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

Soil Survey of Randolph County, Georgia

How To Use This Soil Survey

General Soil Map

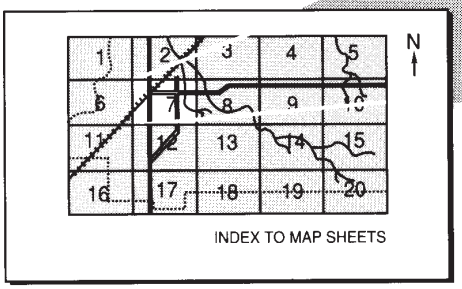
The general soil map, which is a color map, shows the survey area divided into groups of associated soils called general soil map units. This map is useful in planning the use and management of large areas.

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.

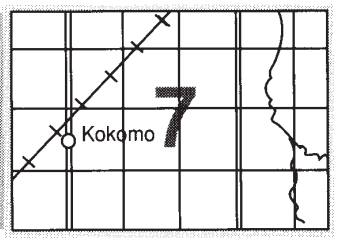
Detailed Soil Maps

The detailed soil maps 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**. Note the number of the map sheet and turn to that sheet.

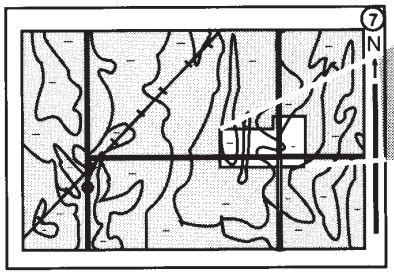


INDEX TO MAP SHEETS

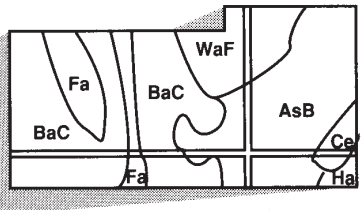


MAP SHEET

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



MAP SHEET



AREA OF INTEREST

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

The **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 2001. Soil names and descriptions were approved in 2001. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1990. 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 Lower Chattahoochee River Soil and Water Conservation District.

Cover: Grain sorghum growing in an area of Orangeburg loamy sand, 0 to 2 percent slopes. This area is prime farmland and is well suited to cultivated crops.

Additional information about the Nation's natural resources is available online from the Natural Resources Conservation Service at http://www.nrcs.usda.gov.

Contents

Issued 2007

Foreword

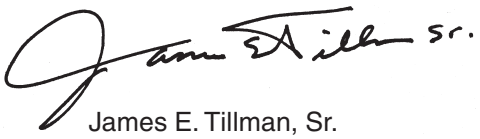
This soil survey contains information that affects land use planning in Randolph County. It contains predictions of soil behavior for selected land uses. The survey also highlights soil limitations, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

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

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

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

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



James E. Tillman, Sr.
State Conservationist
Natural Resources Conservation Service

Soil Survey of
Randolph County, Georgia

By Kenneth W. Monroe, Natural Resources Conservation Service

Fieldwork by Kenneth W. Monroe, Winfield Carson, Rex H. Chandler, Scott Moore, and Jerry A. Pilkerton

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

RANDOLPH COUNTY is in southwestern Georgia, approximately 60 miles south of Columbus and 160 miles south-southwest of Atlanta (fig. 1). The total surface area of Randolph County is about 275,800 acres, including 300 acres of water areas 40 acres or more in size. The county seat is Cuthbert. Elevation ranges from 580 feet northeast of Benevolence to 230 feet along Ichawaynochaway Creek in the far southeastern part of the county. Randolph County is bounded on the north by Stewart and Webster Counties, on the east by Terrell County, on the south by Calhoun and Clay Counties, and on the west by Clay and Quitman Counties.

Most of the soils in Randolph County are well drained, have a sandy or loamy

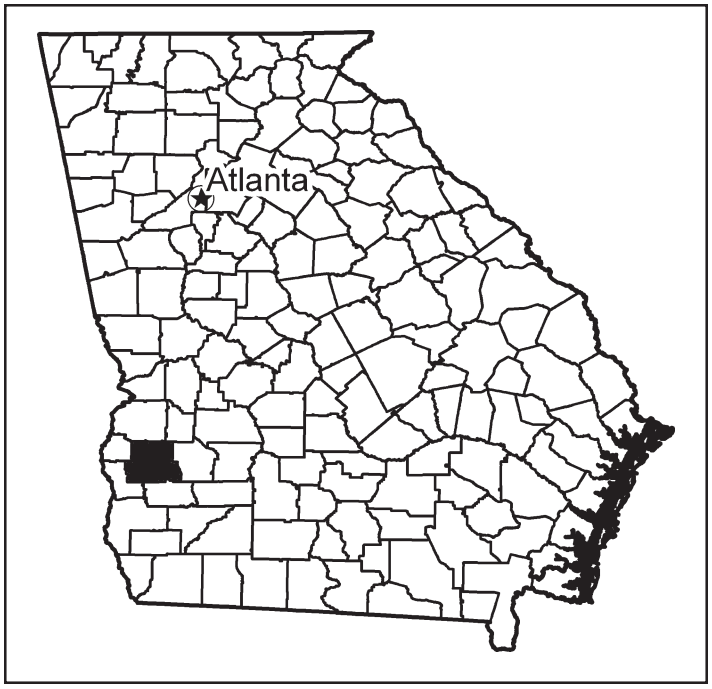


Figure 1.—Location of Randolph County in Georgia.

surface layer, and have a loamy or clayey subsoil. Of the remaining soils, those on uplands are nearly level, less well drained, and have a sandy surface layer and a loamy subsoil or a loamy surface layer and a clayey subsoil. The soils on flood plains along creeks are nearly level, poorly drained, and loamy throughout.

Randolph County is within the Southern Coastal Plain Major Land Resource Area 133A. Surface relief ranges from almost level, undulating, and gently sloping to rolling and hilly. Slopes range from 0 to 5 percent in the more nearly level areas and from 15 to 35 percent in the rolling areas. Good surface drainage prevails, except in some depressions and areas along the streams. Drainage is primarily by Ichawaynochaway, Pachitla, and Pataula Creeks, which drain into the Chattahoochee and Flint Rivers.

This survey updates the survey of Randolph County published in 1928 (Phillips and others, 1928). It provides additional information and has larger maps, which show the soils in greater detail.

General Nature of the Survey Area

This section gives general information about Randolph County. It describes history and settlement, farming, and climate.

History and Settlement

Karen Pittman, local historian, prepared this section.

Randolph County was named in honor of John Randolph of Roanoke, an American statesman. It was ordered cut out of the original Lee County by an act of the Georgia Legislature in December 1828. Lumpkin was the first county seat. When Stewart County was established in 1830, Cuthbert became the county seat of Randolph County.

The Creek lands were ceded by a treaty that formed the original Lee County in the early 1820s. The Land Lottery of 1827 was the primary lottery by which land in Randolph County was made available for settlement. The first seat of government was at the home of Allen Wamble in the 20th district, lot number 49, which is in present-day Stewart County. A log fort building near Gormley's Springs provided the next meeting place for court. Pumpkintown became one of the first settlements. The village of Villa Nova was settled in the mid-1920s.

During the 1830s, Randolph County experienced some turbulent years. The Creek Indians made a last stand to regain control of their lands. By 1837, the Creeks were contained. At that time, the courthouse in Cuthbert was a two-storied frame building in the center of town. In 1845, the population of Randolph County was 11,084. The frame courthouse had been replaced by a plaster-over-brick courthouse. Two female colleges were established in the 1850s. One was Baptist Female College. The other, Andrew Female College, still stands today.

The 1860s experienced the War Between the States. Camp Douglass and Camp Wade operated near Cuthbert for the local militia. Many refugees came to Randolph County. The 1870s and 1880s provided a time for rebuilding in the county. By 1885, a new courthouse was constructed north of the Cuthbert Square. During this time, a local agricultural fair was held every year and the Randolph County Agricultural Society was formed. During the 1890s, Andrew Female College burned to the ground. It burned in April and was rebuilt with the financial support of Randolph County citizens by September. A water tower was erected in the city of Cuthbert in 1895.

The 20th century brought to Randolph County new promise and the communities of Benevolence, Brooksville, Carnegie, Coleman, Cuthbert, Shellman, and Springvale. Unfortunately, by 1916 the boll weevil began to make inroads in the cotton crop. By

1920, the population of the county totaled 16,721. Many federal programs provided jobs for citizens of Randolph County during the 1930s. Contour plowing, crop rotation, and other methods of farming practiced during this decade encouraged an effort to minimize erosion and restore soil fertility. By the 1930s, the timber industry had begun to provide jobs for the county. Kudzu was introduced in the south in the 1940s to assist with erosion control.

Population in the county dropped to 10,700 by 1960 and to 8,023 by 1990. Although timber and agriculture continued to play major roles in the economic health of the county, by 2002 many citizens had come to work for service agencies or government agencies.

Farming

Karen Reese, district conservationist, prepared this section.

Farming has always been a vital part of Randolph County. The early settlers fed their families by planting potatoes, pumpkins, peas, beans, watermelons, and sweet potatoes and by growing sugar cane to make syrup. Due to the favorable climate, two crops of potatoes could be grown annually. Wheat was also planted to make bread throughout the year, and corn was planted for the market as well as for farm animals. Barley, oats, and rye were used as feed crops for the livestock. Farmers raised pigs and cattle for meat and milking cows for milk and butter. Rice was commonly planted in both lowland and upland areas.

Historically, cotton was the main money crop until the arrival of the boll weevil, which persisted as a problem until the Boll Weevil Eradication Program. Prior to the arrival of the boll weevil, peanuts, then known as ground peas, were grown for hog feed. Peanuts emerged as an important money crop after a large acreage of cotton was destroyed and after the invention of the mechanical peanut picker.

Because of the extensive acreage that was farmed and the lack of conservation practices, excessive erosion occurred on many fields. In 1935, the United States Department of Agriculture, Soil Conservation Service, was created to help landowners care for the land. As a result of local involvement, the Lower Chattahoochee River Soil and Water Conservation District (SWCD) was formed in 1939. The partnership between the Soil Conservation Service, now called the Natural Resources Conservation Service (NRCS), and the Lower Chattahoochee River SWCD has saved uncounted tons of soil by helping landowners plan and install conservation practices that help to control erosion.

Today, cotton and peanuts are the main crops in Randolph County. Wheat, corn, grain sorghum, soybeans, and small acreages of rye, oats, and millet are also commonly planted (University of Georgia, 2002). In 2002, approximately 50,000 acres of crops was harvested. The majority of the cotton was planted by conservation tillage methods or strip tillage methods. A few acres of corn and peanuts were strip-tilled into a cover crop. The majority of the fields that are used for peanuts, corn, or cotton are irrigated using a center pivot or cable tow system.

Climate

Table 1 gives data on temperature and precipitation for the survey area as recorded at Cuthbert, Georgia, in the period 1971 to 2000. Table 2 provides data on length of the growing season.

In winter, the average temperature is 53.0 degrees F and the average daily minimum temperature is 41.7 degrees. In summer, the average temperature is 80.7 degrees and the average daily maximum temperature is 91.7 degrees.

The total annual precipitation is about 51.2 inches. Of this, 25 inches, or 48.9 percent, usually falls in April through September. The growing season for most crops

falls within this period. In 3 years out of 10, the rainfall in April through September is less than 16 inches. Thunderstorms occur on about 65 days each year, and most occur in summer.

Snowfall is rare. In 90 percent of the winters, there is no measurable snowfall. In 10 percent, the snowfall, usually of short duration, is more than 1 inch. The heaviest 1-day snowfall on record was more than 3 inches.

The average relative humidity in midafternoon is about 55 percent. Humidity is higher at night, and the average at dawn is about 90 percent. The sun shines 70 percent of the time possible in summer and 60 percent in winter. The prevailing wind is from the north. Average windspeed is highest, 8 miles per hour, in spring.

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; and the kinds of crops and native plants. 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 soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. 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. Additional information regarding the procedures used for the preparation of soil surveys is available in the “National Soil Survey Handbook” (USDA–NRCS, no date).

General Soil Map Units

The general soil map in 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.

1. Kinston-Bibb

Poorly drained soils that are loamy throughout and are on long, narrow flood plains

Setting

Location in survey area: Along Carter, Ichawaynochaway, and Pachitla Creeks and on narrow branches to these and other creeks
Landscape: Coastal Plain
Landform: Uplands
Landform position: Flood plains
Slope: 0 to 2 percent

Composition

Percent of survey area: 4
Kinston soils—47 percent
Bibb soils—37 percent
Minor components—16 percent

Soil Characteristics

Kinston
Surface layer:
0 to 8 inches—dark gray and very dark gray loam and silt loam

Subsurface layer:
8 to 15 inches—dark gray clay loam
15 to 33 inches—very dark gray sandy loam that has light brownish gray and pale brown mottles

Substratum:
33 to 52 inches—dark gray sandy clay loam that has dark yellowish brown mottles
52 to 80 inches—dark gray loamy sand

Depth class: Very deep
Drainage class: Poorly drained
Seasonal high water table: Apparent, at the surface to a depth of 1 foot from November through June in most years
Parent material: Stratified loamy and sandy alluvium

Bibb
Surface layer:
0 to 5 inches—very dark gray fine sandy loam

Substratum:
5 to 27 inches—dark gray, light brownish gray, and gray loam and sandy loam having strong brown, light brownish gray, brownish yellow, yellowish brown, and pale brown mottles
27 to 45 inches—very dark gray sandy loam
45 to 80 inches—very dark gray and dark gray sandy loam and loamy sand having light brownish gray mottles

Depth class: Very deep
Drainage class: Poorly drained
Seasonal high water table: Apparent, at a depth of 1/2 to 1 foot from December through April in most years
Parent material: Stratified loamy and sandy alluvium

Minor soils
- Grady soils, which are in the lower positions
- Goldsboro soils, which are in the higher positions and are moderately well drained

Use and Management

Major uses: Woodland and wildlife habitat

Cropland
Management concerns: Frequent flooding; seasonal wetness

Pasture and hayland
Management concerns: Frequent flooding; wetness

Urban development
Management concerns: Frequent flooding; ponding; and seasonal wetness

2. Greenville-Faceville-Red Bay

Well drained, nearly level and gently sloping soils that have a sandy or loamy surface layer, have a loamy or clayey subsoil, and are on broad ridges

Setting

Location in survey area: Predominantly in the eastern part of the county
Landscape: Coastal Plain
Landform: Uplands
Landform position: Broad ridges
Slope: 0 to 8 percent

Composition

Percent of survey area: 21
Greenville soils—33 percent
Faceville soils—16 percent

Red Bay soils—15 percent
Minor components—36 percent

Soil Characteristics

Greenville
Surface layer:
0 to 8 inches—dark reddish brown sandy loam

Subsoil:
8 to 80 inches—dark red sandy clay

Depth class: Very deep
Drainage class: Well drained
Depth to seasonal high water table: More than 72 inches
Parent material: Clayey marine sediments

Faceville
Surface layer:
0 to 10 inches—reddish brown sandy loam

Subsoil:
10 to 72 inches—red sandy clay
72 to 80 inches—red sandy clay that has strong brown mottles

Depth class: Very deep
Drainage class: Well drained
Depth to seasonal high water table: More than 72 inches
Parent material: Clayey marine sediments

Red Bay
Surface layer:
0 to 8 inches—dark reddish brown loamy sand

Subsoil:
8 to 40 inches—dark red sandy loam
40 to 80 inches—dark red sandy clay loam

Depth class: Very deep
Drainage class: Well drained
Depth to seasonal high water table: More than 72 inches
Parent material: Loamy marine sediments

Minor soils
- Orangeburg soils, which are in positions similar to those of the major soils
- Kinston and Bibb soils, which are in the lower positions along flood plains and are poorly drained
- Lucy soils, which are in positions similar to those of the major soils and have sandy surface and subsurface layers with a combined thickness of 20 to 40 inches
- Nankin and Cowarts soils, which are in the lower positions on side slopes
- Carnegie soils, which are in positions similar to those of the major soils or slightly lower and have more than 5 percent plinthite by volume
- Henderson soils, which are in the slightly lower positions and have chert fragments throughout the profile

Use and Management

Major uses: Cropland

Cropland
Management concerns: Erosion

Pasture and hayland
Management concerns: None

Urban development
Management concerns: Erosion

3. Faceville-Carnegie-Greenville

Well drained, nearly level and gently sloping soils that have a loamy surface layer, have a clayey subsoil, and are on broad ridges and side slopes

Setting

Location in survey area: Predominantly in the southern part of the county
Landscape: Coastal Plain
Landform: Uplands
Landform position: Broad ridges and side slopes
Slope: 0 to 8 percent

Composition

Percent of survey area: 12
Faceville soils—38 percent
Carnegie soils—29 percent
Greenville soils—10 percent
Minor components—23 percent

Soil Characteristics

Faceville
Surface layer:
0 to 10 inches—reddish brown sandy loam

Subsoil:
10 to 72 inches—red sandy clay
72 to 80 inches—red sandy clay that has strong brown mottles

Depth class: Very deep
Drainage class: Well drained
Depth to seasonal high water table: More than 72 inches
Parent material: Clayey marine sediments

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

Subsoil:
5 to 12 inches—yellowish red to dark red sandy clay loam
12 to 17 inches—yellowish red clay
17 to 22 inches—dark red clay
22 to 38 inches—multicolored dark red, light reddish brown, and pale red clay
38 to 72 inches—multicolored red, light reddish brown, pale red, and light gray clay

Depth class: Very deep
Drainage class: Well drained
Depth to seasonal high water table: More than 72 inches
Parent material: Clayey marine sediments

Greenville
Surface layer:
0 to 8 inches—dark reddish brown sandy clay loam

Subsoil:
8 to 80 inches—dark red sandy clay

Depth class: Very deep
Drainage class: Well drained
Depth to seasonal high water table: More than 72 inches
Parent material: Clayey marine sediments

Minor soils
- Nankin soils, which are on the lower, adjacent side slopes
- Kinston and Bibb soils, which are in the lower positions along flood plains and are poorly drained
- Grady soils, which are in the lower depressional positions and are poorly drained
- Lucy soils, which are in positions similar to those of the major soils and have sandy surface and subsurface layers with a combined thickness of 20 to 40 inches
- Henderson soils, which are in the slightly lower positions and on side slopes and have chert fragments throughout the profile
- Orangeburg soils, which are in positions similar to those of the major soils or slightly lower and have a loamy subsoil

Use and Management

Major uses: Cropland, pasture, and hayland

Cropland
Management concerns: Erosion

Pasture and hayland
Management concerns: None

Urban development
Management concerns: None

4. Lakeland-Lucy

Excessively drained to well drained, nearly level to strongly sloping soils that are sandy throughout or have thick, sandy surface and subsurface layers over a loamy subsoil; on broad ridges and side slopes

Setting

Location in survey area: Most areas
Landscape: Coastal Plain
Landform: Uplands
Landform position: Ridges and side slopes
Slope: 0 to 17 percent

Composition

Percent of survey area: 24
Lakeland soils—34 percent
Lucy soils—24 percent
Minor components—42 percent

Soil Characteristics

Lakeland
Surface layer:
0 to 4 inches—dark yellowish brown sand

Underlying material:
4 to 60 inches—yellowish brown sand
60 to 85 inches—strong brown sand

Depth class: Very deep
Drainage class: Excessively drained
Depth to seasonal high water table: More than 72 inches
Parent material: Sandy marine sediments

Lucy
Surface layer:
0 to 8 inches—grayish brown loamy sand

Subsurface layer:
8 to 24 inches—brown loamy sand

Subsoil:
24 to 48 inches—yellowish red sandy loam
48 to 72 inches—red sandy clay loam

Depth class: Very deep
Drainage class: Well drained
Depth to seasonal high water table: More than 72 inches
Parent material: Sandy and loamy marine sediments

Minor soils
- Troup soils, which are in positions similar to those of the major soils, have sandy surface and subsurface layers with a combined thickness of 40 to 80 inches, and are somewhat excessively drained
- Kinston and Bibb soils, which are in the lower positions along flood plains and are poorly drained
- Ailey soils, which are in the lower positions on side slopes and have sandy surface and subsurface layers with a combined thickness of 20 to 40 inches over a dense, brittle subsoil
- Orangeburg soils, which are in positions similar to those of the major soils or slightly lower and do not have thick, sandy surface and subsurface layers
- Cowarts and Nankin soils, which are in the lower positions on side slopes and have a loamy and clayey subsoil

Use and Management

Major uses: Woodland

Cropland
Management concerns: Erosion, slope, droughtiness, and blowing soil

Pasture and hayland
Management concerns: Erosion, slope, droughtiness, and nutrient leaching

Urban development
Management concerns: Slope, seepage, and caving cutbanks

5. Cowarts-Nankin-Ailey

Well drained, gently sloping to strongly sloping soils that have a sandy surface layer, have a loamy or clayey subsoil, and are on ridges and side slopes

Setting

Location in survey area: Predominantly in the western part of the county

Landscape: Coastal Plain
Landform: Uplands
Landform position: Side slopes
Slope: 8 to 35 percent

Composition

Percent of survey area: 30
Cowarts soils—35 percent
Nankin soils—30 percent
Ailey soils—15 percent
Minor components—20 percent

Soil Characteristics

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

Subsoil:
7 to 15 inches—yellowish brown sandy loam
15 to 22 inches—brownish yellow sandy clay loam
22 to 40 inches—brownish yellow sandy clay loam that has yellowish red to strong brown mottles

Substratum:
40 to 59 inches—brownish yellow sandy loam that has yellowish red, reddish yellow, and pale brown mottles
59 to 80 inches—stratified brownish yellow, light yellowish brown, and yellowish red loamy sand

Depth class: Very deep
Drainage class: Well drained
Depth to seasonal high water table: More than 72 inches
Parent material: Loamy marine sediments

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

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

Subsoil:
10 to 16 inches—yellowish brown sandy clay loam that has strong brown mottles
16 to 39 inches—yellowish red sandy clay to sandy clay loam having red mottles
39 to 44 inches—strong brown sandy clay loam that has yellowish red mottles

Substratum:
44 to 55 inches—yellowish brown sandy loam that has red mottles
55 to 80 inches—yellowish brown sandy loam that has red and light brownish gray mottles

Depth class: Very deep
Drainage class: Well drained
Depth to seasonal high water table: More than 72 inches
Parent material: Clayey marine sediments

Ailey soil
Surface layer:
0 to 3 inches—brown loamy sand

Subsurface layer:
3 to 23 inches—light yellowish brown to yellowish brown loamy sand

Subsoil:
23 to 42 inches—strong brown sandy loam to sandy clay loam having very pale brown, clean sand grains
42 to 47 inches—strong brown sandy clay loam that has about 20 percent red, brittle soil bodies

Substratum:
47 to 80 inches—dense, very firm, strong brown clay loam that has red, pale brown, and light gray mottles

Depth class: Very deep
Drainage class: Well drained
Depth to seasonal high water table: More than 72 inches
Parent material: Sandy and loamy marine sediments

Minor soils
- Lakeland soils, which are in the slightly higher positions, are sandy throughout, and are excessively drained
- Lucy soils, which are in positions similar to those of the major soils or slightly higher, have sandy surface and subsurface layers with a combined thickness of 20 to 40 inches, and do not have dense, brittle layers
- Henderson soils, which are in positions similar to those of the major soils and have chert fragments throughout the profile
- Carnegie soils, which are in positions similar to those of the major soils or slightly higher and have more than 5 percent plinthite by volume

Use and Management

Major uses: Woodland

Cropland
Management concerns: Erosion

Pasture and hayland
Management concerns: Slope

Urban development
Management concerns: Slope

6. Orangeburg-Faceville-Norfolk

Well drained, nearly level and gently sloping soils that have a sandy or loamy surface layer, have a loamy or clayey subsoil, and are on broad ridges

Setting

Location in survey area: Predominantly in the southern part of the county
Landscape: Coastal Plains
Landform: Uplands
Landform position: Broad ridges
Slope: 0 to 8 percent

Composition

Percent of survey area: 9
Orangeburg soils—45 percent
Faceville soils—25 percent

Norfolk soils—10 percent
Minor components—20 percent

Soil Characteristics

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

Subsoil:
7 to 11 inches—yellowish red sandy loam
11 to 85 inches—red sandy clay loam

Depth class: Very deep
Drainage class: Well drained
Depth to seasonal high water table: More than 72 inches
Parent material: Loamy marine sediments

Faceville
Surface layer:
0 to 10 inches—reddish brown sandy loam

Subsoil:
10 to 72 inches—red sandy clay
72 to 85 inches—red sandy clay that has strong brown mottles

Depth class: Very deep
Drainage class: Well drained
Depth to seasonal high water table: More than 72 inches
Parent material: Clayey marine sediments

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

Subsoil:
6 to 10 inches—brownish yellow sandy loam
10 to 30 inches—dark yellowish brown sandy clay loam
30 to 55 inches—brownish yellow sandy clay loam
55 to 70 inches—brownish yellow sandy clay loam that has yellowish red, strong brown, and light brownish gray mottles
70 to 82 inches—yellowish brown sandy loam that has red, strong brown, and brownish yellow mottles

Depth class: Very deep
Drainage class: Well drained
Seasonal high water table: Apparent, at a depth of 4 to 6 feet from January through March in most years
Parent material: Loamy marine sediments

Minor soils
- Greenville soils, which are in positions similar to those of the major soils and have a red, clayey subsoil
- Red Bay soils, which are in positions similar to those of the major soils and have a red, loamy subsoil

Use and Management

Major uses: Cropland

Cropland
Management concerns: Erosion

Pasture and hayland
Management concerns: None

Urban development
Management concerns: Erosion

Detailed Soil Map Units

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

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

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

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

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

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, 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, Grady clay loam, ponded, is a phase of the Grady series.

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

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Nankin-Cowarts complex, 2 to 5 percent slopes, is an example.

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

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

Table 3 gives the acreage and proportionate extent of each map unit. Other tables give properties of the soils and the limitations, capabilities, and potentials for many uses. The Glossary defines many of the terms used in describing the soils or miscellaneous areas.

AeB—Ailey loamy sand, 2 to 5 percent slopes

Setting

Landscape: Coastal Plain
Landform: Uplands
Landform position: Narrow ridges; side slopes
Shape of areas: Irregular
Size of areas: 5 to 50 acres

Composition

Ailey and similar soils: 80 percent
Dissimilar soils: 20 percent

Typical Profile

Surface layer:
0 to 3 inches—brown loamy sand

Subsurface layer:
3 to 23 inches—light yellowish brown to yellowish brown loamy sand

Subsoil:
23 to 42 inches—strong brown sandy loam to sandy clay loam with very pale brown, clean sand grains
42 to 47 inches—strong brown sandy clay loam with about 20 percent red, brittle soil bodies

Substratum:
47 to 80 inches—dense and very firm, strong brown clay loam that has red, pale brown, and light gray mottles

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained

Depth to seasonal high water table: More than 72 inches
Permeability: Slow
Available water capacity: Very low or low
Flooding: None
Content of organic matter in the surface layer: Low
Natural fertility: Low
Tilth: Fair
Reaction: Very strongly acid or strongly acid throughout, except where the surface layer has been limed
Other distinctive properties: Thick, sandy surface and subsurface layers and dense, brittle lower layers

Minor Components

Dissimilar soils:
- Cowarts soils, which are in positions similar to those of the Ailey soil and do not have thick, sandy surface and subsurface layers
- Lakeland soils, which are in the slightly higher positions and are sandy throughout
- Lucy soils, which are in positions similar to those of the Ailey soil or slightly higher, have redder hue, and do not have dense subsoil layers
- Nankin soils, which are in positions similar to those of the Ailey soil or slightly lower and have a clayey subsoil
- Troup soils, which are in the slightly higher positions and have sandy surface and subsurface layers with a combined thickness of 40 to 80 inches

Similar soils:
- A few areas of soils that contain indurated layers of iron stone
- A few small areas of soils with horizons that contain 5 percent or more plinthite

Land Use

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

Cropland
Suitability: Moderately suited
Commonly grown crops: Peanuts, cotton, corn, grain sorghum, small grains, and soybeans
Management concerns: Erosion, soil blowing, and droughtiness
Management measures and considerations:
- Using a resource management system that includes stripcropping, contour farming, conservation tillage, and crop residue management helps to control erosion and surface runoff and maximizes the infiltration of water into the soil.
- Leaving the maximum amount of crop residue on the surface helps to minimize the damage done to seedlings by soil blowing and conserves soil moisture.
- Applying supplemental irrigation and selecting crop varieties that are adapted to droughty conditions increase productivity.

Pasture and hayland
Suitability: Well suited
Commonly grown crops: Bahiagrass, coastal bermudagrass, common bermudagrass, legumes, and ryegrass
Management concerns: Droughtiness and nutrient leaching
Management measures and considerations:
- Using drought-tolerant grasses helps to overcome the droughtiness.
- Using split applications helps to minimize leaching and increases the effectiveness of fertilizers and herbicides.

- Using rotational grazing and implementing a well-planned schedule of clipping and harvesting help to maintain the pasture and increase productivity.

Woodland
Suitability: Moderately suited
Potential for commercial species: Moderately high for loblolly pine and longleaf pine
Management concerns: Equipment use, seedling mortality, and windthrow
Management measures and considerations:
- Using tracked or low-pressure ground equipment minimizes rutting and compaction during harvesting.
- Using wide tires, tandem axles, or crawler-type equipment and scheduling management operations for periods when soil moisture is high improve trafficability.
- Increasing the number of seedlings planted can partially offset the seedling mortality rate.
- Selective thinning helps to minimize windthrow.
- Leaving a buffer zone of trees and shrubs along creeks and streams helps to control siltation and provides shade for the surface of the water, thereby improving aquatic habitat and helping to maintain water quality.

Dwellings
Suitability: Well suited
Management concerns: None
Management measures and considerations:
- The hazard of cutbanks caving can be reduced by using support beams to maintain the stability of the cutbanks.

Septic tank absorption fields
Suitability: Poorly suited
Management concerns: Slow permeability
Management measures and considerations:
- This map unit is severely limited as a site for septic tank absorption fields due to slow permeability in the lower part of the subsoil and in the underlying material. A site that has better suited soils should be selected.
- The local health department can be contacted for additional guidance regarding sanitary facilities.

