system that keeps a plant cover on the soil for extended periods can keep soil losses to amounts that do not reduce the productive capacity of the soils. On livestock farms, including forage crops of legumes and grasses in the cropping system helps to control

Figure 5.—Tobacco in an area of Stilson loamy sand, 0 to 2 percent slopes.

erosion on sloping land, provides nitrogen to the soil, and improves soil tilth for the following crop.

Terraces and diversions shorten the length of slopes and help to control runoff and erosion. They are most practical on deep, well drained soils that have regular slopes. Carnegie, Dothan, and Tifton soils are suitable for terraces. Grassed waterways and underground outlets provide suitable outlets for terraces and diversions.

Some slopes are so short and irregular that terraces are not practical. In these areas, a cropping system that provides a substantial cover of plant residue cover is needed to minimize erosion. Managing crop residue, conservation tillage, using cover crops, stripcropping, and including grasses and legumes in pasture rotation provide a surface cover, increase the rate of water infiltration, and reduce the hazards of runoff and erosion. These conservation practices can be adapted to most of the soils in the survey area. No-till farming, a form of conservation tillage, is becoming increasingly common.

Most of the soils used as cropland are subject to soil erosion if they are plowed in the fall and left bare until spring. Winter cover crops should be planted if the cropland is plowed in the fall.

Soil blowing is a management concern on the soils that have a sandy surface layer, including Ailey, Bonifay, Dothan, Fuquay, Lakeland, and Tifton soils. In areas of these soils, young seedlings can be damaged if the winds are strong and the soils are dry and do not have other vegetation or surface mulch. Maintaining crop residue as surface mulch, planting cover crops, applying conservation tillage, and keeping the soil surface rough by proper tillage minimize soil blowing.

Bottom-land soils in the survey area include Kinston, Bibb and Meggett soils. On some bottom-land soils, the production of crops and pasture generally is not possible without drainage measures. Existing drainage systems need to be continually maintained on these soils. Bottom-land soils are also subject to flooding.

Information about soil erosion control and drainage practices for each kind of soil is available at the local office of the Natural Resources Conservation Service.

Drainage is a major consideration in managing crops and pasture. Managing drainage and conforming with regulations regarding wetlands may require special permits and extra planning.

Soil fertility is naturally low in most of the upland soils in the survey area. Many of the soils in the uplands are naturally strongly acid or very strongly acid. Because the content of available phosphorus and potash is naturally low in most of these soils, applications of ground limestone are needed to raise the pH level for the good growth of legumes and other crops. On all soils, applications of lime, fertilizer, and organic wastes should be based on the results of a soil test, realistic crop yields, waste analysis, and a nutrient management plan. The Cooperative Extension Service and the Natural Resources Conservation Service can provide information concerning nutrient management plans.

Organic matter is an important factor in the germination of seeds, root growth, the infiltration of water into the soil, and soil erosion. Soils that have good tilth are granular and porous. Most of the soils used for crops in the survey area have a surface that is loamy sand and that has a low content of organic matter. Generally, the structure of these soils is poor and intense rainfall causes the formation of a crust on the surface. This crust is hard when dry. It reduces the infiltration rate, limits the growth of plants, and increases the runoff rate. Managing crop residue, conservation tillage, stripcropping, including grasses and legumes in the crop rotation, and regularly adding manure and other organic material improve soil structure and reduce the formation of a crust.

The commonly grown crops in the survey area are corn, cotton, peanuts, soybeans, tobacco, rye, wheat, grain sorghum, and vegetables (fig. 5). Some field crops that are suited to the soils and climate of the survey area are not commonly grown. For example, sunflower and canola are suitable plant species and could be grown in the county.

Specialty crops grown in Emanuel County include sweet corn, field peas, squash, watermelons, canteloupes, other small fruits, and nursery plants. Watermelons make up the largest acreage of specialty crops grown in the survey area. Deep soils that have good natural drainage and that warm up early in the spring are especially well suited to many vegetables and small fruits. Cowarts, Dothan, Fuquay, and Tifton soils that have slopes of less than 6 percent are well suited to such crops. Most of the well drained soils in the survey area are suitable for orchards and nursery plants. However, soils in low areas, where frost is frequent and air drainage is poor, generally are poorly suited to early vegetables, small fruits, orchards, and nursery plants. If adequately managed and protected from flooding, many of the soils on flood plains are suited to a wide range of vegetable crops.

Technical assistance and information about growing specialty crops are available at local agricultural agencies.

Irrigation is becoming more widely used in the production of row, orchard, and specialty crops. The major sources of water for irrigation include subsurface water from deep wells and surface water from streams and ponds.

Areas of pasture and hay are generally planted to improved varieties of bahiagrass or bermudagrass (fig. 6). However, native warm-season perennial grasses, such as eastern gamagrass, switchgrass, and indiangrass, should be considered where deferred grazing management is used. A locally adapted endophyte-infected tall fescue variety is also available. It can be considered to meet cool-season forage demands.

Farming is competing with other land uses for large areas of the survey area. Much of the urban land was once well suited for crops. Each year, additional land is being developed for urban uses. In general, the soils in the survey area that are well suited to crops are also well suited to urban development. Prime farmland makes up about 126,860 acres in Emanuel County. This is the best land available for producing food, feed, forage, fiber, and oilseed crops. Prime farmland soils are listed in table 5.

Yields per Acre

The average yields per acre that can be expected of the principal crops under a high level of management are shown in table 6. In any given year, yields may be higher or lower than those indicated in the table because of variations in rainfall and other climatic factors. The land capability classification is shown in the table.

The yields are based mainly on the experience and records of farmers, conservationists, and extension agents. Available yield data from nearby counties and results of field trials and demonstrations are also considered.

The management needed to obtain the indicated yields of the various crops depends on the kind of soil and the crop. Management can include drainage, erosion control, and protection from flooding; the proper planting and seeding rates; suitable high-yielding crop varieties; appropriate and timely tillage; control of weeds, plant diseases, and harmful insects; favorable soil reaction and optimum levels of nitrogen, phosphorus, potassium, and trace elements for each crop; effective use of crop residue, barnyard manure,

Figure 6.—An area of Fuquay loamy sand, 1 to 5 percent slopes, used as improved bermudagrass pasture.

and green manure crops; and harvesting that ensures the smallest possible loss. The fertilizer needs of specific crops on specific soils can be determined by soil tests.

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

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

Crops other than those shown in the table 6 are grown in the survey area, but estimated yields are not listed because the acreage of such crops is small. The local office of the Natural Resources Conservation Service or of the Cooperative Extension Service can provide information about the management and productivity of the soils for those crops.

Land Capability Classification

Land capability classification shows, in a general way, the suitability of soils for use as cropland. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for woodland and for engineering purposes.

In the capability system, soils are generally grouped at three levels—capability class, subclass, and unit. Only class and subclass are used in this survey.

Capability classes, the broadest groups, are designated by Roman numerals I through VIII. The numerals indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class I soils have few limitations that restrict their use.

Class II soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices.

Class III soils have severe limitations that reduce the choice of plants or that require special conservation practices, or both.

Class IV soils have very severe limitations that reduce the choice of plants or that require very careful management, or both.

Class V soils are not likely to erode, but they have other limitations, impractical to remove, that limit their use.

Class VI soils have severe limitations that make them generally unsuitable for cultivation.

Class VII soils have very severe limitations that make them unsuitable for cultivation.

Class VIII soils and miscellaneous areas have limitations that nearly preclude their use for commercial crop production. There are no soils in this capability class in the survey area.

Capability subclasses are soil groups within one class. They are designated by adding a small letter, *e, w, s,* or *c,* to the class numeral, for example, IIe. The letter *e* shows that the main hazard is the risk of erosion unless a close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); *s* shows that the soil is limited mainly because it is shallow, droughty, or stony; and *c*, used in only some parts of the United States, shows that the chief limitation is climate that is very cold or very dry.

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

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

Woodland Management and Productivity

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

The most significant forest types in Emanuel County are loblolly-shortleaf pine, longleaf-slash pine, oak-pine, oak-hickory, and oak-gum-cypress. These forest types were also dominant in the virgin forests that covered a large portion of the survey area.

Forestland makes up about 305,760 acres, or about 69 percent of Emanuel County *(5)*. The dominant forest type in the county is longleaf-slash pine, which makes up about a third of the forestland in the county. About 22 percent of the forested acres are in the loblolly-shortleaf forest type, about 14 percent in the oak-hickory type, about 12 percent in the oak-pine type, and about 19 percent in the oak-gum-cypress type.

Most of the forestland in Emanuel County is privately owned. Over 211,000 acres, or more than 69 percent, of the county's forests are privately owned by individuals, and about 75,000 acres, or about 25 percent, is owned by the forest industry.

Much of the forestland in Emanuel County is less productive than other counties in the state. Only 63,700 acres, or about 20 percent of the 305,760 acres of commercial forestland in the county, produce a cord or more per acre annually.

Forestland in the county is generally well-stocked, with over 41 percent of the land stocked at a rate of 100 percent or better. Only 27 percent of the commercial forestland in the county is stocked at a rate of 60 percent or less.

Forests in the county are found on a wide variety of soils. Soils on flood plains and stream terraces, including Meggett, Wahee, Bladen, Kinston, Bibb, and Pelham soils, are highly productive and have a site index of 90 or more. These soils are characterized by species such as blackgum, sweetgum, water oak, yellow poplar, loblolly pine, and, in some cases, water tupelo and baldcypress. Generally, limitations associated with these soils are severe. Problems are associated with the use of equipment, seedling survival rates, and plant competition.

Upland soils that occur extensively in Emanuel County include Fuquay, Tifton, and Dothan soils. These soils are well suited to several uses. They are very productive when forested, having site indices ranging from 80 to 90. Forests are easily managed in areas of these soils.

Other upland soils that are commonly forested include Cowarts, Nankin, Ailey, Blanton, and Bonifay soils. These soils are also productive and have no severe management restrictions.

Kershaw, Lakeland, and Kureb soils are excessively drained soils that are found in significant portions of Emanuel County. Productivity is low in areas of these soils. The seedling mortality rate and equipment limitations are management concerns. They commonly have a forest cover that includes species such as slash pine, longleaf pine, and loblolly pine. Turkey oak, blackjack oak, and post oak are also common in areas of these soils.

Soils vary in their ability to produce trees. Available water capacity and depth of the root zone have major effects on tree growth. Fertility and texture also influence tree growth. Available water capacity and depth of the root zone are major influences.

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

The first tree listed for each soil under the column "Common trees" is the indicator species for that soil. An indicator species is a tree that is common in the area and that is generally the most productive on a given soil.

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

The second part of the ordination symbol, a letter, indicates the major kind of soil limitation affecting use and management. The letter *W* indicates a soil in which excessive water, either seasonal or year-round, causes a significant limitation. The letter *T* indicates a soil that has, within the root zone, excessive alkalinity, acidity, sodium salts, or other toxic substances that limit or impede development of desirable trees. The letter *S* indicates a dry, sandy soil. The letter *A* indicates a soil having no significant limitations that affect forest use and management.

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

Ratings of *equipment limitation* indicate limits on the use of forest managment equipment, year-round or seasonal, because of such soil characteristics as slope, wetness, stoniness, or susceptibility of the surface layer to compaction. The rating is *slight* if equipment use is restricted by soil wetness for less than 2 months and if special equipment is not needed. The rating is *moderate* if soil wetness restricts equipment use from 2 to 6 months per year, or if special equipment is needed to prevent or minimize compaction. The rating is *severe* if soil wetness restricts equipment for more than 6 months per year. Ratings of moderate or severe indicate a need to choose the best suited equipment and to carefully plan the timing of harvesting and other management activities.

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

The *potential productivity* of *common trees* on a soil is expressed as a *site index* and a *volume* number. Common trees are listed in the order of their observed general occurrence. Generally, only two or three tree species dominate.

The *site index* is determined by taking height measurements and determining the age of selected trees within stands of a given species. This index is the average height, in feet, that trees attain in a specified number of years. This index applies to fully stocked, even-aged, unmanaged stands.

The *productivity class* represent an expected volume produced by the most important trees, expressed in cubic meters per hectare per year. Cubic meters per hectare can be converted to cubic feet per acre by multiplying by 14.3. It can be converted to board feet by multiplying by a factor of about 71. For example, a productivity class of 8 means the soil can be expected to produce 114 cubic feet per acre per year at the point where mean annual increment culminates, or about 568 board feet per acre per year.

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

Recreation

In table 9, the soils of the survey area are rated according to the limitations that affect their suitability for recreation. The ratings are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewer lines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation are also important. Soils subject to flooding are limited for recreational uses by the duration and intensity of flooding and the season when flooding occurs. In planning recreational facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

In table 9, the degree of soil limitation is expressed as slight, moderate, or severe. *Slight* means that soil properties are generally favorable and that limitations are minor and easily overcome. *Moderate* means that limitations can be overcome or alleviated by planning, design, or special maintenance. *Severe* means that soil properties are unfavorable and that limitations can be offset only by costly soil reclamation, special design, intensive maintenance, limited use, or a combination of these measures.

The information in table 9 can be supplemented by other information in this survey, for example, interpretations for septic tank absorption fields in table 12 and interpretations for dwellings without basements and for local roads and streets in table 11.

Camp areas require site preparation, such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The best soils have gentle 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, stones, or boulders that increase the cost of shaping sites or of building access roads and parking areas.

Playgrounds require soils that can withstand intensive foot traffic. The best soils are almost level and are not wet or subject to flooding during the season of use. The surface is free of stones and boulders, is firm after rains, and is not dusty when dry. If grading is needed, the depth of the soil over bedrock or a hardpan should be considered.

Paths and trails for hiking and horseback riding should require little or no cutting and filling. The best soils are not wet, are firm after rains, are not dusty when dry, and are not subject to flooding more than once a year during the period of use. They have moderate slopes and few or no stones or boulders on the surface.

Golf fairways are subject to heavy foot traffic and some light vehicular traffic. Cutting or filling may be required. The best soils for use as golf fairways are firm when wet, are not dusty when dry, and are not subject to prolonged flooding during the period of use. They have moderate slopes and no stones or boulders on the surface. The suitability of the soil for tees or greens is not considered in rating the soils.

Wildlife Habitat

Louis Justice, biologist, Natural Resources Conservation Service, helped prepare this section.

Emanuel County has a large and varied population of fish and wildlife. White-tailed deer, squirrel, and thrushes inhabit the wooded areas. Quail, cottontails, woodchucks, and many types of songbirds inhabit farmed areas where food and cover are readily available. Streams, ponds, and lakes support a variety of fish. Some of the lakes and wetlands provide resting and feeding areas for migratory waterfowl in fall and spring.

Soils affect the kind and amount of vegetation that is available to wildlife as food and cover. They also affect the construction of water impoundments. The kind and abundance of wildlife depend largely on the amount and distribution of food, cover, and water. Wildlife habitat can be created or improved by planting appropriate vegetation, by maintaining the existing plant cover, or by promoting the natural establishment of desirable plants.

In table 10, the soils in the survey area are rated according to their potential for providing habitat for various kinds of wildlife. This information can be used in planning parks, wildlife refuges, nature study areas, and other developments for wildlife; in selecting soils that are suitable for establishing, improving, or maintaining specific elements of wildlife habitat; and in determining the intensity of management needed for each element of the habitat.

The potential of the soil is rated good, fair, poor, or very poor. A rating of *good* indicates that the element or kind of habitat is easily established, improved, or maintained. Few or no limitations affect management, and satisfactory results can be expected. A rating of *fair* indicates that the element or kind of habitat can be established, improved, or maintained in most places. Moderately intensive management is required for satisfactory results. A rating of *poor* indicates that limitations are severe for the designated element or kind of habitat. Habitat can be created, improved, or maintained in most places, but management is difficult and must be intensive. A rating of *very poor* indicates that restrictions for the element or kind of habitat are very severe and that unsatisfactory results can be expected. Creating, improving, or maintaining habitat is impractical or impossible.

The elements of wildlife habitat are described in the following paragraphs.

Grain and seed crops are domestic grains and seed-producing herbaceous plants. Soil properties and features that affect the growth of grain and seed crops are depth of the root zone, texture of the surface layer, available water capacity, wetness, slope, surface stoniness, and flooding. Soil temperature and soil moisture are also considerations. Examples of grain and seed crops are corn, wheat, and rye.

Grasses and legumes are domestic perennial grasses and herbaceous legumes. Soil properties and features that affect the growth of grasses and legumes are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, flooding, and slope. Soil temperature and soil moisture are also considerations. Examples of grasses and legumes are orchardgrass, bahiagrass, clover, lespedeza, and alfalfa.

Wild herbaceous plants are native or naturally established grasses and forbs, including weeds. Soil properties and features that affect the growth of these plants are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, and flooding. Soil temperature and soil moisture are also considerations. Examples of wild herbaceous plants are bluestem, goldenrod, beggarweed, ragweed, lespedza, partridge pea, and awngrasses.

Hardwood trees and woody understory produce nuts or other fruit, buds, catkins, twigs, bark, and foliage. Soil properties and features that affect the growth of hardwood trees and shrubs are depth of the root zone, available water capacity, and wetness. Examples of these plants are oak, cherry, sweetgum, crabapple, hawthorn, dogwood, hickory, blackberry, and blueberry. Examples of fruit-producing shrubs that are suitable for planting on soils rated *good* are plum 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, cypress, and red cedar.

Wetland plants are annual and perennial wild herbaceous plants that grow on moist or wet sites. Submerged or floating aquatic plants are excluded. Soil properties and features affecting wetland plants are texture of the surface layer, wetness, reaction, salinity, slope, and surface stoniness. Examples of wetland plants are smartweed, wild millet, 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, levees, or other water-control structures. Soil properties and features affecting shallow water areas are depth to bedrock, wetness, surface stoniness, slope, and permeability. Examples

of shallow water areas are marshes, waterfowl-feeding areas, and ponds.

The habitat for various kinds of wildlife is described in the following paragraphs.

Habitat for openland wildlife consists of cropland, pasture, meadows, and areas that are overgrown with grasses, herbs, shrubs, and vines. These areas produce grain and seed crops, grasses and legumes, and wild herbaceous plants. Wildlife attracted to these areas include bobwhite quail, meadowlark, field sparrow, cottontail, and red fox.

Habitat for woodland wildlife consists of areas of deciduous plants or coniferous plants or both and associated grasses, legumes, and wild herbaceous plants. Wildlife attracted to these areas include wild turkey, many types of songbirds, woodcock, thrushes, woodpeckers, squirrels, raccoon, and deer.

Habitat for wetland wildlife consists of open, marshy or swampy shallow water areas. Some of the wildlife attracted to such areas are ducks, geese, herons, shore birds, and beaver.

Engineering

This section provides information for planning land uses related to urban development and to water management. Soils are rated for various uses, and the most limiting features are identified. Ratings are given for building site development, sanitary facilities, construction materials, and water management. The ratings are based on observed performance of the soils and on the estimated data and test data in the "Soil Properties" section.

Information in this section is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil within a depth of 5 or 6 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section. Local ordinances and regulations should be considered in planning, in site selection, and in design.

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about grain-size distribution, liquid limit, plasticity index, soil reaction, soil wetness, depth to a seasonal high water table, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kinds of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, earthfill, and topsoil; plan drainage systems, irrigation systems, ponds, terraces, and other structures for soil and water conservation; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the Glossary.

Building Site Development

Table 11 shows the degree and kind of soil limitations that affect shallow excavations, dwellings with and without basements, small commercial buildings, local roads and streets, and lawns and landscaping. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required. Special feasibility studies may be required where the soil limitations are severe.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for basements, graves, utility lines, open ditches, and other purposes. The

ratings are based on soil properties, site features, and observed performance of the soils. The ease of digging, filling, and compacting is affected by a very firm, dense layer; soil texture; and slope. The time of the year that excavations can be made is affected by the depth to a seasonal high water table and the susceptibility of the soil to flooding. The resistance of the excavation walls or banks to sloughing or caving is affected by soil texture and depth to the water table.

Dwellings and *small commercial buildings* are structures built on shallow foundations on undisturbed soil. The load limit is the same as that for single-family dwellings no higher than three stories. Ratings are made for small commercial buildings without basements, for dwellings with basements, and for dwellings without basements. The ratings are based on soil properties, site features, and observed performance of the soils. A high water table, flooding, and shrink-swell potential can cause the movement of footings. Depth to a high water table and flooding affect the ease of excavation and construction. Landscaping and grading that require cuts and fills of more than 5 or 6 feet are not considered.

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or stabilized soil material; and a flexible or rigid surface. Cuts and fills are generally limited to less than 6 feet. The ratings are based on soil properties, site features, and observed performance of the soils. Depth to a high water table, flooding, 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, depth to a high water table, and the available water capacity in the upper 40 inches affect plant growth. Flooding, wetness, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer affect trafficability after vegetation is established.

Sanitary Facilities

Table 12 shows the degree and 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 12 also shows the suitability of the soils for use as daily cover for landfill. A rating of *good* indicates that soil properties and site features are favorable for the use and that 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 80 inches is evaluated. The ratings are based on soil properties, site features, and observed performance of the soils. Permeability, depth to a high water table, and flooding affect absorption of the effluent.

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 is less than 4 feet below the base of the absorption field, if slope is excessive, or if the water table is near the surface. There must be unsaturated soil material beneath the absorption field to filter the effluent effectively. Many local ordinances require that this material be of a certain thickness.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Lagoons generally are designed to hold the sewage within a depth of 2 to 5 feet. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water.

Table 12 gives ratings for the natural soil that makes up the lagoon floor. The surface layer and, generally, 1 or 2 feet of soil material below the surface layer are excavated to provide material for the embankments.

The ratings are based on soil properties, site features, and observed performance of the soils. Considered in the ratings are slope, permeability, depth to a high water table, and flooding.

Excessive seepage resulting from rapid permeability in the soil or a water table that is high enough to raise the level of sewage in the lagoon causes a lagoon to function unsatisfactorily. Pollution results if seepage is excessive or if floodwater overtops the lagoon. Slope can cause construction problems.

Sanitary landfills are areas where solid waste is disposed of by burying it in soil. There are two types of landfill—trench and area. In a trench landfill, the waste is placed in a trench. It is spread, compacted, and covered daily with a thin layer of soil excavated at the site. In an area landfill, the waste is placed in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil from a source away from the site.

Both types of landfill must be able to bear heavy vehicular traffic. Both types involve a risk of ground-water pollution. Ease of excavation and revegetation should be considered.

The ratings in table 12 are based on soil properties, site features, and observed performance of the soils. Permeability, depth to a water table, slope, and flooding affect both types of landfill. Texture and soil reaction affect trench landfills. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, a limitation rated slight or moderate may not be valid. Onsite investigation is needed.

Daily cover for landfill is the soil material that is used to cover compacted solid waste in an area sanitary landfill. The soil material is obtained offsite, transported to the landfill, and spread over the waste.

Soil texture, wetness, coarse fragments, and slope affect the ease of removing and spreading the material during wet and dry periods. Loamy or silty soils that are free of large stones or excess gravel are the best cover for a landfill. Clayey soils are sticky or cloddy and are difficult to spread; sandy soils are subject to soil blowing.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over the water table to permit revegetation. The soil material used as the final cover for a landfill should be suitable for plants. The surface layer generally has the best workability, more organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

Construction Materials

Table 13 gives information about the soils as a source of roadfill, sand, gravel, and topsoil. The soils are rated *good, fair,* or *poor* as a source of roadfill and topsoil. They are rated as a *probable* or *improbable* source of sand and gravel. The ratings are based on soil properties and site features that affect the removal of the soil and its use as construction material. Normal compaction, minor processing, and other standard construction practices are assumed. Each soil is evaluated to a depth of 5 or 6 feet.

Roadfill is soil material that is excavated in one place and used in road embankments in another place. In this table, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments.

The ratings are for the soil material below the surface layer to a depth of 5 or 6 feet. It is assumed that soil layers will be mixed during excavating and spreading. Many soils have layers of contrasting suitability within their profile. The table showing engineering index properties provides detailed information about each soil layer. This information can help to determine the suitability of each layer for use as roadfill. The performance of soil after it is stabilized with lime or cement is not considered in the ratings.

The ratings are based on soil properties, site features, and observed performance of the soils. The thickness of suitable material is a major consideration. The ease of excavation is affected by a high water table and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the engineering classification of the soil) and shrink-swell potential.

Soils rated *good* contain significant amounts of sand or gravel or both. They have at least 5 feet of suitable material, a low shrink-swell potential, few cobbles and stones, and slopes of 15 percent or less. Depth to the water table is more than 3 feet. Soils rated *fair* are more than 35 percent silt- and clay-sized particles and have a plasticity index of less than 10. They have a moderate shrink-swell potential or slopes of 15 to 25 percent. Depth to the water table is 1 to 3 feet. Soils rated *poor* have a plasticity index of more than 10 or a high shrink-swell potential. They are wet and have a water table at a depth of less than 1 foot. They may have layers of suitable material, but the material is less than 3 feet thick.

Sand and *gravel* are natural aggregates suitable for commercial use with a minimum of processing. They are used in many kinds of construction. Specifications for each use vary widely. In table 13, only the probability of finding material in suitable quantity is

evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material.

The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the engineering classification of the soil), and the thickness of suitable material. 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.

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 and a water table.

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 predominantly 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, have slopes of more than 15 percent, or have a seasonal high water table at or near the surface.

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and releases a variety of plant-available nutrients as it decomposes.

Water Management

Table 14 gives information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas and for embankments, dikes, and levees. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and are easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increase in construction costs, and possibly increased maintenance are required.

This table also gives the restrictive features that affect each soil for 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 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 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 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; and susceptibility to flooding. Excavating and grading and the stability of ditchbanks are affected by slope and the hazard of cutbanks caving. 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 performance of a system is affected by the depth of the root zone and soil reaction.

Terraces and diversions are embankments or a combination of channels and ridges constructed across a slope to control erosion and conserve moisture by intercepting runoff. Slope and wetness affect the construction of terraces and diversions. 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. Wetness and slope affect the construction of grassed waterways. Low available water capacity, restricted rooting depth, and restricted permeability adversely affect the growth and maintenance of the grass after construction.

Soil Properties

Data relating to soil properties are collected during the course of the soil survey. The data and the estimates of soil and water features, listed in tables, are explained on the following pages.

Soil properties are determined by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine grain-size distribution, plasticity, and compaction characteristics.

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

The estimates of soil properties shown in the tables include the range of grain-size distribution and Atterberg limits, the engineering classification, and the physical and chemical properties of the major layers of each soil. Pertinent soil and water features also are given.

Engineering Index Properties

Table 15 gives estimates of the engineering classification and of the range of index properties for the major layers of each soil in the survey area. Most soils have layers of contrasting properties within the upper 5 or 6 feet.

Depth to the upper and lower boundaries of each layer is indicated. Information on other properties of each layer are given for each soil series under the heading "Soil Series and Their Morphology."

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. 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.

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.

Physical and Chemical Properties

Table 16 shows estimates of some characteristics and features that affect soil behavior. These estimates are given for the major layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

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

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

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at $^1/_3$-bar moisture tension. Weight is determined after drying the soil at 105 degrees C. In this table, the estimated moist bulk density of each major soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. A bulk density of more than 1.6 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

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

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage in each major soil layer is stated in inches of water per inch of soil. 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 some soils. For others, swelling was estimated on the basis of the kind and amount of clay minerals in the soil and on measurements of similar soils.

If the shrink-swell potential is rated moderate to very high, shrinking and swelling can cause damage to buildings, roads, and other structures. Special design is often needed.

Shrink-swell potential classes are based on the change in length of an unconfined clod as moisture content is increased from air-dry to field capacity. The classes are *low*, a change of less than 3 percent; *moderate*, 3 to 6 percent; and *high*, more than 6 percent. *Very high*, more than 9 percent, is sometimes used.