Local roads and streets
Suitability: Well suited
Management concerns: None

Interpretive Groups

Land capability classification: 3s

AeC—Ailey loamy sand, 5 to 8 percent slopes

Setting

Landscape: Coastal Plain
Landform: Uplands
Landform position: Narrow ridges; side slopes
Shape of areas: Irregular
Size of areas: 5 to 50 acres

Composition

Ailey and similar soils: 80 percent
Dissimilar soils: 20 percent

Typical Profile

Surface layer:
0 to 3 inches—brown loamy sand

Subsurface layer:
3 to 23 inches—light yellowish brown to yellowish brown loamy sand

Subsoil:
23 to 42 inches—strong brown sandy loam to sandy clay loam having very pale brown, clean sand grains
42 to 47 inches—strong brown sandy clay loam that has about 20 percent red, brittle soil bodies

Substratum:
47 to 80 inches—dense and very firm, strong brown clay loam that has red, pale brown, and light gray mottles

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Depth to seasonal high water table: More than 72 inches
Permeability: Slow
Available water capacity: Very low or low
Flooding: None
Content of organic matter in the surface layer: Low
Natural fertility: Low
Tilth: Fair
Reaction: Very strongly acid or strongly acid throughout, except where the surface layer has been limed
Other distinctive properties: Thick, sandy surface and subsurface layers and dense, brittle lower layers

Minor Components

Dissimilar soils:
- Cowarts soils, which are in positions similar to those of the Ailey soil and do not have thick, sandy surface and subsurface layers
- Lakeland soils, which are in the slightly higher positions and are sandy throughout
- Lucy soils, which are in positions similar to those of the Ailey soil or slightly higher and do not have dense subsoil layers
- Nankin soils, which are in positions similar to those of the Ailey soil and have a clayey subsoil
- Troup soils, which are in the slightly higher positions and have sandy surface and subsurface layers with a combined thickness of 40 to 80 inches

Similar soils:
- A few areas of soils that contain indurated layers of iron stone
- A few small areas of soils with horizons that contain 5 percent or more plinthite

Land Use

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

Cropland
Suitability: Moderately suited
Commonly grown crops: Corn, cotton, peanuts, grain sorghum, small grains, and soybeans

Management concerns: Erosion, soil blowing, and droughtiness
Management measures and considerations:
- Using a resource management system that includes stripcropping, contour farming, conservation tillage, and crop residue management helps to control erosion and surface runoff and maximizes the infiltration of water into the soil.
- Leaving the maximum amount of crop residue on the surface helps to minimize the damage done to seedlings by soil blowing and conserves soil moisture.
- Using perennial grasses and legumes in rotation helps to penetrate and break up the dense lower layers.

Pasture and hayland
Suitability: Well suited
Commonly grown crops: Bahiagrass, coastal bermudagrass, common bermudagrass, legumes, and ryegrass
Management concerns: Erosion, droughtiness, and nutrient leaching
Management measures and considerations:
- During the establishment or renovation of pasture, preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the rate of germination.
- Using split applications helps to minimize leaching and increases the effectiveness of lime and fertilizer.
- Using rotational grazing and implementing a well-planned schedule of clipping and harvesting help to maintain the pasture and increase productivity.

Woodland
Suitability: Moderately suited
Potential for commercial species: Moderately high for loblolly pine and longleaf pine
Management concerns: Equipment use, seedling mortality, and windthrow
Management measures and considerations:
- Using tracked or low-pressure ground equipment minimizes rutting and compaction during harvesting.
- Using wide tires, tandem axles, or crawler-type equipment and scheduling management operations for periods when soil moisture is high improve trafficability.
- Increasing the number of seedlings planted can partially offset the seedling mortality rate.
- Selective thinning helps to minimize damage from windthrow.
- Leaving a buffer zone of trees and shrubs along creeks and streams helps to control siltation and provides shade for the surface of the water, thereby improving aquatic habitat and helping to maintain water quality.

Dwellings
Suitability: Well suited
Management concerns: Slope; instablility of cutbanks
Management measures and considerations:
- Cutting and filling and utilizing the less sloping areas help to overcome the slope limitation.
- The hazard of cutbanks caving can be reduced by using support beams to maintain the stability of the cutbanks.

Septic tank absorption fields
Suitability: Poorly suited
Management concerns: Slow permeability
Management measures and considerations:
- This map unit is severely limited as a site for septic tank absorption fields due to slow permeability in the lower part of the subsoil and in the underlying material. A site that has better suited soils should be selected.

- The local health department can be contacted for additional guidance regarding sanitary facilities.

Local roads and streets
Suitability: Well suited
Management concerns: None

Interpretive Groups

Land capability classification: 4s

AoE—Ailey-Cowarts complex, 8 to 25 percent slopes

Setting

Landscape: Coastal Plain
Landform: Uplands
Landform position: Ailey—upper side slopes; Cowarts—lower side slopes
Shape of areas: Elongated and irregular
Size of areas: 40 to 400 acres

Composition

Ailey and similar soils: 60 percent
Cowarts and similar soils: 30 percent
Dissimilar soils: 10 percent

Typical Profile

Ailey
Surface layer:
0 to 3 inches—brown loamy sand

Subsurface layer:
3 to 23 inches—light yellowish brown to yellowish brown loamy sand

Subsoil:
23 to 42 inches—strong brown sandy loam to sandy clay loam having very pale brown, clean sand grains
42 to 47 inches—strong brown sandy clay loam that has about 20 percent red, brittle soil bodies

Substratum:
47 to 80 inches—dense and very firm, strong brown clay loam that has red, pale brown, and light gray mottles

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

Subsoil:
7 to 15 inches—yellowish brown sandy loam
15 to 22 inches—brownish yellow sandy clay loam
22 to 40 inches—brownish yellow sandy clay loam that has yellowish red to strong brown mottles

Substratum:
40 to 59 inches—brownish yellow sandy loam that has yellowish red, reddish yellow, and pale brown mottles
59 to 80 inches—stratified brownish yellow, light yellowish brown, and yellowish red loamy sand

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Depth to seasonal high water table: More than 72 inches
Permeability: Ailey—slow; Cowarts—moderately slow or slow
Available water capacity: Ailey—low; Cowarts—moderately low
Flooding: None
Content of organic matter in the surface layer: Ailey—Low; Cowarts—low or moderately low
Natural fertility: Low
Tilth: Fair
Reaction: Very strongly acid or strongly acid throughout, except where the surface layer has been limed
Other distinctive properties: Ailey soil—thick, sandy surface and subsurface layers and brittle lower subsoil layers

Minor Components

Dissimilar soils:
- Lakeland soils, which are in positions similar to those of the Ailey and Cowarts soil or slightly higher and are sandy throughout
- Nankin soils, which are in positions similar to those of the Ailey and Cowarts soil and have a clayey subsoil
- Troup soils, which are in the slightly higher positions and have sandy surface and subsurface layers with a combined thickness of 40 to 80 inches

Similar soils:
- A few small areas of soils that are similar to the Ailey soil but do not have dense, brittle lower layers
- A few small areas of soils that are similar to the Cowarts soil but have a subsoil that extends to a depth of more than 40 inches

Land Use

Dominant uses: Woodland
Other uses: A few areas of pasture

Cropland
Suitability: Unsuited
Management concerns: Erosion and slope

Pasture and hayland
Suitability: Suited to pasture; poorly suited to hayland
Commonly grown crops: Bahiagrass, coastal bermudagrass, common bermudagrass, legumes, and ryegrass
Management concerns: Erosion and equipment limitations
Management measures and considerations:
- Because of the slope, this map unit is difficult to manage for pasture and very difficult to manage for hayland. A site that has better suited soils should be selected.

Woodland
Suitability: Moderately suited
Potential for commercial species: Ailey—moderately high for loblolly pine and longleaf pine; Cowarts—high for loblolly pine
Management concerns: Equipment use, seedling mortality, windthrow, and plant competition

Management measures and considerations:
- Leaving a buffer zone of trees and shrubs along creeks and streams helps to control siltation and provides shade for the surface of the water, thereby improving aquatic habitat and helping to maintain water quality.
- Constructing roads, fire lanes, and skid trails on the contour reduces the accelerated rates of erosion associated with these surface disturbances.
- Establishing a permanent plant cover on roads and log landings, reforesting immediately after harvesting, and preparing sites with recommended species reduce the hazard of erosion and help to control siltation of streams.
- Using tracked or low-pressure ground equipment minimizes rutting and compaction during harvesting.
- Using wide tires, tandem axles, or crawler-type equipment and scheduling management operations for periods when soil moisture is high improve trafficability.
- Increasing the number of seedlings planted can partially offset the seedling mortality rate.
- Proper site preparation, herbicides, and prescribed burning help to control competition from undesirable plant species.
- Productivity can be increased by the timely harvest of windthrown trees. Windthrow is caused by a combination of high winds and the shallow rooting depth of the Ailey soil.

Dwellings
Suitability: Poorly suited
Management concerns: Slope
Management measures and considerations:
- Designing structures to conform to the contour of the natural slope or building in the less sloping areas helps to overcome the slope limitation.
- Vegetating cleared and graded areas as soon as possible or constructing silt fences helps to maintain soil stability and prevents sediment from leaving the site.
- The hazard of cutbanks caving can be reduced by using support beams to maintain the stability of the cutbanks.

Septic tank absorption fields
Suitability: Poorly suited
Management concerns: Slope and slow permeability
Management measures and considerations:
- This map unit is severely limited as a site for septic tank absorption fields due to steep slopes and restricted permeability.
- The local health department can be contacted for additional guidance regarding sanitary facilities.

Local roads and streets
Suitability: Poorly suited
Management concerns: Slope
Management measures and considerations:
- Constructing roads on the contour and cutting and filling help to overcome the slope limitation.
- Constructing roads on the contour and providing adequate water-control structures, such as culverts, help to maintain road stability.
- Vegetating cut-and-fill slopes as soon as possible after construction helps to stabilize the soil and prevents excessive erosion.

Interpretive Groups

Land capability classification: Ailey—7e; Cowarts—6e

BeB—Benevolence loamy sand, 0 to 5 percent slopes

Setting

Landscape: Coastal Plain
Landform: Uplands
Landform position: Broad ridges
Shape of areas: Irregular
Size of areas: 5 to 250 acres

Composition

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

Typical Profile

Surface layer:
0 to 12 inches—brown loamy sand

Subsoil:
12 to 37 inches—yellowish red sandy loam
37 to 47 inches—red sandy loam
47 to 80 inches—red sandy clay loam

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Depth to seasonal high water table: More than 72 inches
Permeability: Moderate or moderately rapid
Available water capacity: Low or moderate
Flooding: None
Content of organic matter in the surface layer: Low
Natural fertility: Low
Tilth: Fair
Reaction: Very strongly acid to moderately acid throughout, except where the surface layer has been limed
Other distinctive properties: None

Minor Components

Dissimilar soils:
- Lucy soils, which are in positions similar to those of the Benevolence soil and have sandy surface and subsurface layers with a combined thickness of 20 to 40 inches
- Lakeland soils, which are in the higher positions and are sandy throughout
- Orangeburg soils, which are in positions similar to those of the Benevolence soil and have a subsoil that contains slightly more clay
- Troup soils, which are in positions similar to those of the Benevolence soil or slightly higher and have sandy surface and subsurface layers with a combined thickness of 40 to 80 inches

Similar soils:
- A few areas of soils that are darker red than the Benevolence soil

Land Use

Dominant uses: Cropland and woodland
Other uses: Pasture and hayland

Cropland
Suitability: Well suited
Commonly grown crops: Corn, small grains, cotton, peanuts, grain sorghum, and soybeans
Management concerns: Erosion, soil blowing, and droughtiness
Management measures and considerations:
- Using a resource management system that includes stripcropping, contour farming, conservation tillage, and crop residue management helps to control erosion and surface runoff and maximizes the infiltration of water into the soil.
- Stripcropping, wind breaks, and delayed seedbed preparation reduce the extent of the damage caused by soil blowing.
- Selecting crop varieties that are adapted to droughty conditions increases productivity.

Pasture and hayland
Suitability: Well suited
Commonly grown crops: Bahiagrass, coastal bermudagrass, common bermudagrass, legumes, and ryegrass
Management concerns: None

Woodland
Suitability: Well suited
Potential for commercial species: High for loblolly pine
Management concerns: None
Management measures and considerations:
- Leaving a buffer zone of trees and shrubs along creeks and streams helps to control siltation and provides shade for the surface of the water, thereby improving aquatic habitat and helping to maintain water quality.

Dwellings
Suitability: Well suited
Management concerns: None

Septic tank absorption fields
Suitability: Well suited
Management concerns: None
Management measures and considerations:
- The local health department can be contacted for additional guidance regarding sanitary facilities.

Local roads and streets
Suitability: Well suited
Management concerns: None

Interpretive Groups

Land capability classification: 2e

BoB—Bonneau loamy sand, 0 to 5 percent slopes

Setting

Landscape: Coastal Plain
Landform: Uplands
Landform position: Ridges and side slopes
Shape of areas: Irregular and slightly elongated
Size of areas: 5 to 40 acres

Composition

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

Typical Profile

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

Subsurface layer:
6 to 12 inches—light yellowish brown loamy sand
12 to 33 inches—yellowish brown loamy sand

Subsoil:
33 to 52 inches—yellowish brown sandy loam
52 to 65 inches—light yellowish brown sandy loam that has yellowish brown and pale brown mottles
65 to 80 inches—multicolored brownish yellow, light yellowish brown, and light gray sandy clay

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Seasonal high water table: Apparent, at a depth of 4 to 6 feet from December to March in most years
Permeability: Moderate
Available water capacity: Low or moderate
Flooding: None
Content of organic matter in the surface layer: Low
Natural fertility: Low
Tilth: Fair
Reaction: Very strongly acid to moderately acid throughout, except where the surface layer has been limed
Other distinctive properties: Thick, sandy surface and subsurface layers having a combined thickness of 20 to 40 inches

Minor Components

Dissimilar soils:
- Lucy soils, which are in positions similar to those of the Bonneau soil and have a subsoil with redder hue
- Norfolk soils, which are in positions similar to those of the Bonneau soil or slightly lower and do not have thick, sandy surface and subsurface layers
- Orangeburg soils, which are in positions similar to those of the Bonneau soil and do not have thick, sandy surface and subsurface layers
- Troup soils, which are in the slightly higher positions and have sandy surface and subsurface layers with a combined thickness of 40 to 80 inches

Similar soils:
- A few small areas of soils that have 5 percent or more ironstone

Land Use

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

Cropland
Suitability: Well suited

Commonly grown crops: Cotton, peanuts, corn, small grains, grain sorghum, and soybeans
Management concerns: Droughtiness and soil blowing
Management measures and considerations:
- Using a resource management system that includes stripcropping, contour farming, conservation tillage, and crop residue management helps to control erosion and surface runoff and maximizes the infiltration of water into the soil.
- Leaving the maximum amount of crop residue on the surface helps to minimize the damage done to seedlings by soil blowing and conserves soil moisture.
- Selecting crop varieties that are adapted to droughty conditions increases productivity.
- Using split applications of lime and fertilizer minimizes leaching and increases effectiveness.

Pasture and hayland
Suitability: Well suited
Commonly grown crops: Bahiagrass, coastal bermudagrass, common bermudagrass, legumes, and ryegrass
Management concerns: Droughtiness
Management measures and considerations:
- Using grass and forage varieties adapted to droughty conditions increases productivity.

Woodland
Suitability: Well suited
Potential for commercial species: Very high for loblolly pine and longleaf pine
Management concerns: None
Management measures and considerations:
- Using wide tires, tandem axles, or crawler-type equipment and scheduling management operations for periods when soil moisture is high improve trafficability.
- Leaving a buffer zone of trees and shrubs along creeks and streams helps to control siltation and provides shade for the surface of the water, thereby improving aquatic habitat and helping to maintain water quality.

Dwellings
Suitability: Well suited to dwellings without basements; moderately suited to dwellings with basements
Management concerns: Seasonal wetness
Management measures and considerations:
- Where suitable outlets are available, installing and maintaining a subsurface drainage system helps to lower the seasonal water table.
- The hazard of cutbanks caving can be reduced by using support beams to maintain the stability of the cutbanks.

Septic tank absorption fields
Suitability: Moderately suited
Management concerns: Seepage, moderate permeability, and seasonal wetness
- Installing distribution lines at a shallow depth and increasing the length of the lines help to overcome the wetness limitation.
- An alternative system should be considered.
- The local health department can be contacted for additional guidance regarding sanitary facilities.

Local roads and streets
Suitability: Well suited
Management concerns: None

Interpretive Groups

Land capability classification: 2s

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

Setting

Landscape: Coastal Plain
Landform: Uplands
Landform position: Side slopes and knolls
Shape of areas: Irregular
Size of areas: 5 to 175 acres

Composition

Carnegie and similar soils: 80 percent
Dissimilar soils: 20 percent

Typical Profile

Surface layer:
0 to 5 inches—brown sandy loam

Subsoil:
5 to 12 inches—yellowish red sandy clay loam
12 to 22 inches—yellowish red clay
22 to 38 inches—multicolored dark red, light reddish brown, and pale red clay that has about 10 percent plinthite nodules
38 to 72 inches—multicolored red, light reddish brown, pale red, and light gray clay

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Depth to seasonal high water table: More than 72 inches
Permeability: Moderately slow
Available water capacity: Moderate
Flooding: None
Content of organic matter in the surface layer: Low or moderately low
Natural fertility: Low
Tilth: Good
Reaction: Very strongly acid or strongly acid throughout, accept where the surface has been limed
Other distinctive properties: 5 to 15 percent plinthite below a depth of 16 inches; 5 to 25 percent ironstone nodules in the surface layer

Minor Components

Dissimilar soils:
- Faceville soils, which are in positions similar to those of the Carnegie soil or slightly higher and have less than 5 percent plinthite and ironstone nodules
- Greenville soils, which are in positions similar to those of the Carnegie soil or slightly higher, have a subsoil with redder hue, and have less than 5 percent plinthite and ironstone nodules
- Henderson soils, which are in positions similar to those of the Carnegie soil or slightly lower, have less than 5 percent plinthite and ironstone nodules, and have chert fragments throughout

- Nankin soils, which are in positions similar to those of the Carnegie soil or slightly lower, have a thinner solum, and have less than 5 percent plinthite

Similar soils:
- A few small areas of soils that have a surface layer of sandy clay loam

Land Use

Dominant uses: Cropland and pasture
Other uses: Woodland

Cropland
Suitability: Moderately suited
Commonly grown crops: Cotton, peanuts, corn, soybeans, and small grains
Management concerns: Erosion
Management measures and considerations:
- Using a resource management system that includes terraces and diversions, stripcropping, contour tillage, conservation tillage, winter cover crops, no-till practices, and crop residue management minimizes erosion, helps control surface runoff, and maximizes infiltration of water into the soil.
- Leaving the maximum amount of crop residue on the surface helps to control soil blowing, conserves soil moisture, and retains plant nutrients.

Pasture and hayland
Suitability: Well suited
Commonly grown crops: Bahiagrass, improved bermudagrass, common bermudagrass, legumes, and ryegrass
Management concerns: Erosion
Management measures and considerations:
- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the rate of germination.
- Fencing livestock away from creeks and streams helps to prevent streambank erosion and sedimentation.
- Using rotational grazing and implementing a well-planned schedule of clipping and harvesting help to maintain the pasture and increase productivity.

Woodland
Suitability: Well suited
Potential for commercial species: High for loblolly pine
Management concerns: None
Management measures and considerations:
- Leaving a buffer zone of trees and shrubs along creeks and streams helps to control siltation and provides shade for the surface of the water, thereby improving aquatic habitat.

Dwellings
Suitability: Well suited
Management concerns: None

Septic tank absorption fields
Suitability: Poorly suited
Management concerns: Slow permeability
Management measures and considerations:
- Alternative systems should be considered.
- The local health department can be contacted for additional guidance regarding sanitary facilities.

Local roads and streets
Suitability: Moderately suited

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

Interpretive Groups

Land capability classification: 3e

CkC2—Carnegie-Nankin complex, 5 to 8 percent slopes, eroded

Setting

Landscape: Coastal Plain
Landform: Uplands
Landform position: Carnegie—upper side slopes; Nankin—lower side slopes
Shape of areas: Irregular
Size of areas: 5 to 175 acres

Composition

Carnegie and similar soils: 60 percent
Nankin and similar soils: 25 percent
Dissimilar soils: 15 percent

Typical Profile

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

Subsoil:
5 to 12 inches—yellowish red sandy clay loam
12 to 22 inches—yellowish red clay
22 to 38 inches—multicolored dark red, light reddish brown, and pale red clay that has about 10 percent plinthite nodules
38 to 72 inches—multicolored red, light reddish brown, pale red, and light gray clay

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

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

Subsoil:
10 to 16 inches—yellowish brown sandy clay loam that has strong brown mottles
16 to 39 inches—yellowish red sandy clay that has red mottles
39 to 44 inches—strong brown sandy clay loam that has yellowish red mottles

Substratum:
44 to 55 inches—yellowish brown sandy loam that has red mottles
55 to 80 inches—yellowish brown sandy loam that has red and light brownish gray mottles

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained

Depth to seasonal high water table: More than 72 inches
Permeability: Moderately slow
Available water capacity: Moderate
Flooding: None
Content of organic matter in the surface layer: Low or moderately low
Natural fertility: Low
Tilth: Carnegie—good; Nankin—fair
Reaction: Very strongly acid or strongly acid throughout, except where the surface layer has been limed
Other distinctive properties: Carnegie—5 to 25 percent ironstone nodules in the surface layer and 5 to 15 percent plinthite below a depth of 16 inches

Minor Components

Dissimilar soils:
- Faceville soils, which are in positions similar to those of the Carnegie and Nankin soils or slightly higher, have less than 5 percent plinthite, and have a subsoil that extends to a depth of more than 60 inches
- Greenville soils, which are in positions similar to those of the Carnegie and Nankin soils or slightly higher, have less than 5 percent plinthite, and have a subsoil that extends to a depth of more than 60 inches
- Henderson soils, which are in positions similar to those of the Carnegie and Nankin soils or slightly lower, have a subsoil that extends to a depth of more than 60 inches, and have chert fragments throughout

Similar soils:
- A few areas of soils that are similar to the Carnegie soil but have a surface layer of sandy clay loam
- A few small areas of soils that are similar to the Nankin soil but have a subsoil that is less than 40 inches thick

Land Use

Dominant uses: Cropland and pasture
Other uses: Woodland

Cropland
Suitability: Moderately suited
Commonly grown crops: Cotton, peanuts, corn, soybeans, and small grains
Management concerns: Erosion
Management measures and considerations:
- Using a resource management system that includes terraces and diversions, stripcropping, contour tillage, conservation tillage, winter cover crops, no-till practices, and crop residue management minimizes erosion, helps to control surface runoff, and maximizes infiltration of water into the soils.
- Leaving the maximum amount of crop residue on the surface helps to control soil blowing, conserves soil moisture, and retains plant nutrients in the soils.

Pasture and hayland
Suitability: Well suited
Commonly grown crops: Bahiagrass, improved bermudagrass, common bermudagrass, legumes, and ryegrass
Management concerns: Erosion
Management measures and considerations:
- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the rate of germination.

- Fencing livestock away from creeks and streams helps to prevent streambank erosion and sedimentation.
- Using rotational grazing and implementing a well-planned schedule of clipping and harvesting help to maintain the pasture and increase productivity.

Woodland
Suitability: Well suited
Potential for commercial species: High for loblolly pine
Management concerns: None
Management measures and considerations:
- Leaving a buffer zone of trees and shrubs along creeks and streams helps to control siltation and provides shade for the surface of the water, thereby improving aquatic habitat.

Dwellings
Suitability: Well suited
Management concerns: None
Management measures and considerations:
- Cutting and filling and utilizing the less sloping areas help to overcome the slope limitation.

Septic tank absorption fields
Suitability: Poorly suited
Management concerns: Moderately slow permeability
Management measures and considerations:
- Alternative onsite sewage disposal systems should be considered.
- The local health department can be contacted for additional guidance regarding sanitary facilities.

Local roads and streets
Suitability: Carnegie—moderately suited; Nankin—well suited
Management concerns: Low soil strength
Management measures and considerations:
- Incorporating sand and gravel into the roadbed and compacting the roadbed help to overcome the low strength of the natural soil material.
- Designing roads to safely remove surface water improves soil performance.

Interpretive Groups

Land capability classification: 4e

CkD2—Carnegie-Nankin complex, 8 to 15 percent slopes, eroded

Setting

Landscape: Coastal Plain
Landform: Uplands
Landform position: Carnegie—upper side slopes; Nankin—lower side slopes
Shape of areas: Irregular
Size of areas: 5 to 200 acres

Composition

Carnegie and similar soils: 60 percent
Nankin and similar soils: 25 percent
Dissimilar soils: 15 percent

Typical Profile

Carnegie

Surface layer:
0 to 5 inches—brown sandy loam

Subsoil:
5 to 12 inches—yellowish red sandy clay loam
12 to 22 inches—yellowish red clay
22 to 38 inches—multicolored dark red, light reddish brown, and pale red clay that has about 10 percent plinthite nodules
38 to 72 inches—multicolored red, light reddish brown, pale red, and light gray clay

Nankin

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

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

Subsoil:
10 to 16 inches—yellowish brown sandy clay loam that has strong brown mottles
16 to 39 inches—yellowish red sandy clay that has red mottles
39 to 44 inches—strong brown sandy clay loam that has yellowish red mottles

Substratum:
44 to 55 inches—yellowish brown sandy loam that has red mottles
55 to 80 inches—yellowish brown sandy loam that has red and light brownish gray mottles

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Depth to seasonal high water table: More than 72 inches
Permeability: Moderately slow
Available water capacity: Moderate
Flooding: None
Content of organic matter in the surface layer: Low or moderately low
Natural fertility: Low
Tilth: Carnegie—good; Nankin—fair
Reaction: Very strongly acid or strongly acid throughout, except where the surface layer has been limed
Other distinctive properties: Carnegie—5 to 25 percent ironstone nodules in the surface layer and 5 to 15 percent plinthite below a depth of 16 inches

Minor Components

Dissimilar soils:
- Faceville soils, which are in positions similar to those of the Carnegie and Nankin soils or slightly higher, have less than 5 percent plinthite, and have a subsoil that extends to a depth of more than 60 inches
- Greenville soils, which are in positions similar to those of the Carnegie and Nankin soils or slightly higher, have less than 5 percent plinthite, and have a subsoil that extends to a depth of more than 60 inches
- Henderson soils, which are in positions similar to those of the Carnegie and Nankin soils, have a subsoil that extends to a depth of more than 60 inches, and have chert fragments throughout

Similar soils:
- A few areas of soils that are similar to the Carnegie soil but have a surface layer of sandy clay loam
- A few areas of a soils that are similar to the Nankin soil but have a subsoil that is less than 40 inches thick

Land Use

Dominant uses: Cropland and pasture
Other uses: Woodland

Cropland
Suitability: Unsuited
Management concerns: Slope and erosion

Pasture and hayland
Suitability: Well suited to pasture; moderately suited to hayland
Commonly grown crops: Bahiagrass, improved bermudagrass, common bermudagrass, legumes, and ryegrass
Management concerns: Erosion
Management measures and considerations:
- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the rate of germination.
- Fencing livestock away from creeks and streams helps to prevent streambank erosion and sedimentation.
- Using rotational grazing and implementing a well-planned schedule of clipping and harvesting help to maintain the pasture and increase productivity.

Woodland
Suitability: Well suited
Potential for commercial species: High for loblolly pine
Management concerns: Erosion
Management measures and considerations:
- Establishing a permanent plant cover on roads and log landings, reforesting immediately after harvesting, and preparing sites with recommended species reduce the hazard of erosion and help to control siltation of streams.
- Constructing roads, fire lanes, and skid trails on the contour reduces the accelerated rates of erosion associated with these surface disturbances.
- Leaving a buffer zone of trees and shrubs along creeks and streams helps to control siltation and provides shade for the surface of the water, thereby improving aquatic habitat and helping to maintain water quality.

Dwellings
Suitability: Moderately suited
Management concerns: Slope
Management measures and considerations:
- Designing structures to conform to the natural slope and cutting and filling help to overcome the slope limitation.
- Vegetating cleared and graded areas as soon as possible or constructing silt fences helps to maintain soil stability and prevents sediment from leaving the site.

Septic tank absorption fields
Suitability: Poorly suited
Management concerns: Slope and restricted permeability
Management measures and considerations:
- Alternative sewage disposal systems should be considered.
- The local health department can be contacted for additional guidance regarding sanitary facilities.

Local roads and streets
Suitability: Moderately suited
Management concerns: Carnegie—low strength and slope; Nankin—slope
Management measures and considerations:
- Incorporating sand and gravel into the roadbed and compacting the roadbed help to overcome the low strength of the natural soil material.
- Constructing roads on the contour and cutting and filling help to overcome the slope limitation.
- Vegetating cut-and-fill slopes as soon as possible after construction helps to stabilize the soil and prevents excessive erosion.

Interpretive Groups

Land capability classification: 6e

CnA—Clarendon sandy loam, 0 to 2 percent slopes

Setting

Landscape: Coastal Plain
Landform: Uplands
Landform position: Concavities
Shape of areas: Irregular
Size of areas: 5 to 20 acres

Composition

Clarendon and similar soils: 80 percent
Dissimilar soils: 20 percent

Typical Profile

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

Subsoil:
8 to 20 inches—yellowish brown sandy clay loam
20 to 29 inches—yellowish brown sandy clay loam that has strong brown and red mottles
29 to 34 inches—yellowish brown sandy clay loam that has strong brown, red, and light brownish gray mottles
34 to 42 inches—yellowish brown sandy clay loam that has light brownish gray mottles and about 10 percent plinthite
42 to 80 inches—pale brown to light brownish gray sandy clay loam that has strong brown and red mottles and about 5 percent nodular plinthite

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Moderately well drained
Seasonal high water table: Apparent, at a depth of 2 to 3 feet from December through March in most years
Permeability: Moderately slow
Available water capacity: Moderate
Flooding: None
Content of organic matter in the surface layer: Low to moderate
Natural fertility: Low
Tilth: Good
Reaction: Very strongly acid to moderately acid in the surface layer and very strongly

acid or strongly acid in the subsoil, except where the surface layer has been limed

Other distinctive properties: Depth to a horizon with 5 percent or more plinthite ranges from 20 to 58 inches.