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) to predict the average annual rate of soil loss by sheet and rill erosion. Losses are expressed in tons per acre per year. These estimates are based primarily on percentage of silt, sand, and organic matter (up to 4 percent) and on soil structure and permeability. Values of K range from 0.02 to 0.69. 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 over a sustained period without affecting crop productivity. The rate is expressed in tons per acre per year.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In table 16,

the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter in a soil can be maintained or increased by returning crop residue to the soil. Organic matter affects the available water capacity, infiltration rate, and tilth. It is a source of nitrogen and other nutrients for crops.

Soil and Water Features

Table 17 gives estimates of various soil and water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are used to estimate runoff from precipitation. Soils are assigned to one of four groups. They are grouped according to the infiltration of water when the soils are thoroughly wet and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a permanent high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission. If a soil is assigned to two hydrologic groups in table 17, the first letter is for drained areas and the second is for undrained areas. Onsite investigation is needed to determine the hydrologic group of the soil in a particular area.

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

Table 17 gives the frequency and duration of flooding and the time of year when flooding is most likely.

Frequency, duration, and probable dates of occurrence are estimated. Frequency generally is expressed as *none, rare, occasional,* or *frequent. None* means that flooding is not probable. *Rare* means that flooding is unlikely but possible under unusual weather conditions (the chance of flooding is nearly 0 percent to 5 percent in any year). *Occasional* means that flooding occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year). *Frequent* means that flooding occurs often under normal weather conditions (the chance of flooding is more than a 50 percent in any year). *Common* is used when the occasional and frequent classes are grouped for certain purposes. Duration is expressed as *very brief* (less than 2 days), *brief* (2 to 7 days), *long* (7 days to 1 month), and *very long* (more than 1 month). The time of year that floods are most likely to occur is expressed in months. About two-thirds to three-fourths of all flooding occurs during the stated period.

The information on flooding is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered is local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

High water table (seasonal) is the highest level of a saturated zone in the soil in most years. The estimates are based mainly on the evidence of a saturated zone, namely grayish colors or mottles in the soil. Indicated in table 17 are the depth to the seasonal high water table; the kind of water table, that is, *perched* or *apparent*; and the months of the year that the water table commonly is highest. A water table that is seasonally high for less than 1 month is not indicated in table 17.

An *apparent* water table is a thick zone of free water in the soil. It is indicated by the level at which water stands in an uncased borehole after adequate time is allowed for adjustment in the surrounding soil. A *perched* water table is water standing above an unsaturated zone. In places an upper, or perched,

water table is separated from a lower one by a dry zone.

Two numbers in the column showing depth to the water table indicate the normal range in depth to a saturated zone. Depth is given to the nearest half foot. The first numeral in the range indicates the highest water level. A plus sign preceding the range in depth indicates that the water table is above the surface of the soil. “More than 6.0” indicates that the water table is below a depth of 6 feet or that it is within a depth of 6 feet for less than a month.

Depth to bedrock is given if bedrock is within a depth of 5 feet. The depth is based on many soil borings and on observations during soil mapping. The rock is specified as either soft or hard. If the rock is soft or fractured, excavations can be made with trenching machines, backhoes, or small rippers. If the rock is hard or massive, blasting or special equipment generally is needed for excavation.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that dissolves or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than steel in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low, moderate*, or *high*, is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion is also expressed as *low, moderate*, or *high*. It is based on soil texture, acidity, and the amount of sulfates in the saturation extract.

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories *(6)*. 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 on laboratory measurements. Table 18 shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

ORDER. Eleven soil orders are recognized. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in *sol*. An example is Entisol.

SUBORDER. Each order is divided into suborders, primarily on the basis of properties that influence soil genesis and are important to plant growth or properties that reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Aquent (*Aqu*, meaning water, plus *ent*, from Entisol).

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Fluvaquents (*Fluv*, meaning flood plain, plus *aquent*, the suborder of the Entisols that has an aquic moisture regime).

SUBGROUP. Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic is the central concept of the great group; it is not necessarily the most extensive. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but do not indicate transitions to any other known kind of soil. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective *Typic* identifies the subgroup that typifies the great group. An example is Typic Fluvaquents.

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Generally, the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle-size class, mineral content, temperature regime, depth of the root zone, consistence, moisture equivalent, slope, and permanent cracks. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is fine-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. There can be some variation in the texture of the surface layer or of the substratum 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" *(7)*. Many of the technical terms used in the descriptions are defined in "Soil Taxonomy" *(6)*. 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

Depth class: Deep or very deep
Drainage class: Well drained
Permeability: Rapid in the sandy epipedon, slow in the brittle layers of the subsoil and substratum

Parent material: Sandy and loamy marine sediments
Landscape position: Ridges and hillsides
Slope range: 2 to 17 percent
Classification: Loamy, siliceous, thermic Arenic Kanhapludults

Geographically Associated Soils

- Bonifay soils, which are grossarenic and have 5 percent or more plinthite in the subsoil
- Cowarts and Nankin soils, which have a sandy epipedon less than 20 inches thick
- Fuquay soils, which do not have a horizon that has dense and brittle properties and which have 5 percent or more plinthite in the subsoil

Typical Pedon

Ailey loamy sand, 2 to 5 percent slopes; 6.3 miles north on Georgia Highway 192 from its intersection with U.S. Highway 80, about 0.45 mile east on a dirt county road, about 2.2 miles north on paved county road, 75 feet east of the road:

A—0 to 6 inches; dark grayish brown (10YR 4/2) loamy sand; weak fine granular structure; very friable; many fine and common medium roots; strongly acid; clear smooth boundary.

E—6 to 25 inches; yellowish brown (10YR 5/4) loamy sand; weak fine granular structure; very friable; common fine and few medium roots; strongly acid; clear wavy boundary.

Bt1—25 to 31 inches; yellowish brown (10YR 5/6) sandy loam; weak fine subangular blocky structure; friable; few fine roots; strongly acid; gradual wavy boundary.

Bt2—31 to 37 inches; yellowish brown (10YR 5/6) sandy clay loam; common medium prominent yellowish red (5YR 4/6) and common medium distinct light yellowish brown (10YR 6/4) mottles; weak medium subangular blocky structure; friable; few fine roots; very few faint clay film on faces of peds; very strongly acid; clear wavy boundary.

Btx—37 to 48 inches; mottled red (2.5YR 4/8), light gray (10YR 7/2), and light yellowish brown (10YR 6/4) sandy clay loam; moderate medium subangular blocky structure; firm; few fine roots; few faint clay film on faces of peds; the red part makes up about 35 percent of the horizon, by volume, and is brittle; very strongly acid; clear smooth boundary.

Cd—48 to 63 inches; mottled red (2.5YR 4/8), light gray (10YR 7/2), yellowish red (5YR 5/8), and light yellowish brown (10YR 6/4) sandy clay loam; massive; very firm and compact in place; very strongly acid.

Range in Characteristics

Thickness of the solum: 42 inches or more
Thickness of the sandy epipedon: 25 to 32 inches
Reaction: Very strongly acid or strongly acid throughout, except for the surface layer in limed areas
Distinctive features: A Btx horizon, which has 10 to 40 percent (by volume) dense and brittle properties, at a depth of 34 to 40 inches

A horizon:
Thickness—6 to 8 inches
Color—hue of 10YR, value of 3 or 4, and chroma of 2

E horizon:
Color—hue of 10YR, value of 5, and chroma of 4 to 8

Upper part of the Bt horizon:
Color—hue of 10YR, value of 5, and chroma of 6 or 8

Lower part of the Bt horizon:
Color—hue of 7.5YR or 10YR, value of 5, chroma of 6 or 8, and common to many mottles in shades of brown and red; or mottled in shades of brown and red

Btx horizon:
Color—hue of 7.5YR or 10YR, value of 4 to 6, chroma of 4 to 8, and many mottles in shades of yellow, brown, red, and gray; or mottled in shades of yellow, brown, red, and gray

Cd horizon:
Color—hue of 5YR or 7.5YR, value of 4 or 5, chroma of 6 to 8, and common mottles in shades of gray, brown, and red; or mottled in shades of gray, brown, and red
Texture—sandy loam, coarse sandy loam, or sandy clay loam

Albany Series

Depth class: Very deep
Drainage class: Somewhat poorly drained
Permeability: Rapid in the sandy epipedon, moderate or moderately slow in the subsoil
Parent material: Sandy and loamy marine sediments
Depth to a seasonal high water table: 1.0 to 2.5 feet
Landscape position: Upland flats
Slope range: 0 to 3 percent
Classification: Loamy, siliceous, thermic Grossarenic Paleudults

Geographically Associated Soils

- Blanton soils, which are somewhat excessively drained or moderately well drained and are in slightly higher landscape positions
- Centenary and Ridgeland soils, which have a Bh horizon and do not have a Bt horizon
- Chipley soils, which are moderately well drained, are sandy throughout the profile, and are in slightly higher landscape positions
- Ocilla soils, which are arenic
- Pelham soils, which are poorly drained, are arenic, and are in lower landscape positions
- Pickney soils, which are very poorly drained, do not have a Bt horizon, and are in drainageways and depressions

Typical Pedon

Albany sand, in an area of Albany and Chipley soils, 0 to 3 percent slopes; about 3.0 miles south of Nunez on Georgia Highway 297, about 1.2 miles southeast on a road in a woods from the intersection with Georgia Highway 297, about 50 feet west of the road:

A—0 to 8 inches; very dark grayish brown (10YR 3/2) sand; single grained; loose; many fine and common medium roots; very strongly acid; abrupt smooth boundary.

E1—8 to 18 inches; light yellowish brown (10YR 6/4) sand; single grained; loose; common fine and few medium roots; very strongly acid; clear smooth boundary.

E2—18 to 28 inches; light yellowish brown (10YR 6/4) loamy sand; common medium distinct yellowish brown (10YR 5/6) mottles; weak fine granular structure; very friable; common fine roots; very strongly acid; clear smooth boundary.

E3—28 to 55 inches; pale brown (10YR 6/3) loamy sand; common medium distinct yellowish brown (10YR 5/6) and light gray (10YR 7/1) mottles; weak fine granular structure; very friable; few fine roots; very strongly acid; gradual wavy boundary.

Bt—55 to 68 inches; light yellowish brown (10YR 6/4) sandy loam; common medium prominent strong brown (7.5YR 5/6) and common medium distinct yellowish brown (10YR 5/6) and light gray (10YR 7/1) mottles; weak fine subangular blocky structure; very friable; few coated sand grains bridged with clay; very strongly acid; gradual wavy boundary.

Btg—68 to 80 inches; light brownish gray (10YR 6/2) sandy clay loam; common medium distinct yellowish brown (10YR 5/6) and common medium faint pale brown (10YR 6/3) mottles; weak medium subangular blocky structure; friable; few slightly hard concretions; few coated sand grains bridged with clay; very strongly acid.

Range in Characteristics

Thickness of the solum: 80 inches or more
Thickness of the sandy epipedon: 51 to 74 inches
Depth to mottles that have chroma of 2 or less: 24 to 30 inches
Reaction: Very strongly acid or strongly acid throughout the profile, except for the surface layer in limed areas

A horizon:
Thickness—6 to 10 inches
Color—hue of 10YR, value of 3 or 4, and chroma of 1 or 2

E horizon:
Color—hue of 2.5Y or 10YR, value of 5 to 7, chroma of 1 to 8, and gray mottles within a depth of 30 inches
Texture—fine sand, sand, or loamy sand

Bt horizon:
Color—hue of 10YR, value of 4 to 7, chroma of 3 to 6, and common to many mottles in shades of brown and gray
Texture—sandy loam or sandy clay loam

Btg horizon:
Color—hue of 10YR, value of 4 to 7, chroma of 2, and common to many mottles in shades of brown
Texture—sandy loam or sandy clay loam

Bibb Series

Depth class: Very deep
Drainage class: Poorly drained
Permeability: Moderate
Parent material: Stratified loamy and sandy alluvial sediments
Depth to a seasonal high water table: 0.5 to 1.0 foot
Landscape position: Flood plains
Slope range: 0 to 2 percent
Classification: Coarse-loamy, siliceous, acid, thermic Typic Fluvaquents

Geographically Associated Soils

- Kinston soils, which are in a fine-loamy family
- Ocilla soils, which are somewhat poorly drained, have a Bt horizon, and are on toe slopes adjacent to drainageways
- Pelham soils, which have a Bt horizon

Typical Pedon

Bibb loam, in an area of Kinston and Bibb soils, frequently flooded; about 1.2 miles east on Georgia Highway 192 from the intersection with U.S. Highway 1, about 75 feet south of the highway:

A—0 to 6 inches; very dark grayish brown (10YR 3/2) loam; weak fine granular structure; very friable; many fine and medium roots; very strongly acid; clear wavy boundary.

Ag—6 to 14 inches; light brownish gray (10YR 6/2) fine sandy loam; weak fine granular structure; friable; common fine and medium roots; very strongly acid; gradual wavy boundary.

Cg1—14 to 25 inches; light brownish gray (10YR 6/2) sandy loam; common medium distinct yellowish brown (10YR 5/6) and brownish yellow (10YR 6/6) mottles; massive; friable; few fine roots; very strongly acid; clear wavy boundary.

Cg2—25 to 43 inches; light brownish gray (10YR 6/2) sandy loam; common medium prominent strong brown (7.5YR 5/6), common medium distinct yellowish brown (10YR 5/6), and common medium faint pale brown (10YR 6/3) mottles; massive; friable; few fine roots; very strongly acid; gradual wavy boundary.

Cg3—43 to 63 inches; gray (10YR 6/1) loamy sand that has thin strata of sandy loam; common medium prominent yellowish brown (10YR 5/6) and common medium distinct pale brown (10YR 6/3) mottles; massive; friable; few fine roots; very strongly acid.

Range in Characteristics

Reaction: Very strongly acid or strongly acid throughout the profile

A horizon:
Combined thickness of the A horizons—9 to 21 inches
Color—hue of 10YR, value of 3 or 4, and chroma of 1 or 2

Ag horizon:
Color—hue of 10YR, value of 3 to 6, and chroma of 1 or 2
Texture—loam or sandy loam

Upper part of the Cg horizon:
Color—hue of 10YR, value of 4 to 7, chroma of 1 or 2, and few to common mottles in shades of brown and yellow
Texture—sandy loam, fine sandy loam, or silt loam

Lower part of the Cg horizon:
Color—hue of 10YR, value of 4 to 7, chroma of 1 or 2, and few to common mottles in shades of brown and yellow
Texture—loamy sand or sand

Bladen Series

Depth class: Very deep
Drainage class: Poorly drained
Permeability: Slow
Parent material: Clayey alluvial or marine sediments
Depth to a seasonal high water table: At the surface to a depth of 1 foot
Landscape position: Fluvial or marine terraces
Slope range: 0 to 2 percent
Classification: Clayey, mixed, thermic Typic Albaquults

Geographically Associated Soils

- Meggett soils, which have a base saturation of 35 percent or more at a depth of about 50 inches below the top of the argillic horizon
- Rembert soils, which have a decrease in clay content of 20 percent or more from the maximum within a depth of 60 inches and are in depressions
- Wahee soils, which are somewhat poorly drained

Typical Pedon

Bladen fine sandy loam, about 3.2 miles north on Georgia Highway 56 from the intersection with Georgia Highway 192 in Summertown, about 4.2 miles east on a county paved road, about 1.1 miles north on a road in a woods, about 600 feet east of the road:

A1—0 to 6 inches; very dark grayish brown (10YR 3/2) fine sandy loam; weak fine granular structure; very friable; many fine and few medium roots; strongly acid; clear smooth boundary.

A2—6 to 9 inches; dark grayish brown (10YR 4/2) fine sandy loam; weak fine granular structure; very friable; few fine and medium roots; strongly acid; clear smooth boundary.

E—9 to 14 inches; light gray (10YR 7/2) fine sandy loam; weak fine granular structure; very friable; few fine and medium roots; very strongly acid; abrupt smooth boundary.

Btg1—14 to 27 inches; light brownish gray (10YR 6/2) clay; many medium prominent strong brown (7.5YR 5/8) mottles; moderate medium subangular blocky structure parting to strong angular blocky; very firm; few fine and medium roots; common distinct clay films on faces of peds; very strongly acid; clear wavy boundary.

Btg2—27 to 38 inches; light gray (10YR 7/2) clay; many coarse prominent strong brown (7.5YR 5/8) and common medium prominent yellowish red

(5YR 5/8) mottles; strong angular blocky structure parting to moderate medium subangular blocky; very firm; few fine roots; common distinct clay films on faces of peds; very strongly acid; gradual wavy boundary.

Btg3—38 to 54 inches; light gray (10YR 7/2) clay; many coarse prominent strong brown (7.5YR 5/8), common medium prominent yellowish red (5YR 5/8), and common medium distinct yellowish brown (10YR 5/8) mottles; moderate medium subangular blocky structure; very firm; common distinct clay films on faces of peds; very strongly acid; gradual wavy boundary.

Btg4—54 to 62 inches; gray (N 6/0) sandy clay; few fine prominent strong brown (7.5YR 5/8) mottles; moderate medium subangular blocky structure; very firm; few faint clay films on faces of peds; very strongly acid.

Range in Characteristics

Thickness of the solum: 62 inches or more

Reaction: Very strongly acid or strongly acid throughout the profile, except for the surface layer in limed areas

A horizon:

Thickness—4 to 9 inches

Color—hue of 10YR, value of 3 or 4, and chroma of 1 or 2

E horizon:

Color—hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 1 or 2

Btg horizon:

Color—hue of 10YR or 2.5Y or neutral in hue, value of 5 to 7, chroma of 1 or 2, and few to many mottles in shades of brown and red

Texture—sandy clay or clay

Blanton Series

Depth class: Very deep

Drainage class: Somewhat excessively drained to moderately well drained

Permeability: Rapid in the sandy epipedon, moderate or moderately slow in the subsoil

Parent material: Loamy marine sediments

Seasonal high water table: Perched at a depth of 4.0 to 6.0 feet

Landscape position: Broad flats and ridges

Slope range: 0 to 5 percent

Classification: Loamy, siliceous, thermic Grossarenic Paleudults

Geographically Associated Soils

- Albany soils, which are somewhat poorly drained and are in slightly lower landscape positions
- Bonifay soils, which are well drained and have 5 percent or more plinthite in the subsoil
- Fuquay soils, which are arenic, are well drained, and have 5 percent or more plinthite in the subsoil
- Chipley, Kershaw, and Lakeland soils, which are sandy throughout the profile
- Ocilla soils, which are arenic, are somewhat poorly drained, and are in slightly lower landscape positions

Typical Pedon

Blanton sand, 0 to 5 percent slopes, about 1.8 miles northwest of the intersection of U.S. Highway 1 and Georgia Highway 192, on a paved county road, about 0.2 mile south of New Hope Primitive Baptist Church:

Ap—0 to 6 inches; brown (10YR 4/3) sand; single grained; loose; common fine roots; moderately acid; clear smooth boundary.

E1—6 to 40 inches; yellow (10YR 7/6) sand; single grained; loose; few fine roots; many uncoated sand grains; moderately acid; gradual smooth boundary.

E2—40 to 54 inches; brownish yellow (10YR 6/6) sand; single grained; loose; many pockets of uncoated sand grains; strongly acid; gradual wavy boundary.

BE—54 to 60 inches; pale yellow (2.5Y 7/4) loamy sand; weak fine granular structure; very friable; strongly acid; gradual smooth boundary.

Bt1—60 to 64 inches; brownish yellow (10YR 6/6) sandy loam; weak fine subangular blocky structure; very friable; strongly acid; gradual wavy boundary.

Bt2—64 to 75 inches; yellowish brown (10YR 5/8) sandy loam; common medium prominent weak red (2.5YR 5/2), strong brown (7.5YR 5/6), and light gray (10YR 7/2) mottles; weak fine subangular blocky structure; friable; 3 percent nodular plinthite; strongly acid; gradual wavy boundary.

Bt3—75 to 82 inches; yellowish brown (10YR 5/8) sandy loam; common medium prominent light gray (10YR 7/2) and strong brown (7.5YR 5/6) mottles; weak fine subangular blocky structure; friable; strongly acid.

Range in Characteristics

Thickness of the solum: 80 inches or more

Thickness of the sandy epipedon: 50 to 68 inches

Depth to mottles that have chroma of 2 or less: 40 to 70 inches

Content of plinthite: 0 to 3 percent below a depth of 60 inches

Reaction: Very strongly acid to moderately acid

throughout the profile, except for the surface layer in limed areas

A horizon:
Thickness—6 to 11 inches
Color—hue of 10YR, value of 3 or 4, and chroma of 3

E horizon:
Color—hue of 10YR, value of 6 to 8, and chroma of 1 to 6

BE horizon, if it occurs:
Color—hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 4 to 8

Bt horizon:
Color—hue of 10YR, value of 5 to 7, chroma of 3 to 8, and few to many mottles in shades of yellow, brown, red, and gray
Texture—sandy loam or sandy clay loam

Bonifay Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Rapid in the sandy epipedon, moderate in the upper part of the subsoil, and moderately slow in the lower part of the subsoil
Parent material: Sandy and loamy marine sediments
Seasonal high water table: Perched at a depth of 4.0 to 5.0 feet
Landscape position: Ridges and hillsides
Slope range: 1 to 12 percent
Classification: Loamy, siliceous, thermic, Grossarenic Plinthic Paleudults

Geographically Associated Soils

- Ailey and Fuquay soils, which are arenic
- Blanton soils, which are somewhat excessively drained or moderately well drained and do not have 5 percent or more plinthite in the subsoil
- Chipley, Kureb, and Lakeland soils, which are sandy throughout the profile

Typical Pedon

Bonifay sand, 1 to 5 percent slopes, about 5.0 miles north on Georgia Highway 121 from the intersection with U.S. Highway 80, about 0.4 mile southwest on an unpaved road, about 75 feet north of the road:

Ap—0 to 8 inches; very dark grayish brown (10YR 3/2) sand; single grained; loose; many fine roots; strongly acid; abrupt smooth boundary.
E1—8 to 27 inches; light yellowish brown (10YR 6/4) sand; single grained; loose; common fine roots; common streaks of uncoated sand grains; few nodules of ironstone; strongly acid; clear smooth boundary.
E2—27 to 51 inches; pale yellow (2.5Y 7/4) sand; single grained; loose; few fine roots; common streaks of uncoated sand grains; few small nodules of ironstone; very strongly acid; clear wavy boundary.
E3—51 to 57 inches; brownish yellow (10YR 6/6) fine sand; single grained; loose; few fine roots; common streaks of uncoated sand grains; very strongly acid; gradual wavy boundary.
Btv1—57 to 68 inches; yellowish brown (10YR 5/6) sandy loam; common medium prominent red (2.5YR 4/8) and common medium distinct strong brown (7.5YR 5/6) mottles; weak fine subangular blocky structure; very friable; few uncoated sand grains; 7 percent nodular plinthite; very strongly acid; gradual wavy boundary.
Btv2—68 to 80 inches; mottled light brownish gray (10YR 6/2), red (2.5YR 4/8), and strong brown (7.5YR 5/6) sandy clay loam; weak medium subangular blocky structure; friable; few uncoated sand grains; 10 percent nodular plinthite; very strongly acid.

Range in Characteristics

Thickness of the solum: 80 inches or more
Thickness of the sandy epipedon: 46 to 60 inches
Content of plinthite: 5 to 10 percent below a depth of 50 inches
Content of nodules of ironstone: 0 to 3 percent in the A horizon and the upper part of the E horizon
Reaction: Very strongly acid or strongly acid throughout the profile, except for the surface layer in limed areas

Ap horizon:
Thickness—4 to 8 inches
Color—hue of 10YR, value of 3 or 4, and chroma of 2

E horizon:
Thickness—47 to 50 inches
Color—hue of 2.5Y or 10YR, value of 5 to 7, and chroma of 4 to 6

Btv horizon:
Texture—sandy loam or sandy clay loam

Carnegie Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately slow

Parent material: Clayey marine sediments
Landscape position: Ridges and hillsides
Slope range: 2 to 8 percent
Classification: Clayey, kaolinitic, thermic Plinthic Kandiudults

Geographically Associated Soils

- Cowarts soils, which are in a fine-loamy family and have less than 5 percent plinthite in the subsoil
- Dothan and Tifton soils, which are in a fine-loamy family and have 5 percent or more plinthite below a depth of 28 inches
- Nankin soils, which have a thinner solum and have less than 5 percent plinthite in the subsoil

Typical Pedon

Carnegie sandy loam, 2 to 5 percent slopes, eroded, about 8.4 miles north on U.S. Highway 1 from the intersection with U.S. Highway 80 in Swainsboro, about 1.6 miles southeast on an unpaved road, 0.5 mile north on dirt road, about 1,700 feet east on a field road:

Apc—0 to 7 inches; brown (10YR 4/3) sandy loam; weak fine granular structure; very friable; many fine and few medium roots; 13 percent nodules of ironstone; strongly acid; clear smooth boundary.

Btc—7 to 20 inches; strong brown (7.5YR 5/8) sandy clay loam; weak medium subangular blocky structure; friable; common fine and few medium roots; 10 percent nodules of ironstone; moderately acid; gradual smooth boundary.

Btv1—20 to 35 inches; strong brown (7.5YR 5/8) sandy clay; common medium prominent red (2.5YR 4/8) and light yellowish brown (10YR 6/4) and few fine prominent white (10YR 8/1) mottles; moderate medium subangular blocky structure; firm; few fine roots; 7 percent nodular plinthite; few faint clay films on faces of peds; 5 percent nodules of ironstone; strongly acid; gradual wavy boundary.

Btv2—35 to 48 inches; mottled strong brown (7.5YR 5/8), red (2.5YR 4/8), light yellowish brown (10YR 6/4), and light gray (10YR 7/2) sandy clay; moderate medium angular and subangular blocky structure; firm; few fine roots; 15 percent nodular plinthite; common distinct clay films on faces of peds; 3 percent nodules of ironstone; strongly acid; gradual wavy boundary.

Btv3—48 to 60 inches; coarsely mottled light gray (10YR 7/2), dusky red (10R 3/3), brownish yellow (10YR 6/6), and strong brown (7.5YR 5/8) sandy clay; moderate medium angular and subangular blocky structure; firm; 5 percent nodular plinthite; common distinct clay films on faces of peds; strongly acid.

Range in Characteristics

Thickness of the solum: 60 inches or more
Content of plinthite: 5 to 15 percent below a depth of 20 to 26 inches
Content of nodules of ironstone: 5 to 13 percent in the A horizon and the upper part of the Bt horizon
Reaction: Very strongly acid or strongly acid throughout, except for the surface layer in limed areas

Apc horizon:
Thickness—6 to 7 inches
Color—hue of 10YR, value of 4, and chroma of 2 or 3

Bt horizon:
Color—hue of 7.5YR, value of 5, and chroma of 6 or 8; few to common mottles in shades of brown, red, and yellow in some pedons
Texture—sandy clay loam or sandy clay

Upper part of the Btv horizon:
color—hue of 7.5YR, value of 5, chroma of 8, and mottles in shades of red, yellow, and white; or mottled in shades of brown, red, yellow, and gray

Lower part of the Btv horizon:
Color—mottled in shades of gray, brown, and yellow

Centenary Series

Depth class: Very deep
Drainage class: Well drained or somewhat excessively drained
Permeability: Moderately rapid
Parent material: Sandy marine sediments
Depth to a seasonal high water table: 3.5 to 5.0 feet
Landscape position: Broad ridges and upland flats
Slope range: 0 to 3 percent
Classification: Sandy, siliceous, thermic Grossarenic Entic Alorthods

Geographically Associated Soils

- Albany soils, which have a Bt horizon below a depth of 40 inches and do not have a Bh horizon
- Chipley soils, which are moderately well drained and do not have a Bh horizon
- Pickney soils, which are in depressions and drainageways and are very poorly drained
- Ridgeland soils, which have a Bh horizon above a depth of 50 inches and are in slightly lower landscape positions

Typical Pedon

Centenary fine sand, in an area of Centenary-Ridgeland association, 0 to 3 percent slopes; 2.4 miles east on Georgia Highway 46 from the intersection with U.S. Highway 1, about 0.5 mile south on a county road, 0.75 mile southeast on road in a woods, and about 50 feet east of the road:

A1—0 to 5 inches; very dark grayish brown (10YR 3/2) fine sand; single grained; loose; many fine and medium roots; strongly acid; abrupt smooth boundary.

A2—5 to 10 inches; grayish brown (10YR 5/2) fine sand; single grained; loose; common fine roots; strongly acid; clear smooth boundary.

E1—10 to 36 inches; yellowish brown (10YR 5/4) fine sand; single grained; loose; few fine roots; very strongly acid; clear smooth boundary.

E2—36 to 50 inches; yellowish brown (10YR 5/8) fine sand; few fine prominent light brownish gray (10YR 6/2) mottles; single grained; loose; few fine roots; very strongly acid; gradual wavy boundary.

E3—50 to 60 inches; pale brown (10YR 6/3) fine sand; common medium faint light brownish gray (10YR 6/2) and light yellowish brown (10YR 6/4) mottles; single grained; loose; very strongly acid; gradual wavy boundary.

Bh1—60 to 68 inches; dark reddish brown (5YR 3/2) fine sand; single grained; loose; very strongly acid; gradual wavy boundary.

Bh2—68 to 80 inches; dark reddish brown (5YR 2.5/2) fine sand; single grained; loose; slightly brittle; organic coatings on sand grains; very strongly acid.

Range in Characteristics

Thickness of the solum: 80 inches or more
Depth to Bh horizon: 50 to 80 inches
Depth to mottles that have chroma of 2 or less: 29 to 38 inches
Reaction: Very strongly acid or strongly acid throughout, except for the surface layer in limed areas

A horizon:
Thickness—5 to 10 inches
Color—hue of 10YR, value of 3 to 5, and chroma of 1 or 2

Upper part of the E horizon:
Color—hue of 10YR, value of 5 or 6, and chroma of 4 to 8; few to common mottles in shades of brown and gray in some pedons

Lower part of the E horizon:
Color—hue of 10YR, value of 5 to 8, chroma of 1 to 3, and common mottles in shades of gray and brown
Texture—fine sand or loamy sand

Bh horizon:
Color—hue of 5YR to 10YR, value of 2 to 4, chroma of 1 or 2, and mottles in shades of brown in some pedons
Texture—fine sand or loamy sand

Chipley Series

Depth class: Very deep
Drainage class: Moderately well drained
Permeability: Rapid
Parent material: Sandy marine sediments
Depth to a seasonal high water table: 2.0 to 3.0 feet
Landscape position: Upland flats
Slope range: 0 to 3 percent
Classification: Thermic, coated Aquic Quartzipsamments

Geographically Associated Soils

- Albany soils, which are somewhat poorly drained, have a Bt horizon below a depth of 40 inches, and are in slightly lower landscape positions
- Blanton soils, which have a Bt horizon below a depth of 40 inches
- Bonifay soils, which are well drained, have a Bt horizon below a depth of 40 inches, have 5 percent or more plinthite in the subsoil, and are in higher landscape positions
- Centenary and Ridgeland soils, which have a Bh horizon
- Pelham soils, which are poorly drained, have a Bt horizon below a depth of 20 to 40 inches, and are in small drainageways
- Pickney soils, which are very poorly drained and are in depressions and drainageways

Typical Pedon

Chipley sand, in an area of Albany and Chipley soils, 0 to 3 percent slopes; about 1.8 miles northwest of the intersection of U.S. Highway 1 and Georgia Highway 192 on a paved county road, about 0.35 mile south of New Hope Primitive Baptist Church:

Ap—0 to 6 inches; very dark grayish brown (10YR 3/2) sand; single grained; loose; many fine roots; strongly acid; abrupt smooth boundary.

C1—6 to 16 inches; yellowish brown (10YR 5/4) sand; single grained; loose; common fine roots; strongly acid; gradual smooth boundary.

C2—16 to 26 inches; light yellowish brown (10YR 6/4) sand; few fine prominent strong brown (7.5YR 5/6)

and common medium distinct yellowish brown (10YR 5/6) mottles; single grained; loose; few fine roots; strongly acid; gradual wavy boundary.

C3—26 to 42 inches; pale brown (10YR 6/3) sand; few fine distinct brownish yellow (10YR 6/6), light gray (2.5Y 7/2), and yellowish brown (10YR 5/6) mottles; single grained; loose; few fine roots in the upper part; very strongly acid; gradual wavy boundary.

Cg1—42 to 66 inches; light gray (10YR 7/2) sand; common medium distinct light yellowish brown (10YR 6/4) and common fine faint pale brown (10YR 6/3) mottles; single grained; loose; very strongly acid; gradual wavy boundary.

Cg2—66 to 80 inches; light brownish gray (10YR 6/2) sand; common medium distinct light yellowish brown (10YR 6/4) and common fine distinct yellowish brown (10YR 5/6) mottles; single grained; loose; very strongly acid.

Range in Characteristics

Thickness of the sand: 80 inches or more
Depth to mottles that have chroma of 2 or less: 25 to 40 inches
Reaction: Very strongly acid or strongly acid throughout, except for the surface layer in limed areas

A horizon:
Thickness—5 to 10 inches
Color—hue of 10YR, value of 2 to 4, and chroma of 1 or 2

C horizon:
Color—hue of 10YR, value of 5 to 7, and chroma of 3 to 6; or hue of 2.5Y, value of 6 to 8, chroma of 4, and few to common mottles in shades of brown, yellow, and gray

Cg horizon:
Color—hue of 10YR, value of 5 to 7, chroma of 1 or 2, and few to common mottles in shades of brown and yellow; or mottled in shades of gray, brown, and yellow

Clarendon Series

Depth class: Very deep
Drainage class: Moderately well drained
Permeability: Moderately slow
Parent material: Loamy marine sediments
Depth to a seasonal high water table: 2.0 to 3.0 feet
Landscape position: Upland flats
Slope range: 0 to 2 percent
Classification: Fine-loamy, siliceous, thermic Plinthaquic Paleudults

Geographically Associated Soils

- Dothan and Tifton soils, which are well drained and are in higher landscape positions
- Ocilla soils, which are somewhat poorly drained, are arenic, and do not contain 5 percent or more plinthite
- Stilson soils, which are arenic

Typical Pedon

Clarendon loamy sand, 0 to 2 percent slopes, 0.6 mile south on U.S. Highway 1 from the intersection with U.S. Highway 80 in Swainsboro, about 9.0 miles southeast on Lambbridge Road, about 75 feet east of the road:

A—0 to 7 inches; dark grayish brown (10YR 4/2) loamy sand; weak fine granular structure; very friable; many fine and few medium and large roots; moderately acid; clear smooth boundary.

E—7 to 13 inches; light yellowish brown (10YR 6/4) loamy sand; weak fine granular structure; very friable; common fine roots; strongly acid; clear wavy boundary.

BE—13 to 21 inches; light yellowish brown (10YR 6/4) sandy loam; weak fine subangular blocky structure; friable; few fine roots; strongly acid; gradual smooth boundary.

Bt—21 to 28 inches; yellowish brown (10YR 5/6) sandy clay loam; common fine prominent strong brown (7.5YR 5/8) mottles; weak medium subangular blocky structure; friable; few fine roots; strongly acid; gradual wavy boundary.

Btv1—28 to 39 inches; mottled yellowish brown (10YR 5/6), strong brown (7.5YR 5/8), light gray (10YR 7/1), and yellowish red (5YR 5/6) sandy clay loam; moderate medium subangular blocky structure; friable; 7 percent nodular plinthite; strongly acid; gradual wavy boundary.

Btv2—39 to 48 inches; mottled yellowish brown (10YR 5/6), light gray (10YR 7/1), strong brown (7.5YR 5/8), and red (2.5YR 4/8) sandy clay loam; moderate medium subangular blocky structure; friable; few faint clay films on faces of peds; 12 percent nodular plinthite; strongly acid; gradual wavy boundary.

Btgv—48 to 63 inches; light gray (10YR 7/2) sandy clay loam; common medium prominent yellowish brown (10YR 5/6), strong brown (7.5YR 5/8), and red (2.5YR 4/8) mottles; moderate medium subangular blocky structure; friable; few faint clay films on faces of peds; 12 percent nodular plinthite; very strongly acid.

Range in Characteristics

Thickness of the solum: 63 inches or more
Depth to mottles that have chroma of 2 or less: 19 to 30 inches
Content of plinthite: 5 to 15 percent below a depth of 24 inches
Content of nodules of ironstone: Few to common in the A and E horizons and the upper part of the Bt horizon in some pedons
Reaction: Very strongly acid or strongly acid throughout, except for the surface layer in limed areas

A horizon:
Thickness—7 to 9 inches
Color—hue of 2.5Y or 10YR, value of 4 or 5, and chroma of 2

E horizon:
Color—hue of 10YR, value of 6, and chroma of 3 or 4

Bt horizon:
Color—hue of 10YR, value of 5 or 6, chroma of 6, and few to common mottles in shades of yellow, brown, red, and gray in some pedons
Texture—sandy loam or sandy clay loam

Btv horizon:
Color—hue of 10YR, value of 5 or 6, chroma of 3 to 6, and common to many mottles in shades of yellow, brown, red, and gray; or mottled in shades of gray, brown, and red

Btvg horizon:
Color—hue of 10YR, value of 5 or 6, chroma of 2 or less, and mottles in shades of yellow, brown, or red

Cowarts Series

Depth class: Very deep
Drainage class: Well drained and moderately well drained
Permeability: Moderate in the solum, moderately slow or slow in the substratum
Parent material: Loamy marine sediments
Landscape position: Ridges and hillsides
Slope range: 2 to 15 percent
Classification: Fine-loamy, siliceous, thermic Typic Kanhapludults

Geographically Associated Soils

- Ailey soils, which are arenic
- Carnegie soils, which are in a clayey family and have a subsoil that contains 5 percent or more plinthite
- Dothan and Tifton soils, which have a thicker solum and have 5 percent or more plinthite in the lower part of the subsoil
- Rembert soils, which are poorly drained, are in a clayey family, and are in depressions
- Nankin soils, which have a thicker solum and are in a clayey family
- Susquehanna soils, which are somehat poorly drained, are in a fine family, and have montmorillonitic mineralogy

Typical Pedon

Cowarts loamy sand, 2 to 5 percent slopes, 9.4 miles north on U.S. Highway 1 from the intersection with U.S. Highway 80 in Swainsboro; 2.6 miles west on a paved county road, about 1.8 miles north on a paved county road, in a road cut:

A—0 to 5 inches; brown (10YR 4/3) loamy sand; weak fine granular structure; very friable; common fine and medium roots; few rounded quartz pebbles; strongly acid; abrupt smooth boundary.
Bt1—5 to 11 inches; yellowish brown (10YR 5/8) sandy loam; weak fine granular structure; very friable; few fine and medium roots; few rounded quartz pebbles; strongly acid; clear smooth boundary.
Bt2—11 to 21 inches; yellowish brown (10YR 5/8) sandy clay loam; common medium prominent red (2.5YR 4/8) and strong brown (7.5YR 5/6) mottles; weak fine subangular blocky structure; friable; few fine roots; 3 percent nodular plinthite; few to common distinct clay films on faces of peds; strongly acid; clear wavy boundary.
BC—21 to 27 inches; yellowish brown (10YR 5/6) sandy clay; common medium prominent red (2.5YR 4/8) and light gray (10YR 7/1) and common fine faint brownish yellow (10YR 6/6) mottles; moderate medium subangular blocky structure; firm; few fine roots; very strongly acid; gradual wavy boundary.
2Cd—27 to 60 inches; mottled brownish yellow (10YR 6/6), red (2.5YR 4/8), light gray (10YR 7/1), and dusky red (10R 3/2) coarse sandy loam that has pockets of finer material; massive; firm and compact; very strongly acid.

Range in Characteristics

Thickness of the solum: 20 to 40 inches
Content of plinthite: 0 to 4 percent in the Bt horizon
Content of nodules of ironstone: 0 to 10 percent in the A horizon and the upper part of the Bt horizon
Reaction: Very strongly acid or strongly acid throughout, except for the surface layer in limed areas

Distinctive features: The Cd horizon is compact in place and root-restrictive.

A horizon:
Thickness—4 to 6 inches
Color—hue of 10YR, value of 4, and chroma of 2 or 3
Texture—loamy sand or sandy loam

Upper part of the Bt horizon:
Texture—sandy loam or sandy clay loam

Lower part of the Bt horizon:
Color—hue of 7.5YR or 10YR, value of 5, chroma of 8, and few to many mottles in shades of red and brown
Texture—sandy clay loam or sandy clay

BC horizon, if it occurs:
Texture—sandy clay loam or sandy clay

Cd horizon:
Color—hue of 10YR to 5YR, value of 5 or 6, chroma of 4 to 8, and mottles in shades of red, yellow, brown, and gray; or mottled in shades of red, yellow, brown, and gray
Texture—coarse sandy loam, sandy loam, or sandy clay loam

Dothan Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate in the upper part of the subsoil, moderately slow in the lower part
Parent material: Loamy marine sediments
Seasonal high water table: Perched at a depth of 3.0 to 5.0 feet
Landscape position: Ridges and hillsides
Slope range: 0 to 8 percent
Classification: Fine-loamy, siliceous, thermic Plinthic Kandiudults

Geographically Associated Soils

- Carnegie soils, which are in a clayey family and have 5 percent or more plinthite at a depth of 20 to 26 inches
- Clarendon soils, which are moderately well drained and are in slightly lower landscape positions
- Cowarts soils, which have a thinner solum and do not have 5 percent or more plinthite in the subsoil
- Fuquay soils, which are arenic
- Nankin soils, which are in a clayey family and do not have 5 percent or more plinthite in the subsoil
- Rembert soils, which are poorly drained, are in a clayey family, and are in depressions
- Stilson soils, which are moderately well drained and are arenic
- Susquehanna soils, which are somehat poorly drained, are in a fine family, and have montmorillonitic mineralogy
- Tifton soils, which contain 5 percent or more nodules of ironstone in the surface layer and in the upper part of the subsoil

Typical Pedon

Dothan loamy sand, 2 to 5 percent slopes, 6.0 miles south on U.S. Highway 1 from the intersection with U.S. Highway 80 in Swainsboro, about 250 feet west of the highway:

A—0 to 7 inches; brown (10YR 5/3) loamy sand; weak fine granular structure; very friable; common fine and few medium roots; few small nodules of ironstone; strongly acid; clear smooth boundary.

E—7 to 13 inches; light yellowish brown (2.5Y 6/4) loamy sand; weak fine granular structure; very friable; few fine and medium roots; few nodules of ironstone; strongly acid; clear smooth boundary.

Bt1—13 to 18 inches; brownish yellow (10YR 6/6) sandy loam; weak fine granular structure; very friable; few fine roots; strongly acid; gradual wavy boundary.

Bt2—18 to 42 inches; yellowish brown (10YR 5/6) sandy clay loam; weak medium subangular blocky structure; friable; few fine roots; few faint clay films on faces of peds; strongly acid; gradual wavy boundary.

Bt3—42 to 46 inches; yellowish brown (10YR 5/6) sandy clay loam; common fine distinct strong brown (7.5YR 5/6) mottles; moderate medium subangular blocky structure; friable; few faint clay films on faces of peds; 3 percent plinthite; strongly acid; gradual wavy boundary.

Btv1—46 to 56 inches; yellowish brown (10YR 5/6) sandy clay loam; common medium prominent yellowish red (5YR 4/6) and common medium distinct strong brown (7.5YR 5/6) mottles; moderate medium subangular blocky structure; friable; 6 percent plinthite; few distinct clay films on faces of peds; strongly acid; gradual wavy boundary.

Btv2—56 to 63 inches; yellowish brown (10YR 5/8) sandy clay loam; common medium prominent strong brown (7.5YR 5/6) and yellowish red (5YR 4/6), few fine prominent light brownish gray (10YR 6/2), and common medium distinct brownish yellow (10YR 6/6) mottles; moderate medium subangular blocky structure; friable; 12 percent plinthite; few distinct clay films on faces of peds; strongly acid.

Range in Characteristics

Thickness of the solum: 60 inches or more
Content of plinthite: 5 to 15 percent below a depth of 29 inches
Content of nodules of ironstone: 0 to 5 percent in the A, E, and upper part of the Bt horizons
Reaction: Strongly acid or moderately acid throughout, except for the surface layer in limed areas

A horizon:
Thickness—6 to 9 inches
Color—hue of 10YR, value of 3 to 5, and chroma of 2 or 3
Texture—loamy sand or sandy loam

E horizon, if it occurs:
Color—hue of 2.5Y or 10YR, value of 5 or 6, and chroma of 4 or 6

Upper part of the Bt horizon:
Color—hue of 2.5Y or 10YR, value of 5 or 6, and chroma of 4 to 8
Texture—sandy loam or sandy clay loam

Lower part of the Bt horizon:
Color—hue of 10YR, value of 5 or 6, chroma of 4 to 8, and few to common mottles in shades of red and brown

Btv horizon:
Color—hue of 7.5YR or 10YR, value of 5, chroma of 6 or 8, and common to many mottles in shades of brown, red, yellow, and gray; or mottled in shades of brown, red, yellow, and gray

Fuquay Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Rapid in the sandy epipedon, moderate in the upper part of the subsoil, slow in the lower part of the subsoil
Parent material: Sandy and loamy marine sediments
Seasonal high water table: Perched at a depth of 4.0 to 6.0 feet
Landscape position: Ridges and hillsides
Slope range: 1 to 8 percent
Classification: Loamy, siliceous, thermic Arenic Plinthic Kandiudults

Geographically Associated Soils

- Ailey soils, which have horizons that have dense and brittle properties and have less than 5 percent plinthite in the subsoil
- Blanton soils, which are somewhat excessively drained or moderately well drained, are grossarenic, and do not have 5 percent or more plinthite in the subsoil
- Bonifay soils, which are grossarenic
- Dothan and Tifton soils, which have sandy epipedons less than 20 inches thick
- Lakeland soils, which are sandy throughout the profile
- Nankin soils, which have a sandy epipedon less than 20 inches thick
- Stilson soils, which are moderately well drained

Typical Pedon

Fuquay loamy sand, 1 to 5 percent slopes, 3.9 miles west on U.S. Highway 80 from the intersection with U.S. Highway 1, 150 feet south of the highway:

Ap—0 to 9 inches; grayish brown (10YR 5/2) loamy sand; weak fine granular structure; very friable; many fine roots; strongly acid; clear smooth boundary.
E—9 to 27 inches; yellowish brown (10YR 5/4) loamy sand; weak fine granular structure; very friable; common fine roots; strongly acid; clear smooth boundary.
Bt1—27 to 37 inches; brownish yellow (10YR 6/6) sandy loam; weak fine subangular blocky structure; friable; few fine roots; strongly acid; gradual wavy boundary.
Bt2—37 to 47 inches; yellowish brown (10YR 5/6) sandy clay loam; few fine and medium distinct strong brown (7.5YR 5/6) mottles; weak medium subangular blocky structure; friable; few fine roots; strongly acid; gradual wavy boundary.
Btv1—47 to 58 inches; yellowish brown (10YR 5/6) sandy clay loam; common medium prominent red (2.5YR 4/8) and common medium distinct strong brown (7.5YR 5/6) mottles; weak medium subangular blocky structure; friable; 10 percent nodular plinthite; very strongly acid; gradual wavy boundary.
Btv2—58 to 63 inches; yellowish brown (10YR 5/6) sandy clay loam; common medium prominent red (2.5YR 4/8), common medium distinct strong brown (7.5YR 5/6), and common fine distinct very pale brown (10YR 7/3) mottles; weak medium subangular blocky structure; friable; 7 percent nodular plinthite; very strongly acid.

Range in Characteristics

Thickness of the solum: 60 inches or more
Thickness of the sandy epipedon: 20 to 40 inches
Content of plinthite: 5 to 12 percent below a depth of 41 inches

Content of nodules of ironstone: 0 to 5 percent in the A horizon
Reaction: Very strongly acid or strongly acid throughout, except for the surface layer in limed areas

Ap horizon:
Thickness—8 to 10 inches
Color—hue of 10YR, value of 4 or 5, and chroma of 2 or 3

E horizon:
Color—hue of 10YR, value of 5 to 7, and chroma of 4 to 6

BE horizon, if it occurs:
Color—hue of 10YR, value of 6, and chroma of 4 to 6
Texture—loamy sand or sandy loam

Upper part of the Bt horizon:
Color—hue of 7.5YR or 10YR, value of 5 or 6, chroma of 4 to 6, and few to common mottles in shades of brown in some pedons

Lower part of the Bt horizon:
Color—hue of 7.5YR or 10YR, value of 5, chroma of 6 to 8, and few or common mottles in shades of brown and red; or mottled in shades of brown, red, and yellow

Btv horizon:
Color—hue of 7.5YR or 10YR, value of 5, chroma of 6 to 8, and common or many mottles in shades of red, yellow, brown, and gray; or mottled in shades of red, yellow, brown, and gray

Kershaw Series

Depth class: Very deep
Drainage class: Excessively drained
Permeability: Very rapid
Parent material: Sandy marine deposits
Landscape position: Undulating ridges and hillsides
Slope range: 2 to 12 percent
Classification: Thermic, uncoated Typic Quartzipsamments

Geographically Associated Soils

- Blanton soils, which have a Bt horizon below a depth of 40 inches
- Kureb soils, which have an E horizon and a C/Bh horizon
- Lakeland soils, which have coated sand grains

Typical Pedon

Kershaw coarse sand, 2 to 12 percent slopes, 0.4 mile north of Canoochee Creek on Georgia Highway 192, about 100 feet northwest of the highway:

A—0 to 3 inches; dark grayish brown (10YR 4/2) coarse sand; single grained; loose; common fine roots; very strongly acid; abrupt wavy boundary.
C1—3 to 7 inches; yellowish brown (10YR 5/6) coarse sand; single grained; loose; common fine roots; very strongly acid; gradual wavy boundary.
C2—7 to 58 inches; brownish yellow (10YR 6/6) coarse sand; single grained; loose; few fine roots in the upper part; very strongly acid; gradual wavy boundary.
C3—58 to 85 inches; yellow (10YR 7/6) coarse sand; single grained; loose; few coated sand grains in the lower part; very strongly acid.

Range in Characteristics

Thickness of the sand: 80 inches or more

A horizon:
Thickness—3 to 5 inches

C horizon:
Color—hue of 10YR, value of 5 to 7, and chroma of 4 or 6

Kinston Series

Depth class: Very deep
Drainage class: Poorly drained
Permeability: Moderate
Parent material: Stratified loamy alluvial sediments
Depth to a seasonal high water table: At the surface to a depth of 1 foot
Landscape position: Flood plains
Slope range: 0 to 2 percent
Classification: Fine-loamy, siliceous, acid, thermic Typic Fluvaquents

Geographically Associated Soils

- Ocilla soils, which are somewhat poorly drained, have a Bt horizon, and are on toe slopes adjacent to drainageways
- Pelham soils, which have a loamy Bt horizon and are in small drainageways and on broad flats
- Bibb soils, which are in a coarse-loamy family

Typical Pedon

Kinston loam, in an area of Kinston and Bibb soils, frequently flooded; 1.2 miles east on Georgia Highway

192 from the intersection with U.S. Highway 1, about 80 feet north of the highway

A—0 to 6 inches; dark grayish brown (10YR 4/2) loam; weak fine granular structure; very friable; many fine and medium roots; very strongly acid; abrupt smooth boundary.

Cg1—6 to 23 inches; gray (10YR 5/1) sandy loam; common fine prominent yellowish brown (10YR 5/6) and brownish yellow (10YR 6/6) mottles; weak fine granular structure; very friable; common fine and few medium roots; very strongly acid; gradual wavy boundary.

Cg2—23 to 48 inches; gray (10YR 5/1) sandy clay loam; common medium prominent strong brown (7.5YR 5/6) and yellowish red (5YR 5/8) and common medium distinct pale brown (10YR 6/3) mottles; massive; friable; few fine roots; very strongly acid; clear smooth boundary.

Cg3—48 to 63 inches; grayish brown (10YR 5/2) sandy loam; few pockets of sandy clay loam; common medium distinct yellowish brown (10YR 5/4) and pale brown (10YR 6/3) mottles; weak fine granular structure; friable; very strongly acid.

Range in Characteristics

Reaction: Very strongly acid or strongly acid throughout the profile

A horizon:
Thickness—4 to 6 inches
Color—hue of 10YR, value of 3 to 5, and chroma of 2 or 3

Cg horizon:
Color—hue of 10YR, value of 4 to 6, chroma of 1 or 2, and few to common mottles in shades of brown, yellow, and red
Texture—sandy loam, sandy clay loam, or clay loam

Kureb Series

Depth class: Very deep
Drainage class: Excessively drained
Permeability: Rapid
Parent material: Marine and aeolian deposits of sand
Landscape position: Ridges and hillsides
Slope range: 5 to 12 percent
Classification: Thermic, uncoated Spodic Quartzipsamments

Geographically Associated Soils

- Bonifay soils, which have a Bt horizon within a depth of 60 inches
- Kershaw and Lakeland soils, which do not have an E or C/Bh horizon

Typical Pedon

Kureb sand, 5 to 12 percent slopes, 0.2 mile north of the Ohoopee River on Georgia Highway 297, about 125 feet west of the highway:

A—0 to 3 inches; very dark grayish brown (10YR 3/2) sand; single grained; loose; very friable; organic coated sand grains mixed with uncoated sand grains, which provide a salt and pepper appearance; common fine and medium roots; very strongly acid; clear smooth boundary.

E—3 to 25 inches; grayish brown (10YR 5/2) sand; single grained; loose; common fine roots; very strongly acid; clear smooth boundary.

C/Bh—25 to 34 inches; yellowish brown (10YR 5/6) sand (C); common medium prominent reddish brown (5YR 4/4) and common medium distinct strong brown (7.5YR 5/6) mottles; single grained; loose; reddish brown (5YR 4/4) organic coatings (Bh); common to many uncoated sand grains; very strongly acid; gradual wavy boundary.

C1—34 to 51 inches; yellowish brown (10YR 5/6) coarse sand; single grained; loose; very strongly acid; gradual wavy boundary.

C2—51 to 85 inches; brownish yellow (10YR 6/6) coarse sand; common fine distinct very pale brown (10YR 7/4) mottles; single grained; loose; very strongly acid.

Range in Characteristics

Thickness of the sand: 80 inches or more
Reaction: Very strongly acid or strongly acid throughout the profile

A horizon:
Thickness—3 to 5 inches
Color—hue of 10YR, value of 3 to 5, and chroma of 1 or 2

E horizon:
Color—hue of 10YR, value of 5 to 7, and chroma of 1 to 3

C part of the C/Bh horizon:
Color—hue of 10YR, value of 5, and chroma of 6 or 8

Bh part of the C/Bh horizon:
Color—hue of 5YR or 7.5YR, value of 4 or 5, and chroma of 2 to 4

C horizon:
Color—hue of 10YR, value of 5 or 6, chroma of 6

or 8, and few to common mottles in shades of brown and yellow
Texture—sand or coarse sand

Lakeland Series

Depth class: Very deep
Drainage class: Excessively drained
Permeability: Rapid
Landscape position: Broad ridges and hillsides
Slope range: 0 to 8 percent
Classification: Thermic, coated Typic Quartzipsamments

Geographically Associated Soils

- Blanton and Bonifay soils, which have a Bt horizon below a depth of 40 inches
- Fuquay soils, which have a Bt horizon below a depth of 20 inches
- Kershaw soils, which have uncoated sand grains
- Kureb soils, which have an E horizon and a C/Bh horizon

Typical Pedon

Lakeland sand, 0 to 8 percent slopes, 0.7 mile north of Canoochee Creek on Georgia Highway 192, about 75 feet west of the highway:

A—0 to 4 inches; very dark grayish brown (10YR 3/2) sand; single grained; loose; many fine roots; very strongly acid; clear smooth boundary.
C1—4 to 21 inches; yellowish brown (10YR 5/4) sand; single grained; loose; few fine roots; very strongly acid; gradual wavy boundary.
C2—21 to 63 inches; brownish yellow (10YR 6/6) sand; single grained; loose; few uncoated sand grains; very strongly acid; gradual wavy boundary.
C3—63 to 80 inches; very pale brown (10YR 7/4) sand; few fine distinct yellow (10YR 7/6) mottles; single grained; loose; many uncoated sand grains; very strongly acid.