Minor Components

Dissimilar soils:

- Goldsboro soils, which are in positions similar to those of the Clarendon soil and have less than 5 percent plinthite
- Grady soils which are in depressions, have less than 5 percent plinthite, and are poorly drained
- Norfolk soils which are in the higher, more convex positions, have less than 5 percent plinthite, and are well drained
- Orangeburg soils which are in the higher, more convex positions, have less than 5 percent plinthite, and are well drained
- A few small areas of soils that are somewhat poorly drained and do not have plinthite
- A few small areas of soils that have a clayey subsoil

Similar soils:

- A few small areas of soils that have a surface layer of sandy clay loam

Land Use

Dominant uses: Cropland
Other uses: Pasture, hayland, and woodland

Cropland
Suitability: Well suited
Commonly grown crops: Corn, small grains, cotton, peanuts, grain sorghum, and soybeans
Management concerns: None
Management measures and considerations:

- Incorporating crop residue into the surface layer or leaving the residue on the surface reduces the extent of clodding and crusting and improves water infiltration.

Pasture and hayland
Suitability: Well suited
Commonly grown crops: Bahiagrass, coastal bermudagrass, common bermudagrass, legumes, and ryegrass
Management concerns: None
Management measures and considerations:

- Using rotational grazing and implementing a well-planned schedule of clipping and harvesting help to maintain the pasture and increase productivity.

Woodland
Suitability: Well suited
Potential for commercial species: Very high for loblolly pine and sweetgum
Management concerns: None
Management measures and considerations:

- Leaving a buffer zone of trees and shrubs along creeks and streams helps to control siltation and provides shade for the surface of the water, thereby improving aquatic habitat and helping to maintain water quality.

Dwellings
Suitability: Well suited to dwellings without basements; poorly suited to dwellings with basements

Management concerns: Seasonal high water table
Management measures and considerations:
- Constructing buildings on raised, well-compacted beds of fill material reduces the risk of damage from wetness.
- Where suitable outlets are available, installing and maintaining an underground drainage system helps to lower the seasonal water table.

Septic tank absorption fields
Suitability: Poorly suited
Management concerns: Seasonal high water table and restricted permeability
Management measures and considerations:
- Alternative sewage disposal systems should be considered.
- The local health department can be contacted for additional guidance regarding sanitary facilities.

Local roads and streets
Suitability: Well suited
Management concerns: None

Interpretive Groups

Land capability classification: 2w

CoB—Cowarts loamy sand, 2 to 5 percent slopes

Setting

Landscape: Coastal Plain
Landform: Uplands
Landform position: Narrow ridges
Shape of areas: Irregular
Size of areas: 5 to 50 acres

Composition

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

Typical Profile

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

Subsoil:
7 to 15 inches—yellowish brown sandy loam
15 to 22 inches—brownish yellow sandy clay loam
22 to 40 inches—brownish yellow sandy clay loam that has yellowish red to strong brown mottles

Substratum:
40 to 59 inches—brownish yellow sandy loam that has yellowish red, reddish yellow, and pale brown mottles
59 to 80 inches—multicolored brownish yellow, light yellowish brown, and yellowish red stratified loamy sand

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained

Depth to seasonal high water table: More than 72 inches
Permeability: Moderately slow or slow
Available water capacity: Moderate
Flooding: None
Content of organic matter in the surface layer: Low or moderately low
Natural fertility: Low
Tilth: Fair
Reaction: Very strongly acid or strongly acid throughout, except where the surface layer has been limed
Other distinctive properties: None

Minor Components

Dissimilar soils:
- Ailey soils, which are in positions similar to those of the Cowarts soil, have sandy surface and subsurface layers with a combined thickness of 20 to 40 inches, and have dense, brittle lower layers
- Nankin soils, which are in positions similar to those of the Cowarts soil and have a clayey subsoil
- Orangeburg soils, which are in the slightly higher positions and have a subsoil that extends to a depth of more than 60 inches

Similar soils:
- A few small areas of soils that have a subsoil that extends to a depth of more than 40 inches

Land Use

Dominant uses: Woodland (fig. 2)
Other uses: Pasture, hayland, and cropland

Cropland
Suitability: Well suited
Commonly grown crops: Corn, small grains, cotton, peanuts, grain sorghum, and soybeans
Management concerns: Erosion
Management measures and considerations:
- Using a resource management system that includes terraces and diversions, stripcropping, contour farming, conservation tillage, and crop residue management helps to control erosion and surface runoff and maximizes the infiltration of water into the soil.

Pasture and hayland
Suitability: Well suited
Commonly grown crops: Bahiagrass, coastal bermudagrass, common bermudagrass, legumes, and ryegrass
Management concerns: None
Management measures and considerations:
- Using rotational grazing and implementing a well-planned schedule of clipping and harvesting help to maintain the pasture and increase productivity.

Woodland
Suitability: Well suited
Potential for commercial species: High for loblolly pine
Management concerns: Plant competition
Management measures and considerations:
- Proper site preparation, herbicides, and prescribed burning help to control competition from undesirable plant species.

Figure 2.—Loblolly pine planted in an area of Cowarts loamy sand, 2 to 5 percent slopes.

- Leaving a buffer zone of trees and shrubs along creeks and streams helps to control siltation and provides shade for the surface of the water, thereby improving aquatic habitat and helping to maintain water quality.

Dwellings
Suitability: Well suited
Management concerns: None

Septic tank absorption fields
Suitability: Poorly suited
Management concerns: Slow permeability
Management measures and considerations:
- Increasing the size of septic tank absorption fields and placing the distribution lines on the contour improve the performance of the fields.
- Installing distribution lines during dry periods minimizes smearing and sealing of trench walls.
- The local health department can be contacted for additional guidance regarding sanitary facilities.

Local roads and streets
Suitability: Well suited
Management concerns: None

Interpretive Groups

Land capability classification: 2e

CoC—Cowarts loamy sand, 5 to 8 percent slopes

Setting

Landscape: Coastal Plain
Landform: Uplands
Landform position: Narrow ridges; side slopes
Shape of areas: Irregular
Size of areas: 5 to 50 acres

Composition

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

Typical Profile

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

Subsoil:
7 to 15 inches—yellowish brown sandy loam
15 to 22 inches—brownish yellow sandy clay loam
22 to 40 inches—brownish yellow sandy clay loam that has yellowish red to strong brown mottles

Substratum:
40 to 59 inches—brownish yellow sandy loam that has yellowish red, reddish yellow, and pale brown mottles
59 to 80 inches—multicolored brownish yellow, light yellowish brown, and yellowish red stratified loamy sand

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Depth to seasonal high water table: More than 72 inches
Permeability: Moderately slow or slow
Available water capacity: Moderate
Flooding: None
Content of organic matter in the surface layer: Low or moderately low
Natural fertility: Low
Tilth: Fair
Reaction: Very strongly acid or strongly acid throughout, except where the surface layer has been limed
Other distinctive properties: None

Minor Components

Dissimilar soils:
- Ailey soils, which are in positions similar to those of the Cowarts soil, have sandy surface and subsurface layers with a combined thickness of 20 to 40 inches, and have dense, brittle lower layers
- Lakeland soils, which are in the slightly higher positions and are sandy throughout
- Lucy soils, which are in positions similar to those of the Cowarts soil or slightly higher and have sandy surface and subsurface layers with a combined thickness of 20 to 40 inches
- Nankin soils, which are in positions similar to those of the Cowarts soil and have a clayey subsoil

- Troup soils, which are in the higher positions and have sandy surface and subsurface layers with a combined thickness of 40 to 80 inches

Similar soils:
- A few small areas of soils that have a subsoil that extends to a depth of more than 40 inches

Land Use

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

Cropland
Suitability: Moderately suited
Commonly grown crops: Cotton, peanuts, corn, small grains, grain sorghum, and soybeans
Management concerns: Erosion
Management measures and considerations:
- Using a resource management system that includes contour farming, conservation tillage, crop residue management, stripcropping, and a sod-based rotation helps to control erosion and surface runoff and maximizes the infiltration of water into the soil.
- Incorporating crop residue into the surface layer or leaving the residue on the surface reduces the extent of clodding and crusting and improves water infiltration.

Pasture and hayland
Suitability: Well suited
Commonly grown crops: Bahiagrass, coastal bermudagrass, common bermudagrass, legumes, and ryegrass
Management concerns: Erosion
Management measures and considerations:
- During the establishment or renovation of pasture, preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the rate of germination.
- Fencing livestock away from creeks and streams helps to prevent streambank erosion and sedimentation.

Woodland
Suitability: Well suited
Potential for commercial species: High for loblolly pine
Management concerns: Plant competition
Management measures and considerations:
- Proper site preparation, herbicides, and prescribed burning help to control competition from undesirable plant species.
- Leaving a buffer zone of trees and shrubs along creeks and streams helps to control siltation and provides shade for the surface of the water, thereby improving aquatic habitat and helping to maintain water quality.

Dwellings
Suitability: Well suited
Management concerns: Slope
Management measures and considerations:
- Cutting and filling and utilizing the less sloping areas help to overcome the slope limitation.

Septic tank absorption fields
Suitability: Poorly suited
Management concerns: Slow permeability

Management measures and considerations:
- Increasing the size of the absorption field and installing the distribution lines on the contour improve system performance.
- Installing the distribution lines during dry periods minimizes smearing and sealing of trench walls.
- The local health department can be contacted for additional guidance regarding sanitary facilities.

Local roads and streets
Suitability: Well suited
Management concerns: None
Management measures and considerations:
- Designing roads to safely remove surface water improves soil performance.

Interpretive Groups

Land capability classification: 3e

FeA—Faceville sandy loam, 0 to 2 percent slopes

Setting

Landscape: Coastal Plain
Landform: Uplands
Landform position: Broad ridges
Shape of areas: Irregular
Size of areas: 5 to 125 acres

Composition

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

Typical Profile

Surface layer:
0 to 10 inches—reddish brown sandy loam

Subsoil:
10 to 72 inches—red sandy clay
72 to 80 inches—red sandy clay that has strong brown mottles

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Depth to seasonal high water table: More than 72 inches
Permeability: Moderate
Available water capacity: Moderate or high
Flooding: None
Content of organic matter in the surface layer: Low or moderately low
Natural fertility: Low
Tilth: Good
Reaction: Very strongly acid or strongly acid throughout, except where the surface layer has been limed
Other distinctive properties: None

Minor Components

Dissimilar soils:
- Carnegie soils, which are in positions similar to those of the Faceville soil or slightly lower and have more than 5 percent plinthite and ironstone nodules

- Henderson soils, which are in the slightly lower positions and have chert fragments throughout
- Marlboro soils, which are in positions similar to those of the Faceville soil or slightly lower and have a subsoil with a slightly more yellow hue
- Nankin soils, which are in the lower positions and have a thinner solum than that of the Faceville soil
- Orangeburg soils, which are in positions similar to those of the Faceville soil or slightly lower and have less clay in the subsoil

Similar soils:
- A few areas of soils that have a surface layer of loamy sand or sandy clay loam or that have a subsoil that is darker red than that of the Faceville soil

Land Use

Dominant uses: Cropland
Other uses: Pasture, hayland, and woodland

Cropland
Suitability: Well suited
Commonly grown crops: Cotton, peanuts, corn, small grains, grain sorghum, and soybeans
Management concerns: None
Management measures and considerations:
- Conservation tillage, winter cover crops, crop residue management, and crop rotations that include grasses and legumes increase available water capacity and improve tilth and fertility.

Pasture and hayland
Suitability: Well suited
Commonly grown crops: Bahiagrass, coastal bermudagrass, common bermudagrass, legumes, and ryegrass
Management concerns: None

Woodland
Suitability: Well suited
Potential for commercial species: High for loblolly pine
Management concerns: None
Management measures and considerations:
- Establishing a permanent plant cover on roads and log landings, reforesting immediately after harvesting, and preparing sites with recommended species reduce the hazard of erosion and help to control siltation of streams.

Dwellings
Suitability: Well suited
Management concerns: None

Septic tank absorption fields
Suitability: Moderately suited
Management concerns: Moderate permeability
Management measures and considerations:
- Increasing the size of the absorption field improves system performance.
- Installing distribution lines during dry periods minimizes smearing and sealing of trench walls.
- The local health department can be contacted for additional guidance regarding sanitary facilities.

Local roads and streets
Suitability: Moderately suited

Management concerns: Low soil strength
Management measures and considerations:
- Incorporating sand and gravel into the roadbed and compacting the roadbed help to overcome the low strength of the natural soil material and improve trafficability.

Interpretive Groups

Land capability classification: 1

FeB—Faceville sandy loam, 2 to 5 percent slopes

Setting

Landscape: Coastal Plain
Landform: Uplands
Landform position: Broad ridges
Shape of areas: Irregular
Size of areas: 5 to 180 acres

Composition

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

Typical Profile

Surface layer:
0 to 10 inches—reddish brown sandy loam

Subsoil:
10 to 72 inches—red sandy clay
72 to 80 inches—red sandy clay that has strong brown mottles

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Depth to seasonal high water table: More than 72 inches
Permeability: Moderate
Available water capacity: Moderate or high
Flooding: None
Content of organic matter in the surface layer: Low or moderately low
Natural fertility: Low
Tilth: Good
Reaction: Very strongly acid or strongly acid throughout, except where the surface layer has been limed
Other distinctive properties: None

Minor Components

Dissimilar soils:
- Carnegie soils, which are in positions similar to those of the Faceville soil or slightly lower and have more than 5 percent plinthite and ironstone nodules
- Henderson soils, which are in the slightly lower positions and have chert fragments throughout
- Marlboro soils, which are in positions similar to those of the Faceville soil or slightly lower and have a subsoil with a more yellow hue
- Nankin soils, which are in the lower positions and have a thinner solum than that of the Faceville soil

- Orangeburg soils, which are in positions similar to those of the Faceville soil or slightly lower and have less clay in the subsoil

Similar soils:
- A few areas of soils that have a surface layer of loamy sand or sandy clay loam or that have a subsoil that is darker red than that of the Faceville soil

Land Use

Dominant uses: Cropland
Other uses: Pasture, hayland, and woodland

Cropland
Suitability: Well suited
Commonly grown crops: Cotton, peanuts, corn, small grains, grain sorghum, and soybeans
Management concerns: Erosion
Management measures and considerations:
- Using a resource management system that includes terraces and diversions, stripcropping, contour farming, conservation tillage, and crop residue management helps to control erosion and surface runoff and maximizes the infiltration of water into the soil.

Pasture and hayland
Suitability: Well suited
Commonly grown crops: Bahiagrass, clover, coastal bermudagrass, common bermudagrass, legumes, and ryegrass
Management concerns: None

Woodland
Suitability: Well suited
Potential for commercial species: High for loblolly pine
Management concerns: None
Management measures and considerations:
- Leaving a buffer zone of trees and shrubs along creeks and streams helps to control siltation and provides shade for the surface of the water, thereby improving aquatic habitat and helping to maintain water quality.

Dwellings
Suitability: Well suited
Management concerns: None

Septic tank absorption fields
Suitability: Moderately suited
Management concerns: Moderate permeability
Management measures and considerations:
- Increasing the size of the absorption field improves system performance.
- Installing distribution lines during dry periods minimizes smearing and sealing of trench walls.
- The local health department can be contacted for additional guidance regarding sanitary facilities.

Local roads and streets
Suitability: Moderately suited
Management concerns: Low soil strength
Management measures and considerations:
- Incorporating sand and gravel into the roadbed and compacting the roadbed help to overcome the low strength of the natural soil material and improve trafficability.

Interpretive Groups

Land capability classification: 2e

FeC—Faceville sandy loam, 5 to 8 percent slopes

Setting

Landscape: Coastal Plain
Landform: Uplands
Landform position: Side slopes
Shape of areas: Irregular
Size of areas: 5 to 50 acres

Composition

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

Typical Profile

Surface layer:
0 to 10 inches—reddish brown sandy loam

Subsoil:
10 to 72 inches—red sandy clay
72 to 80 inches—red sandy clay that has strong brown mottles

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Depth to seasonal high water table: More than 72 inches
Permeability: Moderate
Available water capacity: Moderate or high
Flooding: None
Content of organic matter in the surface layer: Low or moderately low
Natural fertility: Low
Tilth: Good
Reaction: Very strongly acid or strongly acid throughout, except where the surface layer has been limed
Other distinctive properties: None

Minor Components

Dissimilar soils:
- Carnegie soils, which are in positions similar to those of the Faceville soil or slightly lower and have more than 5 percent plinthite and ironstone nodules
- Henderson soils, which are in positions similar to those of the Faceville soil or slightly lower and have chert fragments throughout
- Marlboro soils, which are in positions similar to those of the Faceville soil or slightly lower and have a subsoil with a more yellow hue
- Nankin soils, which are in positions similar to those of the Faceville soil or slightly lower and have a thinner solum
- Orangeburg soils, which are in positions similar to those of Faceville soil or slightly lower and have less clay in the subsoil

Similar soils:
- A few areas of soils that have a surface layer of loamy sand or sandy clay loam or that have a subsoil that is darker red than that of the Faceville soil

Land Use

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

Cropland
Suitability: Moderately suited
Commonly grown crops: Cotton, peanuts, corn, small grains, grain sorghum, and soybeans
Management concerns: Erosion
Management measures and considerations:
- Using a resource management system that includes terraces and diversions, stripcropping, contour farming, conservation tillage, and crop residue management helps to control erosion and surface runoff and maximizes the infiltration of water into the soil.

Pasture and hayland
Suitability: Well suited
Commonly grown crops: Bahiagrass, clover, coastal bermudagrass, common bermudagrass, legumes, and ryegrass
Management concerns: None

Woodland
Suitability: Well suited
Potential for commercial species: High for loblolly pine
Management concerns: None
Management measures and considerations:
- Leaving a buffer zone of trees and shrubs along creeks and streams helps to control siltation and provides shade for the surface of the water, thereby improving aquatic habitat and helping to maintain water quality.

Dwellings
Suitability: Well suited
Management concerns: Slope
Management measures and considerations:
- Cutting and filling and utilizing the less sloping areas help to overcome the slope limitation.

Septic tank absorption fields
Suitability: Moderately suited
Management concerns: Moderate permeability
Management measures and considerations:
- Increasing the size of the absorption field improves system performance.
- Installing distribution lines during dry periods minimizes smearing and sealing of trench walls.
- The local health department can be contacted for additional guidance regarding sanitary facilities.

Local roads and streets
Suitability: Moderately suited
Management concerns: Low soil strength
Management measures and considerations:
- Incorporating sand and gravel into the roadbed and compacting the roadbed help to overcome the low strength of the natural soil material and improve trafficability.
- Designing roads to safely remove surface water improves soil performance.

Interpretive Groups

Land capability classification: 3e

GoA—Goldsboro loamy sand, 0 to 2 percent slopes

Setting

Landscape: Coastal Plain
Landform: Uplands
Landform position: Interstream divides
Shape of areas: Irregular
Size of areas: 5 to 25 acres

Composition

Goldsboro and similar soils: 80 percent
Dissimilar soils: 20 percent

Typical Profile

Surface layer:
0 to 10 inches—brown loamy sand

Subsoil:
10 to 18 inches—light yellowish brown sandy loam
18 to 33 inches—light yellowish brown sandy clay loam that has yellowish brown and light gray mottles
33 to 80 inches—light gray sandy clay loam that has red, yellowish brown, and light gray mottles

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Moderately well drained
Seasonal high water table: Apparent, at a depth of 2 to 3 feet from December through April in most years
Permeability: Moderate
Available water capacity: Moderate
Flooding: None
Content of organic matter in the surface layer: Low or moderately low
Natural fertility: Low
Tilth: Fair
Reaction: Very strongly acid or strongly acid throughout, except where the surface layer has been limed
Other distinctive properties: None

Minor Components

Dissimilar soils:
- Clarendon soils, which are in positions similar to those of the Goldsboro soil and around the edge of depressions and contain 5 percent or more plinthite
- Grady soils, which are in depressional areas and are poorly drained
- Norfolk soils, which are in the higher, more convex positions and are well drained
- Orangeburg soils, which are in the higher, more convex positions and are well drained
- A few areas of well drained soils that are along drainageways, consist of stratified sandy and loamy alluvium, and are occasionally flooded for brief periods

Similar soils:
- A few areas of soils that are somewhat poorly drained

Land Use

Dominant uses: Cropland
Other uses: Pasture, hayland, and woodland

Cropland
Suitability: Well suited
Commonly grown crops: Cotton, peanuts, corn, small grains, grain sorghum, and soybeans
Management concerns: Seasonal wetness
Management measures and considerations:
- Where suitable outlets are available, installing and maintaining an underground drainage system helps to overcome the seasonal wetness and improves productivity.
- Postponing tillage when the soil is wet helps to prevent clodding and crusting.
- Conservation tillage, winter cover crops, crop residue management, and crop rotations that include grasses and legumes increase available water capacity and improve tilth and fertility.

Pasture and hayland
Suitability: Well suited
Commonly grown crops: Bahiagrass, coastal bermudagrass, common bermudagrass, legumes, and ryegrass
Management concerns: Seasonal wetness
Management measures and considerations:
- Installing cross fencing to enable rotational grazing when the soil is too wet minimizes compaction and increases productivity.

Woodland
Suitability: Well suited
Potential for commercial species: High for loblolly pine and longleaf pine
Management concerns: None
Management measures and considerations:
- Leaving a buffer zone of trees and shrubs along creeks and streams helps to control siltation and provides shade for the surface of the water, thereby improving aquatic habitat and helping to maintain water quality.

Dwellings
Suitability: Well suited to dwellings without basements; poorly suited to dwellings with basements
Management concerns: Seasonal wetness
Management measures and considerations:
- Building on the highest part of the landscape and installing a subsurface drainage system help to overcome the seasonal wetness.

Septic tank absorption fields
Suitability: Poorly suited
Management concerns: Seasonal wetness and moderate permeability
Management measures and considerations:
- An alternative system should be considered for onsite sewage disposal.
- The local health department can be contacted for additional guidance regarding sanitary facilities.

Local roads and streets
Suitability: Well suited
Management concerns: None

Interpretive Groups

Land capability classification: 2w

GrA—Grady clay loam, ponded

Setting

Landscape: Coastal Plain
Landform: Depressions
Landform position: Concavities
Shape of areas: Rounded, oval, or elongated
Size of areas: 3 to 20 acres

Composition

Grady and similar soils: 80 percent
Dissimilar soils: 20 percent

Typical Profile

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

Subsoil:
5 to 10 inches—gray clay
10 to 30 inches—light brownish gray clay
30 to 65 inches—light brownish gray clay that has yellowish brown and yellowish red mottles

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Poorly drained
Seasonal high water table: From 2 feet above the surface to a depth of 1 foot from December through June in most years
Permeability: Slow
Available water capacity: Moderate or high
Ponding: Frequent from December through June in most years
Content of organic matter in the surface layer: Moderately low or moderate
Natural fertility: Low
Tilth: Fair when the soil is drained
Reaction: Extremely acid to strongly acid throughout, except where the surface layer has been limed
Other distinctive properties: None

Minor Components

Dissimilar soils:
- Clarendon soils, which are in the higher positions adjacent to depressions, have 5 percent or more plinthite, and are moderately well drained
- Goldsboro soils, which are in the higher positions and are moderately well drained
- Norfolk soils, which are in the higher positions and are well drained
- A few areas of soils that are less clayey than the Grady soil and are subject to flooding or ponding of brief duration
- A few areas of soils that are in the slightly higher positions and are somewhat poorly drained

Similar soils:
- A few areas of poorly drained soils that have sandy surface and subsurface layers with a combined thickness of 20 to 40 inches
- A few areas of very poorly drained soils that have a solum that is less than 60 inches thick

Land Use

Dominant uses: Woodland
Other uses: A few small drained areas are used as pasture or cropped as weather permits.

Cropland
Suitability: Undrained—unsuited; drained—moderately suited
Commonly grown crops: Corn, grain sorghum, and soybeans
Management concerns: Ponding and wetness
Management measures and considerations:
- Installing a drainage system that includes open ditches, perforated tile, or land shaping increases productivity. Extensive surveying may be necessary to locate a suitable drainage outlet.
- Selecting short-season, water-tolerant crops that can be planted later in the spring and harvested earlier in the fall helps to avoid crop failure or loss due to wetness.
- Postponing tillage when the soil is wet helps to prevent clodding and crusting.

Pasture and hayland
Suitability: Undrained—unsuited to pasture and hayland; drained—poorly suited to pasture and unsuited to hayland
Commonly grown crops: Bahiagrass
Management concerns: Ponding and wetness
Management measures and considerations:
- Installing a drainage system that includes open ditches, perforated tile, or land shaping increases productivity. Extensive surveying may be necessary to locate a suitable drainage outlet.
- Installing cross fencing to enable rotational grazing when the soil is too wet minimizes compaction, improves productivity, and helps to maintain tilth.

Woodland
Suitability: Moderately suited
Potential for commercial species: Moderate for baldcypress, water tupelo, and water oak
Management concerns: Equipment use, seedling mortality, and plant competition
Management measures and considerations:
- This map unit is best reforested by managing for natural regeneration of hardwoods.
- Mechanized management operations should be scheduled for late summer and early fall, when the water table is lowest.
- Using low-pressure ground equipment helps to control rutting of the surface layer and compaction of the subsoil.
- If the soil is drained and planted, the seedlings should be planted on raised beds and the number of seedlings should be larger than the number typically planted on other soils.
- Proper site preparation, herbicides, and prescribed burning help to control competition from undesirable plant species.

Dwellings
Suitability: Unsuited
Management concerns: Ponding, seasonal wetness, and shrink-swell potential

Septic tank absorption fields
Suitability: Unsuited
Management concerns: Ponding, restricted permeability, and wetness

Local roads and streets
Suitability: Unsuited

Management concerns: Ponding, wetness, shrink-swell potential, and low soil strength

Interpretive Groups

Land capability classification: 5w

GsA—Greenville sandy clay loam, 0 to 2 percent slopes

Setting

Landscape: Coastal Plain
Landform: Uplands
Landform position: Broad ridges
Shape of areas: Irregular
Size of areas: 5 to 120 acres

Composition

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

Typical Profile

Surface layer:
0 to 8 inches—dark reddish brown sandy clay loam

Subsoil:
8 to 80 inches—dark red sandy clay

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Depth to seasonal high water table: More than 72 inches
Permeability: Moderate
Available water capacity: Moderate or high
Flooding: None
Content of organic matter in the surface layer: Low or moderately low
Natural fertility: Low
Tilth: Fair
Reaction: Very strongly acid to moderately acid throughout, except where the surface layer has been limed
Other distinctive properties: None

Minor Components

Dissimilar soils:
- Carnegie soils, which are in positions similar to those of the Greenville soil or slightly lower and have more than 5 percent plinthite and ironstone nodules
- Henderson soils, which are in the slightly lower positions and have chert fragments throughout
- Marlboro soils, which are in positions similar to those of the Greenville soil or slightly lower and have a subsoil with a more yellow hue
- Nankin soils, which are in the lower positions and have a thinner solum than that of the Greenville soil
- Orangeburg soils, which are in positions similar to those of the Greenville soil or slightly lower and have less clay in the subsoil
- Red Bay soils, which are in positions similar to those of the Greenville soil or slightly lower and have less clay in the subsoil

Similar soils:
- A few small areas of soils that have a surface layer of sandy clay and that are in the more sloping areas adjacent to drainageways

Land Use

Dominant uses: Cropland
Other uses: Pasture, hayland, and woodland

Cropland
Suitability: Well suited
Commonly grown crops: Cotton, peanuts, corn, small grains, grain sorghum, and soybeans
Management concerns: None
Management measures and considerations:
- Conservation tillage, winter cover crops, crop residue management, and crop rotations that include grasses and legumes increase available water capacity and improve tilth and fertility.

Pasture and hayland
Suitability: Well suited
Commonly grown crops: Bahiagrass, coastal bermudagrass, common bermudagrass, legumes, and ryegrass
Management concerns: None

Woodland
Suitability: Well suited
Potential for commercial species: High for loblolly pine
Management concerns: None
Management measures and considerations:
- Leaving a buffer zone of trees and shrubs along creeks and streams helps to control siltation and provides shade for the surface of the water, thereby improving aquatic habitat and helping to maintain water quality.

Dwellings
Suitability: Well suited
Management concerns: None

Septic tank absorption fields
Suitability: Moderately suited
Management concerns: Moderate permeability
Management measures and considerations:
- Increasing the size of the absorption field improves system performance. Installing distribution lines during dry periods minimizes smearing and sealing of trench walls.
- The local health department can be contacted for additional guidance regarding sanitary facilities.

Local roads and streets
Suitability: Moderately suited
Management concerns: Low soil strength
Management measures and considerations:
- Incorporating sand and gravel into the roadbed and compacting the roadbed help to overcome the low strength of the natural soil material and improve trafficability.

Interpretive Groups

Land capability classification: 1

GsB—Greenville sandy clay loam, 2 to 5 percent slopes

Setting

Landscape: Coastal Plain
Landform: Uplands
Landform position: Broad ridges
Shape of areas: Irregular
Size of areas: 5 to 125 acres

Composition

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

Typical Profile

Surface layer:
0 to 8 inches—dark reddish brown sandy clay loam

Subsoil:
8 to 80 inches—dark red sandy clay

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Depth to seasonal high water table: More than 72 inches
Permeability: Moderate
Available water capacity: Moderate or high
Flooding: None
Content of organic matter in the surface layer: Low or moderately low
Natural fertility: Low
Tilth: Fair
Reaction: Very strongly acid to moderately acid throughout, except where the surface layer has been limed
Other distinctive properties: None

Minor Components

Dissimilar soils:
- Carnegie soils, which are in positions similar to those of the Greenville soil or slightly lower and have more than 5 percent plinthite and ironstone
- Henderson soils, which are in the slightly lower positions and have chert fragments throughout
- Marlboro soils, which are in positions similar to those of the Greenville soil or slightly lower and have a subsoil with a more yellow hue
- Nankin soils, which are in the lower positions and have a thinner solum than that of the Greenville soil
- Orangeburg soils, which are in positions similar to those of the Greenville soil or slightly lower and have a less clayey subsoil
- Red Bay soils, which are in positions similar to those of the Greenville soil or slightly lower and have a less clayey subsoil

Similar soils:
- A few areas of soils that have a surface layer of sandy clay and that are in the more sloping areas adjacent to drainageways

Land Use

Dominant uses: Cropland
Other uses: Pasture, hayland, and woodland

Cropland
Suitability: Well suited
Commonly grown crops: Cotton, peanuts, corn, small grains, grain sorghum, and soybeans
Management concerns: Erosion
Management measures and considerations:
- Using a resource management system that includes terraces and diversions, stripcropping, contour farming, conservation tillage, crop residue management, winter cover, and sod-based rotations helps to stabilize the soil, minimizes erosion, improves tilth, helps to control surface runoff, and maximizes the infiltration of water into the soil.

Pasture and hayland
Suitability: Well suited
Commonly grown crops: Bahiagrass, coastal bermudagrass, common bermudagrass, legumes, and ryegrass
Management concerns: None

Woodland
Suitability: Well suited
Potential for commercial species: High for loblolly pine
Management concerns: None
Management measures and considerations:
- Leaving a buffer zone of trees and shrubs along creeks and streams helps to control siltation and provides shade for the surface of the water, thereby improving aquatic habitat and helping to maintain water quality.

Dwellings
Suitability: Well suited
Management concerns: None

Septic tank absorption fields
Suitability: Moderately suited
Management concerns: Moderate permeability
Management measures and considerations:
- Increasing the size of the absorption field and placing the distribution lines on the contour improve system performance.
- Installing distribution lines during dry periods minimizes smearing and sealing of trench walls.
- The local health department can be contacted for additional guidance regarding sanitary facilities.

Local roads and streets
Suitability: Moderately suited
Management concerns: Low soil strength
Management measures and considerations:
- Incorporating sand and gravel into the roadbed and compacting the roadbed help to overcome the low strength of the natural soil material and improve trafficability.

Interpretive Groups

Land capability classification: 3e

GsC—Greenville sandy clay loam, 5 to 8 percent slopes

Setting

Landscape: Coastal Plain
Landform: Uplands

Landform position: Side slopes
Shape of areas: Irregular
Size of areas: 5 to 50 acres

Composition

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

Typical Profile

Surface layer:
0 to 8 inches—dark reddish brown sandy clay loam

Subsoil:
8 to 80 inches—dark red sandy clay

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Depth to seasonal high water table: More than 72 inches
Permeability: Moderate
Available water capacity: Moderate or high
Flooding: None
Content of organic matter in the surface layer: Low
Natural fertility: Low
Tilth: Fair
Reaction: Very strongly acid to moderately acid throughout, except where the surface layer has been limed
Other distinctive properties: None

Minor Components

Dissimilar soils:
- Carnegie soils, which are in positions similar to those of the Greenville soil or slightly lower and have more than 5 percent plinthite and ironstone
- Henderson soils, which are in positions similar to those of the Greenville soil or slightly lower and have chert fragments throughout
- Marlboro soils, which are in positions similar to those of the Greenville soil or slightly lower and have a subsoil with a more yellow hue
- Nankin soils, which are in the lower positions and have a thinner solum than that of the Greenville soil
- Orangeburg soils, which are in positions similar to those of the Greenville soil or slightly lower and have a less clayey subsoil
- Red Bay soils, which are in positions similar to those of the Greenville soil or slightly lower and have a less clayey subsoil

Similar soils:
- A few areas of soils that have a surface layer of sandy clay

Land Use

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

Cropland
Suitability: Moderately suited
Commonly grown crops: Cotton, peanuts, corn, small grains, grain sorghum, and soybeans
Management concerns: Erosion

Management measures and considerations:
- Using a resource management system that includes terraces and diversions, stripcropping, contour farming, conservation tillage, crop residue management, winter cover, and sod-based rotations helps to stabilize the soil, minimizes erosion, improves tilth, helps to control surface runoff, and maximizes the infiltration of water into the soil.

Pasture and hayland
Suitability: Well suited
Commonly grown crops: Bahiagrass, coastal bermudagrass, common bermudagrass, legumes, and ryegrass
Management concerns: Erosion
Management measures and considerations:
- During the establishment or renovation of pasture, preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the rate of germination.
- Using rotational grazing and implementing a well-planned schedule of clipping and harvesting help to maintain the pasture and increase productivity.

Woodland
Suitability: Well suited
Potential for commercial species: High for loblolly pine
Management concerns: None
Management measures and considerations:
- Leaving a buffer zone of trees and shrubs along creeks and streams helps to control siltation and provides shade for the surface of the water, thereby improving aquatic habitat and helping to maintain water quality.

Dwellings
Suitability: Well suited
Management concerns: Slope
Management measures and considerations:
- Cutting and filling and utilizing the less sloping areas help to overcome the slope limitation.

Septic tank absorption fields
Suitability: Moderately suited
Management concerns: Moderate permeability
Management measures and considerations:
- Increasing the size of the absorption field and placing the distribution lines on the contour improve performance.
- Installing distribution lines during dry periods minimizes smearing and sealing of trench walls.
- The local health department can be contacted for additional guidance regarding sanitary facilities.

Local roads and streets
Suitability: Moderately suited
Management concerns: Low soil strength
Management measures and considerations:
- Incorporating sand and gravel into the roadbed and compacting the roadbed help to overcome the low strength of the natural soil material and improve trafficability.
- Designing roads to safely remove surface water improves soil performance.

Interpretive Groups

Land capability classification: 4e

GsD2—Greenville clay loam, 8 to 15 percent slopes, eroded

Setting

Landscape: Coastal Plain
Landform: Uplands
Landform position: Side slopes
Shape of areas: Irregular
Size of areas: 5 to 50 acres

Composition

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

Typical Profile

Surface layer:
0 to 8 inches—dark reddish brown clay loam

Subsoil:
8 to 80 inches—dark red sandy clay

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Depth to seasonal high water table: More than 72 inches
Permeability: Moderate
Available water capacity: Moderate or high
Flooding: None
Content of organic matter in the surface layer: Low or moderately low
Natural fertility: Low
Tilth: Poor
Reaction: Very strongly acid to moderately acid throughout, except where the surface layer has been limed
Other distinctive properties: None

Minor Components

Dissimilar soils:
- Henderson soils, which are in positions similar to those of the Greenville soil or slightly lower and have chert fragments throughout
- Nankin soils, which are in the lower positions and have a thinner solum than that of the Greenville soil
- Orangeburg soils, which are in positions similar to those of the Greenville soil or slightly higher and have a less clayey subsoil
- Red Bay soils, which are in positions similar to those of the Greenville soil or slightly higher and have a less clayey subsoil

Similar soils:
- A few areas of soils that have a surface layer of sandy clay loam

Land Use

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

Cropland
Suitability: Poorly suited

Commonly grown crops: Cotton, peanuts, corn, small grains, grain sorghum, and soybeans
Management concerns: Erosion
Management measures and considerations:
- Using a resource management system that includes contour farming, conservation tillage, crop residue management, stripcropping, structural erosion-control measures, and sod-based rotations helps to control erosion and surface runoff and maximizes the infiltration of water into the soil.

Pasture and hayland
Suitability: Moderately suited
Commonly grown crops: Bahiagrass, coastal bermudagrass, common bermudagrass, legumes, and ryegrass
Management concerns: Erosion
Management measures and considerations:
- During the establishment or renovation of pasture, preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the rate of germination.
- Fencing livestock away from creeks and streams helps to prevent streambank erosion and sedimentation.
- Using rotational grazing and implementing a well-planned schedule of clipping and harvesting help to maintain the pasture and increase productivity.

Woodland
Suitability: Moderately suited
Potential for commercial species: High for loblolly pine
Management concerns: Erosion
Management measures and considerations:
- Establishing a permanent plant cover on roads and log landings, reforesting immediately after harvesting, and preparing sites with recommended species reduce the hazard of erosion and help to control siltation of streams.
- Constructing roads, fire lanes, and skid trails on the contour reduces the accelerated rates of erosion associated with these surface disturbances.
- Leaving a buffer zone of trees and shrubs along creeks and streams helps to control siltation and provides shade for the surface of the water, thereby improving aquatic habitat and helping to maintain water quality.

Dwellings
Suitability: Moderately suited
Management concerns: Slope
Management measures and considerations:
- Designing structures to conform to the contour of the natural slope, building in the less sloping areas, or cutting and filling helps to overcome the slope limitation.
- Vegetating cleared and graded areas as soon as possible or constructing silt fences helps to maintain soil stability and prevents sediment from leaving the site.

Septic tank absorption fields
Suitability: Moderately suited
Management concerns: Moderate permeability and slope
Management measures and considerations:
- Increasing the size of the absorption field improves system performance.
- Installing distribution lines during dry periods minimizes smearing and sealing of trench walls.
- Installing distribution lines on the contour improves system performance.
- The local health department can be contacted for additional guidance regarding sanitary facilities.

Local roads and streets
Suitability: Moderately suited
Management concerns: Slope and low soil strength
Management measures and considerations:
- Constructing roads on the contour and providing adequate water-control structures, such as culverts, help to maintain road stability.
- Locating roads on the contour, utilizing the less sloping areas, and cutting and filling help to overcome the slope limitation.
- Vegetating cut-and-fill slopes as soon as possible after construction helps to stabilize the soil and prevents excessive erosion.
- Incorporating sand and gravel into the roadbed and compacting the roadbed help to overcome the low strength of the natural soil material and improve trafficability.

Interpretive Groups

Land capability classification: 6e

HnC—Henderson gravelly sandy loam, 2 to 8 percent slopes

Setting

Landscape: Coastal Plain
Landform: Uplands
Landform position: Ridges, knolls, and side slopes
Shape of areas: Irregular
Size of areas: 5 to 100 acres

Composition

Henderson and similar soils: 70 percent
Dissimilar soils: 30 percent

Typical Profile

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

Subsurface layer:
4 to 13 inches—yellowish brown gravelly sandy loam

Subsoil:
13 to 18 inches—strong brown gravelly sandy clay
18 to 49 inches—strong brown gravelly clay that has yellowish red and reddish brown mottles
49 to 65 inches—multicolored yellowish brown, light gray, and reddish brown gravelly clay

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Depth to seasonal high water table: More than 72 inches
Permeability: Slow
Available water capacity: Moderate
Flooding: None
Content of organic matter in the surface layer: Low or moderately low
Natural fertility: Low
Tilth: Poor

Reaction: Very strongly acid or strongly acid throughout, except where the surface layer has been limed
Other distinctive properties: 15 to 35 percent chert fragments throughout

Minor Components

Dissimilar soils:
- Faceville soils, which are in positions similar to those of the Henderson soil or slightly higher and do not have chert fragments
- Greenville soils, which are in positions similar to those of the Henderson soil or slightly higher, have a subsoil with a redder hue, and do not have chert fragments
- Nankin soils, which are in positions similar to those of the Henderson soil and do not have chert fragments
- Orangeburg soils, which are in positions similar to those of the Henderson soil or slightly higher, do not have chert fragments, and have less clay in the subsoil
- Red Bay soils, which are in positions similar to those of the Henderson soil or slightly higher, do not have chert fragments, have a subsoil with a redder hue, and have less clay in the subsoil

Similar soils:
- A few areas of soils that have a surface layer of sandy clay loam or clay

Land Use

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

Cropland
Suitability: Poorly suited
Commonly grown crops: Cotton, peanuts, corn, small grains, grain sorghum, and soybeans
Management concerns: Stoniness and erosion
Management measures and considerations:
- Removing the larger stones helps to minimize damage to equipment.
- Using a resource management system that includes terraces, diversions, stripcropping, contour farming, conservation tillage, crop residue management, and sod-based rotations helps to control erosion and surface runoff and maximizes the infiltration of water into the soil.
- Incorporating crop residue into the surface layer or leaving the residue on the surface reduces the extent of clodding and crusting and improves water infiltration.

Pasture and hayland
Suitability: Well suited
Commonly grown crops: Bahiagrass, coastal bermudagrass, common bermudagrass, legumes, and ryegrass
Management concerns: Stoniness and erosion
Management measures and considerations:
- During the establishment or renovation of pasture, preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the rate of germination.
- Removing the larger stones or limiting equipment use to the larger open areas helps to minimize the damage to equipment.
- Using rotational grazing and implementing a well-planned schedule of clipping and harvesting help to maintain the pasture and increase productivity.

Woodland
Suitability: Well suited
Potential for commercial species: High for loblolly pine

Management concerns: Erosion
Management measures and considerations:
- Establishing a permanent plant cover on roads and log landings, reforesting immediately after harvesting, and preparing sites with recommended species reduce the hazard of erosion and help to control siltation of streams.
- Leaving a buffer zone of trees and shrubs along creeks and streams helps to control siltation and provides shade for the surface of the water, thereby improving aquatic habitat and helping to maintain water quality.

Dwellings
Suitability: Well suited
Management concerns: None
Management measures and considerations:
- Large stones may be encountered during excavation and should be removed.
- Cutting and filling and utilizing the less sloping areas help to overcome the slope limitation.

Septic tank absorption fields
Suitability: Poorly suited
Management concerns: Slow permeability and stoniness
Management measures and considerations:
- An alternative system should be considered for onsite sewage disposal.
- The local health department can be contacted for additional guidance regarding sanitary facilities.

Local roads and streets
Suitability: Moderately suited
Management concerns: Low soil strength
Management measures and considerations:
- Incorporating sand and gravel into the roadbed and compacting the roadbed help to overcome the low strength of the natural soil material and improve trafficability.
- Designing roads to safely remove surface water improves soil performance.

Interpretive Groups

Land capability classification: 4e

HnD—Henderson gravelly sandy loam, 8 to 15 percent slopes

Setting

Landscape: Coastal Plain
Landform: Uplands
Landform position: Side slopes
Shape of areas: Irregular
Size of areas: 5 to 120 acres

Composition

Henderson and similar soils: 70 percent
Dissimilar soils: 30 percent

Typical Profile

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

Subsurface layer:
4 to 13 inches—yellowish brown gravelly sandy loam

Subsoil:
13 to 18 inches—strong brown gravelly sandy clay
18 to 49 inches—strong brown gravelly clay that has yellowish red and reddish brown mottles
49 to 65 inches—multicolored yellowish brown, light gray, and reddish brown gravelly clay

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Depth to seasonal high water table: More than 72 inches
Permeability: Slow
Available water capacity: Moderate
Flooding: None
Content of organic matter in the surface layer: Low or moderately low
Natural fertility: Low
Tilth: Poor
Reaction: Very strongly acid or strongly acid throughout, except where the surface layer has been limed
Other distinctive properties: 15 to 35 percent chert fragments throughout

Minor Components

Dissimilar soils:
- Faceville soils, which are in the higher positions and do not have chert fragments
- Greenville soils, which are in the higher positions, have a redder hue, and do not have chert fragments
- Nankin soils, which are in positions similar to those of the Henderson soil, have a thinner solum, and do not have chert fragments

Similar soils:
- A few areas of soils that have a surface layer of sandy clay loam or clay

Land Use

Dominant uses: Woodland
Other uses: Pasture and hayland

Cropland
Suitability: Unsuited
Management concerns: Erosion, equipment use, slope, and stoniness

Pasture and hayland
Suitability: Suited to pasture; poorly suited to hayland
Commonly grown crops: Bahiagrass, coastal bermudagrass, common bermudagrass, legumes, and ryegrass
Management concerns: Slope, erosion, and stoniness
Management measures and considerations:
- During the establishment or renovation of pasture, preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the rate of germination.
- Limiting equipment use to the less sloping areas helps to overcome the slope limitation.
- Removing the larger stones or limiting equipment use to the larger open areas helps to minimize the damage to equipment.

Woodland
Suitability: Well suited

Potential for commercial species: High for loblolly pine
Management concerns: Erosion and stoniness
Management measures and considerations:
- Establishing a permanent plant cover on roads and log landings, reforesting immediately after harvesting, and preparing sites with recommended species reduce the hazard of erosion and help to control siltation of streams.
- Removing the larger stones helps to overcome the limitations caused by stoniness.
- Leaving a buffer zone of trees and shrubs along creeks and streams helps to control siltation and provides shade for the surface of the water, thereby improving aquatic habitat and helping to maintain water quality.

Dwellings
Suitability: Moderately suited
Management concerns: Slope, low soil strength, and stoniness
Management measures and considerations:
- Designing structures to conform to the natural contour, cutting and filling, or building in the less sloping areas helps to overcome the slope limitation.
- Vegetating cleared and graded areas as soon as possible or constructing silt fences helps to maintain soil stability and prevents sediment from leaving the site.
- Using reinforced foundations and footings helps to overcome the low soil strength.
- Large stones should be removed.

Septic tank absorption fields
Suitability: Poorly suited
Management concerns: Slope, slow permeability, and stoniness
Management measures and considerations:
- An alternative system should to considered for onsite sewage disposal.
- The local health department can be contacted for additional guidance regarding sanitary facilities.

Local roads and streets
Suitability: Moderately suited
Management concerns: Slope and low soil strength
Management measures and considerations:
- Constructing roads on the contour and providing adequate water-control structures, such as culverts, help to maintain road stability.
- Locating roads on the contour, utilizing the less sloping areas, and cutting and filling help to overcome the slope limitation.
- Vegetating cut-and-fill slopes as soon as possible after construction helps to stabilize the soil and prevents excessive erosion.
- Incorporating sand and gravel into the roadbed and compacting the roadbed help to overcome the low strength of the natural soil material and improve trafficability.

Interpretive Groups

Land capability classification: 7e

KBA—Kinston and Bibb soils, 0 to 1 percent slopes, frequently flooded

Setting

Landscape: Coastal Plain
Landform: Flood plains

Landform position: Planar to slightly concave areas
Shape of areas: Elongated
Size of areas: 30 to 1,000 acres

Composition

Kinston and similar soils: 45 percent
Bibb and similar soils: 35 percent
Dissimilar soils: 20 percent

Typical Profile

Kinston
Surface layer:
0 to 8 inches—dark gray loam and very dark gray silt loam

Subsurface layer:
8 to 15 inches—dark gray clay loam
15 to 33 inches—very dark gray sandy loam that has light brownish gray and pale brown mottles

Substratum:
33 to 52 inches—dark gray sandy clay loam that has dark yellowish brown mottles
52 to 80 inches—dark gray loamy sand

Bibb
Surface layer:
0 to 5 inches—very dark gray fine sandy loam

Substratum:
5 to 27 inches—dark gray, light brownish gray, and gray loam and sandy loam having strong brown, light brownish gray, brownish yellow, and pale brown mottles
27 to 45 inches—very dark gray sandy loam
45 to 80 inches—very dark gray and dark gray sandy loam and loamy sand having light brownish gray mottles

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Poorly drained
Seasonal high water table: Kinston—apparent, at the surface to a depth of 1 foot from November through June in most years; Bibb—apparent, at a depth of 1/2 to 1 foot from December through April in most years
Permeability: Moderate
Available water capacity: Moderate
Flooding: Frequent for brief duration
Content of organic matter in the surface layer: Kinston—moderate; Bibb—low to moderate
Natural fertility: Low
Tilth: Good
Reaction: Very strongly acid or strongly acid throughout, except where the surface layer has been limed

Minor Components

Dissimilar soils:
- A few areas of soils that are similar to the Bibb soil but have a surface layer of sandy clay loam or clay loam
- A few areas of soils that are similar to the Kinston or Bibb soil but are in slightly higher positions and are somewhat poorly drained

Similar soils:
- A few areas of soils that are similar to the Bibb soil but do not have buried surface and subsurface layers

Land Use

Dominant uses: Woodland
Other uses: Wildlife habitat

Cropland
Suitability: Unsuited
Management concerns: Frequent flooding and seasonal wetness

Pasture and hayland
Suitability: Poorly suited
Commonly grown crops: Bahiagrass, coastal bermudagrass, common bermudagrass, legumes, and ryegrass
Management concerns: Frequent flooding and seasonal wetness
Management measures and considerations:
- Using rotational grazing and implementing a well-planned schedule of clipping and harvesting help to maintain the pasture and increase productivity.

Woodland
Suitability: Moderately suited
Potential for commercial species: Kinston—very high for loblolly pine and eastern cottonwood; Bibb—very high for loblolly pine and sweetgum
Management concerns: Equipment use, seedling mortality, windthrow, and plant competition
Management measures and considerations:
- Restricting the use of standard wheeled and tracked equipment to drier periods reduces the extent of the rutting and compaction that occurs if the equipment is used when the soils are saturated.
- Planting seedlings on raised beds and increasing the number of seedlings planted help to establish the seedlings and increase the seedling survival rate.
- Productivity can be increased by the timely harvest of windthrown trees. Windthrow is caused by a combination of high winds and the shallow rooting depth of the soils.
- Proper site preparation, herbicides, and prescribed burning help to control competition from undesirable plant species.
- Leaving a buffer zone of trees and shrubs along creeks and streams helps to control siltation and provides shade for the surface of the water, thereby improving aquatic habitat and helping to maintain water quality.

Dwellings
Suitability: Unsuited
Management concerns: Frequent flooding and seasonal wetness

Septic tank absorption fields
Suitability: Unsuited
Management concerns: Frequent flooding and seasonal wetness
- The local health department can be contacted for additional guidance regarding sanitary facilities.

Local roads and streets
Suitability: Unsuited
Management concerns: Frequent flooding and seasonal wetness

Interpretive Groups

Land capability classification: 6w

LkC—Lakeland sand, 0 to 8 percent slopes

Setting

Landscape: Coastal Plain
Landform: Uplands
Landform position: Broad ridges and side slopes
Shape of areas: Irregular
Size of areas: 10 to 300 acres

Composition

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

Typical Profile

Surface layer:
0 to 4 inches—dark yellowish brown sand

Substratum:
4 to 60 inches—yellowish brown sand
60 to 80 inches—strong brown sand

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Excessively drained
Depth to seasonal high water table: More than 72 inches
Permeability: Rapid
Available water capacity: Low or very low
Flooding: None
Content of organic matter in the surface layer: Very low or low
Natural fertility: Low
Tilth: Poor
Reaction: Very strongly acid or strongly acid throughout, except where the surface layer has been limed
Other distinctive properties: Sandy surface and subsurface layers having a combined thickness of more than 80 inches

Minor Components

Dissimilar soils:
- Ailey soils, which are in the slightly lower positions, are well drained, and have sandy surface and subsurface layers with a combined thickness of 20 to 40 inches
- Lucy soils, which are in the slightly lower positions, are well drained, and have sandy surface and subsurface layers with a combined thickness of 20 to 40 inches
- Orangeburg soils, which are in the slightly lower positions, are well drained, and do not have thick, sandy surface and subsurface layers
- Troup soils, which are in positions similar to those of the Lakeland soil, are somewhat excessively drained, and have sandy surface and subsurface layers with a combined thickness of 40 to 80 inches

Similar soils:
- A few areas of soils that are in positions similar to those of the Lakeland soil but have layers of loamy sand

Land Use

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

Cropland
Suitability: Poorly suited
Commonly grown crops: Cotton, peanuts, corn, small grains, grain sorghum, and soybeans
Management concerns: Droughtiness, leaching, low available water capacity, low nutrient holding capacity, erosion, and soil blowing
Management measures and considerations:
- Selecting crop varieties that are adapted to droughty conditions increases productivity.
- Using split applications helps to minimize leaching and increases the effectiveness of lime and fertilizer.
- Using a resource management system that includes contour farming, conservation tillage, crop residue management, stripcropping, and sod-based rotations minimizes erosion, helps to control surface runoff, and maximizes the infiltration of water into the soil.
- Stripcropping, wind breaks, and delayed seedbed preparation reduce the extent of the damage caused by soil blowing.

Pasture and hayland
Suitability: Moderately suited
Commonly grown crops: Bahiagrass, coastal bermudagrass, common bermudagrass, legumes, and ryegrass
Management concerns: Erosion, droughtiness, and nutrient leaching
Management measures and considerations:
- Selecting drought-resistant plant varieties helps to overcome the droughtiness.
- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the rate of germination.
- Using split applications minimizes leaching.

Woodland
Suitability: Moderately suited
Potential for commercial species: High for loblolly pine and longleaf pine
Management concerns: Equipment use and seedling mortality
Management measures and considerations:
- Using wide tires, tandem axles, or crawler-type equipment and scheduling management operations for periods when soil moisture is high improve trafficability.
- Increasing the number of seedlings planted can partially offset the seedling mortality rate.
- Leaving a buffer zone of trees and shrubs along creeks and streams helps to control siltation and provides shade for the surface of the water, thereby improving aquatic habitat and helping to maintain water quality.

Dwellings
Suitability: Well suited
Management concerns: None
Management measures and considerations:
- The hazard of cutbanks caving can be reduced by using support beams to maintain the stability of the cutbanks.

Septic tank absorption fields
Suitability: Poorly suited
Management concerns: Seepage
Management measures and considerations:
- The local health department can be contacted for additional guidance regarding sanitary facilities.

Local roads and streets
Suitability: Well suited
Management concerns: None

Interpretive Groups

Land capability classification: 4s

LkD—Lakeland sand, 8 to 15 percent slopes

Setting

Landscape: Coastal Plain
Landform: Uplands
Landform position: Ridges and side slopes
Shape of areas: Irregular and slightly elongated
Size of areas: 10 to 200 acres

Composition

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

Typical Profile

Surface layer:
0 to 4 inches—dark yellowish brown sand

Underlying material:
4 to 60 inches—yellowish brown sand
60 to 80 inches—strong brown sand

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Excessively drained
Depth to seasonal high water table: More than 72 inches
Permeability: Rapid
Available water capacity: Low or very low
Flooding: None
Content of organic matter in the surface layer: Very low or low
Natural fertility: Low
Tilth: Poor
Reaction: Very strongly acid or strongly acid throughout, except where the surface layer has been limed
Other distinctive properties: Sandy surface and subsurface layers having a combined thickness of more than 80 inches

Minor Components

Dissimilar soils:
- Ailey soils, which are in positions similar to those of the Lakeland soil, are well drained, and have sandy surface and subsurface layers with a combined thickness of 20 to 40 inches
- Cowarts soils, which are in the lower positions, are well drained, and do not have thick, sandy surface layers
- Lucy soils, which are in positions similar to those of the Lakeland soil, are well drained, and have sandy surface and subsurface layers with a combined thickness of 20 to 40 inches

- Nankin soils, which are in the lower positions, are well drained, have a clayey subsoil, and do not have thick, sandy surface layers

Similar soils:
- A few areas of soils that are in positions similar to those of the Lakeland soil but have layers of loamy sand

Land Use

Dominant uses: Woodland
Other uses: Pasture and hayland

Cropland
Suitability: Unsuited
Management concerns: Erosion and slope

Pasture and hayland
Suitability: Moderately suited to pasture; poorly suited to hayland
Commonly grown crops: Bahiagrass, coastal bermudagrass, common bermudagrass, legumes, and ryegrass
Management concerns: Erosion, slope, droughtiness, and nutrient leaching
Management measures and considerations:
- During the establishment or renovation of pasture, preparing seedbeds on the contour or across the slope reduces the hazard of erosion, helps to overcome the slope limitation, and increases the rate of germination.
- Selecting drought-resistant plant varieties helps to overcome the droughtiness.
- Using split applications helps to minimize leaching and increases the effectiveness of lime and fertilizer.

Woodland
Suitability: Moderately suited
Potential for commercial species: High for loblolly pine and longleaf pine
Management concerns: Equipment use and seedling mortality
Management measures and considerations:
- Using wide tires, tandem axles, or crawler-type equipment and scheduling management operations for periods when soil moisture is high improve trafficability.
- Increasing the number of seedlings planted can partially offset the seedling mortality rate.
- Constructing roads, fire lanes, and skid trails on the contour reduces the accelerated rates of erosion associated with these surface disturbances.
- Leaving a buffer zone of trees and shrubs along creeks and streams helps to control siltation and provides shade for the surface of the water, thereby improving aquatic habitat and helping to maintain water quality.

Dwellings
Suitability: Moderately suited
Management concerns: Slope
Management measures and considerations:
- Designing structures to conform to the natural slope and cutting and filling help to overcome the slope limitation.
- Vegetating cleared and graded areas as soon as possible or constructing silt fences helps to maintain soil stability and prevents sediment from leaving the site.
- The hazard of cutbanks caving can be reduced by using support beams to maintain the stability of the cutbanks.

Septic tank absorption fields
Suitability: Poorly suited
Management concerns: Seepage, slope, and moderate permeability

Management measures and considerations:
- The local health department can be contacted for additional guidance regarding sanitary facilities.

Local roads and streets
Suitability: Moderately suited
Management concerns: Slope
Management measures and considerations:
- Locating roads on the contour, utilizing the less sloping areas, and cutting and filling help to overcome the slope limitation.
- Vegetating cut-and-fill slopes as soon as possible after construction helps to stabilize the soil and prevents excessive erosion.

Interpretive Groups

Land capability classification: 7s

LmB—Lucy loamy sand, 0 to 5 percent slopes

Setting

Landscape: Coastal Plain
Landform: Uplands
Landform position: Ridges
Shape of areas: Irregular
Size of areas: 5 to 40 acres

Composition

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

Typical Profile

Surface layer:
0 to 8 inches—grayish brown loamy sand

Subsurface layer:
8 to 24 inches—brown loamy sand

Subsoil:
24 to 48 inches—yellowish red sandy loam
48 to 72 inches—red sandy clay loam

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Depth to seasonal high water table: More than 72 inches
Permeability: Moderate
Available water capacity: Low or moderate
Flooding: None
Content of organic matter in the surface layer: Low
Natural fertility: Low
Tilth: Fair
Reaction: Very strongly acid to moderately acid in the surface and subsurface layers and very strongly acid or strongly acid in the subsoil, except where the surface layer has been limed
Other distinctive properties: Sandy surface and subsurface layers having a combined thickness of 20 to 40 inches

Minor Components

Dissimilar soils:
- Ailey soils, which are in positions similar to those of the Lucy soil or slightly lower and have dense, brittle lower layers
- Bonneau soils, which are in the slightly lower positions and have a subsoil with a more yellow hue
- Norfolk soils, which are in positions similar to those of the Lucy soil, have a subsoil with a more yellow hue, and do not have thick, sandy surface and subsurface layers
- Orangeburg soils, which are in positions similar to those of the Lucy soil and do not have thick, sandy surface and subsurface layers
- Troup soils, which are in positions similar to those of the Lucy soil or slightly higher and that have sandy surface and subsurface layers with a combined thickness of 40 to 80 inches

Similar soils:
- A few areas of soils that have a subsoil that is more yellow than that of the Lucy soil

Land Use

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

Cropland
Suitability: Well suited
Commonly grown crops: Cotton, peanuts, corn, small grains, grain sorghum, and soybeans
Management concerns: Droughtiness, erosion, and blowing soil
Management measures and considerations:
- Using a resource management system that includes stripcropping, contour farming, conservation tillage, and crop residue management helps to control erosion and surface runoff and maximizes the infiltration of water into the soil.
- Leaving the maximum amount of crop residue on the surface helps to minimize the damage done to seedlings by soil blowing and conserves soil moisture.
- Applying supplemental irrigation and selecting crop varieties that are adapted to droughty conditions increase productivity.