Range in Characteristics

Thickness of the sand: 80 inches or more
Reaction: Very strongly acid or strongly acid throughout, except for the surface layer in limed areas

A horizon:
Thickness—3 to 8 inches
Color—hue of 10YR, value of 3 or 4, and chroma of 2 or 3

C horizon:
Color—hue of 10YR, value of 5 to 7, chroma of 3 to 8, and few mottles in shades of brown and yellow below a depth of 50 inches

Meggett Series

Depth class: Very deep
Drainage class: Poorly drained
Permeability: Slow
Parent material: Clayey alluvial sediments
Depth to a seasonal high water table: At the surface to a depth of 1.0 foot
Landscape position: Broad flood plains
Slope range: 0 to 2 percent
Classification: Fine, mixed, thermic Typic Albaqualfs

Geographically Associated Soils

- Bladen soils, which have a base saturation of less than 35 percent at a depth of 50 inches below the top of the argillic horizon
- Wahee soils, which are somewhat poorly drained

Typical Pedon

Meggett loam, frequently flooded, about 0.2 mile south of the Ogeechee River on Georgia Highway 56, about 175 yards east along a road in a woods:

A—0 to 4 inches; dark grayish brown (10YR 4/2) loam; weak fine granular structure; very friable; many fine and medium roots; slightly acid; abrupt smooth boundary.
Btg1—4 to 26 inches; gray (10YR 5/1) sandy clay; common medium prominent yellowish brown (10YR 5/6) and strong brown (7.5YR 5/8) mottles; moderate medium subangular blocky structure; firm; common fine and few medium roots; few faint clay films on faces of peds; moderately acid; gradual wavy boundary.
Btg2—26 to 40 inches; gray (10YR 5/1) clay; common medium prominent yellowish brown (10YR 5/6) and strong brown (7.5YR 5/8) mottles; moderate medium subangular blocky structure; firm; few fine roots; common distinct clay films on faces of peds; neutral; gradual wavy boundary.
Btg3—40 to 52 inches; gray (5Y 6/1) clay; common medium prominent yellowish brown (10YR 5/6) and strong brown (7.5YR 5/6) and few medium prominent brown (7.5YR 4/4) mottles; moderate medium subangular blocky structure; firm; few fine roots; common distinct clay films on faces of peds; common medium accumulations of calcium carbonate; slightly alkaline; gradual wavy boundary.
BCg—52 to 63 inches; gray (5Y 6/1) sandy clay loam; common medium prominent strong brown (7.5YR 5/6) and brown (7.5YR 4/4) mottles; weak medium

subangular blocky structure; friable; common medium accumulations of calcium carbonate; slightly alkaline.

Range in Characteristics

Thickness of the solum: 60 inches or more
Reaction: Slightly acid or moderately acid in the A horizon, moderately acid to slightly alkaline in the upper part of the Btg horizon, and slightly acid to moderately alkaline in the lower part of the Btg horizon and in the BCg horizon
Distinctive feature: Calcium carbonate accumulations in the lower part of the solum

A horizon:
Thickness—4 to 6 inches
Color—hue of 10YR, value of 4, and chroma of 1 or 2

Btg horizon:
Color—hue of 10YR to 5Y, value of 4 to 6, chroma of 1 or 2, and few to many mottles in shades of brown and yellow
Texture—sandy clay or clay

BCg horizon:
Color—hue of 10YR to 5Y, value of 4 to 6, chroma of 1 or 2, and few to many mottles in shades of brown and yellow

Nankin Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately slow
Parent material: Loamy and clayey marine sediments
Landscape position: Ridges and hillsides
Slope range: 2 to 8 percent
Classification: Clayey, kaolinitic, thermic Typic Kanhapludults

Geographically Associated Soils

- Ailey soils, which are arenic
- Carnegie soils, which have 5 percent or more plinthite in the subsoil and a solum more than 50 inches thick
- Cowarts soils, which are in a fine-loamy family and have a thinner solum
- Dothan and Tifton soils, which are in a fine-loamy family and have 5 percent or more plinthite in the lower part of the subsoil
- Fuquay soils, which are arenic
- Rembert soils, which are poorly drained and are in depressions
- Susquehanna soils, which are somewhat poorly drained and have montmorillonitic mineralogy

Typical Pedon

Nankin loamy sand, 2 to 5 percent slopes, about 6.5 miles north on a paved county road from the intersection with the Canoochee-Garfield Road in Canoochee, about 125 feet east of the road:

Ap—0 to 7 inches; brown (10YR 4/3) loamy sand; weak fine granular structure; very friable; many fine roots; few medium rounded nodules of ironstone; few small quartz pebbles; moderately acid; clear smooth boundary.
Bt1—7 to 13 inches; strong brown (7.5YR 5/6) sandy clay loam; weak fine subangular blocky structure; friable; many fine and few medium roots; few medium rounded nodules of ironstone; few small pores; strongly acid; clear wavy boundary.
Bt2—13 to 23 inches; strong brown (7.5YR 5/6) sandy clay; few fine prominent red (2.5YR 5/8) and light yellowish brown (10YR 6/4) mottles; moderate medium subangular blocky structure; friable; common fine roots; few medium rounded nodules of ironstone; few small pores; few faint clay films on faces of peds; strongly acid; gradual wavy boundary.
Bt3—23 to 33 inches; strong brown (7.5YR 5/6) sandy clay; common medium prominent red (2.5YR 5/8), light yellowish brown (10YR 6/4), and very pale brown (10YR 7/3) and common medium distinct brownish yellow (10YR 6/6) mottles; moderate medium subangular blocky structure; firm; few fine roots; few distinct clay films on faces of peds; strongly acid; gradual wavy boundary.
Bt4—33 to 46 inches; mottled red (10R 4/8), light gray (10YR 7/2), and strong brown (7.5YR 5/8) sandy clay; moderate medium subangular blocky structure; firm; few fine roots; few distinct clay films on faces of peds; very strongly acid; gradual wavy boundary.
BC—46 to 57 inches; mottled red (2.5YR 5/8), light gray (10YR 7/2), strong brown (7.5YR 5/8), and light yellowish brown (10YR 6/4) sandy clay loam; weak medium subangular blocky structure; friable; very strongly acid; gradual wavy boundary.
C—57 to 63 inches; mottled red (2.5YR 4/8), light gray (10YR 7/2), strong brown (7.5YR 5/8), and light yellowish brown (10YR 6/4) sandy loam; massive; friable; very strongly acid.

Range in Characteristics

Thickness of the solum: 40 to 60 inches
Content of nodules of ironstone: Few to common in the A horizon and the upper part of the Bt horizon

Reaction: Very strongly acid or strongly acid throughout, except where limed

A horizon:
Thickness—5 to 9 inches
Color—hue of 10YR, value of 3 or 4, and chroma of 2 or 3
Texture—loamy sand or sandy loam

BE horizon, if it occurs:
Color—hue of 10YR, value of 5, and chroma of 4 to 6

Upper part of the Bt horizon:
Color—hue of 10YR or 7.5YR, value of 4 to 6, chroma of 6, and few or common mottles in shades of red and brown in some pedons
Texture—sandy clay loam or sandy clay

Lower part of the Bt horizon:
Color—mottled in shades of red, gray, and brown

BC horizon:
Color—mottled in shades of red, gray, and brown

C horizon:
Color—mottled in shades of red, gray, and brown

Ocilla Series

Depth class: Very deep
Drainage class: Somewhat poorly drained
Permeability: Rapid in the sandy epipedon, moderate in the subsoil
Parent material: Sandy and loamy marine sediments
Depth to a seasonal high water table: 1.0 to 2.5 feet
Landscape position: Broad upland flats and toe slopes
Slope range: 0 to 2 percent
Classification: Loamy, siliceous, thermic Aquic Arenic Paleudults

Geographically Associated Soils

- Albany soils, which are grossarenic
- Bibb and Kinston soils, which are poorly drained, do not have a Bt horizon, and are on flood plains
- Blanton soils, which are grossarenic and are somewhat excessively drained or are moderately well drained
- Clarendon and Stilson soils, which are moderately well drained and have more than 5 percent plinthite in the subsoil
- Pelham soils, which are poorly drained and are in lower landscape positions

Typical Pedon

Ocilla loamy sand, 0 to 2 percent slopes, 1.2 miles east on Georgia Highway 192 from the intersection with U. S. Highway 1, about 450 yards south of the highway:

A1—0 to 6 inches; very dark grayish brown (10YR 3/2) loamy sand; weak fine granular structure; very friable; many fine and common medium roots; strongly acid; clear smooth boundary.

A2—6 to 10 inches; dark grayish brown (10YR 4/2) loamy sand; weak fine granular structure; very friable; common fine and few medium roots; strongly acid; abrupt smooth boundary.

E1—10 to 22 inches; light yellowish brown (10YR 6/4) loamy sand; weak fine granular structure; very friable; few fine roots; strongly acid; clear smooth boundary.

E2—22 to 28 inches; very pale brown (10YR 7/4) loamy sand; weak fine granular structure; very friable; few fine roots; strongly acid; clear smooth boundary.

Bt1—28 to 33 inches; light yellowish brown (10YR 6/4) sandy loam; common medium distinct yellowish brown (10YR 5/6), common fine distinct light gray (10YR 7/2), common medium faint pale brown (10YR 6/3) mottles; weak fine subangular blocky structure; friable; few fine roots; strongly acid; gradual smooth boundary.

Bt2—33 to 42 inches; light yellowish brown (10YR 6/4) sandy clay loam; common medium prominent red (2.5YR 5/6) and common medium distinct yellowish brown (10YR 5/6) and light gray (10YR 7/2) mottles; weak medium subangular blocky structure; friable; few fine roots; sand grains coated and bridged with clay; very strongly acid; gradual wavy boundary.

Btg—42 to 63 inches; light brownish gray (10YR 6/2) sandy clay loam; common medium prominent red (2.5YR 5/6) and yellowish red (5YR 5/8) and common medium distinct yellowish brown (10YR 5/6) mottles; weak medium subangular blocky structure; friable; sand grains coated and bridged with clay; very strongly acid.

Range in Characteristics

Thickness of the solum: 60 inches or more
Thickness of the sandy epipedon: 20 to 40 inches
Depth to mottles that have chroma of 2 or less: 23 to 30 inches
Content of plinthite: 0 to 3 percent in the subsoil of some pedons
Content of nodules of ironstone: Few in the A and E horizons of some pedons
Reaction: Very strongly acid or strongly acid throughout, except for the surface layer in limed areas

A horizon:
Thickness—7 to 10 inches
Color—hue of 10YR, value of 3 or 4, and chroma of 1 or 2

E horizon:
Color—hue of 2.5Y or 10YR, value of 5 to 7, and chroma of 3 or 4

Bt horizon:
Color—hue of 10YR, value of 5 to 7, chroma of 3 to 6, and few to common mottles in shades of brown, gray, red, and yellow
Texture—sandy loam or sandy clay loam

Btg horizon:
Color—hue of 10YR, value of 5 to 7, chroma of 1 or 2, and common to many mottles in shades of red and brown
Texture—sandy loam or sandy clay loam

Pelham Series

Depth class: Very deep
Drainage class: Poorly drained
Permeability: Rapid in the sandy epipedon, moderate in the subsoil
Parent material: Sandy and loamy marine sediments
Depth to a seasonal high water table: At the surface to a depth of 1.0 foot
Landscape position: Broad flats, depressions, and small drainageways
Slope range: 0 to 2 percent
Classification: Loamy, siliceous, thermic Arenic Paleaquults

Geographically Associated Soils

- Albany soils, which are somewhat poorly drained, have a Bt horizon below a depth of 40 inches, and are in higher landscape positions
- Bibb and Kinston soils, which do not have a Bt horizon and are on flood plains
- Chipley soils, which are moderately well drained, are sandy throughout, and are in higher landscape positions
- Ocilla soils, which are somewhat poorly drained and are in higher landscape positions

Typical Pedon

Pelham loamy sand, 0 to 2 percent slopes, occasionally flooded, 1.2 miles north of Canoochee Creek on Georgia Highway 192, about 150 feet east of the highway:

A—0 to 6 inches; very dark gray (10YR 3/1) loamy sand; weak fine granular structure; very friable; many fine and common medium roots; strongly acid; clear smooth boundary.

E—6 to 31 inches; dark grayish brown (10YR 4/2) loamy sand; weak fine granular structure; very friable; common fine and few medium roots; strongly acid; clear wavy boundary.

Btg1—31 to 38 inches; grayish brown (10YR 5/2) sandy loam; weak fine subangular blocky structure; friable; common fine roots; very strongly acid; gradual smooth boundary.

Btg2—38 to 52 inches; grayish brown (10YR 5/2) sandy clay loam; common medium distinct yellowish brown (10YR 5/6) and common medium faint pale brown (10YR 6/3) mottles; weak medium subangular blocky structure; friable; few fine roots; very strongly acid; gradual wavy boundary.

Btg3—52 to 63 inches; light brownish gray (10YR 6/2) sandy clay loam; weak medium subangular blocky structure; friable; very strongly acid.

Range in Characteristics

Thickness of the solum: 63 inches or more
Thickness of the sandy epipedon: 20 to 40 inches
Reaction: Very strongly acid or strongly acid throughout, except for the surface layer in limed areas

A horizon:
Thickness—4 to 8 inches
Color—hue of 10YR, value of 3, and chroma of 1 or 2

E horizon:
Color—hue of 10YR, value of 4 to 6, chroma of 1 or 2, and few to common mottles in shades of brown and yellow in the lower part

Btg horizon:
Color—hue of 10YR, value of 5 to 6, chroma of 1 or 2, and few to many mottles in shades of brown and yellow
Texture—sandy loam or sandy clay loam

Pickney Series

Depth class: Very deep
Drainage class: Very poorly drained
Permeability: Rapid
Parent material: Sandy marine sediments
Seasonal high water table: Ponded or at a depth of less than 1 foot
Landscape position: Drainageways and depressions
Slope range: Less than 2 percent
Classification: Sandy, siliceous, thermic Cumulic Humaquepts

Geographically Associated Soils

- Albany soils, which are somewhat poorly drained, have a Bt horizon below a depth of 40 inches, and are in higher landscape positions
- Centenary soils, which are moderately well drained, have a Bh horizon below a depth of 50 inches, and are in higher landscape positions
- Chipley soils, which are somewhat poorly drained and are in higher landscape positions
- Ridgeland soils, which are somewhat poorly drained, have a Bh horizon, are in higher landscape positions

Typical Pedon

Pickney sand, frequently flooded, 2.4 miles east on Georgia Highway 46 from the intersection with U.S. Highway 1, about 0.4 mile south on a paved road, about 50 feet east of the road:

A1—0 to 10 inches; black (10YR 2/1) sand; single grained; loose; few to common uncoated sand grains; many fine and medium roots; very strongly acid; clear smooth boundary.

A2—10 to 25 inches; black (10YR 2/1) sand; single grained; loose; common uncoated sand grains; common fine roots; very strongly acid; clear smooth boundary.

A3—25 to 43 inches; very dark brown (10YR 2/2) loamy sand; weak fine granular structure; very friable; common uncoated sand grains; few fine roots; very strongly acid; clear wavy boundary.

Cg—43 to 63 inches; very dark grayish brown (10YR 3/2) sand; single grained; loose; very strongly acid.

Range in Characteristics

Thickness of the sand: 60 inches or more
Reaction: Very strongly acid or strongly acid throughout

A horizon:
Thickness—32 to 46 inches
Color—hue of 10YR, value of 2 or 3, and chroma of 1 or 2

Cg horizon:
Color—hue of 10YR or neutral, value of 3 to 5, and chroma of 1 or 2
Texture—fine sand or sand

Rembert Series

Depth class: Very deep
Drainage class: Poorly drained
Permeability: Slow
Parent material: Clayey marine sediments
Seasonal high water table: Ponded at a depth of less than 1 foot
Landscape position: Upland depressions
Slope range: 0 to 2 percent
Classification: Clayey, kaolinitic, thermic Typic Endoaquults

Geographically Associated Soils

- Bladen soils, which are on terraces and do not have a decrease in clay content of 20 percent or more from the maximum within a depth of 60 inches
- Cowarts soils, which are well drained, are in a fine-loamy family, and are in higher landscape positions
- Dothan and Tifton soils, which are well drained, are in a fine-loamy family, and are in higher landscape positions
- Nankin soils, which are well drained and are in higher landscape positions

Typical Pedon

Rembert sandy loam, ponded, 0.8 mile north on Georgia Highway 56 from the intersection with Georgia Highway 192 in Summertown, about 2.9 miles northeast on a paved county road, 0.65 mile north on a dirt road, about 150 feet east of the road:

A—0 to 4 inches; very dark gray (10YR 3/1) sandy loam; weak fine granular structure; very friable; many fine and medium roots; slightly acid; clear smooth boundary.

Btg1—4 to 10 inches; light brownish gray (10YR 6/2) sandy clay loam; common fine distinct brownish yellow (10YR 6/6) mottles; weak fine subangular blocky structure; friable; common fine and medium roots; strongly acid; gradual smooth boundary.

Btg2—10 to 28 inches; light brownish gray (10YR 6/2) sandy clay; common medium prominent strong brown (7.5YR 5/8) and yellowish red (5YR 5/8) mottles; moderate medium subangular blocky structure; firm; few fine and medium roots; few faint clay films on faces of peds; strongly acid; gradual smooth boundary.

Btg3—28 to 43 inches; light gray (10YR 7/2) sandy clay; common medium prominent strong brown (7.5YR 5/8) and common medium faint very pale brown (10YR 7/3) mottles; moderate medium subangular blocky structure; firm; few fine roots; common medium distinct clay films on faces of peds; strongly acid; gradual wavy boundary.

BCg—43 to 55 inches; light brownish gray (10YR 6/2) sandy clay loam; common medium distinct very pale brown (10YR 7/3) and yellowish brown (10YR 5/6) mottles; weak fine subangular blocky structure; friable; few fine roots; strongly acid; gradual wavy boundary.

Cg—55 to 63 inches; light brownish gray (10YR 6/2) sandy loam; common medium distinct very pale

brown (10YR 7/3), brownish yellow (10YR 6/6), and yellowish brown (10YR 5/6) mottles; massive; very friable; very strongly acid.

Range in Characteristics

Thickness of the solum: 40 to 60 inches or more
Reaction: Very strongly acid or strongly acid throughout, except for the surface layer in limed areas

A horizon:
Thickness—4 to 8 inches
Color—hue of 10YR, value of 3 or 4, and chroma of 1 or 2

EB horizon, if it occurs:
Thickness—4 to 7 inches
Color—hue of 10YR, value of 4 to 6, chroma of 1 or 2, and few to common mottles in shades of brown and yellow

Upper part of the Btg horizon:
Color—hue of 10YR, value of 5 or 6, chroma of 1 or 2, and common to many mottles in shades of red, brown, and yellow
Texture—sandy clay loam, sandy clay, or clay

Lower part of the Btg horizon:
Color—hue of 10YR, value of 5 to 7, chroma of 1 or 2, and common to many mottles in shades of red, brown, and yellow
Texture—sandy clay or clay

BCg horizon:
Color—hue of 10YR, value of 5 to 7, chroma of 1 or 2, and few to many mottles in shades of brown and yellow
Texture—sandy loam or sandy clay loam

Cg horizon:
Color—hue of 10YR, value of 5 to 7, chroma of 1 or 2, and few to many mottles in shades of brown and yellow
Texture—loamy sand or sandy loam

Ridgeland Series

Depth class: Very deep
Drainage class: Somewhat poorly drained
Permeability: Moderately rapid to moderate
Parent material: Sandy marine sediments
Depth to a seasonal high water table: 1.5 to 2.5 feet
Landscape position: Broad ridges and upland flats
Slope range: 0 to 2 percent
Classification: Sandy, siliceous, thermic Oxyaquic Alorthods

Geographically Associated Soils

- Albany soils, which have a Bt horizon below a depth of 40 inches and do not have a Bh horizon
- Centenary soils, which are in slightly higher landscape positions and have a Bh horizon below a depth of 50 inches
- Chipley soils, which do not have a Bh horizon and are in slightly higher landscape positions
- Pickney soils, which are very poorly drained and are in drainageways and depressions

Typical Pedon

Ridgeland fine sand, in an area of Centenary-Ridgeland association, 0 to 3 percent slopes; about 2.4 miles east on Georgia Highway 46 from the intersection with U.S. Highway 1, about 0.5 mile south on a county road, about 150 feet east of the road:

A—0 to 9 inches; very dark gray (10YR 3/1) fine sand; weak fine granular structure; very friable; common fine and few medium roots; very strongly acid; clear smooth boundary.
Bh—9 to 17 inches; dark brown (7.5YR 3/2) sand; massive; firm; slightly brittle; few fine roots; very strongly acid; clear smooth boundary.
E1—17 to 37 inches; grayish brown (10YR 5/2) sand; single grained; loose; few fine roots; very strongly acid; gradual smooth boundary.
E2—37 to 42 inches; pale brown (10YR 6/3) sand; single grained; loose; very strongly acid; gradual smooth boundary.
B´h1—42 to 50 inches; dark reddish brown (5YR 3/2) sand; massive; firm and brittle when dry; very strongly acid; clear smooth boundary.
B´h2—50 to 80 inches; dark reddish brown (5YR 2.5/2) sand; massive; firm and brittle when dry; very strongly acid.

Range in Characteristics

Thickness of the solum: 80 inches or more
Thickness of the sand: 80 inches or more
Reaction: Extremely acid or very strongly acid throughout, except for the surface layer in limed areas

A horizon:
Thickness—6 to 9 inches
Color—hue of 10YR, value of 3 or 4, and chroma of 1 or 2

Bh horizon:
Color—hue of 5YR to 10YR, value of 2 or 3, and chroma of 1 to 4
Texture—sand or fine sand

E horizon:
Color—hue of 10YR, value of 5 to 7, and chroma of 1 to 7

Stilson Series

Depth class: Very deep
Drainage class: Moderately well drained
Permeability: Rapid in the sandy epipedon and moderate in the subsoil
Parent material: Sandy and loamy marine sediments
Depth to a seasonal high water table: 2.5 to 3.0 feet
Landscape position: Upland flats
Slope range: 0 to 2 percent
Classification: Loamy, siliceous, thermic Arenic Plinthic Paleudults

Geographically Associated Soils

- Clarendon soils, which have a sandy epipedon less than 20 inches thick
- Dothan and Tifton soils, which are well drained and have a sandy epipedon less than 20 inches thick
- Fuquay soils, which are well drained
- Ocilla soils, which contain less than 5 percent plinthite in the subsoil

Typical Pedon

Stilson loamy sand, 0 to 2 percent slopes, about 1.8 miles north of the Ohoopee River on Georgia Highway 297, about 100 feet west of the highway:

A—0 to 9 inches; dark grayish brown (2.5Y 4/2) loamy sand; weak fine granular structure; very friable; many fine roots; medium acid; abrupt smooth boundary.

E—9 to 22 inches; light yellowish brown (2.5Y 6/4) loamy sand; weak fine granular structure; very friable; common fine roots; strongly acid; clear smooth boundary.

Bt1—22 to 29 inches; brownish yellowish (10YR 6/6) sandy loam; weak fine subangular blocky structure; very friable; few fine roots; few small nodules of ironstone; strongly acid; clear wavy boundary.

Bt2—29 to 36 inches; light yellowish brown (10YR 6/4) sandy clay loam; common medium prominent strong brown (7.5YR 5/6), common medium distinct yellowish brown (10YR 5/6), and common fine faint pale brown (10YR 6/3) mottles; weak medium subangular blocky structure; friable; few fine roots; few small nodules of ironstone; strongly acid; gradual smooth boundary.

Btv1—36 to 50 inches; light yellowish brown (10YR 6/4) sandy clay loam; common medium prominent strong brown (7.5YR 5/6) and red (2.5YR 4/8) and common medium distinct light brownish gray (10YR 6/2) mottles; weak medium subangular blocky structure; friable; few fine roots; about 10 percent nodular plinthite; few small nodules of ironstone; very strongly acid; gradual wavy boundary.

Btv2—50 to 65 inches; light yellowish brown (2.5Y 6/4) sandy clay loam; common medium prominent strong brown (7.5YR 5/6) and yellowish brown (10YR 5/6) mottles; moderate medium subangular blocky structure; friable; about 15 percent nodular plinthite; few small nodules of ironstone; few faint clay films on faces of peds; very strongly acid.

Range in Characteristics

Thickness of the solum: 60 inches or more
Thickness of the sandy epipedon: 22 to 26 inches
Depth to mottles that have chroma of 2 or less: 28 to 40 inches
Content of plinthite: 5 to 15 percent below a depth of 30 to 45 inches
Content of nodules of ironstone: 0 to 5 percent throughout the solum
Reaction: Very strongly acid or strongly acid throughout, except for the surface layer in limed areas

A horizon:
Thickness—8 to 10 inches
Color—hue of 2.5Y or 10YR, value of 3 or 4, and chroma of 2

E horizon:
Color—hue of 2.5Y or 10YR, value of 6 or 7, and chroma of 3 or 4

Bt horizon:
Color—hue of 10YR, value of 5 or 6, chroma of 4 to 8, and few to common mottles in shades of brown or red in some pedons
Texture—sandy loam or sandy clay loam

Btv horizon:
Color—hue of 2.5Y or 10YR, value of 5 to 7, chroma of 4, and few to many mottles in shades of brown, red, and gray

Susquehanna Series

Depth class: Very deep
Drainage class: Somewhat poorly drained
Permeability: Very slow
Parent material: Clayey marine sediments
Landscape position: Ridges, hillsides, and toeslopes
Slope range: 2 to 8 percent

Classification: Fine, montmorillonitic, thermic Vertic Paleudalfs

Geographically Associated Soils

- Cowarts soils, which are well drained, are in a fine-loamy family, and have a thinner solum
- Dothan soils, which are well drained, are in a fine-loamy family, and have 5 percent or more plinthite in the lower part of the subsoil
- Nankin soils, which are well drained and have kaolinitic mineralogy

Typical Pedon

Susquehanna sandy loam, 2 to 8 percent slopes, 5.0 miles east on U.S. Highway 80 from the intersection with U. S. Highway 1, about 50 feet north of the highway:

A—0 to 3 inches; very dark grayish brown (10YR 3/2) sandy loam; weak fine granular structure; friable; many fine and few medium roots; strongly acid; abrupt smooth boundary.

Bt1—3 to 8 inches; red (2.5YR 4/6) clay; strong medium angular blocky structure; firm, very sticky and very plastic; common fine and few medium roots; common distinct clay films on faces of peds; strongly acid; clear wavy boundary.

Bt2—8 to 19 inches; red (2.5YR 4/6) clay; many medium prominent light brownish gray (10YR 6/2) mottles; strong medium angular blocky structure; very firm, very sticky and very plastic; few fine roots; common distinct clay films on faces of peds; very strongly acid; gradual wavy boundary.