Pasture and hayland
Suitability: Well suited
Commonly grown crops: Bahiagrass, coastal bermudagrass, common bermudagrass, legumes, and ryegrass
Management concerns: Droughtiness
Management measures and considerations:
- Selecting grass and forage varieties that are adapted to droughty conditions increases productivity.

Woodland
Suitability: Well suited
Potential for commercial species: Very high for loblolly pine
Management concerns: None
Management measures and considerations:
- Using wide tires, tandem axles, or crawler-type equipment and scheduling management operations for periods when soil moisture is high improve trafficability.
- Leaving a buffer zone of trees and shrubs along creeks and streams helps to control siltation and provides shade for the surface of the water, thereby improving aquatic habitat and helping to maintain water quality.

Dwellings
Suitability: Well suited
Management concerns: None
Management measures and considerations:
- The hazard of cutbanks caving can be reduced by using support beams to maintain the stability of the cutbanks.

Septic tank absorption fields
Suitability: Moderately suited
Management concerns: Seepage and moderate permeability
Management measures and considerations:
- The local health department can be contacted for additional guidance regarding sanitary facilities.

Local roads and streets
Suitability: Well suited
Management concerns: None

Interpretive Groups

Land capability classification: 2s

LmC—Lucy loamy sand, 5 to 8 percent slopes

Setting

Landscape: Coastal Plain
Landform: Uplands
Landform position: Ridges
Shape of areas: Irregular
Size of areas: 5 to 40 acres

Composition

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

Typical Profile

Surface layer:
0 to 8 inches—grayish brown loamy sand

Subsurface layer:
8 to 24 inches—brown loamy sand

Subsoil:
24 to 48 inches—yellowish red sandy loam
48 to 72 inches—dark red sandy clay loam

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Depth to seasonal high water table: More than 72 inches
Permeability: Moderate
Available water capacity: Low or moderate
Flooding: None
Content of organic matter in the surface layer: Low
Natural fertility: Low
Tilth: Fair

Reaction: Very strongly acid to moderately acid in the surface and subsurface layers and very strongly acid or strongly acid in the subsoil, except where the surface layer has been limed
Other distinctive properties: Sandy surface and subsurface layers having a combined thickness of 20 to 40 inches

Minor Components

Dissimilar soils:
- Ailey soils, which are in positions similar to those of the Lucy soil or slightly lower and have dense, brittle lower layers
- Bonneau soils, which are in positions similar to those of the Lucy soil or slightly lower and have a subsoil with a more yellow hue
- Norfolk soils, which are in the slightly lower positions, have a subsoil with a more yellow hue, and do not have thick, sandy surface and subsurface layers
- Orangeburg soils, which are in the slightly lower positions and do not have thick, sandy surface and subsurface layers
- Troup soils, which are in positions similar to those of the Lucy soil or slightly higher and have sandy surface and subsurface layers with a combined thickness of 40 to 80 inches

Similar soils:
- A few areas of soils that have a subsoil that is more yellow than that of the Lucy soil

Land Use

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

Cropland
Suitability: Moderately suited
Commonly grown crops: Cotton, peanuts, corn, small grains, grain sorghum, and soybeans
Management concerns: Erosion, slope, droughtiness, and blowing soil
Management measures and considerations:
- Using a resource management system that includes stripcropping, contour farming, conservation tillage, and crop residue management helps to control erosion and surface runoff and maximizes the infiltration of water into the soil.
- Selecting crop varieties that are adapted to droughty conditions increases productivity.
- Leaving the maximum amount of crop residue on the surface helps to minimize the damage done to seedlings by soil blowing and conserves soil moisture.

Pasture and hayland
Suitability: Well suited
Commonly grown crops: Bahiagrass, coastal bermudagrass, common bermudagrass, legumes, and ryegrass
Management concerns: Droughtiness
Management measures and considerations:
- Selecting grass and forage varieties that are adapted to droughty conditions increases productivity.

Woodland
Suitability: Well suited
Potential for commercial species: Very high for loblolly pine
Management concerns: Equipment use
Management measures and considerations:
- Using wide tires, tandem axles, or crawler-type equipment and scheduling management operations for periods when soil moisture is high improve trafficability.

- Leaving a buffer zone of trees and shrubs along creeks and streams helps to control siltation and provides shade for the surface of the water, thereby improving aquatic habitat and helping to maintain water quality.

Dwellings
Suitability: Well suited
Management concerns: None
Management measures and considerations:
- Cutting and filling and utilizing the less sloping areas help to overcome the slope limitation.
- The hazard of cutbanks caving can be reduced by using support beams to maintain the stability of the cutbanks.

Septic tank absorption fields
Suitability: Moderately suited
Management concerns: Seepage and moderate permeability
Management measures and considerations:
- The local health department can be contacted for additional guidance regarding sanitary facilities.

Local roads and streets
Suitability: Well suited
Management concerns: None

Interpretive Groups

Land capability classification: 3s

LmD—Lucy loamy sand, 8 to 15 percent slopes

Setting

Landscape: Coastal Plain
Landform: Uplands
Landform position: Side slopes
Shape of areas: Irregular to slightly elongated
Size of areas: 5 to 50 acres

Composition

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

Typical Profile

Surface layer:
0 to 8 inches—grayish brown loamy sand

Subsurface layer:
8 to 24 inches—brown loamy sand

Subsoil:
24 to 48 inches—yellowish red sandy loam
48 to 72 inches—dark red sandy clay loam

Soil Properties and Qualities

Depth class: Very deep
Depth to root-restricting layer: Greater than 60 inches
Drainage class: Well drained
Depth to seasonal high water table: More than 72 inches

Permeability: Moderate
Available water capacity: Low or moderate
Runoff: Slow
Flooding: None
Content of organic matter in the surface layer: Low
Natural fertility: Low
Tilth: Fair
Reaction: Very strongly acid to moderately acid in the surface and subsurface layers and very strongly acid or strongly acid in the subsoil, except where the surface layer has been limed
Other distinctive properties: Sandy surface and subsurface layers having a combined thickness of 20 to 40 inches

Minor Components

Dissimilar soils:
- Ailey soils, which are in positions similar to those of the Lucy soil or slightly lower and have dense, brittle lower layers
- Bonneau soils, which are in positions similar to those of the Lucy soil and have a subsoil with a more yellow hue
- Norfolk soils, which are in positions similar to those of the Lucy soil, have a subsoil with a more yellow hue, and do not have thick, sandy surface and subsurface layers
- Orangeburg soils, which are in positions similar to those of the Lucy soil and do not have thick, sandy surface and subsurface layers
- Troup soils, which are in the slightly higher positions and have sandy surface and subsurface layers with a combined thickness of 40 to 80 inches

Similar soils:
- A few areas of soils that have a subsoil that is more yellow than that of the Lucy soil

Land Use

Dominant uses: Woodland
Other uses: A few small areas of cropland, pasture, and hayland

Cropland
Suitability: Poorly suited
Commonly grown crops: Cotton, peanuts, corn, small grains, grain sorghum, and soybeans
Management concerns: Erosion, slope, and equipment use
Management measures and considerations:
- Using a resource management system that includes stripcropping, contour farming, conservation tillage, and crop residue management helps to control erosion and surface runoff and maximizes the infiltration of water into the soil.
- Careful use of equipment helps to overcome the slope limitation.
- Using equipment with low-pressure tires reduces the slippage and rutting caused by the high sand content in the soil.
- Leaving the maximum amount of crop residue on the surface helps to minimize the damage done to seedlings by soil blowing and conserves soil moisture.
- Applying supplemental irrigation and selecting crop varieties that are adapted to droughty conditions increase productivity.

Pasture and hayland
Suitability: Well suited to pasture; moderately suited to hayland
Commonly grown crops: Bahiagrass, coastal bermudagrass, common bermudagrass, legumes, and ryegrass
Management concerns: Erosion is a severe concern, and equipment limitations, droughtiness, and soil fertility are moderate concerns.

Management measures and considerations:
- Installing cross fencing to allow rotational grazing during drier periods and implementing a well-planned schedule of clipping and harvesting help to maintain the pasture and increase productivity.
- Applying supplemental irrigation and selecting grass and forage varieties that are adapted to droughty conditions increase productivity.

Woodland
Suitability: Moderately suited
Potential for commercial species: High for loblolly pine and longleaf pine
Management concerns: Equipment use and seedling mortality
Management measures and considerations:
- Using wide tires, tandem axles, or crawler-type equipment and scheduling management operations for periods when soil moisture is high improve trafficability.
- Increasing the number of seedlings planted can partially offset the seedling mortality rate.
- Leaving a buffer zone of trees and shrubs along creeks and streams helps to control siltation and provides shade for the surface of the water, thereby improving aquatic habitat and helping to maintain water quality.

Dwellings
Suitability: Moderately suited
Management concerns: Slope
Management measures and considerations:
- Cutting and filling and utilizing the less sloping areas help to overcome the slope limitation.
- Vegetating cleared and graded areas as soon as possible or constructing silt fences helps to maintain soil stability and prevents sediment from leaving the site.
- The hazard of cutbanks caving can be reduced by using support beams to maintain the stability of the cutbanks.

Septic tank absorption fields
Suitability: Moderately suited
Management concerns: Moderate permeability; slope
Management measures and considerations:
- Installing distribution lines on the contour improves system performance.
- The local health department can be contacted for additional guidance regarding sanitary facilities.

Local roads and streets
Suitability: Moderately suited
Management concerns: Slope
Management measures and considerations:
- Constructing roads on the contour and cutting and filling help to overcome the slope limitation.
- Vegetating cut-and-fill slopes as soon as possible after construction helps to stabilize the soil and prevents excessive erosion.

Interpretive Groups

Land capability classification: 4s

MaA—Marlboro sandy loam, 0 to 2 percent slopes

Setting

Landscape: Coastal Plain
Landform: Uplands

Landform position: Broad ridges
Shape of areas: Irregular
Size of areas: 5 to 90 acres

Composition

Marlboro and similar soils: 80 percent
Dissimilar soils: 20 percent

Typical Profile

Surface layer:
0 to 8 inches—brown sandy loam

Subsoil:
8 to 13 inches—yellowish brown sandy clay loam
13 to 36 inches—yellowish brown clay loam that has strong brown mottles
36 to 70 inches—yellowish brown clay loam that has yellowish red, strong brown, and yellow mottles
70 to 80 inches—brownish yellow sandy clay loam that has red, yellowish red, strong brown, and yellow mottles

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Depth to seasonal high water table: More than 72 inches
Permeability: Moderate
Available water capacity: Moderate or high
Flooding: None
Content of organic matter in the surface layer: Low or moderately low
Natural fertility: Low
Tilth: Good
Reaction: Very strongly acid to moderately acid throughout, except where the surface layer has been limed
Other distinctive properties: None

Minor Components

Dissimilar soils:
- Clarendon soils, which are in the lower positions, have more than 5 percent, plinthite, and are moderately well drained
- Grady soils, which are in depressions and are poorly drained
- Faceville soils, which are in positions similar to those of the Marlboro soil or slightly higher and have a subsoil with a redder hue
- Nankin soils, which are in the lower positions and have a thinner solum than that of the Marlboro soil

Similar soils:
- A few small areas of soils that are moderately well drained
- A few small areas soils that have a slope of more than 2 percent, primarily around depressions

Land Use

Dominant uses: Cropland
Other uses: Pasture, hayland, and woodland

Cropland
Suitability: Well suited
Commonly grown crops: Cotton, peanuts, corn, small grains, grain sorghum, and soybeans

Management concerns: None
Management measures and considerations:
- Conservation tillage, winter cover crops, crop residue management, and crop rotations that include grasses and legumes increase available water capacity and improve tilth and fertility.

Pasture and hayland
Suitability: Well suited
Commonly grown crops: Bahiagrass, clover, coastal bermudagrass, common bermudagrass, legumes, and ryegrass
Management concerns: None

Woodland
Suitability: Well suited
Potential for commercial species: High for loblolly pine
Management concerns: None
Management measures and considerations:
- Leaving a buffer zone of trees and shrubs along creeks and streams helps to control siltation and provides shade for the surface of the water, thereby improving aquatic habitat and helping to maintain water quality.

Dwellings
Suitability: Well suited
Management concerns: None

Septic tank absorption fields
Suitability: Moderately suited
Management concerns: Moderate permeability
Management measures and considerations:
- Increasing the size of the absorption field improves system performance.
- Installing distribution lines during dry periods minimizes smearing and sealing of trench walls.
- The local health department can be contacted for additional guidance regarding sanitary facilities.

Local roads and streets
Suitability: Well suited
Management concerns: None

Interpretive Groups

Land capability classification: 1

MaB—Marlboro sandy loam, 2 to 5 percent slopes

Setting

Landscape: Coastal Plain
Landform: Uplands
Landform position: Broad ridges
Shape of areas: Irregular
Size of areas: 5 to 90 acres

Composition

Marlboro and similar soils: 80 percent
Dissimilar soils: 20 percent

Typical Profile

Surface layer:
0 to 8 inches—brown sandy loam

Subsoil:
8 to 13 inches—yellowish brown sandy clay loam
13 to 36 inches—yellowish brown clay loam that has strong brown mottles
36 to 70 inches—yellowish brown clay loam that has yellowish red, strong brown, and yellow mottles
70 to 80 inches—brownish yellow sandy clay loam that has red, yellowish red, strong brown, and yellow mottles

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Depth to seasonal high water table: More than 72 inches
Permeability: Moderate
Available water capacity: Moderate or high
Flooding: None
Content of organic matter in the surface layer: Low or moderately low
Natural fertility: Low
Tilth: Good
Reaction: Very strongly acid to moderately acid throughout, except where the surface layer has been limed
Other distinctive properties: None

Minor Components

Dissimilar soils:
- Clarendon soils, which are in the lower positions, have more than 5 percent plinthite, and are moderately well drained
- Faceville soils, which are in positions similar to those of the Marlboro soil or slightly higher and have a subsoil with a redder hue
- Nankin soils, which are in the lower positions and have a thinner solum than that of the Marlboro soil

Similar soils:
- A few small areas of soils that are moderately well drained

Land Use

Dominant uses: Cropland
Other uses: Pasture, hayland, and woodland

Cropland
Suitability: Well suited
Commonly grown crops: Cotton, peanuts, corn, small grains, grain sorghum, and soybeans
Management concerns: Erosion
Management measures and considerations:
- Using a resource management system that includes terraces and diversions, stripcropping, contour farming, conservation tillage, and crop residue management helps to control erosion and surface runoff and maximizes the infiltration of water into the soil.

Pasture and hayland
Suitability: Well suited

Commonly grown crops: Bahiagrass, coastal bermudagrass, common bermudagrass, legumes, and ryegrass
Management concerns: None

Woodland
Suitability: Well suited
Potential for commercial species: High for loblolly pine
Management concerns: None
Management measures and considerations:
- Leaving a buffer zone of trees and shrubs along creeks and streams helps to control siltation and provides shade for the surface of the water, thereby improving aquatic habitat and helping to maintain water quality.

Dwellings
Suitability: Well suited
Management concerns: None

Septic tank absorption fields
Suitability: Moderately suited
Management concerns: Moderate permeability
Management measures and considerations:
- Increasing the size of the absorption field improves system performance.
- Installing distribution lines during dry periods minimizes smearing and sealing of trench walls.
- The local health department can be contacted for additional guidance regarding sanitary facilities.

Local roads and streets
Suitability: Well suited
Management concerns: None

Interpretive Groups

Land capability classification: 2e

NcB—Nankin-Cowarts complex, 2 to 5 percent slopes

Setting

Landscape: Coastal Plain
Landform: Uplands
Landform position: Ridges
Shape of areas: Irregular
Size of areas: 5 to 80 acres

Composition

Nankin and similar soils: 60 percent
Cowarts and similar soils: 25 percent
Dissimilar soils: 15 percent

Typical Profile

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

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

Subsoil:
10 to 16 inches—yellowish brown sandy clay loam that has brown mottles
16 to 39 inches—yellowish red sandy clay to sandy clay loam having red mottles
39 to 44 inches—strong brown sandy clay loam that has yellowish red mottles

Substratum:
44 to 55 inches—yellowish brown sandy loam that has red mottles
55 to 80 inches—yellowish brown sandy loam that has red and light brownish gray mottles

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

Subsoil:
7 to 15 inches—yellowish brown sandy loam
15 to 22 inches—brownish yellow sandy clay loam
22 to 40 inches—brownish yellow sandy clay loam that has yellowish red and strong brown mottles

Substratum:
40 to 59 inches—brownish yellow sandy loam that has yellowish red, reddish yellow, and pale brown mottles
59 to 80 inches—stratified brownish yellow, light yellowish brown, and yellowish red loamy sand

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Depth to seasonal high water table: More than 72 inches
Permeability: Nankin—moderately slow; Cowarts—moderately slow or slow
Available water capacity: Nankin—moderate; Cowarts—low or moderate
Flooding: None
Content of organic matter in the surface layer: Low or moderately low
Natural fertility: Low
Tilth: Fair
Reaction: Very strongly acid or strongly acid throughout, except where the surface layer has been limed
Other distinctive properties: None

Minor Components

Dissimilar soils:
- Carnegie soils, which are in positions similar to those of the Nankin and Cowarts soils or slightly higher, have a subsoil that extends to a depth of more than 60 inches, and have more than 5 percent plinthite
- Faceville soils, which are in positions similar to those of the Nankin and Cowarts soils or slightly higher and have a subsoil that extends to a depth of more than 60 inches
- Greenville soils, which are in positions similar to those of Nankin and Cowarts soils or slightly higher and have a subsoil that extends to a depth of more than 60 inches
- Orangeburg soils, which are in positions similar to those of Nankin and Cowarts soils or slightly lower and have a subsoil that extends to a depth of more than 60 inches

Similar soils:
- A few small areas of soils that are similar to the Nankin soil but have a subsoil that is less than 40 inches thick

- A few small areas of soils that are similar to the Cowarts soil but have a subsoil that extends to a depth of more than 40 inches

Land Use

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

Cropland
Suitability: Well suited
Commonly grown crops: Cotton, peanuts, corn, small grains, grain sorghum, and soybeans
Management concerns: Erosion
Management measures and considerations:
- Conservation tillage, winter cover crops, crop residue management, and crop rotations that include grasses and legumes increase available water capacity and improve tilth and fertility.

Pasture and hayland
Suitability: Well suited
Commonly grown crops: Bahiagrass, coastal bermudagrass, common bermudagrass, legumes, and ryegrass
Management concerns: None
Management measures and considerations:
- During the establishment or renovation of pasture, preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the rate of germination.
- Using rotational grazing and implementing a well-planned schedule of clipping and harvesting help to maintain the pasture and increase productivity.

Woodland
Suitability: Well suited
Potential for commercial species: High for loblolly pine
Management concerns: None
Management measures and considerations:
- Leaving a buffer zone of trees and shrubs along creeks and streams helps to control siltation and provides shade for the surface of the water, thereby improving aquatic habitat and helping to maintain water quality.

Dwellings
Suitability: Well suited
Management concerns: None

Septic tank absorption fields
Suitability: Poorly suited
Management concerns: Slow permeability
Management measures and considerations:
- This map unit is severely limited as a site for septic tank absorption fields due to restricted permeability.
- Increasing the size of the absorption field can improve system performance.
- Installing distribution lines during dry periods minimizes smearing and sealing of trench walls.
- The local health department can be contacted for additional guidance regarding sanitary facilities.

Local roads and streets
Suitability: Well suited
Management concerns: None

Interpretive Groups

Land capability classification: 2e

NcD—Nankin-Cowarts complex, 5 to 15 percent slopes

Setting

Landscape: Coastal Plain
Landform: Uplands
Landform position: Nankin—upper side slopes; Cowarts—lower side slopes
Shape of areas: Irregular
Size of areas: 5 to 80 acres

Composition

Nankin and similar soils: 60 percent
Cowarts and similar soils: 25 percent
Dissimilar soils: 15 percent

Typical Profile

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

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

Subsoil:
10 to 16 inches—yellowish brown sandy clay loam that has strong brown mottles
16 to 39 inches—yellowish red sandy clay that has red mottles
39 to 44 inches—strong brown sandy clay loam that has yellowish red mottles

Substratum:
44 to 55 inches—yellowish brown sandy loam that has red mottles
55 to 80 inches—yellowish brown sandy loam that has red and light brownish gray mottles

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

Subsoil:
7 to 15 inches—yellowish brown sandy loam
15 to 22 inches—brownish yellow sandy clay loam
22 to 40 inches—brownish yellow sandy clay loam that has yellowish red and strong brown mottles

Substratum:
40 to 59 inches—brownish yellow sandy loam that has yellowish red, reddish yellow, and pale brown mottles
59 to 80 inches—stratified brownish yellow, light yellowish brown, and yellowish red loamy sand

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Depth to seasonal high water table: More than 72 inches
Permeability: Nankin—moderately slow; Cowarts—moderately slow or slow

Available water capacity: Nankin—moderate; Cowarts—low or moderate
Flooding: None
Content of organic matter in the surface layer: Low or moderately low
Natural fertility: Low
Tilth: Fair
Reaction: Very strongly acid or strongly acid throughout, except where the surface layer has been limed
Other distinctive properties: None

Minor Components

Dissimilar soils:
- Ailey soils, which are in positions similar to those of the Nankin and Cowarts soils or slightly higher, have sandy surface and subsurface layers with a combined thickness of 20 to 40 inches, and have dense, brittle lower layers
- Carnegie soils, which are in positions similar to those of the Nankin and Cowarts soils or slightly higher, have a subsoil that extends to a depth of more than 60 inches, and have more than 5 percent plinthite
- Faceville soils, which are in positions similar to those of the Nankin and Cowarts soils or slightly higher and have a subsoil that extends to a depth of more than 60 inches
- Greenville soils, which are in positions similar to those of the Nankin and Cowarts soils or slightly higher and have a subsoil that extends to a depth of more than 60 inches
- Henderson soils, which are in positions similar to those of the Nankin and Cowarts soils, have a subsoil that extends to a depth of more than 60 inches, and have chert fragments throughout

Similar soils:
- A few small areas of soils that are similar to the Nankin soil but have a subsoil that is less than 40 inches thick
- A few small areas of soils that are similar to the Cowarts soil but have a subsoil that extends to a depth of more than 40 inches

Land Use

Dominant uses: Woodland (fig. 3)
Other uses: Pasture and hayland

Cropland
Suitability: Poorly suited
Commonly grown crops: Cotton, peanuts, corn, small grains, grain sorghum, and soybeans
Management concerns: Erosion
Management measures and considerations:
- Using a resource management system that includes contour farming, conservation tillage, crop residue management, stripcropping, and sod-based rotations helps to control erosion and surface runoff and maximizes the infiltration of water into the soil.
- Because of the varying length, steepness, and direction of slope, the use of structural erosion-control measures is limited.
- Incorporating crop residue into the surface layer or leaving the residue on the surface reduces clodding, crusting, and erosion and improves water infiltration.

Pasture and hayland
Suitability: Well suited to pasture; moderately suited to hayland
Commonly grown crops: Bahiagrass, coastal bermudagrass, common bermudagrass, legumes, and ryegrass

Figure 3.—An area of Nankin-Cowarts complex, 5 to 15 percent slopes, that has been clear cut of pines. The residue left onsite helps to minimize erosion.

Management concerns: Erosion, slope, and equipment use
Management measures and considerations:
- During the establishment or renovation of pasture, preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the rate of germination.
- Fencing livestock away from creeks and streams helps to prevent streambank erosion and sedimentation.
- The slope can limit equipment use in the steeper areas when hay crops are harvested.
- Using rotational grazing and implementing a well-planned schedule of clipping and harvesting help to maintain the pasture and increase productivity.

Woodland
Suitability: Well suited
Potential for commercial species: High for loblolly pine
Management concerns: Erosion
Management measures and considerations:
- Establishing a permanent plant cover on roads and log landings, reforesting immediately after harvesting, and preparing sites with recommended species reduce the hazard of erosion and help to control siltation of streams.
- Leaving a buffer zone of trees and shrubs along creeks and streams helps to control siltation and provides shade for the surface of the water, thereby improving aquatic habitat and helping to maintain water quality.

Dwellings
Suitability: Moderately suited

Management concerns: Slope
Management measures and considerations:
- Designing structures to conform to the natural slope and cutting and filling help to overcome the slope limitation.
- Vegetating cleared and graded areas as soon as possible or constructing silt fences helps to maintain soil stability and prevents sediment from leaving the site.

Septic tank absorption fields
Suitability: Poorly suited
Management concerns: Slow permeability and slope
Management measures and considerations:
- Increasing the size of the absorption field improves system performance.
- Installing distribution lines during dry periods minimizes smearing and sealing of trench walls.
- Installing distribution lines on the contour improves system performance.
- The local health department can be contacted for additional guidance regarding sanitary facilities.

Local roads and streets
Suitability: Moderately suited
Management concerns: Slope
Management measures and considerations:
- Constructing roads on the contour and cutting and filling help to maintain road stability.
- Vegetating cut-and-fill slopes as soon as possible after construction helps to stabilize the soil and prevents excessive erosion.

Interpretive Groups

Land capability classification: 4e

NcF—Nankin-Cowarts complex, 15 to 35 percent slopes

Setting

Landscape: Coastal Plain
Landform: Uplands
Landform position: Nankin—upper side slopes; Cowarts—lower side slopes
Shape of areas: Elongated and irregular
Size of areas: 20 to 350 acres

Composition

Nankin and similar soils: 47 percent
Cowarts and similar soils: 38 percent
Dissimilar soils: 15 percent

Typical Profile

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

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

Subsoil:
10 to 16 inches—yellowish brown sandy clay loam that has strong brown mottles
16 to 39 inches—yellowish red sandy clay that has red mottles
39 to 44 inches—strong brown sandy clay loam that has yellowish red mottles

Substratum:
44 to 55 inches—yellowish brown sandy loam that has red mottles
55 to 80 inches—yellowish brown sandy loam that has red and light brownish gray mottles

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

Subsoil:
7 to 15 inches—yellowish brown sandy loam
15 to 22 inches—brownish yellow sandy clay loam
22 to 40 inches—brownish yellow sandy clay loam that has yellowish red and strong brown mottles

Substratum:
40 to 59 inches—brownish yellow sandy loam that has yellowish red, reddish yellow, and pale brown mottles
59 to 80 inches—stratified brownish yellow, light yellowish brown, and yellowish red loamy sand

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Depth to seasonal high water table: More than 72 inches
Permeability: Nankin—moderately slow; Cowarts—moderately slow or slow
Available water capacity: Nankin—moderate; Cowarts—low or moderate
Flooding: None
Content of organic matter in the surface layer: Low or moderately low
Natural fertility: Low
Tilth: Fair
Reaction: Very strongly acid or strongly acid throughout, except where the surface layer has been limed
Other distinctive properties: None

Minor Components

Dissimilar soils:
- Ailey soils, which are in positions similar to those of the Nankin and Cowarts soils and have sandy surface and subsurface layers with a combined thickness of 20 to 40 inches
- Faceville soils, which are in the higher, less steep positions and have a subsoil that extends to a depth of more than 60 inches
- Greenville soils, which are in the higher, less steep positions and have a subsoil that extends to a depth of more than 60 inches
- Henderson soils, which are in positions similar to those of the Nankin and Cowarts soils, have a subsoil that extends to a depth of more than 60 inches, and have chert fragments throughout
- Norfolk soils, which are in the higher, less steep positions and have a subsoil that extends to a depth of more than 60 inches
- Orangeburg soils, which are in the higher positions and have a subsoil that extends to a depth of more than 60 inches
- Red Bay soils, which are in the higher positions and have a subsoil that extends to a depth of more than 60 inches

Similar soils:
- A few areas of soils that are similar to the Cowarts soil but have a subsoil that extends to a depth of more than 40 inches

- A few areas of soils that are similar to the Nankin soil but have thin layers of indurated ironstone

Land Use

Dominant uses: Woodland
Other uses: Some small areas of pasture

Cropland
Suitability: Unsuited
Management concerns: Erosion and slope

Pasture and hayland
Suitability: Poorly suited to pasture; unsuited to hayland
Commonly grown crops: Bahiagrass, coastal bermudagrass, common bermudagrass, legumes, and ryegrass
Management concerns: Slope, erosion, and equipment use
Management measures and considerations:
- During the establishment or renovation of pasture, preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the rate of germination.
- Fencing livestock away from creeks and streams helps to prevent streambank erosion and sedimentation.
- The slope can limit equipment use in the steeper areas when hay crops are harvested.
- Using rotational grazing and implementing a well-planned schedule of clipping and harvesting help to maintain the pasture and increase productivity.
- Restricting equipment use to the less sloping areas helps to overcome the slope limitation.

Woodland
Suitability: Moderately suited
Potential for commercial species: High for loblolly pine
Management concerns: Erosion, slope, equipment use, and seedling mortality
Management measures and considerations:
- Installing broad-based dips, water bars, and culverts helps to stabilize logging roads, skid trails, and landings.
- Reseeding disturbed areas with adapted grasses and legumes helps to control erosion and siltation.
- Constructing roads, fire lanes, and skid trails on the contour reduces the accelerated rates of erosion associated with these surface disturbances.
- Using tracked vehicles and restricting the use of harvesting equipment to the less sloping areas help to minimize the equipment limitations.
- Increasing the number of seedlings planted can partially offset the seedling mortality rate.
- Leaving a buffer zone of trees and shrubs along creeks and streams helps to control siltation and provides shade for the surface of the water, thereby improving aquatic habitat and helping to maintain water quality.

Dwellings
Suitability: Poorly suited
Management concerns: Slope
Management measures and considerations:
- Cutting and filling and utilizing the less sloping areas help to overcome the slope limitation.
- Vegetating cleared and graded areas as soon as possible or constructing silt fences helps to maintain soil stability and prevents sediment from leaving the site.

Septic tank absorption fields
Suitability: Poorly suited
Management concerns: Slope and restricted permeability
Management measures and considerations:
- Areas with a slope of 25 percent or more should not be selected as sites for absorption fields.
- The local health department can be contacted for additional guidance regarding sanitary facilities.

Local roads and streets
Suitability: Poorly suited
Management concerns: Slope
Management measures and considerations:
- Constructing roads on the contour and cutting and filling help to overcome the slope limitation.
- Constructing roads on the contour and providing adequate water-control structures, such as culverts, help to maintain road stability.
- Vegetating cut-and-fill slopes as soon as possible after construction helps to stabilize the soil and prevents excessive erosion.