Btssg1—19 to 38 inches; light brownish gray (10YR 6/2) clay; many medium prominent dark red (10R 3/6) and common medium distinct yellowish brown (10YR 5/6) mottles; strong medium angular blocky structure; very firm, very sticky and very plastic; few fine roots; common distinct intersecting slickensides that have distinct polished and grooved surfaces; common prominent clay films on faces of peds; very strongly acid; gradual wavy boundary.

Btssg2—38 to 50 inches; light brownish gray (10YR 6/2) clay; many medium prominent strong brown (7.5YR 5/8) and red (2.5YR 4/6) and common medium distinct yellowish brown (10YR 5/6) mottles; strong medium angular blocky structure; very firm, very sticky and very plastic; few fine roots; common distinct intersecting slickensides that have distinct polished and grooved surfaces; common prominent clay films on ped faces; very strongly acid; gradual wavy boundary.

Btg—50 to 63 inches; mottled light brownish gray (10YR 6/2), pale brown (10YR 6/3) and red (2.5YR 5/8) clay; strong medium angular blocky structure parting to moderate medium subangular blocky; very firm, very sticky and very plastic; common distinct clay films on faces of peds; very strongly acid.

Range in Characteristics

Thickness of the solum: 63 inches or more

Depth to mottles that have chroma of 2 or less: 8 to 15 inches

Reaction: Very strongly acid or strongly acid throughout, except for the surface layer in limed areas

A horizon:
Thickness—3 to 5 inches
Color—hue of 10YR, value of 3, and chroma of 1 or 2

Upper part of the Bt horizon:
Color—hue of 2.5YR or 7.5YR, value of 4 or 5, chroma of 6 or 8, and common to many mottles in shades of gray and yellow

Lower part of the Bt horizon and Bsst horizon:
Color—hue of 10YR, value of 5 or 6, chroma of 2, and common to many mottles in shades of red, brown, and yellow; or mottled in shades of gray, red, brown, and yellow

Tifton Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate in the upper part of the subsoil, moderately slow in the lower part
Parent material: Loamy marine sediments
Seasonal high water table: Perched at a depth of 3.5 to 6.0 feet
Landscape position: Ridges and hillsides
Slope range: 0 to 8 percent
Classification: Fine-loamy, siliceous, thermic Plinthic Kandiudults

Geographically Associated Soils

- Carnegie soils, which are in a clayey family and have 5 percent or more plinthite at a depth of 20 to 26 inches
- Clarendon soils, which are moderately well drained and are in slightly lower landscape positions
- Cowarts soils, which have a thinner solum and have less than 5 percent plinthite in the subsoil
- Dothan soils, which have less than 5 percent nodules of ironstone in any horizon
- Fuquay soils, which are arenic

- Nankin soils, which are in a clayey family
- Rembert soils, which are poorly drained, are in a clayey family, and are in depressions
- Stilson soils, which are moderately well drained and are arenic

Typical Pedon

Tifton loamy sand, 2 to 5 percent slopes, 1.0 mile north on U.S. Highway 1 from the center of Oak Park, about 1.25 miles west on Georgia Highway 46 from the intersection with U.S. Highway 1, about 0.8 mile southwest on a dirt road, about 25 feet southeast of the road:

Apc—0 to 11 inches; dark grayish brown (10YR 4/2) loamy sand; weak fine granular structure; very friable; many fine roots; 10 percent nodules of ironstone; moderately acid; clear smooth boundary.

BEc—11 to 16 inches; yellowish brown (10YR 5/4) sandy loam; weak fine subangular blocky structure; friable; common fine roots; 10 percent nodules of ironstone; moderately acid; clear wavy boundary.

Btc—16 to 33 inches; yellowish brown (10YR 5/8) sandy clay loam; few fine distinct strong brown (7.5YR 5/8) mottles; weak medium subangular blocky structure; 10 percent nodules of ironstone; moderately acid; gradual wavy boundary.

Btv1—33 to 50 inches; yellowish brown (10YR 5/8) sandy clay loam; common medium prominent strong brown (7.5YR 5/6) and yellowish red (5YR 5/8) mottles; moderate medium subangular blocky structure; friable; 8 percent nodular plinthite; few faint clay films on faces of peds; strongly acid; gradual wavy boundary.

Btv2—50 to 63 inches; yellowish brown (10YR 5/6) sandy clay loam; common medium prominent yellowish red (5YR 5/8) and common medium distinct strong brown (7.5YR 5/6) and light gray (10YR 7/2) mottles; moderate medium subangular blocky structure; friable; 10 percent nodular plinthite; common faint clay films on faces of peds; strongly acid.

Range in Characteristics

Thickness of the solum: 60 inches or more

Content of plinthite: 5 to 15 percent below a depth of 28 to 45 inches

Content of nodules of ironstone: 5 to 20 percent in the A and Bt horizons, 0 to 10 percent in the Btv horizon

Reaction: Very strongly acid or strongly acid throughout, except for the upper horizons of soils in limed areas

A horizon:
Thickness—6 to 11 inches
Color—hue of 10YR, value of 4, and chroma of 2 or 3
Texture—loamy sand or sandy loam

Btc horizon:
Color—hue of 10YR, value of 5, chroma of 6 or 8, and few to common mottles in shades of yellow and brown in some pedons

Upper part of the Btv horizon:
Color—hue of 10YR or 7.5YR, value of 5, chroma of 6 or 8, and common to many mottles in shades of brown, red, and gray

Lower part of the Btv horizon:
Color—hue of 10YR or 7.5YR, value of 5, chroma of 6 or 8, and common to many mottles in shades of brown, red, and gray; or mottled in shades of brown, red, and gray

Wahee Series

Depth class: Very deep
Drainage class: Somewhat poorly drained
Permeability: Slow
Parent material: Clayey alluvial sediments
Depth to a seasonal high water table: 0.5 to 1.5 feet
Landscape position: Low stream terraces
Slope range: 0 to 2 percent
Classification: Clayey, mixed, thermic Aeric Endoaquults

Geographically Associated Soils

- Bladen soils, which are poorly drained
- Meggett soils, which are poorly drained

Typical Pedon

Wahee sandy loam, 0 to 2 percent slopes, occasionally flooded, about 4.3 miles east on McKinney's Pond Road from the intersection with Georgia Highway 56, about 1.1 miles north on a road in a woods, about 300 yards west on a fire lane road, 25 feet north of the road:

Ap—0 to 7 inches; grayish brown (10YR 5/2) sandy loam; weak fine granular structure; very friable; many fine and common medium roots; moderately acid; clear smooth boundary.

E—7 to 11 inches; pale brown (10YR 6/3) fine sandy loam; weak medium fine granular structure; very friable; common fine and medium roots; moderately acid; clear smooth boundary.

Bt—11 to 23 inches; yellowish brown (10YR 5/4) clay; few fine prominent red (2.5YR 4/6) and few fine distinct light brownish gray (10YR 6/2) mottles; moderate medium subangular blocky structure; firm; common fine and medium roots; common distinct clay films on faces of peds; slightly acid; gradual smooth boundary.

Btg1—23 to 38 inches; light brownish gray (10YR 6/2) clay; many medium distinct yellowish brown (10YR 5/6) mottles; strong medium subangular blocky structure; very firm; common fine and medium roots; many prominent clay films on faces of peds; slightly acid; gradual smooth boundary.

Btg2—38 to 51 inches; light gray (10YR 7/2) clay; common medium distinct yellowish brown (10YR 5/6) mottles; strong medium subangular blocky structure; very firm; common fine and medium roots; many prominent clay films on faces of peds; slightly alkaline; gradual smooth boundary.

BCg—51 to 60 inches; light gray (10YR 7/1) sandy clay; many medium prominent yellowish brown (10YR 5/6) mottles; moderate medium subangular blocky structure; firm; few fine roots; few faint clay films on faces of peds; moderately alkaline.

The Wahee soils in this survey area are considered taxadjuncts to the series because they have a higher pH than is normal for the series. Also, the depth to mottles that have chroma of 2 or less is deeper than is normal for the series. However, these differences do not significantly affect the use and management of the soils.

Range in Characteristics

Thickness of the solum: 60 inches or more

Depth to mottles that have chroma of 2 or less: 4 to 14 inches

Reaction: Very strongly acid to moderately alkaline throughout the profile

A horizon:

Thickness—4 to 7 inches

Color—hue of 10YR, value of 3 to 5, and chroma of 2

E horizon, if it occurs:

Color—hue of 10YR, value 5 to 7, and chroma of 2 or 3

Bt horizon:

Color—hue of 10YR, value of 5 or 6, chroma of 3 to 6, and few to many mottles in shades of brown, gray, and red

Texture—sandy clay loam, sandy clay, or clay

Btg horizon:

Color—hue of 10YR, value of 5 to 7, chroma of 1 or 2, and few to many mottles in shades of brown, yellow, and red

Texture—sandy clay or clay

BCg horizon:

Color—hue of 10YR or 5Y, value of 5 to 7, chroma of 1 or 2, and few to many mottles in various shades of brown

Formation of the Soils

This section describes the factors of soil formation and relates them to the soils in Emanuel County.

Soil characteristics are determined by the physical and mineral composition of the parent material; the climate under which the parent material accumulated and has existed since accumulation; the plant and animal life on and in the soil; the relief, or lay of the land; and the length of time that the forces of soil formation have acted on the soil material *(3)*. All of these factors influence every soil, but the significance of each factor varies from place to place. In one area, one factor may dominate soil formation; in another area, a different factor may be the most important.

The interrelationships among these five factors is complex, and the effects of any one factor cannot be isolated and completely evaluated. It is convenient, however, to discuss each factor separately and to indicate the probable effects of each.

Parent Material

Parent material is the unconsolidated mass in which soil forms. The chemical and mineralogical composition of the soil is derived largely from the parent material. The soils of Emanuel County formed primarily in sandy and loamy marine sediments *(4)*. The Neogene undifferentiated unit makes up the parent material for most of the upland soils in the county. The well drained Cowarts, Dothan, Fuquay, Nankin, and Tifton soils are the main soils that formed in this material. These soils are dominantly very gently sloping and gently sloping. Dothan, Fuquay, and Tifton soils have a brownish, loamy subsoil that is mottled in the middle and lower parts. Nodules of ironstones are in the surface layer and in the upper part of the soil. Fuquay soils have a brownish surface layer and thick subsurface layer that are sandy. They also have a brownish, loamy subsoil that is mottled in the middle and lower parts. Cowarts soils have a brownish, loamy subsoil that is mottled in the lower part, and they have mottled loamy material that is hard and firm in the underlying layer. Nankin soils have a brownish, sandy or loamy surface layer, a brownish clayey subsoil that is mottled in the lower part, and mottled loamy material in the underlying layer. Of lesser extent are the well drained Ailey and Bonifay soils. These soils are in landscape positions similar to those of the Dothan, Fuquay, and Tifton soils. Ailey soils have a brownish surface layer and thick subsurface layer that are sandy, a brownish loamy subsoil that is mottled in the lower part, and mottled, compact and hard loamy material in the underlying layer. Bonifay soils consist dominantly of very thick, yellowish sandy material that overlies a reddish, loamy subsoil.

Stream alluvium is adjacent to all the streams in the survey area. The soils in this alluvium formed in more recent sediments than the soils that formed in the uplands. The nearly level, poorly drained Kinston and Bibb soils are the main soils on flood plains along Little Ohoope River, Canoochee Creek, Little Canoochee Creek, and Long Creek. They are dominantly grayish throughout the profile. Kinston soils are mostly loamy, and Bibb soils are mostly sandy.

Aeolian sand deposits make up the parent material of a small area along Little Ohoopee River and Canochee Creek.

Plants and Animals

The role of plants, animals, and other organisms is significant in soil development. Plants and animals increase the amounts of organic matter and nitrogen, increase or decrease content of plant nutrients, and change soil structure and porosity.

Plants recycle nutrients, accumulate organic matter, and provide food and cover for animals. Plants stabilize the surface layer so that soil-forming processes can continue. Vegetation also provides a more stable environment for soil-forming processes by protecting the soils from extremes in temperature.

The soils in the survey area formed under a succession of briars, brambles, and woody plants that yielded to pines and hardwood trees. Later, the hardwoods suppressed most other plants and became the climax vegetation.

Animals rearrange soil material by making the surface rough, by forming and filling channels, and by shaping the peds and voids. The soil is mixed by ants, wasps, worms, and spiders that make channels; by crustacea, such as crabs and crayfish; and by turtles and foxes that dig burrows. Humans affect the soil-forming process by tilling crops, by removing the

natural vegetation and growing different plants, and by reducing or increasing soil fertility.

Bacteria, fungi, and other microorganisms increase the rate of decomposition of organic matter and increase the release of minerals for plant growth.

The net gains and losses caused by plants and animals in the soil-forming process are important in the survey area. However, the relationship between plants and animals, climate, and parent materials is very close; therefore, the soils do not differ significantly because of the role of plants and animals.

Climate

The present climate of the survey area is probably similar to the climate that existed as the soils formed. The relatively high rainfall and warm temperatures contribute to rapid soil formation. They are the two most important climatic features that relate to soil properties.

Water from precipitation is essential in the formation of soil. Water dissolves soluble materials and is used by plants and animals. It transports material from one part of the soil to another part or from one area to another area.

Soils in the survey area formed under a thermic temperature regime; that is, the mean soil temperature at a depth of 20 inches is 59 to 72 degrees Fahrenheit. Based on the mean annual air temperature, it is estimated the mean annual soil temperature in the survey area is about 66 degrees Fahrenheit at a depth of 20 inches (see table 1). The rate of chemical reactions and other processes in the soil depend to some extent on temperature. In addition, temperature affects the type and quantity of vegetation, the amount and kind of organic matter, and the rate of decomposition of organic matter.

Relief

Relief is the elevations, or inequalities, of land surface considered collectively. Color of the soil, wetness, thickness of the A horizon, content of organic matter, and plant cover are commonly related to relief. In the survey area, the most obvious effects of relief are the color of the soil and wetness.

Dothan and Tifton soils primarily have a yellowish brown subsoil, and Rembert soils are primarily gray throughout the subsoil. This color difference results from a difference in relief and a corresponding difference in internal drainage. Dothan and Tifton soils are in higher areas and are better drained than the other soils; therefore, the soil material is better oxidized and the subsoil is more brown in color.

The movement of water across the surface and through the soil is controlled to a large extent by relief. Water flowing over the soil commonly carries solid particles and results in either erosion or deposition, depending on the kind of relief. More water runs off sloping areas and less water enters the soil, so the soils are drier. Lower lying areas receive the water that flows off and through the higher soils. They are commonly wetter than the other soils.

Time

The length of time that soil-forming factors act on the parent material determines to a large degree the characteristics of the soil. Determinations of when soil formation began in the survey area are not exact, but most soils in the survey area are considered to be mature. A mature soil is in equilibrium with the environment. It has readily recognized pedogenic horizons and a regular decrease in content of carbon with increasing depth. Some areas of Dothan and Tifton soils are on rather broad, stable landscapes where the soil-forming processes have been active for thousands of years. These mature soils have a thick solum and a well expressed zone of illuviation.

Kinston and Bibb soils receive sediment annually from flood water. These young soils are stratified and are not old enough to have a zone of illuviation. Young soils do not have pedogenic horizons. The content of carbon decreases irregularly with increasing depth.

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Glossary

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

Area reclaim (in tables). An area difficult to reclaim after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

Association, soil. A group of soils geographically associated in a characteristic repeating pattern and defined and delineated as a single map unit.

Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:

Very low	0 to 3
Low	3 to 6
Moderate	6 to 9
High	9 to 12
Very high	more than 12

Base saturation. The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, and K), expressed as a percentage of the total cation-exchange capacity.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Bottom land. The normal flood plain of a stream, subject to flooding.

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.

Climax vegetation. The stabilized plant community on a particular site. The plant cover reproduces itself and does not change so long as the environment remains the same.

Complex slope. Irregular or variable slope. Planning or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.

Complex, soil. A map unit of two or more kinds of soil in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils are somewhat similar in all areas.

Compressible (in tables). The volume of soft soil decreases excessively under load.

Concretions. Grains, pellets, or nodules of various sizes, shapes, and colors consisting of concentrated compounds or cemented soil grains. The composition of most concretions is unlike that of the surrounding soil. Calcium carbonate and iron oxide are common compounds in concretions.

Conservation tillage. A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

Consistence, soil. The feel of the soil and the ease with which a lump can be crushed by the fingers. Terms commonly used to describe consistence are:

Loose.—Noncoherent when dry or moist; does not hold together in a mass.

Friable.—When moist, crushes easily under gentle pressure between thumb and forefinger and can be pressed together into a lump.

Firm.—When moist, crushes under moderate pressure between thumb and forefinger, but resistance is distinctly noticeable.

Plastic.—When wet, readily deformed by moderate pressure but can be pressed into a lump; will form a "wire" when rolled between thumb and forefinger.
Sticky.—When wet, adheres to other material and tends to stretch somewhat and pull apart rather than to pull free from other material.

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.

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.

Drainage class (natural). Refers to the frequency and duration of periods of saturation or partial saturation during soil formation, as opposed to altered drainage, which is commonly the result of artificial drainage or irrigation but may be caused by the sudden deepening of channels or the blocking of drainage outlets. Seven classes of natural soil drainage are recognized:
Excessively drained.—Water is removed from the soil very rapidly. Excessively drained soils are commonly very coarse textured, rocky, or shallow. Some are steep. All are free of the mottling related to wetness.
Somewhat excessively drained.—Water is removed from the soil rapidly. Many somewhat excessively drained soils are sandy and rapidly pervious. Some are shallow. Some are so steep that much of the water they receive is lost as runoff. All are free of the mottling related to wetness.
Well drained.—Water is removed from the soil readily, but not rapidly. It is available to plants throughout most of the growing season, and wetness does not inhibit growth of roots for significant periods during most growing seasons. Well drained soils are commonly medium textured. They are mainly free of mottling.
Moderately well drained.—Water is removed from the soil somewhat slowly during some periods. Moderately well drained soils are wet for only a short time during the growing season, but periodically they are wet long enough that most mesophytic crops are affected. They commonly have a slowly pervious layer within or directly below the solum or periodically receive high rainfall, or both.
Somewhat poorly drained.—Water is removed slowly enough that the soil is wet for significant periods during the growing season. Wetness markedly restricts the growth of mesophytic crops unless artificial drainage is provided. Somewhat poorly drained soils commonly have a slowly pervious layer, a high water table, additional water from seepage, nearly continuous rainfall, or a combination of these.
Poorly drained.—Water is removed so slowly that the soil is saturated periodically during the growing season or remains wet for long periods. Free water is commonly at or near the surface for long enough during the growing season that most mesophytic crops cannot be grown unless the soil is artificially drained. The soil is not continuously saturated in layers directly below plow depth. Poor drainage results from a high water table, a slowly pervious layer within the profile, seepage, nearly continuous rainfall, or a combination of these.
Very poorly drained.—Water is removed from the soil so slowly that free water remains at or on the surface during most of the growing season. Unless the soil is artificially drained, most mesophytic crops cannot be grown. Very poorly drained soils are commonly level or depressed and are frequently ponded. Yet, where rainfall is high and nearly continuous, they can have moderate or high slope gradients.

Drainage, surface. Runoff, or surface flow of water, from an area.

Erosion. The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

Excess fines (in tables). Excess silt and clay in the soil. The soil is not a source of gravel or sand for construction purposes.

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, or 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 7.6 centimeters) in diameter. An individual piece is a pebble.

Gully. A miniature valley with steep sides cut by running water and through which water ordinarily runs only after rainfall. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the "Soil Survey Manual." The major horizons of mineral soil are as follows:

Hydrologic soil groups. Refers to soils grouped according to their runoff-producing characteristics. The chief consideration is the inherent capacity of soil bare of vegetation to permit infiltration. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff. Soils are assigned to four groups. In group A are soils having a high infiltration rate when thoroughly wet and having a low runoff potential. They are mainly deep, well drained, and sandy or gravelly. In group D, at the other extreme, are soils having a very slow infiltration rate and thus a high runoff potential. They have a claypan or clay layer at or near the surface, have a permanent high water table, or are shallow over nearly impervious bedrock or other material. A soil is assigned to two hydrologic groups if part of the acreage is artificially drained and part is undrained.

Illuviation. The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Irrigation. Application of water to soils to assist in production of crops. Methods of irrigation are:

Liquid limit. The moisture content at which the soil passes from a plastic to a liquid state.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Low strength. The soil is not strong enough to support loads.

Miscellaneous area. An area that has little or no natural soil and supports little or no vegetation.

Morphology, soil. The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mottling, soil. Irregular spots of different colors that vary in number and size. Mottling generally indicates poor aeration and impeded drainage. Descriptive terms are as follows: abundance—*few, common,* and *many*; size—*fine, medium,* and *coarse*; and contrast—*faint, distinct,* and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium*, from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse*, more than 15 millimeters (about 0.6 inch).

Munsell notation. A designation of color by degrees of the three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.

Organic matter. Plant and animal residue in the soil in various stages of decomposition.

Terms describing organic matter are:

Low	less than 1.0 percent
Moderately low	1.0-2.0 percent
Moderate	2.0-4.0 percent
High	4.0-8.0 percent

Parent material. The unconsolidated organic and mineral material in which soil forms.

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Pedon. The smallest volume that can be called "a soil." A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

Percolation. The downward movement of water through the soil.

Percs slowly (in tables). The slow movement of water through the soil adversely affects the specified use.

Permeability. The quality of the soil that enables water to move through the profile. Permeability is measured as the number of inches per hour that

water moves through the saturated soil. Terms describing permeability are:

Very slow	less than 0.06 inch
Slow	0.06 to 0.2 inch
Moderately slow	0.2 to 0.6 inch
Moderate	0.6 inch to 2.0 inches
Moderately rapid	2.0 to 6.0 inches
Rapid	6.0 to 20 inches
Very rapid	more than 20 inches

Phase, soil. A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and thickness.

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Piping (in tables). Subsurface tunnels or pipelike cavities are formed by water moving through the soil.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Plinthite. The sesquioxide-rich, humus-poor, highly weathered mixture of clay with quartz and other diluents. It commonly appears as red mottles, usually in platy, polygonal, or reticulate patterns. Plinthite changes irreversibly to an ironstone hardpan or to irregular aggregates on repeated wetting and drying, especially if it is exposed also to heat from the sun. In a moist soil, plinthite can be cut with a spade. It is a form of laterite.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poor filter (in tables). Because of rapid permeability, the soil may not adequately filter effluent from a waste disposal system.

Productivity, soil. The capability of a soil for producing a specified plant or sequence of plants under specific management.

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

Reaction, soil. A measure of the acidity or alkalinity of a soil expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Extremely acid	below 4.5
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Moderately acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Slightly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

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

Rill. A steep-sided channel resulting from accelerated erosion. A rill is generally a few inches deep and not wide enough to be an obstacle to farm machinery.

Rooting depth (in tables). Shallow root zone. The soil is shallow over a layer that greatly restricts roots.

Root zone. The part of the soil that can be penetrated by plant roots.

Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Sand. As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Seepage (in tables). The movement of water through the soil adversely affects the specified use.

Series, soil. A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer or of the underlying material. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Shrink-swell. The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Site index. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75 feet.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical

distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance.

The slope classes in this survey are:

Nearly level	0-2 percent
Very gently sloping	2-5 percent
Gently sloping	5-8 percent
Strongly sloping	8-12 percent
Moderately steep	12-25 percent
Steep	25-35 percent

Slope (in tables). Slope is great enough that special practices are required to ensure satisfactory performance of the soil for a specific use.

Sloughed till. Water-saturated till that has flowed slowly downhill from its original place of deposit by glacial ice. It may rest on other till, on glacial outwash, or on a glaciolacustrine deposit.

Small stones (in tables). Rock fragments less than 3 inches (7.6 centimeters) in diameter. Small stones adversely affect the specified use of the soil.

Soil. A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief over periods of time.

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the underlying material. The living roots and plant and animal activities are largely confined to the solum.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grained* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Substratum. The part of the soil below the solum.

Subsurface layer. Technically, the E horizon. Generally refers to a leached horizon lighter in color and lower in organic matter content than the overlying surface layer.

Surface layer. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the "plow layer," or the "Ap horizon."

Taxadjuncts. Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior.

Terrace. An embankment, or ridge, constructed on the contour or at a slight angle to the contour across sloping soils. The terrace intercepts surface runoff, so that water soaks into the soil or flows slowly to a prepared outlet.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

Thin layer (in tables). An otherwise suitable soil material that is too thin for the specified use.

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Topsoil. The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Upland (geology). Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

Weathering. All physical and chemical changes produced by atmospheric agents in rocks or other deposits at or near the earth's surface. These changes result in disintegration and decomposition of the material.

Tables

Table 1.--Temperature and Precipitation

(Recorded in the period 1951-88 at Swainsboro, Georgia)

Month	Temperature: Average daily maximum	Average daily minimum	Average daily	2 years in 10 will have-- Maximum temperature higher than--	Minimum temperature lower than--	Average number of growing degree days*	Precipitation: Average	2 years in 10 will have-- Less than--	More than--	Average number of days with 0.10 inch or more	Average snowfall
	o F	o F	o F	o F	o F	Units	In	In	In		In
January-----	58.3	35.9	47.1	79	12	108	3.62	1.69	5.24	6	.0
February----	63.1	38.6	50.9	81	17	132	4.33	2.03	6.11	6	.2
March-------	70.7	44.9	57.8	87	24	269	4.36	1.87	6.22	6	.0
April-------	78.9	51.7	65.3	91	33	459	3.29	1.27	4.87	5	.0
May---------	85.7	59.9	72.8	96	43	707	3.24	1.19	4.83	6	.0
June--------	90.7	66.3	78.5	102	53	855	4.27	2.01	6.10	6	.0
July--------	92.2	69.4	80.8	101	59	955	5.00	2.12	7.48	8	.0
August------	91.5	69.0	80.3	100	60	939	4.67	1.81	7.12	7	.0
September---	86.6	64.7	75.7	96	48	771	3.51	.93	5.40	5	.0
October-----	78.4	53.4	65.9	91	32	493	2.07	.31	3.29	3	.0
November----	69.6	44.4	57.0	85	23	239	2.45	.96	3.68	4	.0
December----	61.9	38.4	50.2	81	16	124	3.54	1.87	4.95	6	.0
Yearly:											
Average---	77.3	53.1	65.2	---	---	---	---	---	---	---	---
Extreme---	---	---	---	102	10	---	---	---	---	---	---
Total-----	---	---	---	---	---	6,051	44.35	34.97	54.61	68	.2

* A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (50 degrees F).