Interpretive Groups

Land capability classification: 6e

NoA—Norfolk loamy sand, 0 to 2 percent slopes

Setting

Landscape: Coastal Plain
Landform: Uplands
Landform position: Broad ridges
Shape of areas: Irregular
Size of areas: 5 to 185 acres

Composition

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

Typical Profile

Surface layer:
0 to 6 inches—brown loamy sand

Subsoil:
6 to 10 inches—brownish yellow sandy loam
10 to 30 inches—yellowish brown sandy clay loam
30 to 55 inches—brownish yellow sandy clay loam
55 to 70 inches—brownish yellow sandy clay loam that has yellowish red, strong brown, and light brownish gray mottles
70 to 80 inches—brownish yellow sandy loam that has red, strong brown, and brownish yellow mottles

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Seasonal high water table: Apparent, at a depth of 4 to 6 feet from January through March in most years

Permeability: Moderate
Available water capacity: Moderate or high
Flooding: None
Content of organic matter in the surface layer: Low or moderately low
Natural fertility: Low
Tilth: Good
Reaction: Extremely acid to strongly acid throughout, except where the surface layer has been limed
Other distinctive properties: None

Minor Components

Dissimilar soils:
- Clarendon soils, which are in the lower, more concave positions, have more than 5 percent plinthite, and are moderately well drained
- Henderson soils, which are in positions similar to those of the Norfolk soil or slightly lower, have a clayey subsoil, and have chert fragments throughout
- Orangeburg soils, which are in positions similar to those of the Norfolk soil or slightly higher and have a subsoil with a redder hue
- Nankin soils, which are in the lower positions, have a clayey subsoil, and have a thinner solum than that of the Norfolk soil

Similar soils:
- A few small areas of soils that contain more than 5 percent plinthite
- A few small areas of soils that are moderately well drained
- A few small areas of soils that have a surface layer of sandy loam

Land Use

Dominant uses: Cropland
Other uses: Pasture, hayland, and woodland

Cropland
Suitability: Well suited
Commonly grown crops: Cotton, peanuts, corn, small grains, grain sorghum, and soybeans
Management concerns: None
Management measures and considerations:
- Stripcropping, wind breaks, and delayed seedbed preparation reduce the extent of damage caused by soil blowing. Leaving the maximum amount of crop residue on the surface also helps to minimize the damage done to seedlings by soil blowing and conserves soil moisture.

Pasture and hayland
Suitability: Well suited
Commonly grown crops: Bahiagrass, coastal bermudagrass, common bermudagrass, legumes, and ryegrass
Management concerns: None

Woodland
Suitability: Well suited
Potential for commercial species: High for loblolly pine
Management concerns: None
Management measures and considerations:
- Leaving a buffer zone of trees and shrubs along creeks and streams helps to control siltation and provides shade for the surface of the water, thereby improving aquatic habitat and helping to maintain water quality.

Dwellings
Suitability: Well suited to dwellings without basements; moderately suited to dwellings with basements
Management concerns: Seasonal wetness
Management measures and considerations:
- Where suitable outlets are available, installing and maintaining an underground drainage system helps to lower the seasonal water table.

Septic tank absorption fields
Suitability: Moderately suited
Management concerns: Moderate permeability and seasonal wetness
Management measures and considerations:
- Increasing the size of the absorption field improves system performance.
- The local health department can be contacted for additional guidance regarding sanitary facilities.

Local roads and streets
Suitability: Well suited
Management concerns: None

Interpretive Groups

Land capability classification: 1

NoB—Norfolk loamy sand, 2 to 5 percent slopes

Setting

Landscape: Coastal Plain
Landform: Uplands
Landform position: Broad ridges; side slopes
Shape of areas: Irregular
Size of areas: 5 to 150 acres

Composition

Norfolk and similar soils: 80 percent
Dissimilar soils: 20 percent

Typical Profile

Surface layer:
0 to 6 inches—brown loamy sand

Subsoil:
6 to 10 inches—brownish yellow sandy loam
10 to 30 inches—yellowish brown sandy clay loam
30 to 55 inches—brownish yellow sandy clay loam
55 to 70 inches—brownish yellow sandy clay loam that has yellowish red, strong brown, and light brownish gray mottles
70 to 80 inches—brownish yellow sandy loam that has red, strong brown, and brownish yellow mottles

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Seasonal high water table: Apparent, at a depth of 4 to 6 feet from January through March in most years

Permeability: Moderate
Available water capacity: Moderate or high
Flooding: None
Content of organic matter in the surface layer: Low or moderately low
Natural fertility: Low
Tilth: Good
Reaction: Extremely acid to strongly acid throughout, except where the surface layer has been limed
Other distinctive properties: None

Minor Components

Dissimilar soils:
- Clarendon soils, which are in the lower, more concave positions, have more than 5 percent plinthite, and are moderately well drained
- Henderson soils, which are in positions similar to those of the Norfolk soil or slightly lower, have a clayey subsoil, and have chert fragments throughout
- Nankin soils, which are in the lower positions and have a thinner solum than that of the Norfolk soil
- Orangeburg soils, which are in positions similar to those of the Norfolk soil or slightly higher and have a subsoil with a redder hue

Similar soils:
- A few small areas of soils that contain more than 5 percent plinthite
- A few small areas of soils that are moderately well drained
- A few small areas of soils that have a surface layer of sandy loam

Land Use

Dominant uses: Cropland
Other uses: Pasture, hayland, and woodland

Cropland
Suitability: Well suited
Commonly grown crops: Cotton, peanuts, corn, small grains, grain sorghum, and soybeans
Management concerns: Erosion
Management measures and considerations:
- Using a resource management system that includes terraces and diversions, stripcropping, contour farming, conservation tillage, and crop residue management helps to control erosion and surface runoff and maximizes the infiltration of water into the soil.

Pasture and hayland
Suitability: Well suited
Commonly grown crops: Bahiagrass, coastal bermudagrass, common bermudagrass, legumes, and ryegrass
Management concerns: None

Woodland
Suitability: Well suited
Potential for commercial species: High for loblolly pine
Management concerns: None
Management measures and considerations:
- Leaving a buffer zone of trees and shrubs along creeks and streams helps to control siltation and provides shade for the surface of the water, thereby improving aquatic habitat and helping to maintain water quality.

Dwellings
Suitability: Well suited to dwellings without basements; moderately suited to dwellings with basements
Management concerns: Seasonal wetness
Management measures and considerations:
- Where suitable outlets are available, installing and maintaining an underground drainage system helps to lower the seasonal water table.

Septic tank absorption fields
Suitability: Moderately suited
Management concerns: Moderate permeability and seasonal wetness
Management measures and considerations:
- Increasing the size of the absorption field improves system performance.
- An alternative system should be considered.
- The local health department can be contacted for additional guidance regarding sanitary facilities.

Local roads and streets
Suitability: Well suited
Management concerns: None

Interpretive Groups

Land capability classification: 2e

OeA—Orangeburg loamy sand, 0 to 2 percent slopes

Setting

Landscape: Coastal Plain
Landform: Uplands
Landform position: Broad ridges
Shape of areas: Irregular
Size of areas: 5 to 125 acres

Composition

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

Typical Profile

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

Subsoil:
7 to 11 inches—yellowish red sandy loam
11 to 80 inches—red sandy clay loam

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Depth to seasonal high water table: More than 72 inches
Permeability: Moderate
Available water capacity: Moderate
Flooding: None
Content of organic matter in the surface layer: Low or moderately low
Natural fertility: Low
Tilth: Good

Reaction: Very strongly acid to moderately acid in the upper part of the soil and very strongly acid or strongly acid in the lower part, except where the surface layer has been limed
Other distinctive properties: None

Minor Components

Dissimilar soils:
- Faceville soils, which are in positions similar to those of the Orangeburg soil or slightly higher and have a clayey subsoil
- Henderson soils, which are in positions similar to those of the Orangeburg soil or slightly lower and more sloping, have a clayey subsoil, and have chert fragments throughout
- Nankin soils, which are in the lower positions, have a clayey subsoil, and have a thinner solum than that of the Orangeburg soil
- Norfolk soils, which are in positions similar to those of the Orangeburg soil or slightly lower and have a subsoil with a more yellow hue

Similar soils:
- A few small areas of soils that have a surface layer of sandy loam
- A few small areas of soils that have slopes of more than 2 percent and that normally are adjacent to drainageways

Land Use

Dominant uses: Cropland
Other uses: Pasture, hayland, and woodland

Cropland
Suitability: Well suited
Commonly grown crops: Cotton, peanuts, corn, small grains, grain sorghum, and soybeans
Management concerns: None
Management measures and considerations:
- Conservation tillage, winter cover crops, crop residue management, and crop rotations that include grasses and legumes increase available water capacity and improve tilth and fertility.

Pasture and hayland
Suitability: Well suited
Commonly grown crops: Bahiagrass, coastal bermudagrass, common bermudagrass, legumes, and ryegrass
Management concerns: None

Woodland
Suitability: Well suited
Potential for commercial species: High for loblolly pine
Management concerns: None
Management measures and considerations:
- Leaving a buffer zone of trees and shrubs along creeks and streams helps to control siltation and provides shade for the surface of the water, thereby improving aquatic habitat and helping to maintain water quality.

Dwellings
Suitability: Well suited
Management concerns: None

Septic tank absorption fields
Suitability: Moderately suited

Management concerns: Moderate permeability
Management measures and considerations:
- Increasing the size of the absorption field improves system performance.
- The local health department can be contacted for additional guidance regarding sanitary facilities.

Local roads and streets
Suitability: Well suited
Management concerns: None

Interpretive Groups

Land capability classification: 1

OeB—Orangeburg loamy sand, 2 to 5 percent slopes

Setting

Landscape: Coastal Plain
Landform: Uplands
Landform position: Broad ridges
Shape of areas: Irregular
Size of areas: 5 to 150 acres

Composition

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

Typical Profile

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

Subsoil:
7 to 11 inches—yellowish red sandy loam
11 to 80 inches—red sandy clay loam

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Depth to seasonal high water table: More than 72 inches
Permeability: Moderate
Available water capacity: Moderate
Flooding: None
Content of organic matter in the surface layer: Low or moderately low
Natural fertility: Low
Tilth: Good
Reaction: Very strongly acid to moderately acid in the upper part of the soil and very strongly acid or strongly acid in the lower part, except where the surface layer has been limed
Other distinctive properties: None

Minor Components

Dissimilar soils:
- Faceville soils, which are in positions similar to those of the Orangeburg soil or slightly higher and have a clayey subsoil
- Henderson soils, which are in positions similar to those of the Orangeburg soil or slightly lower, have a clayey subsoil, and have chert throughout

- Nankin soils, which are in the lower positions, have a clayey subsoil, and have a thinner solum than that of the Orangeburg soil
- Norfolk soils, which are in positions similar to those of the Orangeburg soil or slightly lower and have a subsoil with a more yellow hue

Similar soils:
- A few small areas of soils that have a surface layer of sandy loam or sandy clay loam and normally are along drainageways

Land Use

Dominant uses: Cropland
Other uses: Pasture, hayland, and woodland

Cropland
Suitability: Well suited
Commonly grown crops: Cotton, peanuts, corn, small grains, grain sorghum, and soybeans
Management concerns: Erosion
Management measures and considerations:
- Using a resource management system that includes terraces and diversions, stripcropping, contour farming, conservation tillage, and crop residue management helps to control erosion and surface runoff and maximizes the infiltration of water into the soil.

Pasture and hayland
Suitability: Well suited
Commonly grown crops: Bahiagrass, coastal bermudagrass, common bermudagrass, legumes, and ryegrass
Management concerns: None

Woodland
Suitability: Well suited
Potential for commercial species: High for loblolly pine
Management concerns: None
Management measures and considerations:
- Leaving a buffer zone of trees and shrubs along creeks and streams helps to control siltation and provides shade for the surface of the water, thereby improving aquatic habitat and helping to maintain water quality.

Dwellings
Suitability: Well suited
Management concerns: None

Septic tank absorption fields
Suitability: Moderately suited
Management concerns: Moderate permeability
Management measures and considerations:
- Increasing the size of the absorption field improves system performance.
- The local health department can be contacted for additional guidance regarding sanitary facilities.

Local roads and streets
Suitability: Well suited
Management concerns: None

Interpretive Groups

Land capability classification: 2e

OeC2—Orangeburg sandy loam, 5 to 8 percent slopes, eroded

Setting

Landscape: Coastal Plain
Landform: Uplands
Landform position: Ridges and side slopes
Shape of areas: Irregular
Size of areas: 5 to 50 acres

Composition

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

Typical Profile

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

Subsoil:
5 to 11 inches—yellowish red sandy loam
11 to 80 inches—red sandy clay loam

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Depth to seasonal high water table: More than 72 inches
Permeability: Moderate
Available water capacity: Moderate
Flooding: None
Content of organic matter in the surface layer: Low or moderately low
Natural fertility: Low
Tilth: Good
Reaction: Very strongly acid to moderately acid in the upper part of the soil and very strongly acid or strongly acid in the lower part, except where the surface layer has been limed
Other distinctive properties: None

Minor Components

Dissimilar soils:
- Cowarts soils, which are in positions similar to those of the Orangeburg soil or lower and have a thinner solum
- Faceville soils, which are in positions similar to those of the Orangeburg soil or slightly higher and have a clayey subsoil
- Henderson soils, which are in positions similar to those of the Orangeburg soil or slightly lower, have a clayey subsoil, and have chert fragments throughout
- Nankin soils, which are in the lower positions, have a clayey subsoil, and have a thinner solum than that of the Orangeburg soil
- Norfolk soils, which are in positions similar to those of the Orangeburg soil or slightly lower and have a subsoil with a more yellow hue

Similar soils:
- A few small areas of soils that have a surface layer of sandy loam or sandy clay loam

Land Use

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

Cropland
Suitability: Moderately suited
Commonly grown crops: Cotton, peanuts, corn, small grains, grain sorghum, and soybeans
Management concerns: Erosion
Management measures and considerations:
- Using a resource management system that includes contour farming, conservation tillage, crop residue management, stripcropping, and sod-based rotations helps to control erosion and surface runoff and maximizes the infiltration of water into the soil.

Pasture and hayland
Suitability: Well suited
Commonly grown crops: Bahiagrass, clover, coastal bermudagrass, common bermudagrass, legumes, and ryegrass
Management concerns: Erosion
Management measures and considerations:
- During the establishment or renovation of pasture, preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the rate of germination.

Woodland
Suitability: Well suited
Potential for commercial species: High for loblolly pine
Management concerns: None
Management measures and considerations:
- Leaving a buffer zone of trees and shrubs along creeks and streams helps to control siltation and provides shade for the surface of the water, thereby improving aquatic habitat and helping to maintain water quality.

Dwellings
Suitability: Well suited
Management concerns: Slope
Management measures and considerations:
- Cutting and filling and utilizing the less sloping areas help to overcome the slope limitation.

Septic tank absorption fields
Suitability: Moderately suited
Management concerns: Moderate permeability
Management measures and considerations:
- Increasing the size of the absorption field improves system performance.
- The local health department can be contacted for additional guidance regarding sanitary facilities.

Local roads and streets
Suitability: Well suited
Management concerns: None
Management measures and considerations:
- Designing roads to safely remove surface water improves soil performance.

Interpretive Groups

Land capability classification: 3e

OeD2—Orangeburg sandy loam, 8 to 15 percent slopes, eroded

Setting

Landscape: Coastal Plain
Landform: Uplands
Landform position: Side slopes
Shape of areas: Irregular
Size of areas: 5 to 60 acres

Composition

Orangeburg and similar soils: 80 percent
Dissimilar soils: 20 percent

Typical Profile

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

Subsoil:
5 to 11 inches—yellowish red sandy loam
11 to 80 inches—red sandy clay loam

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Depth to seasonal high water table: More than 72 inches
Permeability: Moderate
Available water capacity: Moderate
Flooding: None
Content of organic matter in the surface layer: Low or moderately low
Natural fertility: Low
Tilth: Good
Reaction: Very strongly acid to moderately acid in the upper part of the soil and very strongly acid or strongly acid in the lower part, except where the surface layer has been limed
Other distinctive properties: None

Minor Components

Dissimilar soils:
- Cowarts soils, which are in positions similar to those of the Orangeburg soil and have a thinner solum
- Faceville soils, which are in positions similar to those of the Orangeburg soil or slightly higher and have a clayey subsoil
- Nankin soils, which are in positions similar to those of the Orangeburg soil, have a clayey subsoil, and have a thinner solum

Similar soils:
- A few areas of soils that have a surface layer of sandy clay loam

Land Use

Dominant uses: Woodland
Other uses: Pasture

Cropland
Suitability: Poorly Suited

Commonly grown crops: Cotton, peanuts, corn, small grains, grain sorghum, and soybeans
Management concerns: Erosion
Management measures and considerations:
- Using a resource management system that includes contour farming, conservation tillage, crop residue management, stripcropping, and sod-based rotations helps to control erosion and surface runoff and maximizes the infiltration of water into the soil.
- Because of the varying length, steepness, and direction of slope, the use of structural erosion-control measures is limited.
- Incorporating crop residue into the surface layer or leaving the residue on the surface helps to control erosion, clodding, and crusting and improves water infiltration.

Pasture and hayland
Suitability: Moderately suited
Commonly grown crops: Bahiagrass, coastal bermudagrass, common bermudagrass, legumes, and ryegrass
Management concerns: Erosion, slope, and equipment use
Management measures and considerations:
- During the establishment or renovation of pasture, preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the rate of germination.
- Fencing livestock away from creeks and streams helps to prevent streambank erosion and sedimentation.
- The slope can limit equipment use in the steeper areas when hay crops are harvested.
- Restricting equipment use to the less sloping areas helps to overcome the slope limitation.
- Using rotational grazing and implementing a well-planned schedule of clipping and harvesting help to maintain the pasture and increase productivity.

Woodland
Suitability: Well suited
Potential for commercial species: High for loblolly pine
Management concerns: Erosion
Management measures and considerations:
- Establishing a permanent plant cover on roads and log landings, reforesting immediately after harvesting, and preparing sites with recommended species reduce the hazard of erosion and help to control siltation of streams.
- Constructing roads, fire lanes, and skid trails on the contour reduces the accelerated rates of erosion associated with these surface disturbances.
- Leaving a buffer zone of trees and shrubs along creeks and streams helps to control siltation and provides shade for the surface of the water, thereby improving aquatic habitat and helping to maintain water quality.

Dwellings
Suitability: Moderately suited
Management concerns: Slope
Management measures and considerations:
- Designing structures to conform to the contour of the natural slope, cutting and filling, or building in the less sloping areas helps to overcome the slope limitation.
- Vegetating cleared and graded areas as soon as possible or constructing silt fences helps to maintain soil stability and prevents sediment from leaving the site.

Septic tank absorption fields
Suitability: Moderately suited

Management concerns: Slope and moderate permeability
Management measures and considerations:
- Installing distribution lines on the contour improves system performance.
- Increasing the size of the absorption field improves system performance.
- The local health department can be contacted for additional guidance regarding sanitary facilities.

Local roads and streets
Suitability: Moderately suited
Management concerns: Slope
Management measures and considerations:
- Constructing roads on the contour, cutting and filling, and providing adequate water-control structures, such as culverts, help to maintain road stability.
- Locating roads on the contour, utilizing the less sloping areas, and cutting and filling help to overcome the slope limitation.
- Vegetating cut-and-fill slopes as soon as possible after construction helps to stabilize the soil and prevents excessive erosion.

Interpretive Groups

Land capability classification: 4e

Pt—Pits

Setting

Landscape: Coastal Plain
Landform: Uplands
Landform position: Broad ridges
Shape of areas: Irregular
Size of areas: 3 to 5 acres

Composition

- Sandy and loamy material or remnants of underlying material

Land Use

Pit sites include borrow areas and idle land. Onsite evaluation is required to determine suitability for cropland, pasture, hayland, woodland, dwellings, septic tank absorption fields, and local roads and streets.

Interpretive Groups

Land capability classification: 8s

ReA—Red Bay loamy sand, 0 to 2 percent slopes

Setting

Landscape: Coastal Plain
Landform: Uplands
Landform position: Broad ridges
Shape of areas: Irregular
Size of areas: 5 to 150 acres

Composition

Red Bay and similar soils: 90 percent
Dissimilar soils: 10 percent

Typical Profile

Surface layer:
0 to 8 inches—dark reddish brown loamy sand

Subsoil:
8 to 40 inches—dark red sandy loam
40 to 80 inches—dark red sandy clay loam

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Depth to seasonal high water table: More than 72 inches
Permeability: Moderate
Available water capacity: Moderate
Flooding: None
Content of organic matter in the surface layer: Low or moderately low
Natural fertility: Low
Tilth: Good
Reaction: Very strongly acid to moderately acid in the upper part of the soil and very strongly acid or strongly acid in the lower part, except where the surface layer has been limed
Other distinctive properties: None

Minor Components

Dissimilar soils:
- Greenville soils, which are in positions similar to those of the Red Bay soil or slightly higher and have a clayey subsoil
- Henderson soils, which are in positions similar to those of the Red Bay soil or slightly lower, have a clayey subsoil, and have chert fragments throughout
- Nankin soils, which are in the lower positions, have a clayey subsoil, and have a thinner solum than that of the Red Bay soil
- Orangeburg soils, which are in positions similar to those of the Red Bay soil and have a subsoil with a slightly more yellow hue

Similar soils:
- A few areas of soils that have a surface layer of sandy loam
- A few small areas that have a slope of more than 2 percent, primarily adjacent to drainageways and on shoulder slopes

Land Use

Dominant uses: Cropland
Other uses: Pasture, hayland, woodland, and orchards (fig. 4)

Cropland
Suitability: Well suited
Commonly grown crops: Cotton, peanuts, corn, small grains, grain sorghum, and soybeans
Management concerns: None
Management measures and considerations:
- Conservation tillage, winter cover crops, crop residue management, and crop rotations that include grasses and legumes increase available water capacity and improve tilth and fertility.

Pasture and hayland
Suitability: Well suited

Figure 4.—A pecan grove in an area of Red Bay loamy sand, 0 to 2 percent slopes.

Commonly grown crops: Bahiagrass, coastal bermudagrass, common bermudagrass, legumes, and ryegrass
Management concerns: None

Woodland
Suitability: Well suited
Potential for commercial species: High for loblolly pine
Management concerns: None
Management measures and considerations:
- Leaving a buffer zone of trees and shrubs along creeks and streams helps to control siltation and provides shade for the surface of the water, thereby improving aquatic habitat and helping to maintain water quality.

Dwellings
Suitability: Well suited
Management concerns: None

Septic tank absorption fields
Suitability: Moderately suited
Management concerns: Moderate permeability
Management measures and considerations:
- Increasing the size of the absorption field improves system performance.
- The local health department can be contacted for additional guidance regarding sanitary facilities.

Local roads and streets
Suitability: Well suited
Management concerns: None

Interpretive Groups

Land capability classification: 1

ReB—Red Bay loamy sand, 2 to 5 percent slopes

Setting

Landscape: Coastal Plain
Landform: Uplands
Landform position: Broad ridges
Shape of areas: Irregular
Size of areas: 5 to 50 acres

Composition

Red Bay and similar soils: 85 percent
Dissimilar soils: 15 percent

Typical Profile

Surface layer:
0 to 8 inches—dark reddish brown loamy sand

Subsoil:
8 to 40 inches—dark red sandy loam
40 to 80 inches—dark red sandy clay loam

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Depth to seasonal high water table: More than 72 inches
Permeability: Moderate
Available water capacity: Moderate
Flooding: None
Content of organic matter in the surface layer: Low or moderately low
Natural fertility: Low
Tilth: Good
Reaction: Very strongly acid to moderately acid in the upper part of the soil and very strongly acid or strongly acid in the lower part, except where the surface layer has been limed
Other distinctive properties: None

Minor Components

Dissimilar soils:
- Cowarts soils, which are in the lower positions and have a thinner solum than that of the Red Bay soil
- Henderson soils, which are in the slightly lower, more sloping positions, have a clayey subsoil, and have chert fragments throughout
- Nankin soils, which are in the lower positions, have a clayey subsoil, and have a thinner solum than that of the Red Bay soil
- Orangeburg soils, which are in positions similar to those of the Red Bay soil and have a subsoil with a slightly more yellow hue

Similar soils:
- A few areas of soils that have a surface layer of sandy loam or sandy clay loam

Land Use

Dominant uses: Cropland
Other uses: Pasture, hayland, and woodland

Cropland
Suitability: Well suited
Commonly grown crops: Cotton, peanuts, corn, small grains, grain sorghum, and soybeans
Management concerns: Erosion
Management measures and considerations:
- Using a resource management system that includes terraces and diversions, stripcropping, contour farming, conservation tillage, and crop residue management helps to control erosion and surface runoff and maximizes the infiltration of water into the soil.
- Leaving the maximum amount of crop residue on the surface helps to minimize the damage done to seedlings by soil blowing and conserves soil moisture.

Pasture and hayland
Suitability: Well suited
Commonly grown crops: Bahiagrass, coastal bermudagrass, common bermudagrass, legumes, and ryegrass
Management concerns: None

Woodland
Suitability: Well suited
Potential for commercial species: High for loblolly pine
Management concerns: None
Management measures and considerations:
- Leaving a buffer zone of trees and shrubs along creeks and streams helps to control siltation and provides shade for the surface of the water, thereby improving aquatic habitat and helping to maintain water quality.

Dwellings
Suitability: Well suited
Management concerns: None

Septic tank absorption fields
Suitability: Moderately suited
Management concerns: Moderate permeability
Management measures and considerations:
- Increasing the size of the absorption field improves system performance.
- The local health department can be contacted for additional guidance regarding sanitary facilities.

Local roads and streets
Suitability: Well suited
Management concerns: None

Interpretive Groups

Land capability classification: 2e

ReC2—Red Bay sandy loam, 5 to 8 percent slopes, eroded

Setting

Landscape: Coastal Plain
Landform: Uplands

Landform position: Side slopes
Shape of areas: Irregular
Size of areas: 5 to 30 acres

Composition

Red Bay and similar soils: 85 percent
Dissimilar soils: 15 percent

Typical Profile

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

Subsoil:
6 to 24 inches—dark reddish brown sandy clay loam
24 to 80 inches—dusky red sandy clay loam

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Depth to seasonal high water table: More than 72 inches
Permeability: Rapid in the surface layer and moderately rapid or moderate in the subsoil
Available water capacity: Moderate
Flooding: None
Content of organic matter in the surface layer: Low or moderately low
Natural fertility: Low
Tilth: Good
Reaction: Very strongly acid to moderately acid in the upper part of the soil and very strongly acid or strongly acid in the lower part, except where the surface layer has been limed
Other distinctive properties: None

Minor Components

Dissimilar soils:
- Cowarts soils, which are in positions similar to those of the Red Bay soil or slightly lower and have a thinner solum
- Henderson soils, which are in positions similar to those of the Red Bay soil or slightly lower, have a clayey subsoil, and have chert fragments throughout
- Nankin soils, which are in the lower positions, have a clayey subsoil, and have a thinner solum than that of the Red Bay soil
- Orangeburg soils, which are in positions similar to those of the Red Bay soil and have a subsoil with a slightly more yellow hue

Similar soils:
- A few areas of soils that have a surface layer of sandy loam or sandy clay loam

Land Use

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

Cropland
Suitability: Moderately suited
Commonly grown crops: Cotton, peanuts, corn, small grains, grain sorghum, and soybeans
Management concerns: Erosion

Management measures and considerations:
- Using a resource management system that includes contour farming, conservation tillage, crop residue management, stripcropping, and sod-based rotations helps to control erosion and surface runoff and maximizes the infiltration of water into the soil.
- Leaving the maximum amount of crop residue on the surface helps to minimize the damage done to seedlings by soil blowing and conserves soil moisture.

Pasture and hayland
Suitability: Well suited
Commonly grown crops: Bahiagrass, coastal bermudagrass, common bermudagrass, legumes, and ryegrass
Management concerns: None

Woodland
Suitability: Well suited
Potential for commercial species: High for loblolly pine
Management concerns: None
Management measures and considerations:
- Leaving a buffer zone of trees and shrubs along creeks and streams helps to control siltation and provides shade for the surface of the water, thereby improving aquatic habitat and helping to maintain water quality.

Dwellings
Suitability: Well suited
Management concerns: Slope
Management measures and considerations:
- Cutting and filling and utilizing the less sloping areas help to overcome the slope limitation.

Septic tank absorption fields
Suitability: Moderately suited
Management concerns: Moderate permeability
Management measures and considerations:
- Increasing the size of the absorption field improves system performance.
- The local health department can be contacted for additional guidance regarding sanitary facilities.

Local roads and streets
Suitability: Well suited
Management concerns: None
Management measures and considerations:
- Designing roads to safely remove surface water improves soil performance.

Interpretive Groups

Land capability classification: 3e

ReD2—Red Bay sandy loam, 8 to 15 percent slopes, eroded

Setting

Landscape: Coastal Plain
Landform: Uplands
Landform position: Side slopes
Shape of areas: Irregular and elongated
Size of areas: 5 to 25 acres

Composition

Red Bay and similar soils: 80 percent
Dissimilar soils: 20 percent

Typical Profile

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

Subsoil:
6 to 24 inches—dark reddish brown sandy clay loam
24 to 80 inches—dusky red sandy clay loam

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Depth to seasonal high water table: More than 72 inches
Permeability: Moderate
Available water capacity: Moderate
Flooding: None
Content of organic matter in the surface layer: Low
Natural fertility: Low
Tilth: Good
Reaction: Very strongly acid to moderately acid in the upper part of the soil and very strongly acid or strongly acid in the lower part, except where the surface layer has been limed
Other distinctive properties: None

Minor Components

Dissimilar soils:
- Cowarts soils, which are in positions similar to those of the Red Bay soil or slightly lower and have a thinner solum
- Nankin soils, which are in positions similar to those of the Red Bay soil or slightly lower, have a clayey subsoil, and have a thinner solum
- Orangeburg soils, which are in positions similar to those of the Red Bay soil or slightly lower and have a subsoil with a slightly more yellow hue

Similar soils:
- A few areas of soils that have a surface layer of sandy clay loam

Land Use

Dominant uses: Woodland
Other uses: Pasture

Cropland
Suitability: Poorly Suited
Commonly grown crops: Cotton, peanuts, corn, small grains, grain sorghum, and soybeans
Management concerns: Erosion
Management measures and considerations:
- Using a resource management system that includes contour farming, conservation tillage, crop residue management, stripcropping, and sod-based rotations helps to control erosion and surface runoff and maximizes the infiltration of water into the soil.
- Because of the varying length, steepness, and direction of slope, the use of structural erosion-control measures is limited.

- Incorporating crop residue into the surface layer or leaving the residue on the surface helps to control erosion, clodding, and crusting and improves water infiltration.

Pasture and hayland
Suitability: Moderately suited
Commonly grown crops: Bahiagrass, coastal bermudagrass, common bermudagrass, legumes, and ryegrass
Management concerns: Erosion, slope, and equipment use
Management measures and considerations:
- During the establishment or renovation of pasture, preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the rate of germination.
- Fencing livestock away from creeks and streams helps to prevent streambank erosion and sedimentation.
- The slope can limit equipment use in the steeper areas when hay crops are harvested. Restricting equipment use to the less sloping areas helps to overcome this limitation.
- Using rotational grazing and implementing a well-planned schedule of clipping and harvesting help to maintain the pasture and increase productivity.

Woodland
Suitability: Well suited
Potential for commercial species: High for loblolly pine
Management concerns: Erosion
Management measures and considerations:
- Establishing a permanent plant cover on roads and log landings, reforesting immediately after harvesting, and preparing sites with recommended species reduce the hazard of erosion and help to control siltation of streams.
- Constructing roads, fire lanes, and skid trails on the contour reduces the accelerated rates of erosion associated with these surface disturbances.
- Leaving a buffer zone of trees and shrubs along creeks and streams helps to control siltation and provides shade for the surface of the water, thereby improving aquatic habitat and helping to maintain water quality.

Dwellings
Suitability: Moderately suited
Management concerns: Slope
Management measures and considerations:
- Designing structures to conform to the contour of the natural slope, cutting and filling, or building in the less sloping areas helps to overcome the slope limitation.

Septic tank absorption fields
Suitability: Moderately suited
Management concerns: Slope and moderate permeability
Management measures and considerations:
- Installing distribution lines on the contour improves system performance.
- Increasing the size of the absorption field improves system performance.
- The local health department can be contacted for additional guidance regarding sanitary facilities.

Local roads and streets
Suitability: Moderately suited
Management concerns: Slope
Management measures and considerations:
- Constructing roads on the contour, cutting and filling, and providing adequate water-control structures, such as culverts, help to maintain road stability.

- Locating roads on the contour, utilizing the less sloping areas, and cutting and filling help to overcome the slope limitation.
- Vegetating cut-and-fill slopes as soon as possible after construction helps to stabilize the soil and prevents excessive erosion.

Interpretive Groups

Land capability classification: 4e

TrB—Troup loamy sand, 0 to 5 percent slopes

Setting

Landscape: Coastal Plain
Landform: Uplands
Landform position: Ridges and side slopes
Shape of areas: Irregular
Size of areas: 5 to 125 acres

Composition

Troup and similar soils: 80 percent
Dissimilar soils: 20 percent

Typical Profile

Surface layer:
0 to 9 inches—brown loamy sand

Subsurface layer:
9 to 50 inches—strong brown loamy sand
50 to 60 inches—yellowish red loamy sand

Subsoil:
60 to 80 inches—red sandy loam

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Somewhat excessively drained
Depth to seasonal high water table: More than 72 inches
Permeability: Moderate
Available water capacity: Low
Flooding: None
Content of organic matter in the surface layer: Very low or low
Natural fertility: Low
Tilth: Fair
Reaction: Very strongly acid or strongly acid throughout, except where surface layer has been limed
Other distinctive properties: Sandy surface and subsurface layers having a combined thickness of 40 to 80 inches

Minor Components

Dissimilar soils:
- Lakeland soils, which are in positions similar to those of the Troup soil or slightly higher and are sandy throughout
- Lucy soils, which are in positions similar to those of the Troup soil or slightly lower and have sandy surface and subsurface layers with a combined thickness of 20 to 40 inches

- Orangeburg soils, which are in positions similar to those of the Troup soil or slightly lower and do not have thick, sandy surface and subsurface layers

Similar soils:
- A few areas of soils that have a subsoil with a more yellow hue than that of the Troup soil

Land Use

Dominant uses: Woodland
Other uses: Crops, pasture, and hayland

Cropland
Suitability: Moderately suited
Commonly grown crops: Cotton, peanuts, corn, small grains, grain sorghum, and soybeans
Management concerns: Soil blowing, droughtiness, erosion, and nutrient leaching
Management measures and considerations:
- Using a resource management system that includes contour farming, conservation tillage, crop residue management, stripcropping, and sod-based rotations helps to control erosion and surface runoff and maximizes the infiltration of water into the soil.
- Stripcropping, wind breaks, and delayed seedbed preparation reduce the extent of the damage caused by soil blowing.
- Applying supplemental irrigation and selecting crop varieties that are adapted to droughty conditions increase productivity.
- Using split applications helps to minimize leaching and increases the effectiveness of lime and fertilizer.

Pasture and hayland
Suitability: Well suited
Commonly grown crops: Bahiagrass, coastal bermudagrass, common bermudagrass, legumes, and ryegrass
Management concerns: Droughtiness and nutrient leaching
Management measures and considerations:
- Selecting drought-resistant plant varieties helps to overcome the droughtiness.
- Using split applications helps to minimize leaching and increases the effectiveness of lime and fertilizer.

Woodland
Suitability: Well suited
Potential for commercial species: Moderately high for loblolly pine and longleaf pine
Management concerns: Seedling mortality
Management measures and considerations:
- Increasing the number of seedlings planted can partially offset the seedling mortality rate.
- Using wide tires, tandem axles, or crawler-type equipment and scheduling management operations for periods when soil moisture is high improve trafficability.
- Establishing a permanent plant cover on roads and log landings, reforesting immediately after harvesting, and preparing sites with recommended species reduce the hazard of erosion and help to control siltation of streams.

Dwellings
Suitability: Well suited
Management concerns: None
Management measures and considerations:
- The hazard of cutbanks caving can be reduced by using support beams and bracing to maintain the stability of the cutbanks.

Septic tank absorption fields
Suitability: Moderately suited
Management concerns: Seepage
Management measures and considerations:
- The local health department can be contacted for additional guidance regarding sanitary facilities.

Local roads and streets
Suitability: Well suited
Management concerns: None

Interpretive Groups

Land capability classification: 3s

TrC—Troup loamy sand, 5 to 8 percent slopes

Setting

Landscape: Coastal Plain
Landform: Uplands
Landform position: Ridges and side slopes
Shape of areas: Irregular
Size of areas: 5 to 90 acres

Composition

Troup and similar soils: 80 percent
Dissimilar soils: 20 percent

Typical Profile

Surface layer:
0 to 9 inches—brown loamy sand

Subsurface layer:
9 to 50 inches—strong brown loamy sand
50 to 60 inches—yellowish red loamy sand

Subsoil:
60 to 80 inches—red sandy loam

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Somewhat excessively drained
Depth to seasonal high water table: More than 72 inches
Permeability: Moderate
Available water capacity: Low
Flooding: None
Content of organic matter in the surface layer: Very low or low
Natural fertility: Low
Tilth: Fair
Reaction: Very strongly acid or strongly acid throughout, except where the surface layer has been limed
Other distinctive properties: Thick, sandy surface and subsurface layers having a combined thickness of 40 to 80 inches

Minor Components

Dissimilar soils:
- Lakeland soils, which are in positions similar to those of the Troup soil or slightly higher and are sandy throughout

- Lucy soils, which are in positions similar to those of the Troup soil or slightly lower and have sandy surface and subsurface layers with a combined thickness of 20 to 40 inches
- Orangeburg soils, which are in positions similar to those of the Troup soil or lower and do not have thick, sandy surface and subsurface layers

Similar soils:
- A few areas of soils that have a subsoil with a more yellow hue than that of the Troup soil

Land Use

Dominant uses: Woodland
Other uses: Crops, pasture, and hayland

Cropland
Suitability: Poorly Suited
Commonly grown crops: Cotton, peanuts, corn, small grains, grain sorghum, and soybeans
Management concerns: Soil blowing, droughtiness, erosion, and nutrient leaching
Management measures and considerations:
- Using a resource management system that includes contour farming, conservation tillage, crop residue management, stripcropping, and sod-based rotations helps to control erosion and surface runoff and maximizes the infiltration of water into the soil.
- Stripcropping, wind breaks, and delayed seedbed preparation reduce the extent of the damage caused by soil blowing.
- Applying supplemental irrigation and selecting crop varieties that are adapted to droughty conditions increase productivity.
- Using split applications helps to minimize leaching and increases the effectiveness of lime and fertilizer.

Pasture and hayland
Suitability: Well suited
Commonly grown crops: Bahiagrass, coastal bermudagrass, common bermudagrass, legumes, and ryegrass
Management concerns: Droughtiness and erosion
Management measures and considerations:
- Selecting drought–resistant plant varieties helps to overcome the droughtiness.
- During the establishment or renovation of pasture, preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the rate of germination.

Woodland
Suitability: Moderately suited
Potential for commercial species: Moderately high for loblolly pine and longleaf pine
Management concerns: Seedling mortality
Management measures and considerations:
- Increasing the number of seedlings planted can partially offset the seedling mortality rate.
- Using wide tires, tandem axles, or crawler-type equipment and scheduling management operations for periods when soil moisture is high improve trafficability.
- Establishing a permanent plant cover on roads and log landings, reforesting immediately after harvesting, and preparing sites with recommended species reduce the hazard of erosion and help to control siltation of streams.

Dwellings
Suitability: Moderately suited
Management concerns: Slope; instability of cutbanks
Management measures and considerations:
- Cutting and filling and utilizing the less sloping areas help to overcome the slope limitation.
- The hazard of cutbanks caving can be reduced by using support beams to maintain the stability of the cutbanks.

Septic tank absorption fields
Suitability: Moderately suited
Management concerns: Seepage
Management measures and considerations:
- The local health department can be contacted for additional guidance regarding sanitary facilities.

Local roads and streets
Suitability: Moderately suited
Management concerns: Slope
Management measures and considerations:
- Cutting and filling and utilizing the less sloping areas help to overcome the slope limitation.

Interpretive Groups

Land capability classification: 4s

TrD—Troup loamy sand, 8 to 15 percent slopes

Setting

Landscape: Coastal Plain
Landform: Uplands
Landform position: Side slopes
Shape of areas: Irregular
Size of areas: 5 to 75 acres

Composition

Troup and similar soils: 80 percent
Dissimilar soils: 20 percent

Typical Profile

Surface layer:
0 to 9 inches—brown loamy sand

Subsurface layer:
9 to 50 inches—strong brown loamy sand
50 to 60 inches—yellowish red loamy sand

Subsoil:
60 to 80 inches—red sandy loam

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Somewhat excessively drained
Depth to seasonal high water table: More than 72 inches
Permeability: Moderate

Available water capacity: Low
Flooding: None
Content of organic matter in the surface layer: Low or very low
Natural fertility: Low
Tilth: Fair
Reaction: Very strongly acid to moderately acid throughout, except where the surface layer has been limed
Other distinctive properties: Sandy surface and subsurface layers having a combined thickness of 40 to 80 inches

Minor Components

Dissimilar soils:
- Ailey soils, which are in positions similar to those of the Troup soil and have sandy surface and subsurface layers with a combined thickness of 20 to 40 inches over dense, brittle layers
- Cowarts soils, which are in the lower positions, have a thinner solum than that of the Troup soil, and do not have thick, sandy surface and subsurface layers
- Lakeland soils, which are in positions similar to those of the Troup soil or slightly higher and are sandy throughout
- Lucy soils, which are in positions similar to those of the Troup soil or slightly lower and have sandy surface and subsurface layers with a combined thickness of 20 to 40 inches

Similar soils:
- A few small areas of soils that have a subsoil with a more yellow hue than that of the Troup soil

Land Use

Dominant uses: Woodland
Other uses: Pasture

Cropland
Suitability: Unsuited
Management concerns: Erosion and equipment use

Pasture and hayland
Suitability: Well suited to pasture; moderately suited to hayland
Commonly grown crops: Bahiagrass, coastal bermudagrass, common bermudagrass, legumes, and ryegrass
Management concerns: Erosion
Management measures and considerations:
- During the establishment or renovation of pasture, preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the rate of germination.

Woodland
Suitability: Moderately suited
Potential for commercial species: Moderately high for loblolly pine and longleaf pine
Management concerns: Equipment use and seedling mortality
Management measures and considerations:
- Using tracked or low-pressure ground equipment minimizes rutting and compaction during harvesting.
- Using wide tires, tandem axles, or crawler-type equipment and scheduling management operations for periods when soil moisture is high improve trafficability.
- Increasing the number of seedlings planted can partially offset the seedling mortality rate.

- Proper site preparation, herbicides, and prescribed burning help to control competition from undesirable plant species.
- Leaving a buffer zone of trees and shrubs along creeks and streams helps to control siltation and provides shade for the surface of the water, thereby improving aquatic habitat and helping to maintain water quality.

Dwellings
Suitability: Moderately suited
Management concerns: Slope
Management measures and considerations:
- Designing structures to conform to the contour of the natural slope, cutting and filling, or building in the less sloping areas helps to overcome the slope limitation.
- The hazard of cutbanks caving can be reduced by using support beams to maintain the stability of the cutbanks.

Septic tank absorption fields
Suitability: Moderately suited
Management concerns: Seepage and slope
Management measures and considerations:
- The local health department can be contacted for additional guidance regarding sanitary facilities.

Local roads and streets
Suitability: Moderately suited
Management concerns: Slope
Management measures and considerations:
- Constructing roads on the contour, cutting and filling, and providing adequate water-control structures, such as culverts, help to maintain road stability.
- Locating roads on the contour, utilizing the less sloping areas, and cutting and filling help to overcome the slope limitation.
- Vegetating cut-and-fill slopes as soon as possible after construction helps to stabilize the soil and prevents excessive erosion.

Interpretive Groups

Land capability classification: 6s

Use and Management of the Soils

This soil survey is an inventory and evaluation of the soils in the survey area. It can be used to adjust land uses to the limitations and potentials of natural resources and the environment. Also, it can help to prevent soil-related failures in land uses.

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

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

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

Contractors can use this survey to locate sources of sand and gravel, roadfill, and topsoil. They can use it to identify areas where 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.

Interpretive Ratings

The interpretive tables in this survey rate the soils in the survey area for various uses. Many of the tables identify the limitations that affect specified uses and indicate the severity of those limitations. The ratings in these tables are both verbal and numerical.

Rating Class Terms

Rating classes are expressed in the tables in terms that indicate the extent to which the soils are limited by all of the soil features that affect a specified use or in terms that indicate the suitability of the soils for the use. Thus, the tables may show limitation classes or suitability classes. Terms for the limitation classes are *not limited, somewhat limited,* and *very limited*. The suitability ratings are expressed as *well suited, moderately suited, poorly suited,* and *unsuited* or as *good, fair,* and *poor*.

Numerical Ratings

Numerical ratings in the tables indicate the relative severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.00 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use and the point at which the soil feature is not a limitation. The limitations

appear in order from the most limiting to the least limiting. Thus, if more than one limitation is identified, the most severe limitation is listed first and the least severe one is listed last.

Crops and Pasture

James E. Dean, state conservation agronomist, Holli A. Kuykendall, grassland water quality specialist, and Karen Reese, district conservationist, Natural Resources Conservation Service, helped prepare this section.

The major management issues for cropland and pasture in Randolph County are described in this section. 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 presented for each soil.

This section provides information about the overall agricultural potential of the survey area and about suitable management practices. 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.”

Where the slope is more than 2 percent in the survey area, erosion is a hazard affecting cropland and pasture. The loss of the surface layer through erosion is damaging for several reasons. 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, a clayey subsoil, or both. For example, Carnegie-Nankin complex, 8 to 15 percent slopes, eroded, has a shallow surface layer and a clayey subsoil in many areas. Tilling or preparing a good seedbed is difficult on the clayey spots where the original, friable surface layer has been lost through erosion.

Erosion on farmland also results in the sedimentation of streams, ponds, and wetlands. Controlling erosion minimizes pollution of surface water by reducing the amount of sediment and improves water quality for a variety of uses, including recreational uses and use by livestock, 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 maintains 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 grasses and legumes in the cropping system and in areas used as permanent pasture and hayland helps to control erosion in sloping areas, provides nitrogen to the soil, and improves tilth for the following crop.

Terraces and diversions shorten the length of slope and help to control runoff and erosion. They are most practical on deep, well-drained soils that have regular slopes. Faceville, Greenville, Orangeburg, and Red Bay soils are suitable for terraces. Grassed waterways and underground outlets provide suitable outlets for terraces and diversions by removing excess runoff without increasing erosion.

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 is needed to minimize erosion.

Residue management, conservation tillage, cover crops, strip-cropping, and a rotation that includes grasses and legumes provide adequate ground cover, improve soil quality, increase the rate of water infiltration, and reduce the volume and velocity of runoff and the hazard of erosion. These conservation practices can be adapted to most of the soils in the survey area. No-till and strip-till, which are forms of conservation tillage, are becoming increasingly common.

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

Soil loss caused by wind erosion is a concern on soils that have a sandy surface layer. Examples include Lucy, Norfolk, Orangeburg, and Red Bay soils. Young seedlings can be damaged and killed if the winds are strong and these soils are dry and not protected by other vegetation or surface mulch. Maintaining crop residue on the surface, planting cover crops, applying conservation tillage, and keeping the soil surface rough minimize soil blowing.

Bottomland soils in the survey area include Bibb and Kinston soils. The production of crops and pasture plants on these soils is not generally possible without artificial drainage. Existing drainage systems need continuing maintenance in areas of these soils. Bottomland soils are also subject to flooding.

Information regarding erosion-control practices and drainage practices is available at the local office of the Natural Resources Conservation Service. Drainage is a major consideration in the management of crops and pasture. Because of Federal, State, and local regulations, the installation of drainage systems and the maintenance of existing drainage systems may require special permits and extra planning where wetlands are influenced.

Soil fertility is naturally low in most of the upland soils in the survey area. Most of the soils in the survey area are naturally acid. The soils on flood plains, such as Bibb and Kinston soils, typically are very strongly acid or strongly acid throughout.

Many of the soils on uplands are strongly acid or very strongly acid in their natural state. Because the content of available phosphorus and the content of potash and magnesium are naturally low in most of these soils, applications of ground dolomitic limestone are needed to raise the pH for good growth of legumes and other crops. On all soils, applications of lime, fertilizer, and organic wastes should be based on the results of soil testing, a realistic projection of 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.

The content of organic matter in soil is an important factor affecting the germination of seeds, root growth, the infiltration of water into the soil, and erosion. Soils that have good tilth are granular and porous.

Most of the soils used for crops in the survey area have a surface layer of loamy sand or sandy loam and have 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, increases the runoff rate, and limits crop growth. Managing crop residue on the surface, using conservation tillage, strip-cropping, including grasses and legumes in the rotation, and regularly adding manure and other organic material improve soil structure and minimize crust formation. The elimination of tillage can also result in an increased content of organic matter in these soils.

The commonly grown crops in the survey area are corn, cotton, peanuts, soybeans, rye, wheat, and grain sorghum. 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 species that could be grown in the survey area.

Specialty crops that could be grown in the survey area include sweet corn, field peas, squash, watermelons, cantaloupes, other small fruits, and nursery plants. 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, Faceville, Greenville, Norfolk, Red Bay, and Orangeburg soils having 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 positions 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 suitable for a wide range of vegetable crops. Technical assistance and information regarding specialty crops is available from agricultural agencies.

Pasture and hayland in the survey area are typically seeded to improved varieties of bahiagrass or common bermudagrass or are sprigged to hybrid bermudagrass (fig. 5). Overseeding cool-season annual grasses and/or legumes into dormant warm-season pastures or planting these crops for grazing on existing cropland extends the grazing season, minimizes hay feeding requirements, and provides high quality forage. Native warm-season perennial grasses, such as eastern gamagrass, switchgrass, and Indiangrass, can be considered if livestock producers manage their pastures with rotational stocking methods and leave an appropriate stubble height for plant maintenance and regrowth after the grazing or haying cycle. A locally adapted, endophyte-infected tall fescue variety is also available. It can be considered for cool-season forage.

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

In general, the soils in the survey area that are well suited to crops are also well suited to other land uses, including urban development. Prime farmland makes up about 107,420 acres in the survey area. This is the best land available for producing food, feed, forage, fiber, and oilseed crops.

Yields per Acre

The average yields per acre that can be expected of the principal crops and pasture grasses under a high level of management are shown in tables 4 and 5. In any given

Figure 5.—An area of Lucy loamy sand, 0 to 5 percent slopes. This soil is well suited to hayland and is capable of producing high yields of bermudagrass hay.

year, yields may be higher or lower than those indicated in the table because of variations in rainfall and other climatic factors. The land capability classification of map units in the survey area also is shown in the table.

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

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

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

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

Land Capability Classification

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops (USDA–SCS, 1961). Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for rangeland, for forestland, or for engineering purposes.

In the capability system, soils are generally grouped at three levels—capability class, subclass, and unit.

Capability classes, the broadest groups, are designated by the numbers 1 through 8. The numbers indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class 1 soils have slight limitations that restrict their use.

Class 2 soils have moderate limitations that restrict the choice of plants or that require moderate conservation practices.

Class 3 soils have severe limitations that restrict the choice of plants or that require special conservation practices, or both.

Class 4 soils have very severe limitations that restrict the choice of plants or that require very careful management, or both.

Class 5 soils are subject to little or no erosion but have other limitations, impractical to remove, that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

Class 6 soils have severe limitations that make them generally unsuitable for cultivation and that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

Class 7 soils have very severe limitations that make them unsuitable for cultivation and that restrict their use mainly to grazing, forestland, or wildlife habitat.

Class 8 soils and miscellaneous areas have limitations that preclude commercial plant production and that restrict their use to recreational purposes, wildlife habitat, watershed, or esthetic purposes.

Capability subclasses are soil groups within one class. They are designated by adding a small letter, *e, w,* or *s,* to the class numeral, for example, 2e. The letter *e* shows that the main hazard is the risk of erosion unless close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); and *s* shows that the soil is limited mainly because it is shallow, droughty, or stony.

In class 1 there are no subclasses because the soils of this class have few limitations. Class 5 contains only the subclasses indicated by *w* or *s* because the soils in class 5 are subject to little or no erosion. They have other limitations that restrict their use to pasture, rangeland, forestland, wildlife habitat, or recreation.

The acreage of soils in each capability class and subclass is shown in table 6. The capability classification of map units in this survey area is given in the section "Detailed Soil Map Units" and in the yields tables.

Prime Farmland and Other Important Farmlands

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

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forestland, or other land, but it is not urban or built-up land or water areas. The soil qualities, growing season, and moisture supply are those needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied (fig 6). In general, prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, and few or no rocks. It is permeable to water and air. It is not excessively erodible or saturated with water for long periods, and it either is not frequently flooded during the growing season or is protected from flooding. Slope ranges mainly from 0 to 8 percent. More detailed information about the criteria for prime farmland is available at the local office of the Natural Resources Conservation Service.

About 107,420 acres, or nearly 39 percent of the survey area, would meet the requirements for prime farmland if an adequate and dependable supply of irrigation water were available.

A recent trend in land use in some parts of the survey area has been the loss of some prime farmland to industrial and urban uses. The loss of prime farmland to other uses puts pressure on marginal lands, which generally are more erodible, droughty, and less productive and cannot be easily cultivated.

The map units in the survey area that are considered prime farmland are listed in table 7, Farmland Classification. This list does not constitute a recommendation for a particular land use. On some soils included in the list, measures that overcome a hazard or limitation, such as flooding, wetness, and droughtiness, are needed. Onsite evaluation is needed to determine whether or not the hazard or limitation has been overcome by corrective measures.

Figure 6.—Cotton in an area of Greenville sandy clay loam, 0 to 2 percent slopes. This soil is prime farmland and is well suited to cultivated crops.

Also listed in the table are map units that are considered additional "Farmland of Statewide Importance." 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 than prime farmland, or is usually less productive than prime farmland. The extent of each listed map unit is shown in table 3. The location is shown on the detailed soil maps. The soil qualities that affect use and management are described under the heading "Detailed Soil Map Units."

Hydric Soils

In this section, hydric soils are defined and described and the hydric soils in the survey area are listed.

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin and others, 1979; U.S. Army Corps of Engineers, 1987; National Research Council, 1995; Tiner, 1985). Criteria for each of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species (fig. 7). Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). These soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

Figure 7.—An area of Kinston and Bibb soils, 0 to 1 percent slopes, frequently flooded. These soils are hydric and support bottomland hardwoods and other vegetation that is valuable to wildlife.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 1995). These criteria are used to identify a phase of a soil series that normally is associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 1998) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils in this survey area are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and others, 1998).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present.

The following map units meet the definition of hydric soils and, in addition, have at least one of the hydric soil indicators. This list can help in planning land uses; however,

onsite investigation is recommended to determine the hydric soils on a specific site (National Research Council, 1995; Hurt and others, 1998).

GrA Grady clay loam, ponded
KBA Kinston and Bibb soils, 0 to 1 percent slopes, frequently flooded

Map units that are made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units made up of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform.

Forestland Productivity and Management

By Josh A. Wheat, resource conservationist, Natural Resources Conservation Service

Of the 275,800 acres in Randolph County, over 65 percent, or 180,700 acres, is forestland. About 127,600 acres, or 70 percent of the forestland, is privately owned. The remainder is owned by the forest industry and local governments. Among the most significant forest types in Randolph County are mixed oak-hickory (68,800 acres) and natural stands of loblolly-shortleaf pine (83,200 acres) (USDA–FS, 1998).

Virgin forest once covered most of the county. As settlement progressed in the area, the upland, well-drained soils were cleared for cultivation. The soils in the remaining forestland consisted of either moderately drained to poorly drained soils along streams, in wetlands, on flood plains, in depressions, and on broad, low-lying uplands or deep, excessively drained soils on ridges, uplands, and stream terraces. The total forested acreage has remained fairly steady over the last decade, increasing by slightly more than 1,000 acres from 1989 to 1997. Forest types, however, changed significantly during that time. The acreage of loblolly pine increased by more than 40,000 acres, and the acreage of mixed pine and hardwoods decreased by almost 30,000 acres.

About 63 percent of the forestland in Randolph County is considered fully or medium stocked. The remainder is considered poorly stocked. Only about 18 percent of the forestland is considered moderately productive, that is, capable of producing 1 to 1.5 cords per acre per year under average management. One cord of standing timber contains approximately 70 to 90 cubic feet of wood by volume. Much of the remaining acreage normally produces less than 1 cord per acre. Production on much of the existing forestland could be improved by thinning out mature trees and undesirable species and by controlling fire, disease, and insects. The Natural Resources Conservation Service, the Georgia Forestry Commission, and the Cooperative Extension Service can help to determine specific forestland management needs.

The forests in Randolph County are on a wide variety of soils. The Greenville-Faceville-Red Bay general soil map unit and the Lakeland-Lucy general soil map unit have high potential productivity for loblolly pine. Both of these units are on uplands, broad ridges, and side slopes and consist of very deep soils. They are well drained to excessively drained. On these soils, the site index (see description below) ranges from 75 to 90 for loblolly pine and from 60 to 77 for longleaf pine. All of the major soils in these units are moderately suited to well suited for planting and in regards to seedling mortality.

The tables described in this section can help forest owners or managers plan the use of soils for wood crops. They show the potential productivity of the soils for wood crops and rate the soils according to the limitations that affect various aspects of forest management. The tables can be used by woodland managers planning ways to increase the productivity of forestland. Some soils respond better to applications of fertilizer than others, and some are more susceptible to erosion after roads are built and timber is harvested. Some soils require special reforestation efforts.

Forestland Productivity

In table 8, the *potential productivity* of merchantable or *common trees* on a soil is expressed as a site index and as a volume number. The *site index* is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. Commonly grown trees are those that forest managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability. More detailed information regarding site index is available in the "National Forestry Manual," which is available in local offices of the Natural Resources Conservation Service or on the Internet.

The *volume of wood fiber*, a number, is the yield likely to be produced by the most important tree species. This number, expressed as cubic feet per acre per year and calculated at the age of culmination of the mean annual increment (CMAI), indicates the amount of fiber produced in a fully stocked, even-aged, unmanaged stand.

Trees to manage are those that are preferred for planting, seeding, or natural regeneration and those that remain in the stand after thinning or partial harvest.

Ratings in the column *potential for seedling mortality* are based on flooding, ponding, depth to a water table, content of lime, reaction, salinity, available water capacity, soil moisture regime, soil temperature regime, aspect, and slope.

Rating class terms for seedling mortality are expressed as *low, moderate,* and *high*. The numerical ratings indicate gradations between the point at which the potential for seedling mortality is highest (1.00) and the point at which the potential is lowest (0.00).

Forestland Management

In tables 9a and 9b, interpretive ratings are given for various aspects of forestland management. The ratings are both verbal and numerical.

Some rating class terms indicate the degree to which the soils are suited to a specified forest management practice. *Well suited* indicates that the soil has features that are favorable for the specified practice and has no limitations. Good performance can be expected, and little or no maintenance is needed. *Moderately suited* indicates that the soil has features that are moderately favorable for the specified practice. One or more soil properties are less than desirable, and fair performance can be expected. Some maintenance is needed. *Poorly suited* indicates that the soil has one or more properties that are unfavorable for the specified practice. Overcoming the unfavorable properties requires special design, extra maintenance, and costly alteration. *Unsuited* indicates that the expected performance of the soil is unacceptable for the specified practice or that extreme measures are needed to overcome the undesirable soil properties.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the specified forest management practice (1.00) and the point at which the soil feature is not a limitation (0.00).

The paragraphs that follow indicate the soil properties considered in rating the soils for forest management practices. More detailed information about the criteria used in the ratings is available in the "National Forestry Manual," which is available in local offices of the Natural Resources Conservation Service or on the Internet (http://soils.usda.gov/technical).

The ratings of *suitability for log landings* are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification, depth to a water table, ponding, flooding, and the hazard of soil slippage. The soils are described as well suited, moderately suited, or poorly suited to use as log landings.

Ratings in the column *hazard of erosion on roads and trails* are based on the soil erodibility factor K, slope, and content of rock fragments. The ratings apply to unsurfaced roads and trails. The hazard is described as slight, moderate, or severe. A rating of *slight* indicates that little or no erosion is likely; *moderate* indicates that some erosion is likely, that the roads or trails may require occasional maintenance, and that simple erosion-control measures are needed; and *severe* indicates that significant erosion is expected, that the roads or trails require frequent maintenance, and that costly erosion-control measures are needed.

Ratings in the column *suitability for roads (natural surface)* are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification, depth to a water table, ponding, flooding, and the hazard of soil slippage. The ratings indicate the suitability for using the natural surface of the soil for roads. The soils are described as well suited, moderately suited, or poorly suited to this use.