Table 2.--Freeze Dates in Spring and Fall

(Recorded in the period 1951-88 at Swainsboro, Georgia)

Probability	Temperature		
	24°F or lower	28°F or lower	32°F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	Mar. 12	Mar. 29	Apr. 11
2 years in 10 later than--	Mar. 3	Mar. 21	Apr. 4
5 years in 10 later than--	Feb. 12	Mar. 7	Mar. 22
First freezing temperature in fall:			
1 year in 10 earlier than--	Nov. 17	Nov. 3	Oct. 25
2 years in 10 earlier than--	Nov. 25	Nov. 10	Oct. 30
5 years in 10 earlier than--	Dec. 12	Nov. 23	Nov. 9

Table 3.--Growing Season

(Recorded in the period 1951-88 at Swainsboro, Georgia)

Probability	Daily minimum temperature during growing season		
	Higher than 24°F	Higher than 28°F	Higher than 32°F
	Days	Days	Days
9 years in 10	270	229	205
8 years in 10	280	240	214
5 years in 10	300	260	231
2 years in 10	321	281	249
1 year in 10	335	292	258

Table 4.--Acreage and Proportionate Extent of the Soils

Map symbol	Soil name	Acres	Percent
AeB	Ailey loamy sand, 2 to 5 percent slopes	8,325	1.9
AeC	Ailey loamy sand, 5 to 8 percent slopes	7,160	1.6
AeD	Ailey loamy sand, 8 to 17 percent slopes	2,555	0.6
AHA	Albany and Chipley soils, 0 to 3 percent slopes	6,570	1.5
Bd	Bladen fine sandy loam	1,515	0.3
BnB	Blanton sand, 0 to 5 percent slopes	5,250	1.2
BoB	Bonifay sand, 1 to 5 percent slopes	26,665	6.0
BoC	Bonifay sand, 5 to 8 percent slopes	11,590	2.6
BoD	Bonifay sand, 8 to 12 percent slopes	525	0.1
CaB2	Carnegie sandy loam, 2 to 5 percent slopes, eroded	5,895	1.3
CaC2	Carnegie sandy loam, 5 to 8 percent slopes, eroded	5,720	1.3
CDA	Centenary-Ridgeland association, 0 to 3 percent slopes	670	0.2
CnA	Clarendon loamy sand, 0 to 2 percent slopes	6,070	1.4
CoB	Cowarts loamy sand, 2 to 5 percent slopes	17,885	4.1
CoC	Cowarts loamy sand, 5 to 8 percent slopes	4,255	1.0
CtC2	Cowarts sandy loam, 5 to 8 percent slopes, eroded	13,655	3.1
CtD2	Cowarts sandy loam, 8 to 15 percent slopes, eroded	3,745	0.8
DoA	Dothan loamy sand, 0 to 2 percent slopes	4,300	1.0
DoB	Dothan loamy sand, 2 to 5 percent slopes	27,480	6.2
DtC2	Dothan sandy loam, 5 to 8 percent slopes, eroded	1,360	0.3
FuB	Fuquay loamy sand, 1 to 5 percent slopes	51,695	11.7
FuC	Fuquay loamy sand, 5 to 8 percent slopes	3,235	0.7
KeC	Kershaw coarse sand, 2 to 12 percent slopes	13,385	3.0
KFA	Kinston and Bibb soils, frequently flooded	63,910	14.5
KuC	Kureb sand, 5 to 12 percent slopes	2,850	0.6
LaB	Lakeland sand, 0 to 8 percent slopes	2,925	0.7
Me	Meggett loam, frequently flooded	15,480	3.5
NaB	Nankin loamy sand, 2 to 5 percent slopes	15,990	3.6
NkB2	Nankin sandy loam, 2 to 5 percent slopes, eroded	4,995	1.1
NkC2	Nankin sandy loam, 5 to 8 percent slopes, eroded	11,370	2.6
OdA	Ocilla loamy sand, 0 to 2 percent slopes	8,650	2.0
PeA	Pelham loamy sand, 0 to 2 percent slopes, occasionally flooded	26,540	6.0
Pk	Pickney sand, frequently flooded	960	0.2
Re	Rembert sandy loam, ponded	4,375	1.0
SeA	Stilson loamy sand, 0 to 2 percent slopes	3,280	0.7
SuC	Susquehanna sandy loam, 2 to 8 percent slopes	6,170	1.4
TfA	Tifton loamy sand, 0 to 2 percent slopes	3,235	0.7
TfB	Tifton loamy sand, 2 to 5 percent slopes	33,800	7.7
TnC2	Tifton sandy loam, 5 to 8 percent slopes, eroded	1,595	0.4
Uc	Udorthents-Pits complex, clayey	285	0.1
Us	Udorthents-Pits complex, sandy	145	*
WaA	Wahee sandy loam, 0 to 2 percent slopes, occasionally flooded	4,175	0.9
	Water	1,065	0.2
	Total	441,300	100.0

* Less than 0.1 percent.

Table 5.--Important Farmland

(Only map units that meet the soil criteria for prime farmland or additional farmland of statewide importance are listed.)

Map symbol	Soil name	Prime farmland	Additional farmland of statewide importance
		Acres	Acres
AeB	Ailey loamy sand, 2 to 5 percent slopes	---	8,325
AeC	Ailey loamy sand, 5 to 8 percent slopes	---	7,160
AHA	Albany and Chipley soils, 0 to 3 percent slopes	---	6,570
BnB	Blanton sand, 0 to 5 percent slopes	---	5,250
BoB	Bonifay sand, 1 to 5 percent slopes	---	26,665
BoC	Bonifay sand, 5 to 8 percent slopes	---	11,590
BoD	Bonifay sand, 8 to 12 percent slopes	---	525
CaB2	Carnegie sandy loam, 2 to 5 percent slopes, eroded	5,895	---
CaC2	Carnegie sandy loam, 5 to 8 percent slopes, eroded	---	5,720
CDA	Centenary-Ridgeland association, 0 to 3 percent slopes	---	670
CnA	Clarendon loamy sand, 0 to 2 percent slopes	6,070	---
CoB	Cowarts loamy sand, 2 to 5 percent slopes	17,885	---
CoC	Cowarts loamy sand, 5 to 8 percent slopes	4,255	---
CtC2	Cowarts sandy loam, 5 to 8 percent slopes, eroded	---	13,655
DoA	Dothan loamy sand, 0 to 2 percent slopes	4,300	---
DoB	Dothan loamy sand, 2 to 5 percent slopes	27,480	---
DtC2	Dothan sandy loam, 5 to 8 percent slopes, eroded	1,360	---
FuB	Fuquay loamy sand, 0 to 5 percent slopes	---	51,695
FuC	Fuquay loamy sand, 5 to 8 percent slopes	---	3,235
NaB	Nankin loamy sand, 2 to 5 percent slopes	15,990	---
NkB2	Nankin sandy loam, 2 to 5 percent slopes, eroded	4,995	---
NkC2	Nankin sandy loam, 5 to 8 percent slopes, eroded	---	11,370
OdA	Ocilla loamy sand, 0 to 2 percent slopes	---	8,650
SeA	Stilson loamy sand, 0 to 2 percent slopes	---	3,280
SuC	Susquehanna sandy loam, 2 to 8 percent slopes	---	6,170
TfA	Tifton loamy sand, 0 to 2 percent slopes	3,235	---
TfB	Tifton loamy sand, 2 to 5 percent slopes	33,800	---
TnC2	Tifton sandy loam, 5 to 8 percent slopes, eroded	1,595	---
	Total	126,860	170,530

Table 6.--Land Capability and Yields per Acre of Crops and Pasture

(Yields in the N columns are for nonirrigated soils; those in the I columns are for irrigated soils. Yields are those that can be expected under a high level of management. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil)

Soil name and map symbol	Land capability		Corn		Soybeans		Tobacco		Cotton		Peanuts		Improved bermudagrass		Bahiagrass	
	N	I	N	I	N	I	N	I	N	I	N	I	N	I	N	I
			Bu	Bu	Bu	Bu	Lbs	Lbs	Lbs	Lbs	Lbs	Lbs	AUM*	AUM*	AUM*	AUM*
AeB---------- Ailey	IIIs	---	50	80	20	24	1,700	---	400	500	2,300	3,450	6.0	7.0	6.0	---
AeC---------- Ailey	IVs	---	45	70	18	22	---	---	350	400	2,000	3,000	5.0	6.0	5.0	---
AeD---------- Ailey	VIs	---	---	---	---	---	---	---	---	---	---	---	5.0	6.0	5.0	---
AHA:																
Albany----------	IIIw	---	65	105	25	30	2,100	---	---	---	1,700	2,300	7.0	9.0	6.5	---
Chipley----------	IIIs	---	60	180	20	40	2,000	---	---	---	2,200	3,000	8.0	10.5	7.5	---
Bd---------- Bladen	VIw	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BnB---------- Blanton	IIIs	---	60	180	25	40	2,000	---	---	---	2,200	3,650	8.0	10.5	6.5	---
BoB---------- Bonifay	IIIs	---	60	180	25	40	2,000	---	---	---	1,600	2,650	7.5	10.0	7.2	---
BoC---------- Bonifay	IVs	---	55	165	22	35	---	---	---	---	1,400	2,300	7.5	10.0	7.2	---
BoD---------- Bonifay	VIs	---	---	---	---	---	---	---	---	---	---	---	7.5	10.0	7.2	---
CaB2---------- Carnegie	IIIe	---	65	105	30	35	2,400	---	500	600	3,200	4,300	6.5	8.5	7.0	---
CaC2---------- Carnegie	IVe	---	55	90	25	30	2,000	---	400	500	2,600	3,500	6.0	8.0	6.5	---
CDA**:																
Centenary----------	IIIs	---	65	105	20	30	2,000	---	---	---	---	---	7.5	10.0	7.5	---
Ridgeland----------	IIIw	---	65	105	25	30	2,200	---	---	---	---	---	7.5	10.0	7.5	---
CnA---------- Clarendon	IIw	---	125	200	45	54	3,000	---	700	---	---	---	10.5	13.0	10.0	---
CoB---------- Cowarts	IIe	---	80	130	35	42	---	---	650	800	2,400	3,250	8.0	10.5	7.5	---
CoC---------- Cowarts	IIIe	---	70	110	25	30	---	---	600	700	1,800	2,400	7.5	9.0	7.0	---
CtC2---------- Cowarts	IVe	---	60	95	20	24	---	---	500	600	1,600	2,150	7.0	9.0	7.0	---
CtD2---------- Cowarts	VIe	---	---	---	---	---	---	---	---	---	---	---	6.5	8.0	6.5	---

See footnotes at end of table.

Table 6.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Soil name and map symbol	Land capability		Corn		Soybeans		Tobacco		Cotton		Peanuts		Improved bermudagrass		Bahiagrass	
	N	I	N	I	N	I	N	I	N	I	N	I	N	I	N	I
			Bu	Bu	Bu	Bu	Lbs	Lbs	Lbs	Lbs	Lbs	Lbs	AUM*	AUM*	AUM*	AUM*
DoA---------- Dothan	I	---	120	190	40	48	2,800	---	900	1,100	3,800	5,150	10.5	14.0	9.0	---
DoB---------- Dothan	IIe	---	120	190	35	42	2,600	---	900	1,100	3,600	4,850	10.5	14.0	9.0	---
DtC2---------- Dothan	IVe	---	90	145	25	30	2,200	---	700	850	3,000	4,050	9.5	12.0	7.0	---
FuB---------- Fuquay	IIs	---	85	160	30	40	2,400	---	650	850	2,900	4,350	7.5	10.0	8.5	---
FuC---------- Fuquay	IIIs	---	75	140	25	33	2,200	---	600	800	2,600	3,900	7.0	9.5	8.5	---
KeC---------- Kershaw	VIIs	---	---	---	---	---	---	---	---	---	---	---	3.5	---	3.5	---
KFA:																
Kinston----------	VIw	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bibb----------	Vw	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
KuC---------- Kureb	VIIs	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
LaB---------- Lakeland	IVs	---	55	165	20	32	1,700	---	450	700	2,000	3,300	7.0	9.5	7.0	---
Me---------- Meggett	VIw	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
NaB---------- Nankin	IIe	---	75	120	30	36	2,200	---	600	700	2,200	3,000	9.0	12.0	7.0	---
NkB2---------- Nankin	IIIe	---	60	95	20	24	2,000	---	500	600	1,600	2,150	7.0	9.5	6.0	---
NkC2---------- Nankin	IVe	---	50	80	20	24	1,600	---	450	550	1,400	1,900	6.0	8.0	6.0	---
OdA---------- Ocilla	IIIw	---	75	140	35	47	2,600	---	---	---	2,200	---	8.5	11.5	7.5	---
PeA---------- Pelham	Vw	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pk---------- Pickney	VIIw	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Re---------- Rembert	VIw	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SeA---------- Stilson	IIw	---	80	150	35	40	2,600	---	600	800	3,100	4,000	10.0	12.0	7.5	---
SuC---------- Susquehanna	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---	5.5	---
TfA---------- Tifton	I	---	115	185	46	55	2,800	---	950	1,150	3,800	5,150	10.5	14.0	8.5	---

See footnotes at end of table.

Table 6.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Soil name and map symbol	Land capability		Corn		Soybeans		Tobacco		Cotton		Peanuts		Improved bermudagrass		Bahiagrass	
	N	I	N	I	N	I	N	I	N	I	N	I	N	I	N	I
			Bu	Bu	Bu	Bu	Lbs	Lbs	Lbs	Lbs	Lbs	Lbs	AUM*	AUM*	AUM*	AUM*
TfB---------- Tifton	IIe	---	115	185	46	55	2,800	---	950	1,150	3,800	5,150	10.5	14.0	8.5	---
TnC2---------- Tifton	IIIe	---	80	130	34	41	2,400	---	650	800	3,000	4,050	9.0	11.5	7.0	---
Uc**, Us**:																
Udorthents.																
Pits.																
WaA---------- Wahee	IIw	---	110	175	45	55	2,600	---	---	---	---	---	9.0	11.0	8.0	---

* 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.

** See description of the map unit for composition and behavior characteristics of the map unit.

Table 7.--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	7,535	---	---	---
II	160,375	95,155	13,525	51,695
III	76,105	16,740	12,860	46,505
IV	53,780	32,105	---	21,675
V	55,299	---	55,299	---
VI	69,515	9,915	56,520	3,080
VII	17,195	---	960	16,235
VIII	---	---	---	---

Table 8.--Woodland Management and Productivity

(Only the soils suitable for production of commercial trees are listed. Absence of an entry indicates that information was not available)

Soil name and map symbol	Ordination symbol	Management concerns: Erosion hazard	Equipment limitation	Seedling mortality	Potential productivity: Common trees	Site index	Productivity class*	Trees to plant
AeB, AeC, AeD------ Ailey	8S	Slight	Moderate	Moderate	Slash pine----------	70	8	Slash pine, longleaf pine.
					Longleaf pine--------	60	4	
AHA**:								
Albany----------	10W	Slight	Moderate	Moderate	Loblolly pine--------	95	10	Loblolly pine, slash pine.
					Slash pine----------	85	11	
					Longleaf pine--------	80	7	
Chipley----------	11S	Slight	Moderate	Slight	Slash pine----------	90	11	Slash pine, loblolly pine.
					Loblolly pine--------	90	9	
					Longleaf pine--------	80	7	
					Post oak----------	---	---	
					Turkey oak----------	---	---	
					Blackjack oak--------	---	---	
Bd---------- Bladen	9W	Slight	Severe	Severe	Loblolly pine--------	94	9	Loblolly pine, slash pine, American sycamore, water oak, Nuttall oak.
					Slash pine----------	91	12	
					Sweetgum----------	90	7	
BnB---------- Blanton	11S	Slight	Moderate	Moderate	Slash pine----------	90	11	Slash pine, loblolly pine, longleaf pine.
					Loblolly pine--------	85	8	
					Longleaf pine--------	70	6	
					Bluejack oak---------	---	---	
					Turkey oak----------	---	---	
					Southern red oak-----	---	---	
					Live oak----------	---	---	
BoB, BoC, BoD------ Bonifay	10S	Slight	Moderate	Moderate	Slash pine----------	85	11	Slash pine, loblolly pine, longleaf pine.
					Longleaf pine--------	69	7	
					Loblolly pine--------	85	8	
					Post oak----------	---	---	
					Blackjack oak--------	---	---	
					Turkey oak----------	---	---	
CaB2, CaC2--------- Carnegie	9A	Slight	Slight	Slight	Loblolly pine--------	86	9	Loblolly pine, slash pine.
					Slash pine----------	86	11	
					Longleaf pine--------	72	6	
CDA**:								
Centenary---------	11S	Slight	Severe	Moderate	Slash pine----------	85	11	Slash pine, loblolly pine.
					Loblolly pine--------	85	8	
					Longleaf pine--------	72	6	
Ridgeland---------	8W	Slight	Moderate	Moderate	Loblolly pine--------	80	8	Loblolly pine, slash pine, longleaf pine.
					Slash pine----------	80	10	
					Longleaf pine--------	70	6	
					Pond pine----------	---	---	
					Blackgum----------	---	---	
CnA---------- Clarendon	9W	Slight	Slight	Slight	Loblolly pine--------	90	9	Loblolly pine, American sycamore, yellow-poplar, sweetgum.
					Sweetgum----------	85	6	

See footnotes at end of table.

Table 8.--Woodland Management and Productivity--Continued

Soil name and map symbol	Ordination symbol	Management concerns: Erosion hazard	Equipment limitation	Seedling mortality	Potential productivity: Common trees	Site index	Productivity class*	Trees to plant
CoB, CoC, CtC2, CtD2---------- Cowarts	9A	Slight	Slight	Slight	Loblolly pine--------	86	9	Loblolly pine, longleaf pine, slash pine.
					Slash pine----------	86	11	
					Longleaf pine--------	67	5	
DoA, DoB, DtC2----- Dothan	9A	Slight	Slight	Slight	Loblolly pine--------	88	9	Loblolly pine, slash pine, longleaf pine.
					Slash pine----------	92	12	
					Longleaf pine--------	84	8	
					Hickory----------	---	---	
					Water oak----------	---	---	
FuB, FuC---------- Fuquay	8S	Slight	Moderate	Moderate	Loblolly pine--------	85	8	Loblolly pine, slash pine, longleaf pine.
					Longleaf pine--------	77	7	
					Slash pine----------	93	12	
KeC---------- Kershaw	8S	Slight	Moderate	Severe	Slash pine----------	65	8	Sand pine, slash pine, longleaf pine.
					Longleaf pine--------	55	3	
KFA**:								
Kinston----------	8W	Slight	Severe	Severe	Sweetgum----------	95	8	Loblolly pine, American sycamore, yellow-poplar, eastern cottonwood, cherrybark oak, green ash, sweetgum.
					Loblolly pine--------	100	11	
					White oak----------	90	5	
					Eastern cottonwood---	100	9	
					Cherrybark oak-------	95	5	
Bibb----------	11W	Slight	Severe	Severe	Loblolly pine--------	100	11	Loblolly pine, sweetgum, yellow-poplar, eastern cottonwood.
					Sweetgum----------	90	7	
					Water oak----------	90	6	
					Blackgum----------	---	---	
					Yellow-poplar--------	---	---	
					Atlantic white-cedar-	---	---	
KuC---------- Kureb	6S	Slight	Moderate	Severe	Loblolly pine--------	64	6	Longleaf pine, sand pine, loblolly pine, slash pine.
					Longleaf pine--------	53	3	
					Slash pine----------	---	---	
LaB---------- Lakeland	9S	Slight	Moderate	Moderate	Slash pine----------	75	9	Slash pine, loblolly pine, longleaf pine.
					Loblolly pine--------	75	7	
					Longleaf pine--------	60	4	
					Turkey oak----------	---	---	
					Blackjack oak--------	---	---	
					Post oak----------	---	---	
Me---------- Meggett	13W	Slight	Severe	Severe	Slash pine----------	100	13	Slash pine, loblolly pine.
					Loblolly pine--------	100	11	
					Pond pine----------	75	4	
NaB, NkB2, NkC2---- Nankin	8A	Slight	Slight	Slight	Loblolly pine--------	80	8	Loblolly pine, slash pine.
					Slash pine----------	80	10	
					Longleaf pine--------	70	6	
OdA---------- Ocilla	8W	Slight	Moderate	Moderate	Loblolly pine--------	85	8	Loblolly pine, slash pine.
					Slash pine----------	90	11	
					Longleaf pine--------	77	7	

See footnotes at end of table.

Table 8.--Woodland Management and Productivity--Continued

Soil name and map symbol	Ordination symbol	Management concerns: Erosion hazard	Equipment limitation	Seedling mortality	Potential productivity: Common trees	Site index	Productivity class*	Trees to plant
PeA---------- Pelham	11W	Slight	Severe	Severe	Slash pine----------	90	11	Slash pine, loblolly pine.
					Loblolly pine--------	90	9	
					Longleaf pine--------	80	7	
					Sweetgum----------	80	6	
					Blackgum----------	80	8	
					Water oak----------	80	5	
Pk---------- Pickney	7W	Slight	Severe	Severe	Sweetgum----------	90	7	Water tupelo, sweetgum, baldcypress.
					Water tupelo---------	---	---	
					Water oak----------	---	---	
					Pond pine----------	---	---	
					Yellow-poplar--------	---	---	
					Blackgum----------	---	---	
					Baldcypress----------	---	---	
Re---------- Rembert	7W	Slight	Severe	Severe	Sweetgum----------	90	7	Eastern cottonwood, baldcypress, water tupelo.
					Baldcypress----------	---	---	
					Water tupelo---------	---	---	
SeA---------- Stilson	9W	Slight	Moderate	Slight	Loblolly pine--------	95	9	Slash pine, loblolly pine, longleaf pine.
					Slash pine----------	95	12	
					Longleaf pine--------	80	7	
					Sweetgum----------	---	---	
SuC---------- Susquehanna	8C	Slight	Moderate	Slight	Loblolly pine--------	78	8	Loblolly pine, shortleaf pine.
					Shortleaf pine-------	68	7	
TfA, TfB, TnC2----- Tifton	9A	Slight	Slight	Slight	Loblolly pine--------	86	9	Loblolly pine, slash pine.
					Slash pine----------	86	11	
					Longleaf pine--------	72	6	
WaA---------- Wahee	9W	Slight	Moderate	Moderate	Loblolly pine--------	86	9	Loblolly pine, slash pine, sweetgum, American sycamore, water oak.
					Slash pine----------	86	11	
					Sweetgum----------	90	7	
					Blackgum----------	---	---	
					Water oak----------	---	---	
					Swamp chestnut oak---	---	---	
					Willow oak----------	---	---	
					Southern red oak-----	---	---	

* Productivity class is the yield in cubic meters per hectare per year calculated at the age of culmination of mean annual increment for fully stocked natural stands.

** See description of the map unit for composition and behavior characteristics of the map unit.

Table 9.--Recreational Development

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not rated)

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
AeB Ailey	Moderate: too sandy.	Moderate: too sandy.	Moderate: slope, too sandy.	Moderate: too sandy.	Moderate: droughty.
AeC Ailey	Moderate: too sandy.	Moderate: too sandy.	Severe: slope.	Moderate: too sandy.	Moderate: droughty.
AeD Ailey	Moderate: slope, too sandy.	Moderate: slope, too sandy.	Severe: slope.	Moderate: too sandy.	Moderate: slope, droughty.
AHA*:					
Albany	Severe: wetness, too sandy.	Severe: too sandy.	Severe: too sandy, wetness.	Severe: too sandy.	Severe: droughty.
Chipley	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: droughty.
Bd Bladen	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
BnB Blanton	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: droughty.
BoB Bonifay	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: droughty.
BoC, BoD Bonifay	Severe: too sandy.	Severe: too sandy.	Severe: slope, too sandy.	Severe: too sandy.	Severe: droughty.
CaB2 Carnegie	Moderate: percs slowly.	Moderate: percs slowly.	Moderate: slope, small stones, percs slowly.	Slight	Slight.
CaC2 Carnegie	Moderate: percs slowly.	Moderate: percs slowly.	Severe: slope.	Slight	Slight.
CDA*:					
Centenary	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: droughty.
Ridgeland	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: droughty.
CnA Clarendon	Moderate: wetness.	Moderate: wetness.	Moderate: small stones.	Slight	Moderate: droughty.
CoB Cowarts	Moderate: percs slowly.	Moderate: percs slowly.	Moderate: slope, small stones.	Slight	Moderate: droughty.
CoC, CtC2 Cowarts	Moderate: percs slowly.	Moderate: percs slowly.	Severe: slope.	Slight	Moderate: droughty.

See footnote at end of table.

Table 9.--Recreational Development--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
CtD2 Cowarts	Moderate: slope, percs slowly.	Moderate: slope, percs slowly.	Severe: slope.	Slight	Moderate: droughty, slope.
DoA Dothan	Slight	Slight	Slight	Slight	Moderate: droughty.
DoB Dothan	Slight	Slight	Moderate: slope.	Slight	Moderate: droughty.
DtC2 Dothan	Slight	Slight	Severe: slope.	Slight	Slight.
FuB Fuquay	Moderate: too sandy.	Moderate: too sandy.	Moderate: slope, too sandy.	Moderate: too sandy.	Moderate: droughty.
FuC Fuquay	Moderate: too sandy.	Moderate: too sandy.	Severe: slope.	Moderate: too sandy.	Moderate: droughty.
KeC Kershaw	Severe: too sandy.	Severe: too sandy.	Severe: slope, too sandy.	Severe: too sandy.	Severe: droughty, too sandy.
KFA*:					
Kinston	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.	Severe: wetness, flooding.
Bibb	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.	Severe: wetness, flooding.
KuC Kureb	Severe: too sandy, too acid.	Severe: too sandy, too acid.	Severe: slope, too sandy, too acid.	Severe: too sandy.	Severe: too acid, droughty.
LaB Lakeland	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: droughty, too sandy.
Me Meggett	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness, flooding.
NaB, NkB2 Nankin	Moderate: percs slowly.	Moderate: percs slowly.	Moderate: slope, percs slowly.	Slight	Slight.
NkC2 Nankin	Moderate: percs slowly.	Moderate: percs slowly.	Severe: slope.	Slight	Slight.
OdA Ocilla	Severe: flooding.	Moderate: wetness, too sandy.	Moderate: wetness, too sandy.	Moderate: wetness, too sandy.	Moderate: wetness, droughty.
PeA Pelham	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.

See footnote at end of table.

Table 9.--Recreational Development--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
Pk---------- Pickney	Severe: flooding, too sandy, ponding.	Severe: too sandy, ponding.	Severe: too sandy, flooding, ponding.	Severe: too sandy, ponding.	Severe: flooding, ponding.
Re---------- Rembert	Severe: flooding, ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
SeA---------- Stilson	Moderate: too sandy.	Moderate: too sandy.	Moderate: too sandy.	Moderate: too sandy.	Moderate: droughty.
SuC---------- Susquehanna	Severe: percs slowly.	Severe: percs slowly.	Severe: percs slowly.	Slight----------	Slight.
TfA---------- Tifton	Slight----------	Slight----------	Moderate: small stones.	Slight----------	Slight.
TfB---------- Tifton	Slight----------	Slight----------	Moderate: slope.	Slight----------	Slight.
TnC2---------- Tifton	Slight----------	Slight----------	Severe: slope.	Slight----------	Slight.
Uc*, Us*:					
Udorthents.					
Pits.					
WaA---------- Wahee	Severe: flooding, 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 10.--Wildlife Habitat

(See text for definitions of "good," "fair," "poor," and "very poor." Absence of an entry indicates that the soil was not rated)

Soil name and map symbol	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
AeB Ailey	Poor	Fair	Fair	Poor	Poor	Poor	Very poor.	Fair	Poor	Very poor.
AeC Ailey	Poor	Poor	Fair	Poor	Poor	Poor	Very poor.	Fair	Poor	Very poor.
AeD Ailey	Poor	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Fair	Poor	Very poor.
AHA*:										
Albany	Fair	Fair	Fair	Fair	Fair	Fair	Poor	Fair	Fair	Poor.
Chipley	Poor	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
Bd Bladen	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
BnB Blanton	Poor	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
BoB, BoC, BoD Bonifay	Poor	Fair	Fair	Poor	Fair	Very poor.	Very poor.	Poor	Fair	Very poor.
CaB2 Carnegie	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
CaC2 Carnegie	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
CDA*:										
Centenary	Poor	Fair	Fair	Poor	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
Ridgeland	Poor	Poor	Poor	Fair	Fair	Poor	Poor	Poor	Fair	Poor.
CnA Clarendon	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
CoB, CoC Cowarts	Poor	Fair	Good	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
CtC2, CtD2 Cowarts	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
DoA, DoB, DtC2 Dothan	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
FuB Fuquay	Fair	Fair	Good	Fair	Fair	Poor	Very poor.	Good	Fair	Very poor.
FuC Fuquay	Poor	Fair	Good	Fair	Fair	Poor	Very poor.	Good	Fair	Very poor.
KeC Kershaw	Very poor.	Poor	Poor	Very poor.	Very poor.	Very poor.	Very poor.	Poor	Very poor.	Very poor.

See footnote at end of table.

Table 10.--Wildlife Habitat--Continued

Soil name and map symbol	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
KFA*:										
Kinston	Very poor.	Poor	Poor	Poor	Poor	Good	Fair	Poor	Poor	Fair.
Bibb	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
KuC Kureb	Very poor.	Poor	Poor	Very poor.	Poor	Very poor.	Very poor.	Poor	Very poor.	Very poor.
LaB Lakeland	Poor	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
Me Meggett	Poor	Fair	Fair	Fair	Good	Good	Good	Fair	Good	Good.
NaB, NkB2 Nankin	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
NkC2 Nankin	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
OdA Ocilla	Fair	Fair	Good	Fair	Good	Fair	Fair	Fair	Good	Fair.
PeA Pelham	Poor	Poor	Fair	Fair	Fair	Fair	Fair	Poor	Fair	Fair.
Pk Pickney	Very poor.	Poor	Fair	Poor	Poor	Good	Very poor.	Poor	Poor	Good.
Re Rembert	Very poor.	Poor	Very poor.	Poor	Very poor.	Good	Good	Very poor.	Poor	Good.
SeA Stilson	Fair	Fair	Good	Fair	Fair	Poor	Poor	Fair	Fair	Poor.
SuC Susquehanna	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
TfA Tifton	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
TfB Tifton	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
TnC2 Tifton	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
Uc*, Us*:										
Udorthents.										
Pits.										
WaA Wahee	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 11.--Building Site Development

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
AeB---------- Ailey	Moderate: cutbanks cave.	Slight---------	Slight---------	Slight---------	Slight---------	Moderate: droughty.
AeC---------- Ailey	Moderate: cutbanks cave.	Slight---------	Slight---------	Moderate: slope.	Slight---------	Moderate: droughty.
AeD---------- Ailey	Moderate: cutbanks cave.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: slope, droughty.
AHA*:						
Albany----------	Severe: cutbanks cave, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Moderate: wetness.	Severe: droughty.
Chipley----------	Severe: cutbanks cave, wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.	Severe: droughty.
Bd---------- Bladen	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: low strength, wetness.	Severe: wetness.
BnB---------- Blanton	Severe: cutbanks cave.	Slight---------	Moderate: wetness.	Slight---------	Slight---------	Severe: droughty.
BoB---------- Bonifay	Severe: cutbanks cave.	Slight---------	Moderate: wetness.	Slight---------	Slight---------	Severe: droughty.
BoC---------- Bonifay	Severe: cutbanks cave.	Slight---------	Moderate: wetness.	Moderate: slope.	Slight---------	Severe: droughty.
BoD---------- Bonifay	Severe: cutbanks cave.	Moderate: slope.	Moderate: wetness, slope.	Severe: slope.	Moderate: slope.	Severe: droughty.
CaB2---------- Carnegie	Moderate: too clayey.	Slight---------	Slight---------	Slight---------	Moderate: low strength.	Slight.
CaC2---------- Carnegie	Moderate: too clayey.	Slight---------	Slight---------	Moderate: slope.	Moderate: low strength.	Slight.
CDA*:						
Centenary--------	Severe: cutbanks cave.	Slight---------	Moderate: wetness.	Slight---------	Slight---------	Severe: droughty.
Ridgeland--------	Severe: cutbanks cave, wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: droughty.
CnA---------- Clarendon	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: droughty.
CoB---------- Cowarts	Slight---------	Slight---------	Slight---------	Slight---------	Slight---------	Moderate: droughty.

See footnote at end of table.

Table 11.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
CoC, CtC2 Cowarts	Slight	Slight	Slight	Moderate: slope.	Slight	Moderate: droughty.
CtD2 Cowarts	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: droughty, slope.
DoA, DoB Dothan	Moderate: wetness.	Slight	Moderate: wetness.	Slight	Slight	Moderate: droughty.
DtC2 Dothan	Moderate: wetness.	Slight	Moderate: wetness.	Moderate: slope.	Slight	Slight.
FuB Fuquay	Moderate cutbanks cave.	Slight	Moderate: wetness.	Slight	Slight	Moderate: droughty.
FuC Fuquay	Moderate: cutbanks cave.	Slight	Moderate: wetness.	Moderate: slope.	Slight	Moderate: droughty.
KeC Kershaw	Severe: cutbanks cave.	Slight	Slight	Moderate: slope.	Slight	Severe: droughty, too sandy.
KFA*:						
Kinston	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, wetness, flooding.	Severe: wetness, flooding.
Bibb	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.	Severe: wetness, flooding.
KuC Kureb	Severe: cutbanks cave.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Severe: too acid, droughty.
LaB Lakeland	Severe: cutbanks cave.	Slight	Slight	Moderate: slope.	Slight	Moderate: droughty, too sandy.
Me Meggett	Severe: wetness.	Severe: flooding, wetness, shrink-swell.	Severe: flooding, wetness, shrink-swell.	Severe: flooding, wetness, shrink-swell.	Severe: shrink-swell, wetness, flooding.	Severe: wetness, flooding.
NaB, NkB2 Nankin	Moderate: too clayey.	Slight	Slight	Slight	Slight	Slight.
NkC2 Nankin	Moderate: too clayey.	Slight	Slight	Moderate: slope.	Slight	Slight.
OdA Ocilla	Severe: cutbanks cave, wetness.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding, wetness.	Moderate: wetness, flooding.	Moderate: wetness, droughty.
PeA Pelham	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.	Severe: wetness.

See footnote at end of table.

Table 11.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
Pk---------- Pickney	Severe: cutbanks cave, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.
Re---------- Rembert	Severe: ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: ponding.	Severe: ponding.
SeA---------- Stilson	Moderate: cutbanks cave.	Slight---------	Moderate: wetness.	Slight---------	Slight---------	Moderate: droughty.
SuC---------- Susquehanna	Moderate: too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: low strength, shrink-swell.	Slight.
TfA, TfB---------- Tifton	Moderate: wetness.	Slight---------	Moderate: wetness.	Slight---------	Slight---------	Slight.
TnC2---------- Tifton	Moderate: wetness.	Slight---------	Moderate: wetness.	Moderate: slope.	Slight---------	Slight.
Uc*, Us*:						
Udorthents.						
Pits.						
WaA---------- Wahee	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, wetness, flooding.	Severe: wetness.

* See description of the map unit for composition and behavior characteristics of the map unit.

Table 12.--Sanitary Facilities

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "good," and other terms. Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
AeB, AeC Ailey	Severe: percs slowly.	Severe: seepage.	Slight	Slight	Good.
AeD Ailey	Severe: percs slowly.	Severe: seepage, slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
AHA*:					
Albany	Severe: wetness.	Severe: seepage, wetness.	Severe: wetness, too sandy.	Severe: seepage, wetness.	Poor: too sandy, wetness.
Chipley	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: seepage, wetness, too sandy.	Severe: seepage, wetness.	Poor: seepage, too sandy.
Bd Bladen	Severe: wetness, percs slowly.	Slight	Severe: wetness, too clayey.	Severe: wetness.	Poor: too clayey, hard to pack, wetness.
BnB Blanton	Moderate: wetness.	Severe: seepage.	Severe: too sandy.	Severe: seepage.	Poor: too sandy.
BoB, BoC Bonifay	Moderate: wetness, percs slowly.	Severe: seepage.	Severe: too sandy.	Severe: seepage.	Poor: too sandy.
BoD Bonifay	Moderate: wetness, percs slowly, slope.	Severe: seepage, slope.	Severe: too sandy.	Severe: seepage.	Poor: too sandy.
CaB2, CaC2 Carnegie	Severe: percs slowly.	Moderate: slope.	Moderate: too clayey.	Slight	Fair: too clayey.
CDA*:					
Centenary	Severe: wetness, poor filter.	Severe: seepage.	Severe: seepage, wetness, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
Ridgeland	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: seepage, wetness, too sandy.	Severe: seepage, wetness.	Poor: seepage, too sandy.
CnA Clarendon	Severe: wetness, percs slowly.	Severe: seepage, wetness.	Severe: wetness.	Severe: wetness.	Fair: wetness.
CoB, CoC, CtC2 Cowarts	Severe: percs slowly.	Moderate: seepage, slope.	Moderate: too clayey.	Slight	Fair: too clayey.

See footnote at end of table.

Table 12.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
CtD2 Cowarts	Severe: percs slowly.	Severe: slope.	Moderate: slope, too clayey.	Moderate: slope.	Fair: too clayey, slope.
DoA Dothan	Moderate: wetness, percs slowly.	Moderate: seepage.	Moderate: wetness.	Slight	Good.
DoB, DtC2 Dothan	Severe: wetness, percs slowly.	Moderate: seepage, slope.	Moderate: wetness.	Slight	Good.
FuB, FuC Fuquay	Moderate: percs slowly, poor filter.	Severe: seepage.	Moderate: too sandy.	Severe: seepage.	Poor: seepage.
KeC Kershaw	Severe: poor filter.	Severe: seepage, slope.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
KFA*:					
Kinston	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
Bibb	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: small stones, wetness.
KuC Kureb	Severe: poor filter.	Severe: seepage, slope.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
LaB Lakeland	Slight	Severe: seepage.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
Me Meggett	Severe: flooding, wetness, percs slowly.	Severe: flooding.	Severe: flooding, wetness, too clayey.	Severe: flooding, wetness.	Poor: too clayey, hard to pack, wetness.
NaB, NkB2, NkC2 Nankin	Severe: percs slowly.	Moderate: seepage, slope.	Moderate: too clayey.	Slight	Fair: too clayey.
OdA Ocilla	Severe: wetness.	Severe: seepage, wetness.	Severe: wetness.	Severe: seepage, wetness.	Fair: wetness.
PeA Pelham	Severe: flooding, wetness.	Severe: seepage, flooding, wetness.	Severe: flooding, wetness, too acid.	Severe: flooding, seepage, wetness.	Poor: wetness, too acid.
Pk Pickney	Severe: flooding, ponding, poor filter.	Severe: flooding, ponding, seepage.	Severe: flooding, seepage, ponding.	Severe: flooding, ponding, seepage.	Poor: too sandy, seepage, ponding.

See footnote at end of table.

Table 12.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
Re---------- Rembert	Severe: ponding, percs slowly.	Severe: ponding.	Severe: seepage, ponding.	Severe: ponding.	Poor: ponding.
SeA---------- Stilson	Severe: wetness.	Severe: seepage, wetness.	Moderate: wetness.	Severe: seepage.	Fair: wetness.
SuC---------- Susquehanna	Severe: percs slowly.	Moderate: slope.	Severe: too clayey.	Slight----------	Poor: too clayey, hard to pack.
TfA---------- Tifton	Moderate: percs slowly, wetness.	Moderate: seepage.	Slight----------	Severe: seepage.	Good.
TfB, TnC2---------- Tifton	Moderate: percs slowly, wetness.	Moderate: slope, seepage.	Slight----------	Severe: seepage.	Good.
Uc*, Us*:					
Udorthents.					
Pits.					
WaA---------- Wahee	Severe: flooding, wetness, percs slowly.	Severe: flooding.	Severe: flooding, wetness, too clayey.	Severe: flooding, wetness.	Poor: too clayey, hard to pack, wetness.

* See description of the map unit for composition and behavior characteristics of the map unit.

Table 13.--Construction Materials

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "good," "fair," and other terms. Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
AeB, AeC:				
Ailey	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: too sandy.
AeD:				
Ailey	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: slope, too sandy.
AHA*:				
Albany	Fair: wetness.	Probable	Improbable: too sandy.	Poor: too sandy.
Chipley	Fair: wetness.	Probable	Improbable: too sandy.	Poor: too sandy.
Bd:				
Bladen	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.
BnB:				
Blanton	Good	Probable	Improbable: too sandy.	Poor: too sandy.
BoB, BoC, BoD:				
Bonifay	Good	Probable	Improbable: too sandy.	Poor: too sandy.
CaB2, CaC2:				
Carnegie	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
CDA*:				
Centenary	Good	Probable	Improbable: too sandy.	Poor: too sandy.
Ridgeland	Fair: wetness.	Probable	Improbable: too sandy.	Poor: too sandy.
CnA:				
Clarendon	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones.
CoB, CoC, CtC2, CtD2:				
Cowarts	Good	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
DoA, DoB, DtC2:				
Dothan	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: thin layer.
FuB, FuC:				
Fuquay	Good	Improbable: thin layer.	Improbable: too sandy.	Fair: too sandy, small stones.
KeC:				
Kershaw	Good	Probable	Improbable: too sandy.	Severe: seepage.
KFA*:				
Kinston	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.

See footnote at end of table.

Table 13.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
KFA*:				
Bibb	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, wetness.
KuC Kureb	Good	Probable	Improbable: too sandy.	Poor: too sandy, too acid.
LaB Lakeland	Good	Probable	Improbable: too sandy.	Poor: too sandy.
Me Meggett	Poor: wetness, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.
NaB, NkB2, NkC2 Nankin	Good	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
OdA Ocilla	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: too sandy.
PeA Pelham	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
Pk Pickney	Poor: wetness.	Probable	Improbable: too sandy.	Poor: too sandy, wetness.
Re Rembert	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.
SeA Stilson	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: too sandy.
SuC Susquehanna	Poor: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
TfA, TfB, TnC2 Tifton	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones.
Uc*, Us*:				
Udorthents.				
Pits.				
WaA Wahee	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.

* See description of the map unit for composition and behavior characteristics of the map unit.

Table 14.--Water Management

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not evaluated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Soil name and map symbol	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
AeB, AeC---------- Ailey	Moderate: seepage, slope.	Slight---------	Deep to water	Droughty, percs slowly, slope.	Too sandy, percs slowly.	Droughty, rooting depth.
AeD---------- Ailey	Severe: slope.	Slight---------	Deep to water	Droughty, percs slowly, slope.	Slope, too sandy, percs slowly.	Slope, droughty, rooting depth.
AHA*:						
Albany----------	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: slow refill, cutbanks cave.	Wetness, droughty.	Wetness, too sandy, soil blowing.	Wetness, droughty.
Chipley----------	Severe: seepage.	Severe: seepage.	Cutbanks cave	Wetness, droughty.	Wetness, too sandy, soil blowing.	Droughty.
Bd---------- Bladen	Slight---------	Severe: wetness.	Percs slowly---	Wetness, percs slowly.	Wetness, percs slowly.	Wetness, percs slowly.
BnB---------- Blanton	Severe: seepage.	Severe: seepage, piping.	Deep to water	Droughty, fast intake.	Too sandy, soil blowing.	Droughty.
BoB, BoC---------- Bonifay	Severe: seepage.	Severe: seepage.	Deep to water	Slope, droughty, fast intake.	Too sandy, soil blowing.	Droughty.
BoD---------- Bonifay	Severe: seepage, slope.	Severe: seepage.	Deep to water	Slope, droughty, fast intake.	Slope, too sandy, soil blowing.	Slope, droughty.
CaB2, CaC2-------- Carnegie	Moderate: slope.	Slight---------	Deep to water	Slope----------	Soil blowing---	Favorable.
CDA*:						
Centenary--------	Severe: seepage.	Severe: seepage, piping.	Deep to water	Droughty, fast intake.	Too sandy, soil blowing.	Droughty.
Ridgeland--------	Severe: seepage.	Severe: seepage, piping, wetness.	Cutbanks cave	Wetness, droughty, fast intake.	Wetness, too sandy, soil blowing.	Droughty.
CnA---------- Clarendon	Moderate: seepage.	Severe: piping.	Favorable------	Wetness, droughty.	Wetness, soil blowing.	Droughty.
CoB, CoC---------- Cowarts	Moderate: seepage, slope.	Severe: piping.	Deep to water	Slope, droughty, fast intake.	Soil blowing, percs slowly.	Droughty, rooting depth.

See footnote at end of table.

Table 14.--Water Management--Continued

Soil name and map symbol	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
CtC2 Cowarts	Moderate: seepage, slope.	Severe: piping.	Deep to water	Slope, droughty.	Soil blowing, percs slowly.	Droughty, rooting depth.
CtD2 Cowarts	Severe: slope.	Severe: piping.	Deep to water	Slope, droughty.	Slope, soil blowing, percs slowly.	Slope, droughty, rooting depth.
DoA Dothan	Moderate: seepage.	Moderate: piping.	Deep to water	Fast intake, droughty.	Favorable	Droughty.
DoB Dothan	Moderate: seepage, slope.	Moderate: piping.	Deep to water	Fast intake, slope, droughty.	Favorable	Droughty.
DtC2 Dothan	Moderate: seepage, slope.	Moderate: piping.	Deep to water	Slope	Favorable	Favorable.
FuB, FuC Fuquay	Severe: seepage.	Severe: seepage, piping.	Deep to water	Slope, droughty, fast intake.	Too sandy, soil blowing.	Droughty.
KeC Kershaw	Severe: seepage.	Severe: seepage, piping.	Deep to water	Slope, droughty, fast intake.	Too sandy, soil blowing.	Droughty.
KFA*:						
Kinston	Moderate: seepage.	Severe: wetness.	Flooding	Wetness, flooding.	Wetness	Wetness.
Bibb	Moderate: seepage.	Severe: piping, wetness.	Flooding	Wetness	Erodes easily, wetness.	Wetness, erodes easily.
KuC Kureb	Severe: seepage, slope.	Severe: seepage, piping.	Deep to water	Droughty, fast intake, slope.	Slope, too sandy, soil blowing.	Slope, droughty, rooting depth.
LaB Lakeland	Severe: seepage.	Severe: seepage.	Deep to water	Slope, droughty, fast intake.	Too sandy, soil blowing.	Droughty.
Me Meggett	Slight	Severe: hard to pack, wetness.	Percs slowly, flooding.	Wetness, percs slowly.	Wetness, percs slowly.	Wetness, percs slowly.
NaB Nankin	Moderate: seepage, slope.	Moderate: piping.	Deep to water	Fast intake, slope.	Soil blowing	Favorable.
NkB2, NkC2 Nankin	Moderate: seepage, slope.	Moderate: piping.	Deep to water	Slope	Soil blowing	Favorable.
OdA Ocilla	Severe: seepage.	Severe: piping, wetness.	Favorable	Wetness, droughty, fast intake.	Wetness, soil blowing.	Droughty.

See footnote at end of table.

Table 14.--Water Management--Continued

Soil name and map symbol	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
PeA---------- Pelham	Severe: seepage.	Severe: piping, wetness.	Flooding, too acid.	Wetness, fast intake, flooding.	Wetness, soil blowing.	Wetness.
Pk---------- Pickney	Severe: seepage.	Severe: seepage, piping, ponding.	Cutbanks cave, flooding, ponding.	Ponding, droughty, fast intake.	Ponding, too sandy, soil blowing.	Wetness, droughty.
Re---------- Rembert	Moderate: seepage.	Severe: ponding.	Ponding, percs slowly.	Ponding, soil blowing, percs slowly.	Ponding, soil blowing.	Wetness, percs slowly.
SeA---------- Stilson	Moderate: seepage.	Severe: piping.	Favorable------	Wetness, droughty.	Wetness, soil blowing.	Droughty.
SuC---------- Susquehanna	Moderate: slope.	Severe: hard to pack.	Deep to water	Percs slowly, slope.	Percs slowly---	Percs slowly.
TfA---------- Tifton	Severe: seepage.	Slight---------	Deep to water	Fast intake----	Favorable------	Favorable.
TfB---------- Tifton	Severe: seepage.	Slight---------	Deep to water	Fast intake, slope.	Favorable------	Favorable.
TnC2---------- Tifton	Severe: seepage.	Slight---------	Deep to water	Slope----------	Favorable------	Favorable.
Uc*, Us*:						
Udorthents.						
Pits.						
WaA---------- Wahee	Slight---------	Severe: hard to pack, wetness.	Percs slowly, flooding.	Wetness, soil blowing.	Wetness, soil blowing, percs slowly.	Wetness, percs slowly.

* See description of the map unit for composition and behavior characteristics of the map unit.

Table 15.--Engineering Index Properties

(The symbol < means less than; > means more than. Absence of an entry indicates that data were not estimated)

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas-ticity index
	In								Pct	
AeB, AeC, AeD---- Ailey	0-25	Loamy sand-------	SM, SP-SM	A-2, A-3	85-100	75-100	50-80	5-20	---	NP
	25-37	Sandy loam, sandy clay loam.	SM, SC, SC-SM	A-2, A-4, A-6	90-100	75-100	60-90	30-40	20-40	3-16
	37-48	Sandy loam, sandy clay loam.	SM, SC, SC-SM	A-2, A-4, A-6	90-100	75-100	55-90	20-50	20-40	3-16
	48-63	Coarse sandy loam, sandy loam, sandy clay loam.	SM, SC, SC-SM	A-2, A-4, A-6	85-100	75-100	50-85	15-40	<40	NP-14
AHA*:										
Albany----------	0-55	Sand----------	SM, SP-SM	A-2	100	100	75-90	10-20	---	NP
	55-68	Sandy loam-------	SM	A-2	100	100	75-92	22-30	---	NP
	68-80	Sandy clay loam, sandy loam, fine sandy loam.	SC, SM, SC-SM	A-2, A-4, A-6	97-100	95-100	70-100	20-50	<40	NP-17
Chipley---------	0-6	Sand----------	SP-SM	A-3, A-2-4	100	100	80-100	6-12	---	NP
	6-80	Sand, fine sand	SP-SM	A-3, A-2-4	100	100	80-100	6-12	---	NP
Bd---------- Bladen	0-14	Fine sandy loam	SM	A-2, A-4	100	97-100	60-85	20-50	---	NP
	14-54	Clay, sandy clay	CL, CH	A-7	100	99-100	75-100	55-85	45-67	23-45
	54-62	Clay, sandy clay, clay loam.	CL, CH, SC	A-4, A-6, A-7	100	89-99	75-95	45-75	25-60	8-35
BnB---------- Blanton	0-54	Sand----------	SP-SM, SM	A-3, A-2-4	100	90-100	65-100	5-20	---	NP
	54-60	Sandy loam, loamy sand, loamy coarse sand.	SM	A-2-4	100	95-100	65-96	13-30	<25	NP-3
	60-82	Sandy clay loam, sandy loam, sandy clay.	SC, SC-SM, SM	A-4, A-2-4, A-2-6, A-6	100	95-100	69-100	25-50	12-45	3-22
BoB, BoC, BoD---- Bonifay	0-57	Sand----------	SP-SM	A-3, A-2-4	98-100	98-100	60-95	5-12	---	NP
	57-68	Sandy loam, sandy clay loam, fine sandy loam.	SC-SM, SC, SM	A-2-4, A-4, A-2-6, A-6	95-100	90-100	63-95	23-50	<30	NP-12
	68-80	Sandy clay loam, sandy clay.	SC-SM, SC	A-2, A-4, A-6, A-7	95-100	90-100	60-95	30-50	25-45	5-22
CaB2, CaC2------- Carnegie	0-7	Sandy loam-------	SM, SC-SM	A-2	85-100	75-95	51-75	13-30	<25	NP-5
	7-20	Sandy clay, sandy clay loam.	CL	A-6, A-7	95-100	90-99	90-95	65-70	36-49	13-25
	20-35	Sandy clay, clay	CL	A-6, A-7	92-100	90-98	89-98	63-76	36-49	13-25
	35-60	Sandy clay, clay	CL	A-7, A-6	99-100	98-100	90-98	68-79	36-49	13-25
CDA*:										
Centenary-------	0-10	Fine sand--------	SP, SP-SM	A-3	100	100	60-100	4-10	---	NP
	10-60	Sand, fine sand, loamy sand.	SP-SM, SP, SM	A-3, A-2-4	100	100	60-100	4-20	---	NP
	60-80	Sand, fine sand, loamy sand.	SP, SP-SM, SM	A-3, A-2-4	100	100	60-100	3-20	---	NP

See footnote at end of table.

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas-ticity index
	In								Pct	
CDA*:										
Ridgeland-------	0-9	Fine sand--------	SP-SM, SM	A-2, A-3	100	100	80-100	5-20	<20	NP
	9-17	Sand, fine sand, loamy fine sand.	SP-SM, SP, SM	A-2, A-3	100	100	80-100	3-18	<20	NP
	17-42	Sand, fine sand, loamy fine sand.	SP-SM, SP, SM	A-2, A-3	100	100	80-100	2-15	<20	NP
	42-80	Sand, fine sand, loamy fine sand.	SP-SM, SP, SM	A-2, A-3	100	90-100	70-100	2-15	<20	NP
CnA---------- Clarendon	0-13	Loamy sand-------	SM, SP-SM	A-2	98-100	85-100	65-90	10-30	<20	NP-3
	13-28	Sandy clay loam, sandy loam.	SC, CL, SC-SM, CL-ML	A-4, A-6	98-100	85-100	75-95	36-55	20-40	5-15
	28-63	Sandy clay loam, sandy loam, sandy clay.	SC, CL, SC-SM, CL-ML	A-2, A-4, A-6	99-100	96-100	80-95	25-55	<40	NP-15
CoB, CoC--------- Cowarts	0-5	Loamy sand-------	SM	A-2	90-100	85-100	50-80	13-30	<20	NP
	5-21	Fine sandy loam, sandy loam, sandy clay loam.	SC-SM, SC, SM	A-2, A-4, A-6	95-100	90-100	60-95	23-45	20-40	NP-15
	21-27	Sandy clay loam, sandy clay, clay loam.	SM, SC	A-6, A-7, A-2-6	95-100	90-100	60-95	25-50	20-54	5-25
	27-60	Sandy loam, sandy clay loam, coarse sandy loam.	SC-SM, SC, CL-ML, CL	A-2, A-4, A-6, A-7	85-100	80-100	60-95	25-58	25-53	5-20
CtC2, CtD2------- Cowarts	0-5	Sandy loam-------	SM, SC-SM	A-2, A-4	95-100	90-100	75-90	20-40	<20	NP-5
	5-24	Fine sandy loam, sandy loam, sandy clay loam.	SC-SM, SC, SM	A-2, A-4, A-6	95-100	90-100	60-95	23-45	20-40	NP-15
	24-29	Sandy clay loam, sandy clay, clay loam.	SM, SC	A-6, A-7, A-2-6	95-100	90-100	60-95	25-50	20-54	5-25
	29-63	Sandy loam, sandy clay loam, clay loam.	SC-SM, SC, CL-ML, CL	A-2, A-4, A-6, A-7	85-100	80-100	60-95	25-58	25-53	5-20
DoA, DoB--------- Dothan	0-13	Loamy sand-------	SM	A-2	95-100	92-100	60-80	13-30	<20	NP
	13-46	Sandy clay loam, sandy loam, fine sandy loam.	SC-SM, SC, SM	A-2, A-4, A-6	95-100	92-100	60-90	23-49	<40	NP-16
	46-63	Sandy clay loam, sandy clay.	SC-SM, SC, CL-ML, CL	A-2, A-4, A-6, A-7	95-100	92-100	70-95	30-53	25-45	4-23
DtC2---------- Dothan	0-12	Sandy loam-------	SM, SP-SM	A-2, A-4	95-100	92-100	75-90	20-40	<25	NP-5
	12-46	Sandy clay loam, sandy loam, fine sandy loam.	SC-SM, SC, SM	A-2, A-4, A-6	95-100	92-100	60-90	23-49	<40	NP-16
	46-63	Sandy clay loam, sandy clay.	SC-SM, SC, CL-ML, CL	A-2, A-4, A-6, A-7	95-100	92-100	70-95	30-53	25-45	4-23
FuB, FuC--------- Fuquay	0-27	Loamy sand-------	SP-SM, SM	A-2, A-3	95-100	90-100	50-83	5-35	10-20	NP
	27-47	Sandy loam, fine sandy loam, sandy clay loam.	SM, SC, SC-SM	A-2, A-4, A-6	85-100	85-100	70-90	23-45	20-45	NP-13
	47-63	Sandy clay loam	SC, SC-SM, SM	A-2, A-4, A-6, A-7-6	95-100	90-100	58-90	28-49	25-45	4-13

See footnote at end of table.

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas-ticity index
	In								Pct	
KeC---------- Kershaw	0-85	Coarse sand------	SP, SP-SM, SW	A-2, A-3	98-100	98-100	50-80	1-7	<20	NP
KFA*:										
Kinston---------	0-6	Loam----------	ML, CL, CL-ML	A-4, A-6	100	98-100	85-100	50-97	17-40	4-15
	6-63	Sandy loam, clay loam, sandy clay loam.	CL	A-4, A-6, A-7	100	95-100	75-100	60-95	20-45	8-22
Bibb----------	0-14	Loam----------	ML, CL-ML	A-4	95-100	90-100	80-90	50-80	<25	NP-7
	14-63	Sandy loam, silt loam, loamy sand.	SM, SC-SM, ML, CL-ML	A-2, A-4	60-100	50-100	40-100	30-90	<30	NP-7
KuC---------- Kureb	0-85	Sand----------	SP, SP-SM	A-3	100	100	60-100	0-7	10-14	NP
LaB---------- Lakeland	0-63	Sand----------	SP-SM	A-3, A-2-4	90-100	90-100	60-100	5-12	<20	NP
	63-80	Sand, fine sand.	SP, SP-SM	A-3, A-2-4	90-100	90-100	50-100	1-12	<20	NP
Me---------- Meggett	0-4	Loam----------	ML, CL-ML, CL	A-4, A-6	100	95-100	85-100	55-80	20-40	5-15
	4-26	Clay, sandy clay, clay loam.	CH, MH, CL	A-6, A-7	100	90-100	75-100	51-90	30-60	11-30
	26-52	Clay, sandy clay, clay loam.	CH, MH, CL, ML	A-6, A-7	100	90-100	75-100	51-90	35-65	11-30
	52-63	Sandy clay, sandy clay loam, clay.	SC, SM, ML, MH	A-4, A-6, A-7	90-100	65-100	50-100	36-90	30-60	7-25
NaB---------- Nankin	0-7	Loamy sand-------	SM, SP-SM	A-2	85-100	85-100	50-85	10-35	<20	NP
	7-13	Sandy clay loam, sandy loam.	SC, SM, SC-SM	A-2, A-4, A-6	97-100	95-100	75-90	25-45	20-35	4-15
	13-46	Sandy clay, clay, sandy clay loam.	SC, CL, ML, CL-ML	A-4, A-6, A-7	98-100	95-100	75-95	40-70	25-45	7-20
	46-63	Sandy clay loam, sandy loam.	SC, SC-SM, CL, CL-ML	A-2, A-4, A-6	98-100	95-100	70-85	25-55	20-40	4-16
NkB2, NkC2------- Nankin	0-4	Sandy loam-------	SM, SC-SM	A-2, A-4	85-100	85-100	70-90	25-45	<25	NP-4
	4-9	Sandy clay loam, sandy loam.	SC, SM, SC-SM	A-2, A-4, A-6	97-100	95-100	75-90	25-45	20-35	4-15
	9-32	Sandy clay, clay, sandy clay loam.	SC, CL, ML, CL-ML	A-4, A-6, A-7	98-100	95-100	75-95	40-70	25-45	7-20
	32-63	Sandy clay loam, sandy loam.	SC, SC-SM, CL, CL-ML	A-2, A-4, A-6	98-100	95-100	70-85	25-55	20-40	4-16
OdA---------- Ocilla	0-28	Loamy sand-------	SM, SP-SM	A-2, A-3	100	95-100	75-100	8-35	0-14	NP
	28-33	Sandy loam, sandy clay loam, fine sandy loam.	SM, CL, SC, ML	A-2, A-4, A-6	100	95-100	80-100	20-55	20-40	NP-18
	33-63	Sandy clay loam, sandy clay, sandy loam.	SC, CL	A-4, A-6, A-7	100	95-100	80-100	36-60	20-45	7-20
PeA---------- Pelham	0-31	Loamy sand-------	SM	A-2	100	95-100	75-90	15-30	<20	NP
	31-63	Sandy clay loam, sandy loam, fine sandy loam.	SM, SC, SC-SM	A-2, A-4, A-6	100	95-100	65-90	27-50	15-30	2-12

See footnote at end of table.

Table 15.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas-ticity index
	In								Pct	
Pk----------	0-43	Sand----------	SP-SM, SM	A-2	100	100	50-90	10-25	<20	NP
Pickney	43-63	Loamy fine sand, loamy sand, fine sand.	SP, SP-SM, SM	A-2, A-3	100	100	50-90	3-25	<20	NP
Re----------	0-4	Sandy loam-------	SM, SC-SM	A-4	100	95-100	60-80	36-50	<20	NP-7
Rembert	4-43	Clay, sandy clay, sandy clay loam.	CL, CH	A-6, A-7	100	98-100	85-98	55-85	35-53	15-30
	43-55	Sandy clay loam, clay loam, sandy clay.	SC, SC-SM, CL, CL-ML	A-2, A-4, A-6	100	95-100	67-98	30-60	15-35	4-15
	55-63	Sandy clay loam, sandy loam, loamy sand.	SC, SM, SC-SM	A-2, A-4	100	98-100	60-90	20-50	<30	NP-10
SeA----------	0-22	Loamy sand-------	SM	A-2	94-100	94-100	74-92	15-24	<20	NP
Stilson	22-36	Sandy loam, sandy clay loam.	SM, SC, SC-SM	A-2, A-6, A-4	89-100	86-100	77-94	25-41	<29	NP-13
	36-65	Sandy loam, sandy clay loam.	SM, SC, SC-SM	A-2, A-6, A-4	96-100	95-100	70-99	25-50	<40	NP-20
SuC----------	0-3	Sandy loam-------	ML, SM	A-4	100	100	65-90	40-55	<25	NP
Susquehanna	3-63	Clay, silty clay loam, silty clay.	CH	A-7	100	100	88-100	80-98	50-90	28-56
TfA, TfB---------	0-11	Loamy sand-------	SM, SP-SM	A-2	70-97	62-94	53-85	11-27	<20	NP
Tifton	11-16	Sandy loam, gravelly sandy loam, fine sandy loam.	SM, SC-SM	A-2	70-95	56-89	55-89	20-35	<25	NP-7
	16-33	Sandy clay loam, gravelly sandy clay loam.	SC, CL	A-2, A-6, A-4	70-98	65-94	60-89	22-53	22-40	8-22
	33-63	Sandy clay loam, sandy clay.	SC, CL	A-2, A-6, A-7, A-4	87-100	80-99	50-94	34-55	24-45	8-23
TnC2----------	0-5	Sandy loam-------	SM, SC-SM	A-2	70-95	60-89	55-89	15-30	<20	NP-6
Tifton	5-35	Sandy clay loam, gravelly sandy clay loam.	SC, CL	A-2, A-6, A-4	70-98	65-94	60-89	22-53	22-40	8-22
	35-63	Sandy clay loam, sandy clay.	SC, CL	A-2, A-6, A-7, A-4	87-100	80-99	50-94	34-55	24-45	8-23
Uc*, Us*:										
Udorthents.										
Pits.										
WaA----------	0-11	Sandy loam-------	SM, SC-SM	A-2, A-4	100	95-100	50-98	30-50	<28	NP-7
Wahee	11-51	Clay, clay loam, silty clay.	CL, CH	A-6, A-7	100	100	85-100	51-92	38-81	16-54
	51-60	Variable---------	---	---	---	---	---	---	---	---

* See description of the map unit for composition and behavior characteristics of the map unit.

Table 16.--Physical and Chemical Properties of the Soils

(The symbol < means less than; > means more than. Entries under "Erosion factors--T" apply to the entire profile. Entries under "Organic matter" apply only to the surface layer. Absence of an entry indicates that data were not available or were not estimated)

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors K	Erosion factors T	Organic matter
	In	Pct	g/cc	In/hr	In/in	pH				Pct
AeB, AeC, AeD----	0-25	5-10	1.35-1.45	6.0-20	0.03-0.05	4.5-5.5	Low----------	0.15	4	<1
Ailey	25-37	15-35	1.55-1.70	0.6-2.0	0.09-0.12	4.5-5.5	Low----------	0.24		
	37-48	18-35	1.70-1.80	0.06-0.2	0.06-0.10	4.5-5.5	Low----------	0.24		
	48-63	15-30	1.80-1.95	0.06-0.2	0.04-0.08	4.5-5.5	Low----------	0.15		
AHA*:										
Albany----------	0-55	1-10	1.40-1.55	6.0-20	0.02-0.04	4.5-5.5	Low----------	0.10	5	1-2
	55-68	1-20	1.50-1.70	2.0-6.0	0.08-0.10	4.5-5.5	Low----------	0.20		
	68-80	13-35	1.55-1.65	0.2-2.0	0.10-0.16	4.5-5.5	Low----------	0.24		
Chipley---------	0-6	1-5	1.35-1.45	6.0-20	0.05-0.10	4.5-5.5	Low----------	0.10	5	1-2
	6-80	1-7	1.45-1.60	6.0-20	0.03-0.08	4.5-5.5	Low----------	0.10		
Bd----------	0-14	10-20	1.35-1.45	0.6-2.0	0.10-0.13	4.5-5.5	Low----------	0.24	5	1-3
Bladen	14-54	35-55	1.60-1.70	0.06-0.2	0.12-0.16	4.5-5.5	Moderate-----	----		
	54-62	35-70	1.60-1.70	0.06-0.2	0.12-0.16	4.5-5.5	Moderate-----	----		
BnB----------	0-54	1-7	1.30-1.60	6.0-20	0.03-0.07	4.5-6.0	Low----------	0.10	5	.5-1
Blanton	54-60	10-18	1.50-1.65	2.0-6.0	0.10-0.15	4.5-6.0	Low----------	0.15		
	60-82	12-40	1.60-1.70	0.2-2.0	0.10-0.15	4.5-6.0	Low----------	0.20		
BoB, BoC, BoD----	0-57	3-9	1.35-1.60	6.0-20	0.03-0.08	4.5-5.5	Low----------	0.10	5	.5-2
Bonifay	57-68	15-35	1.60-1.70	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.24		
	68-80	20-45	1.60-1.70	0.2-0.6	0.10-0.15	4.5-5.5	Low----------	0.24		
CaB2, CaC2-------	0-7	3-8	1.45-1.65	2.0-6.0	0.05-0.10	4.5-6.0	Low----------	0.28	3	1-2
Carnegie	7-20	36-43	1.40-1.65	0.2-0.6	0.10-0.16	4.5-5.5	Low----------	0.32		
	20-35	36-51	1.40-1.65	0.2-0.6	0.10-0.14	4.5-5.5	Low----------	0.28		
	35-60	36-55	1.40-1.65	0.2-0.6	0.10-0.14	4.5-5.5	Low----------	0.28		
CDA*:										
Centenary-------	0-10	1-8	1.40-1.60	6.0-20	0.03-0.08	4.5-5.5	Low----------	0.10	5	<1
	10-60	1-8	1.40-1.60	6.0-20	0.03-0.05	4.5-5.5	Low----------	0.10		
	60-80	2-10	1.50-1.70	2.0-6.0	0.03-0.10	4.5-5.5	Low----------	0.10		
Ridgeland-------	0-9	<10	1.20-1.50	6.0-20	0.05-0.10	3.6-5.0	Low----------	0.10	5	1-4
	9-17	<10	1.50-1.70	0.6-6.0	0.04-0.08	3.6-5.0	Low----------	0.15		
	17-42	<10	1.40-1.60	6.0-20	0.04-0.08	3.6-5.0	Low----------	0.15		
	42-80	<10	1.50-1.70	0.6-6.0	0.04-0.08	3.6-5.0	Low----------	0.15		
CnA----------	0-13	2-10	1.40-1.60	2.0-6.0	0.08-0.12	4.5-5.5	Low----------	0.15	5	.5-3
Clarendon	13-28	18-35	1.40-1.60	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.20		
	28-63	15-40	1.40-1.70	0.2-0.6	0.08-0.12	4.5-5.5	Low----------	0.15		
CoB, CoC---------	0-5	3-10	1.30-1.70	2.0-6.0	0.06-0.10	4.5-5.5	Low----------	0.15	4	.5-2
Cowarts	5-21	10-30	1.30-1.50	0.6-2.0	0.10-0.16	4.5-5.5	Low----------	0.28		
	21-27	25-40	1.30-1.50	0.2-2.0	0.10-0.16	4.5-5.5	Low----------	0.28		
	27-60	18-35	1.65-1.80	0.06-0.6	0.10-0.14	4.5-5.5	Low----------	0.24		
CtC2, CtD2-------	0-5	5-20	1.30-1.65	2.0-6.0	0.08-0.13	4.5-5.5	Low----------	0.24	4	1-3
Cowarts	5-24	10-30	1.30-1.50	0.6-2.0	0.10-0.16	4.5-5.5	Low----------	0.28		
	24-29	25-40	1.30-1.50	0.2-2.0	0.10-0.16	4.5-5.5	Low----------	0.28		
	29-63	18-35	1.65-1.80	0.06-0.6	0.10-0.14	4.5-5.5	Low----------	0.24		

See footnote at end of table.

Table 16.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors K	Erosion factors T	Organic matter
	In	Pct	g/cc	In/hr	In/in	pH				Pct
DoA, DoB---------	0-13	5-15	1.30-1.60	2.0-6.0	0.06-0.10	5.1-6.0	Low----------	0.15	5	<.5
Dothan	13-46	18-35	1.40-1.60	0.6-2.0	0.12-0.16	5.1-6.0	Low----------	0.28		
	46-63	18-40	1.45-1.70	0.2-0.6	0.08-0.12	5.1-6.0	Low----------	0.28		
DtC2----------	0-12	10-18	1.30-1.70	2.0-6.0	0.08-0.13	5.1-6.0	Low----------	0.24	5	.5-1
Dothan	12-46	18-35	1.40-1.60	0.6-2.0	0.12-0.16	5.1-6.0	Low----------	0.28		
	46-63	18-40	1.45-1.70	0.2-0.6	0.08-0.12	5.1-6.0	Low----------	0.28		
FuB, FuC---------	0-27	2-10	1.60-1.70	>6.0	0.04-0.09	4.5-5.5	Low----------	0.15	5	.5-2
Fuquay	27-47	10-35	1.40-1.60	0.6-2.0	0.12-0.15	4.5-5.5	Low----------	0.20		
	47-63	20-35	1.40-1.60	0.06-0.2	0.10-0.13	4.5-5.5	Low----------	0.20		
KeC----------	0-85	1-5	1.35-1.60	>20	0.02-0.05	4.5-5.0	Low----------	0.10	5	<1
Kershaw										
KFA*:										
Kinston---------	0-6	5-27	1.30-1.50	0.6-2.0	0.14-0.20	4.5-5.5	Low----------	0.37	5	2-5
	6-63	18-35	1.30-1.50	0.6-2.0	0.14-0.18	4.5-5.5	Low----------	0.32		
Bibb----------	0-14	2-18	1.40-1.65	0.6-2.0	0.15-0.20	4.5-5.5	Low----------	0.28	5	1-3
	14-63	2-18	1.45-1.75	0.6-2.0	0.10-0.20	4.5-5.5	Low----------	0.37		
KuC----------	0-85	0-3	1.60-1.80	6.0-20	<0.05	4.5-5.5	Low----------	0.10	5	0-2
Kureb										
LaB----------	0-63	2-8	1.35-1.65	6.0-20	0.05-0.09	4.5-5.5	Low----------	0.10	5	.5-1
Lakeland	63-80	1-6	1.50-1.60	6.0-20	0.02-0.08	4.5-5.5	Low----------	0.10		
Me----------	0-4	15-25	1.20-1.40	0.6-2.0	0.15-0.20	5.6-6.5	Low----------	0.28	5	2-8
Meggett	4-26	30-60	1.45-1.60	0.06-0.2	0.13-0.18	5.6-7.8	High---------	0.32		
	26-52	35-60	1.50-1.75	0.06-0.2	0.13-0.18	6.1-8.4	High---------	0.32		
	52-63	25-50	1.40-1.60	0.06-0.6	0.12-0.18	6.1-8.4	Moderate-----	0.28		
NaB----------	0-7	5-12	1.45-1.65	2.0-6.0	0.05-0.10	4.5-5.5	Low----------	0.17	3	.5-1
Nankin	7-13	15-35	1.55-1.65	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.24		
	13-46	35-50	1.30-1.70	0.2-0.6	0.11-0.16	4.5-5.5	Low----------	0.24		
	46-63	15-35	1.60-1.70	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.24		
NkB2, NkC2-------	0-4	7-20	1.45-1.55	2.0-6.0	0.08-0.12	4.5-5.5	Low----------	0.28	3	.5-1
Nankin	4-9	15-35	1.55-1.65	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.24		
	9-32	35-50	1.30-1.70	0.2-0.6	0.11-0.16	4.5-5.5	Low----------	0.24		
	32-63	15-35	1.60-1.70	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.24		
OdA----------	0-28	4-10	1.45-1.65	2.0-20	0.05-0.08	4.5-5.5	Low----------	0.10	5	1-2
Ocilla	28-33	15-35	1.55-1.70	0.6-2.0	0.09-0.12	4.5-5.5	Low----------	0.24		
	33-63	15-40	1.55-1.70	0.2-2.0	0.09-0.12	4.5-5.5	Low----------	0.24		
PeA----------	0-31	5-10	1.50-1.70	6.0-20	0.05-0.08	4.5-5.5	Low----------	0.10	5	1-2
Pelham	31-63	15-30	1.30-1.60	0.6-2.0	0.10-0.13	4.5-5.5	Low----------	0.24		
Pk----------	0-43	2-10	1.20-1.40	6.0-20	0.04-0.08	4.5-5.5	Low----------	0.10	5	3-15
Pickney	43-63	1-10	1.40-1.60	6.0-20	0.03-0.11	4.5-5.5	Low----------	0.10		
Re----------	0-4	5-18	1.40-1.60	0.6-2.0	0.10-0.14	4.5-5.5	Low----------	0.20	5	1-5
Rembert	4-43	35-60	1.20-1.50	0.06-0.2	0.12-0.16	4.5-5.5	Low----------	0.20		
	43-55	22-45	1.30-1.50	0.6-2.0	0.12-0.15	4.5-5.5	Low----------	0.17		
	55-63	8-25	1.30-1.60	0.6-6.0	0.07-0.12	4.5-5.5	Low----------	0.17		
SeA----------	0-22	3-8	1.35-1.60	6.0-20	0.06-0.09	4.5-5.5	Low----------	0.10	5	.5-1
Stilson	22-36	15-30	1.40-1.60	0.6-2.0	0.09-0.12	4.5-5.5	Low----------	0.24		
	36-65	15-35	1.40-1.60	0.6-2.0	0.08-0.10	4.5-5.5	Low----------	0.17		

See footnote at end of table.

Table 16.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors K	Erosion factors T	Organic matter
	In	Pct	g/cc	In/hr	In/in	pH				Pct
SuC---------- Susquehanna	0-3	2-12	1.50-1.55	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.28	5	.5-2
	3-63	35-60	1.25-1.50	<0.06	0.15-0.20	4.5-5.5	High---------	0.32		
TfA, TfB--------- Tifton	0-11	3-8	1.30-1.55	6.0-20	0.03-0.08	4.5-5.5	Low----------	0.10	4	<1
	11-16	13-22	1.45-1.65	6.0-20	0.08-0.12	4.5-5.5	Low----------	0.24		
	16-33	20-35	1.50-1.70	0.6-2.0	0.12-0.16	4.5-5.5	Low----------	0.24		
	33-63	25-40	1.55-1.80	0.2-0.6	0.10-0.13	4.5-5.5	Low----------	0.17		
TnC2---------- Tifton	0-5	10-20	1.30-1.50	6.0-20	0.06-0.10	4.5-5.5	Low----------	0.17	4	1-2
	5-35	20-35	1.50-1.70	0.6-2.0	0.12-0.16	4.5-5.5	Low----------	0.24		
	35-63	25-40	1.55-1.80	0.2-0.6	0.10-0.13	4.5-5.5	Low----------	0.17		
Uc*, Us*:										
Udorthents.										
Pits.										
WaA---------- Wahee	0-11	5-20	1.30-1.60	0.6-2.0	0.10-0.15	4.5-8.4	Low----------	0.24	5	.5-5
	11-51	35-70	1.40-1.60	0.06-0.2	0.12-0.20	4.5-8.4	Moderate-----	0.28		
	51-60	---	---	---	---	---	----------	----		

* See description of the map unit for composition and behavior characteristics of the map unit.

Table 17.--Soil and Water Features

("Flooding" and "water table" and terms such as "rare," "brief," "apparent," and "perched" are explained in the text. The symbol < means less than; > means more than. Absence of an entry indicates that the feature is not a concern or that data were not estimated)

Soil name and map symbol	Hydro-logic group	Flooding: Frequency	Flooding: Duration	Flooding: Months	High water table: Depth	High water table: Kind	High water table: Months	Bedrock: Depth	Bedrock: Hard-ness	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
					Ft			In			
AeB, AeC, AeD----- Ailey	B	None--------	---	---	>6.0	---	---	>60	---	Moderate	Moderate.
AHA*:											
Albany----------	C	None--------	---	---	1.0-2.5	Apparent	Dec-Mar	>60	---	High-----	High.
Chipley----------	C	None--------	---	---	2.0-3.0	Apparent	Dec-Apr	>60	---	Low------	High.
Bd---------- Bladen	D	None--------	---	---	0-1.0	Apparent	Dec-May	>60	---	High-----	High.
BnB---------- Blanton	A	None--------	---	---	4.0-6.0	Perched	Mar-Aug	>60	---	High-----	High.
BoB, BoC, BoD----- Bonifay	A	None--------	---	---	4.0-5.0	Perched	Jan-Feb	>60	---	Low------	High.
CaB2, CaC2-------- Carnegie	C	None--------	---	---	>6.0	---	---	>60	---	Low------	Moderate.
CDA*:											
Centenary--------	A	None--------	---	---	3.5-5.0	Apparent	Dec-Mar	>60	---	Moderate	High.
Ridgeland--------	D	None--------	---	---	1.5-2.5	Apparent	Nov-Apr	>60	---	Moderate	High.
CnA---------- Clarendon	C	None--------	---	---	2.0-3.0	Apparent	Dec-Mar	>60	---	Moderate	High.
CoB, CoC, CtC2, CtD2---------- Cowarts	C	None--------	---	---	>6.0	---	---	>60	---	Moderate	Moderate.
DoA, DoB, DtC2---- Dothan	B	None--------	---	---	3.0-5.0	Perched	Jan-Apr	>60	---	Moderate	Moderate.
FuB, FuC---------- Fuquay	B	None--------	---	---	4.0-6.0	Perched	Jan-Mar	>60	---	Low------	High.
KeC---------- Kershaw	A	None--------	---	---	>6.0	---	---	>60	---	Low------	High.
KFA*:											
Kinston----------	D	Frequent----	Brief-----	Nov-Jun	0-1.0	Apparent	Nov-Jun	>60	---	High-----	High.
Bibb----------	D	Frequent----	Brief-----	Dec-May	0.5-1.0	Apparent	Dec-Apr	>60	---	High-----	Moderate.
KuC---------- Kureb	A	None--------	---	---	>6.0	---	---	>60	---	Low------	Low.
LaB---------- Lakeland	A	None--------	---	---	>6.0	---	---	>60	---	Low------	Moderate.
Me---------- Meggett	D	Frequent----	Long------	Dec-Apr	0-1.0	Apparent	Nov-Apr	>60	---	High-----	Moderate.

See footnote at end of table.

Table 17.--Soil and Water Features--Continued

Soil name and map symbol	Hydro-logic group	Flooding: Frequency	Flooding: Duration	Flooding: Months	High water table: Depth	High water table: Kind	High water table: Months	Bedrock: Depth	Bedrock: Hard-ness	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
					Ft			In			
NaB, NkB2, NkC2--- Nankin	C	None--------	---	---	>6.0	---	---	>60	---	High-----	High.
OdA---------- Ocilla	C	Rare--------	---	---	1.0-2.5	Apparent	Dec-Apr	>60	---	High-----	Moderate.
PeA---------- Pelham	B/D	Occasional	Brief-----	Dec-Mar	0-1.0	Apparent	Jan-Apr	>60	---	High-----	High.
Pk---------- Pickney	D	Frequent----	Long------	Nov-Jul	+1-1.5	Apparent	Nov-Jun	>60	---	High-----	High.
Re---------- Rembert	D	Rare--------	---	---	+1-1.0	Apparent	Nov-Apr	>60	---	High-----	High.
SeA---------- Stilson	B	None--------	---	---	2.5-3.0	Apparent	Dec-Apr	>60	---	Moderate	High.
SuC---------- Susquehanna	D	None--------	---	---	>6.0	---	---	>60	---	High-----	High.
TfA, TfB, TnC2---- Tifton	B	None--------	---	---	3.5-6.0	Perched	Jan-Feb	>60	---	Low------	Moderate.
Uc*, Us*:											
Udorthents.											
Pits.											
WaA---------- Wahee	D	Occasional	Very brief	Dec-Apr	0.5-1.5	Apparent	Dec-Mar	>60	---	High-----	High.

* See description of the map unit for composition and behavior characteristics of the map unit.

Table 18.--Classification of the Soils

(An asterisk in the first column indicates that the soil is a taxadjunct to the series. See text for a description of those characteristics of the soil that are outside the range of the series)

Soil name	Family or higher taxonomic class
Ailey	Loamy, siliceous, thermic Arenic Kanhapludults
Albany	Loamy, siliceous, thermic Grossarenic Paleudults
Bibb	Coarse-loamy, siliceous, acid, thermic Typic Fluvaquents
Bladen	Clayey, mixed, thermic Typic Albaquults
Blanton	Loamy, siliceous, thermic Grossarenic Paleudults
Bonifay	Loamy, siliceous, thermic Grossarenic Plinthic Paleudults
Carnegie	Clayey, kaolinitic, thermic Plinthic Kandiudults
Centenary	Sandy, siliceous, thermic Grossarenic Entic Alorthods
Chipley	Thermic, coated Aquic Quartzipsamments
Clarendon	Fine-loamy, siliceous, thermic Plinthaquic Paleudults
Cowarts	Fine-loamy, siliceous, thermic Typic Kanhapludults
Dothan	Fine-loamy, siliceous, thermic Plinthic Kandiudults
Fuquay	Loamy, siliceous, thermic Arenic Plinthic Kandiudults
Kershaw	Thermic, uncoated Typic Quartzipsamments
Kinston	Fine-loamy, siliceous, acid, thermic Typic Fluvaquents
Kureb	Thermic, uncoated Spodic Quartzipsamments
Lakeland	Thermic, coated Typic Quartzipsamments
Meggett	Fine, mixed, thermic Typic Albaqualfs
Nankin	Clayey, kaolinitic, thermic Typic Kanhapludults
Ocilla	Loamy, siliceous, thermic Aquic Arenic Paleudults
Pelham	Loamy, siliceous, thermic Arenic Paleaquults
Pickney	Sandy, siliceous, thermic Cumulic Humaquepts
Rembert	Clayey, kaolinitic, thermic Typic Endoaquults
Ridgeland	Sandy, siliceous, thermic Oxyaquic Alorthods
Stilson	Loamy, siliceous, thermic Arenic Plinthic Paleudults
Susquehanna	Fine, montmorillonitic, thermic Vertic Paleudalfs
Tifton	Fine-loamy, siliceous, thermic Plinthic Kandiudults
Udorthents	Udorthents
*Wahee	Clayey, mixed, thermic Aeric Endoaquults