Ratings in the columns *suitability for hand planting* and *suitability for mechanical planting* are based on slope, depth to a restrictive layer, content of sand, plasticity index, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, moderately suited, poorly suited, or unsuited to these methods of planting. It is assumed that necessary site preparation is completed before seedlings are planted.

Ratings in the column *suitability for use of harvesting equipment* are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification, depth to a water table, and ponding. The soils are described as well suited, moderately suited, or poorly suited to this use.

Recreation

The soils of the survey area are rated in table 10 according to limitations that affect their suitability for recreation. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the recreational uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The ratings in the table 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 also are important. Soils that are 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.

The information in the table can be supplemented by other information in this

survey, for example, interpretations for building site development, construction materials, sanitary facilities, and water management.

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 ratings are based on the soil properties that affect the ease of developing camp areas and the performance of the areas after development. Slope, stoniness, and depth to a cemented pan are the main concerns affecting the development of camp areas.

The soil properties that affect the performance of the areas after development are those that influence trafficability and promote the growth of vegetation, especially in heavily used areas. For good trafficability, the surface of camp areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to a cemented pan, permeability, and toxic substances in the soil.

Picnic areas are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The ratings are based on the soil properties that affect the ease of developing picnic areas and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of picnic areas. For good trafficability, the surface of picnic areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to a cemented pan, permeability, and toxic substances in the soil.

Playgrounds require soils that are nearly level, are free of stones, and can withstand intensive foot traffic. The ratings are based on the soil properties that affect the ease of developing playgrounds and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of playgrounds. For good trafficability, the surface of the playgrounds should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to a cemented pan, permeability, and toxic substances in the soil.

Paths and trails for hiking and horseback riding should require little or no slope modification through cutting and filling. The ratings are based on the soil properties that affect trafficability and erodibility. These properties are stoniness, depth to a water table, ponding, flooding, slope, and texture of the surface layer.

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 data in the tables described under the heading “Soil Properties.” Additional information is available in the “National Engineering Handbook” (USDA–NRCS, no date).

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 between the surface and a depth of 5 to 7 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 particle-size distribution, liquid limit, plasticity index, soil reaction, soil wetness, depth to a water table, ponding, 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

Soil properties influence the development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. Table 11 shows the degree and kind of soil limitations that affect dwellings with and without basements, local roads and streets, and shallow excavations.

The ratings in the tables are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect building site development. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate

gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Dwellings are single-family houses of three stories or less. For dwellings without basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet. For dwellings with basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of about 7 feet. The ratings for dwellings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. Compressibility is inferred from the Unified classification. The properties that affect the ease and amount of excavation include depth to a water table, ponding, flooding, slope, depth to a cemented pan, hardness of a cemented pan, and the amount and size of rock fragments.

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 soil material stabilized by lime or cement; and a surface of flexible material (asphalt), rigid material (concrete), or gravel with a binder. The ratings are based on the soil properties that affect the ease of excavation and grading and the traffic-supporting capacity. The properties that affect the ease of excavation and grading are depth to a cemented pan, hardness of a cemented pan, depth to a water table, ponding, flooding, the amount of large stones, and slope. The properties that affect the traffic-supporting capacity are soil strength (as inferred from the AASHTO group index number), subsidence, linear extensibility (shrink-swell potential), depth to a water table, and ponding.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for graves, utility lines, open ditches, or other purposes. The ratings are based on the soil properties that influence the ease of digging and the resistance to sloughing. Depth to a cemented pan, hardness of a cemented pan, the amount of large stones, and dense layers influence the ease of digging, filling, and compacting. Depth to the seasonal high water table, flooding, and ponding may restrict the period when excavations can be made. Slope influences the ease of using machinery. Soil texture, depth to the water table, and linear extensibility (shrink-swell potential) influence the resistance to sloughing.

Sanitary Facilities

Table 12 shows the degree and kind of soil limitations that affect septic tank absorption fields and sewage lagoons. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative

impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

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 60 inches is evaluated. The ratings are based on the soil properties that affect absorption of the effluent, construction and maintenance of the system, and public health. Permeability, depth to a water table, ponding, depth to a cemented pan, and flooding affect absorption of the effluent. Stones and a cemented pan interfere with installation. Subsidence interferes with installation and maintenance. Excessive slope may cause lateral seepage and surfacing of the effluent in downslope areas.

Some soils are underlain by loose sand and gravel at a depth of less than 4 feet below the distribution lines. In these soils the absorption field may not adequately filter the effluent, particularly when the system is new. As a result, the ground water may become contaminated.

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. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water. Considered in the ratings are slope, permeability, depth to a water table, ponding, depth to a cemented pan, flooding, large stones, and content of organic matter.

Soil permeability is a critical property affecting the suitability for sewage lagoons. Most porous soils eventually become sealed when they are used as sites for sewage lagoons. Until sealing occurs, however, the hazard of pollution is severe. Soils that have a permeability rate of more than 2 inches per hour are too porous for the proper functioning of sewage lagoons. In these soils, seepage of the effluent can result in contamination of the ground water. Ground-water contamination is also a hazard if fractured bedrock is within a depth of 40 inches, if the water table is high enough to raise the level of sewage in the lagoon, or if floodwater overtops the lagoon.

A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope, bedrock, and cemented pans can cause construction problems, and large stones can hinder compaction of the lagoon floor. If the lagoon is to be uniformly deep throughout, the slope must be gentle enough and the soil material must be thick enough over bedrock or a cemented pan to make land smoothing practical.

Construction Materials

Table 13 gives information about the soils as potential sources of sand, topsoil, and roadfill. Normal compaction, minor processing, and other standard construction practices are assumed.

Sand is a natural aggregate suitable for commercial use with a minimum of processing. It is used in many kinds of construction. Specifications for each use vary widely. In the table, only the likelihood 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 are gradation of grain sizes (as indicated by the Unified classification of the soil), the thickness of suitable material, and the content of rock fragments. If the bottom layer of the soil contains sand, the soil is considered a likely source regardless of thickness. The assumption is that the sand layer below the depth of observation exceeds the minimum thickness.

The soils are rated *good, fair,* or *poor* as potential sources of sand. A rating of *good* or *fair* means that the source material is likely to be in or below the soil. The bottom

layer and the thickest layer of the soils are assigned numerical ratings. These ratings indicate the likelihood that the layer is a source of sand or gravel. The number 0.00 indicates that the layer is a poor source. The number 1.00 indicates that the layer is a good source. A number between 0.00 and 1.00 indicates the degree to which the layer is a likely source.

The soils are rated *good, fair,* or *poor* as potential sources of topsoil and roadfill. The features that limit the soils as sources of these materials are specified in the tables. The numerical ratings given after the specified features indicate the degree to which the features limit the soils as sources of topsoil or roadfill. The lower the number, the greater the limitation.

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. The ratings are based on the soil properties that affect plant growth; the ease of excavating, loading, and spreading the material; and reclamation of the borrow area. Toxic substances, soil reaction, and the properties that are inferred from soil texture, such as available water capacity and fertility, affect plant growth. The ease of excavating, loading, and spreading is affected by rock fragments, slope, depth to a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, depth to a water table, rock fragments, depth to a cemented pan, and toxic material.

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

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 whole soil, from the surface to a depth of about 5 feet. It is assumed that soil layers will be mixed when the soil material is excavated and spread.

The ratings are based on the amount of suitable material and on soil properties that affect the ease of excavation and the performance of the material after it is in place. The thickness of the suitable material is a major consideration. The ease of excavation is affected by large stones, depth to a 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 AASHTO classification of the soil) and linear extensibility (shrink-swell potential).

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 ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate

gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

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. 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. Embankments that have zoned construction (core and shell) are not considered. In this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

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

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

Soil Properties

Data relating to soil properties are collected during the course of the soil survey.

Soil properties are ascertained 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 particle-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 are shown in tables. They include engineering index properties, physical and chemical properties, and pertinent soil and water features.

Engineering Index Properties

Table 15 gives the engineering classifications and the range of index properties for the layers of each soil in the survey area.

Depth to the upper and lower boundaries of each layer is indicated.

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. “Loam,” for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, “gravelly.” Textural terms are defined in the Glossary.

Classification of the soils is determined according to the Unified soil classification system (ASTM, 2001) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 2000).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group

index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

Rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

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

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

The estimates of particle-size distribution, liquid limit, and plasticity index are generally rounded to the nearest 5 percent. Thus, if the ranges of gradation and Atterberg limits extend a marginal amount (1 or 2 percentage points) across classification boundaries, the classification in the marginal zone is generally omitted in the table.

Water Features

Table 16 gives estimates of various water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

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

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

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

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas.

The *months* in the table indicate the portion of the year in which the feature is most likely to be a concern.

Water table refers to a saturated zone in the soil. Table 16 indicates, by month, depth to the top *(upper limit)* of the saturated zone in most years. Estimates of the upper limit are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors or mottles (redoximorphic

features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

Ponding is standing water in a closed depression. Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation. The table indicates *surface water depth* and the *duration* and *frequency* of ponding. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, rare, occasional, and frequent. *None* means that ponding is not probable; *rare* that it is unlikely but possible under unusual weather conditions (the chance of ponding is nearly 0 percent to 5 percent in any year); *occasional* that it occurs, on the average, once or less in 2 years (the chance of ponding is 5 to 50 percent in any year); and *frequent* that it occurs, on the average, more than once in 2 years (the chance of ponding is more than 50 percent in any year).

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

Duration and *frequency* are estimated. Duration is expressed as *extremely brief* if 0.1 hour to 4 hours, *very brief* if 4 hours to 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent. *None* means that flooding is not probable; *very rare* that it is very unlikely but possible under extremely unusual weather conditions (the chance of flooding is less than 1 percent in any year); *rare* that it is unlikely but possible under unusual weather conditions (the chance of flooding is 1 to 5 percent in any year); *occasional* that it occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year); *frequent* that it is likely to occur often under normal weather conditions (the chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year); and *very frequent* that it is likely to occur very often under normal weather conditions (the chance of flooding is more than 50 percent in all months of any year).

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

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

Selected Physical and Chemical Properties of the Soils

Table 17 shows estimates of some physical and chemical characteristics and features that affect soil behavior (USDA–NRCS, 1996). These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In table 17, the estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of sand, silt, and clay affects the physical behavior of a soil. Particle

size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

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

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at 1/3- or 1/10-bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each 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. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Saturated hydraulic conductivity refers to the ability of a soil to transmit water or air. The term "permeability," as used in soil surveys, indicates saturated hydraulic conductivity (K_{sat}). The estimates in the table indicate the rate of water movement, in micrometers per second (µm/sec), when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each soil layer. The capacity varies, depending on soil properties that affect retention of water. 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.

Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at 1/3- or 1/10-bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. Volume change is influenced by the amount and type of clay minerals in the soil.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

Soil reaction is a measure of acidity or alkalinity. The pH of each soil 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.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In table 17, 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 by returning crop residue to the soil. Organic matter has a positive effect on available water capacity, water

infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms.

Erosion factors are shown in table 17 as the K factor (Kw and Kf) and the T factor. 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) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and permeability. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor Kw indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Erosion factor Kf indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories (Soil Survey Staff, 1998 and 1999). Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or from laboratory measurements. Table 18 shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

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

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

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; type of saturation; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Kandiudult (*Kandi*, meaning an apparent cation-exchange capacity of 16 centimoles of positive charge or less per kilogram of clay and an apparent effective cation-exchange capacity of 12 centimoles of positive charge or less per kilogram of clay, plus *udult*, the suborder of the Ultisols that has a udic moisture regime).

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

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, mineralogy class, cation-exchange activity class, soil temperature regime, soil depth, and reaction class. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is coarse-loamy, kaolinitic, thermic Typic Kandiudults.

SERIES. The series consists of soils within a family that have horizons similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile. An example is the Benevolence series.

Soil Series and Their Morphology

In this section, each soil series recognized in the survey area is described. Characteristics of the soil and the material in which it formed are identified for each series. A pedon, a small three-dimensional area of soil, that is typical of the series in the survey area is described. The detailed description of each soil horizon follows standards in the "Soil Survey Manual" (Soil Survey Division Staff, 1993). Many of the technical terms used in the descriptions are defined in "Soil Taxonomy" (Soil Survey Staff, 1999) and in "Keys to Soil Taxonomy" (Soil Survey Staff, 1998). Unless otherwise indicated, colors in the descriptions are for moist soil. Following the pedon description is the range of important characteristics of the soils in the series.

Ailey Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Slow
Parent material: Sandy and loamy marine sediments
Landscape: Coastal Plain
Landform: Uplands
Landform position: Narrow ridges; side slopes
Slope: 2 to 25 percent
Taxonomic class: Loamy, kaolinitic, thermic Arenic Kanhapludults

Commonly Associated Soils

Cowarts, Lakeland, Nankin, and Troup soils are commonly associated with the Ailey series.

- The Cowarts soils are in positions similar to those of the Ailey series; do not have thick, sandy surface and subsurface layers; and have a solum that ranges from 20 to 40 inches in thickness.
- The Lakeland soils are in the slightly higher positions, are excessively drained, and are sandy throughout.
- The Nankin soils are in positions similar to those of the Ailey series or slightly lower; do not have thick, sandy surface and subsurface layers; and have a fine control section.
- The Troup soils are in the slightly higher positions, are somewhat excessively drained, and have sandy surface and subsurface layers with a combined thickness of 40 to 80 inches.

Typical Pedon

Ailey loamy sand, 5 to 8 percent slopes; about 2,500 feet north of County Road 152, on a side slope adjacent to Collins Mill Creek; Randolph County, Georgia; USGS Brooksville topographic quadrangle; lat. 31 degrees 51 minutes 2 seconds N. and long. 84 degrees 41 minutes 55 seconds W., NAD27.

Ap—0 to 3 inches; brown (10YR 4/3) loamy sand; weak fine granular structure; very friable; many fine and medium roots and few coarse roots; about 5 percent, by volume, angular ironstone; moderately acid; abrupt wavy boundary.

E1—3 to 14 inches; light yellowish brown (10YR 6/4) loamy sand; weak coarse subangular blocky structure; very friable; many fine and medium and few coarse roots; about 5 percent, by volume, angular ironstone; moderately acid; gradual wavy boundary.

E2—14 to 23 inches; yellowish brown (10YR 5/6) loamy sand; weak coarse subangular blocky structure; very friable; many fine and medium and few coarse

roots; about 5 percent, by volume, angular ironstone; strongly acid; gradual wavy boundary.

Bt1—23 to 30 inches; strong brown (7.5YR 5/6) sandy loam; weak medium subangular blocky structure; friable; common fine and medium roots; common medium distinct pockets of very pale brown (10YR 7/3) clean sand grains; about 10 percent, by volume, angular ironstone; strongly acid; gradual wavy boundary.

Bt2—30 to 42 inches; strong brown (7.5YR 5/8) sandy clay loam; moderate medium subangular blocky structure; friable; few fine and medium roots; few medium distinct pockets of very pale brown (10YR 7/3) clean sand grains; about 12 percent, by volume, angular ironstone; strongly acid; gradual wavy boundary.

Btx—42 to 47 inches; strong brown (7.5YR 5/6) sandy clay loam; about 80 percent moderate medium subangular blocky structure and 20 percent red (2.5YR 5/6) strong thick platy; firm when moist; platy peds are hard and brittle when dry; few medium roots; few faint clay films on faces of some peds; strongly acid; gradual wavy boundary.

2Cd—47 to 80 inches; strong brown (7.5YR 5/6) clay loam; massive parting to strong thick platy structure; very firm; few medium roots; few faint clay films on faces of some peds; common medium distinct red (2.5YR 5/6) and pale brown (10YR 6/3) masses in which iron has accumulated; light gray (10YR 7/1) areas from which iron has depleted; strongly acid.

Range in Characteristics

Thickness of the solum: 42 to 60 inches

Thickness of the sandy epipedon: 20 to 40 inches

Reaction: Very strongly acid or strongly acid throughout, except where the surface layer has been limed

A or Ap horizon:

Color—hue of 10YR, value of 3 to 5, and chroma of 2 or 3

Texture—loamy sand or sand

E horizon:

Color—hue of 10YR, value of 5 or 6, and chroma of 4 to 6

Texture—loamy sand or sand

BE horizon (where present):

Color—hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 6 to 8

Texture—loamy sand or sandy loam

Bt horizon:

Color—hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 6 to 8

Redoximorphic features—no, few, or common iron accumulations in shades of brown and red

Texture—sandy loam or sandy clay loam

Btx horizon:

Color—hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 6 to 8; or no dominant color and multicolored in shades of red, yellow, brown, and gray

Redoximorphic features—few or common iron or clay depletions in shades of gray and iron accumulations in shades of brown, red, and yellow

Texture—sandy clay loam

Other features—Brittle and hard bodies, commonly red, make up 10 to 40 percent, by volume, of the horizon.

Cd or 2Cd horizon:

Color—hue of 5YR to 10YR, value of 4 to 7, and chroma of 4 to 8; or no dominant color and multicolored in shades of red, yellow, brown, and gray

Redoximorphic features—common or many iron or clay depletions in shades of gray and iron accumulations in shades of red, brown, or yellow
Texture—sandy loam, sandy clay loam, or clay loam

Benevolence Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate or moderately rapid
Parent material: Sandy and loamy marine sediments
Landscape: Coastal Plain
Landform: Uplands
Landform position: Broad ridges; side slopes
Slope: 0 to 5 percent
Taxonomic class: Coarse-loamy, kaolinitic, thermic Typic Kandiudults

Commonly Associated Soils

Lakeland, Lucy, Orangeburg, Red Bay, and Troup soils are commonly associated with the Benevolence series.

- The Lakeland soils are in the higher positions, are excessively drained, and are sandy throughout.
- The Lucy soils are in positions similar to those of the Benevolence soils and have sandy surface and subsurface layers with a combined thickness of 20 to 40 inches.
- The Orangeburg soils are in positions similar to those of the Benevolence soils and have a fine-loamy control section.
- The Red Bay soils are in positions similar to those of the Benevolence soils or slightly higher, have red hues, and have a fine-loamy control section.
- The Troup soils are in positions similar to those of the Benevolence soils or slightly higher, are somewhat excessively drained, and have sandy surface and subsurface layers with a combined thickness of 40 to 80 inches.

Typical Pedon

Benevolence loamy sand, 0 to 5 percent slopes; in a pine plantation about 3 miles northeast of Benevolence; Randolph County, Georgia; USGS Cuthbert topographic quadrangle; lat. 31 degrees 54 minutes 33 seconds N. and long. 84 degrees 41 minutes 47 seconds W., NAD27.

Ap—0 to 12 inches; brown (7.5YR 4/4) loamy sand; weak fine granular structure; very friable; many fine roots; moderately acid; clear smooth boundary.
Bt1—12 to 37 inches; yellowish red (5YR 5/6) sandy loam; weak coarse subangular blocky structure; friable; many fine and medium roots; sand grains coated and bridged with clay; moderately acid; gradual wavy boundary.
Bt2—37 to 47 inches; red (2.5YR 4/8) sandy loam; weak medium subangular blocky structure; very friable; common fine and medium roots; most sand grains coated and bridged with clay; moderately acid; gradual wavy boundary.
Bt3—47 to 80 inches; red (2.5YR 5/6) sandy clay loam; moderate medium subangular blocky structure; friable; few fine roots; few faint discontinuous clay films on faces of peds; strongly acid.

Range in Characteristics

Thickness of the solum: More than 80 inches
Reaction: Very strongly acid to moderately acid throughout, except where the surface layer has been limed

Ap or A horizon:
Color—hue of 7.5YR or 10YR, value of 3 or 4, and chroma of 3 or 4
Texture—loamy fine sand or loamy sand

E horizon (where present):
Color—hue of 10YR, value of 5 or 6, and chroma of 4
Texture—loamy fine sand or loamy sand

EB horizon (where present):
Color—hue of 7.5YR, value of 5 or 6, and chroma of 5 or 6
Texture—loamy fine sand or loamy sand

BE horizon (where present):
Color—hue of 5YR or 7.5YR, value of 4 to 6, and chroma of 4 to 8
Texture—sandy loam

Bt horizon:
Color—hue of 2.5YR or 5YR, value of 4 or 5, and chroma of 6 to 8
Texture—fine sandy loam or sandy loam in the upper part; sandy loam or sandy clay loam in the lower part

Bibb Series

Depth class: Very deep
Drainage class: Poorly drained
Permeability: Moderate
Parent material: Stratified loamy and sandy alluvium
Landscape: Coastal Plain
Landform: Flood plains
Landform position: Planer or slightly concave areas
Slope: 0 to 2 percent
Taxonomic class: Coarse-loamy, siliceous, active, acid, thermic Typic Fluvaquents

Commonly Associated Soils

Cowarts, Kinston, Lakeland, Lucy, Nankin, and Troup soils are commonly associated with the Bibb series.

- The Cowarts soils are on side slopes on uplands and are well drained.
- The Kinston soils are in positions similar to those of the Bibb series and have a fine-loamy control section.
- The Lakeland soils are on uplands, are excessively drained, and are sandy throughout.
- The Lucy soils are on uplands, are well drained, and have a sandy epipedon that ranges from 20 to 40 inches in thickness.
- The Nankin soils are on side slopes on uplands, are well drained, and have a fine control section.
- The Troup soils are on uplands, are somewhat excessively drained, and have sandy surface and subsurface layers with a combined thickness of 40 to 80 inches.

Typical Pedon

Bibb fine sandy loam in an area of Kinston and Bibb soils, 0 to 1 percent slopes, frequently flooded; about 3,800 feet west of the Randolph and Terrell county line on County Road 155 and 300 feet north in the Ichawaynochaway Creek flood plain; Randolph County, Georgia; USGS Parrot topographic quadrangle; lat. 31 degrees 54 minutes 3 seconds N. and long. 84 degrees 36 minutes 48 seconds W., NAD27.

A—0 to 5 inches; very dark gray (10YR 3/1) fine sandy loam; weak fine granular structure; very friable; many fine and medium and common coarse roots; strongly acid; clear wavy boundary.
Cg1—5 to 8 inches; dark gray (10YR 4/1) loam; massive; very friable; common fine, medium, and coarse roots; few fine distinct strong brown (7.5YR 5/6) masses in which iron has accumulated; strongly acid; clear wavy boundary.
Cg2—8 to 13 inches; dark gray (10YR 4/1) sandy loam; massive; friable; few fine and medium and common coarse roots; common medium distinct strong brown (7.5YR 5/6) masses in which iron has accumulated and which have diffuse boundaries; common medium distinct light brownish gray (10YR 6/2) areas of iron depletions which have diffuse boundaries; strongly acid; clear wavy boundary.
Cg3—13 to 21 inches; light brownish gray (10YR 6/2) sandy loam; massive; friable; few medium and common coarse roots; common medium distinct pale brown (10YR 6/3), light yellowish brown (10YR 6/4), and brownish yellow (10YR 6/6) masses in which iron has accumulated and which have diffuse boundaries; very strongly acid; clear wavy boundary.
Cg4—21 to 27 inches; gray (10YR 5/1) sandy loam; massive; friable; few coarse roots; common medium distinct light yellowish brown (10YR 6/4) masses in which iron has accumulated and which have diffuse boundaries; very strongly acid; clear wavy boundary.
Ab—27 to 45 inches; very dark gray (10YR 3/1) sandy loam; massive; firm; very strongly acid; clear wavy boundary.
C´g1—45 to 63 inches; very dark gray (10YR 3/1) sandy loam; massive; friable; common medium distinct pockets and strata of light brownish gray (10YR 6/2) clean sand grains; strongly acid; clear wavy boundary.
C´g2—63 to 80 inches; dark gray (10YR 4/1) loamy sand; massive; very friable; very strongly acid.

Range in Characteristics

Reaction: Very strongly acid or strongly acid throughout, except where the surface layer has been limed
Other features: The buried surface and substratum horizons have the same range in colors and textures as the Ag and Cg horizons.

A or Ap horizon:
Color—hue of 7.5YR or 10YR, value of 2 to 5, and chroma of 1 to 3
Redoximorphic features—no, few, or common iron or clay depletions in shades of gray and iron accumulations in shades of brown
Texture—loamy sand, loamy fine sand, sandy loam, fine sandy loam, or silt loam

Ag horizon (where present):
Color—hue of 10YR or 2.5Y, value of 3 to 7, and chroma of 2 or less; or neutral in hue and value of 3 to 7
Redoximorphic features—no, few, or common iron accumulations in shades of yellow and brown
Texture—loamy sand, loamy fine sand, sandy loam, fine sandy loam, or silt loam

Cg horizon:
Color—hue of 10YR to 5BG, value of 3 to 7, and chroma of 2 or less; or neutral in hue and value of 3 to 7
Redoximorphic features—few to many iron or clay depletions in shades of gray and iron accumulations in shades of brown, yellow, and red
Texture—upper part: sandy loam, fine sandy loam, or loam or stratified in these textures; lower part: sand, loamy sand, loamy fine sand, sandy loam, fine sandy loam, or loam or stratified in these textures

Bonneau Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Parent material: Loamy marine sediments
Landscape: Coastal Plain
Landform: Uplands
Landform position: Ridges and side slopes
Slope: 0 to 8 percent
Taxonomic class: Loamy, siliceous, subactive, thermic Arenic Paleudults

Commonly Associated Soils

Norfolk, Orangeburg, and Troup soils are commonly associated with the Bonneau series.

- The Norfolk and Orangeburg soils are in positions similar to those of the Bonneau series and do not have thick, sandy surface and subsurface horizons.
- The Troup soils are in the slightly higher positions, are somewhat excessively drained, and have sandy surface and subsurface horizons with a combined thickness of 40 to 80 inches.

Typical Pedon

Bonneau loamy sand, 0 to 5 percent slopes; about 0.6 mile northwest of Springvale on County Road 31 and 40 feet west of the road; Randolph County, Georgia; USGS Morris topographic quadrangle; lat. 31 degrees 50 minutes 8 seconds N. and long. 84 degrees 53 minutes 43 seconds W., NAD27.

Ap—0 to 6 inches; dark grayish brown (10YR 4/2) loamy sand; weak fine granular structure; very friable; many fine and medium and few coarse roots; slightly acid; abrupt wavy boundary.

E1—6 to 12 inches; light yellowish brown (10YR 6/4) loamy sand; weak fine granular structure; very friable; many fine and medium roots; slightly acid; gradual wavy boundary.

E2—12 to 22 inches; yellowish brown (10YR 5/4) loamy sand; weak fine granular structure; very friable; many fine and medium roots; moderately acid; gradual wavy boundary.

E3—22 to 33 inches; yellowish brown (10YR 5/6) loamy sand; weak fine granular structure; very friable; many fine and medium roots; moderately acid; gradual wavy boundary.

Bt1—33 to 52 inches; yellowish brown (10YR 5/6) sandy loam; weak medium subangular blocky structure; friable; common fine and medium roots; about 3 percent, by volume, ironstone nodules; moderately acid; gradual wavy boundary.

Bt2—52 to 65 inches; light yellowish brown (10YR 6/4) sandy loam; moderate medium subangular blocky structure; friable; few fine and medium roots; about 3 percent, by volume, ironstone nodules; common medium distinct yellowish brown (10YR 5/6) masses in which iron has accumulated; common medium distinct very pale brown (10YR 7/3) areas from which iron has depleted; moderately acid; gradual wavy boundary.

BC—65 to 72 inches; multicolored, about 35 percent brownish yellow (10YR 6/6), 35 percent light yellowish brown (10YR 6/4), and 30 percent light gray (5Y 7/2) sandy clay; weak medium subangular blocky structure; friable; the areas of brownish yellow and light yellowish brown are areas in which iron has accumulated; the areas of light gray are iron depletions; moderately acid.

Range in Characteristics

Thickness of the solum: 60 to more than 80 inches
Thickness of the sandy epipedon: 20 to 40 inches
Reaction: Very strongly acid to moderately acid throughout, except where the surface layer has been limed

A or Ap horizon:
Color—hue of 10YR, value of 3 to 5, and chroma of 2 to 4
Texture—loamy sand

E horizon:
Color—hue of 10YR, value of 4 to 6, and chroma of 4 to 6
Texture—loamy sand

Bt horizon, upper part:
Color—hue of 7.5YR or 10YR, value of 5 to 7, and chroma of 6 to 8
Texture—sandy loam or sandy clay loam

Bt horizon, lower part:
Color—hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 3 to 8; or multicolored in shades of red, brown, yellow, or gray
Redoximorphic features—no, few, or common iron accumulations in shades of brown, red, and yellow; depletions of chroma 2 or less within a depth of 60 inches
Texture—sandy loam, sandy clay loam, or sandy clay

BC horizon (where present):
Color—hue of 7.5YR to 2.5Y, value of 5 to 7, and chroma of 3 to 8; or multicolored in shades of red, brown, yellow, or gray
Redoximorphic features—few to many iron or clay depletions in shades of gray and few to many iron accumulations in shades of red and brown
Texture—sandy loam, sandy clay loam, or sandy clay

Carnegie Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately slow
Parent material: Clayey marine sediments
Landscape: Coastal Plain
Landform: Uplands
Landform position: Side slopes and knolls
Slope: 2 to 12 percent
Taxonomic class: Fine, kaolinitic, thermic Plinthic Kandiudults

Commonly Associated Soils

Cowarts, Faceville, Henderson, Nankin, and Norfolk soils are commonly associated with the Carnegie series.

- The Cowarts soils are in positions similar to those of the Carnegie soils or lower, have less than 5 percent plinthite, and have a fine-loamy control section.
- The Faceville soils are in positions similar to those of the Carnegie soils or slightly higher and have less than 5 percent plinthite.
- The Henderson soils are in positions similar to those of the Carnegie soils or slightly lower, have less than 5 percent plinthite, and have chert fragments throughout.

- The Nankin soils are in positions similar to those of the Carnegie soils or slightly lower, have less than 5 percent plinthite, and have a solum that is less than 60 inches thick.
- The Norfolk soils are in positions similar to those of the Carnegie soils or slightly lower, have less than 5 percent plinthite, and have a fine-loamy control section.

Typical Pedon

Carnegie sandy loam, 2 to 5 percent slopes, eroded; about 2.2 miles south of Shellman on County Road 44, about 400 feet west of the roadway; Randolph County, Georgia; USGS Martins Crossroads topographic quadrangle; lat. 31 degrees 42 minutes 51 seconds N. and long. 84 degrees 37 minutes 58 seconds W., NAD27.

Ap—0 to 5 inches; brown (7.5YR 4/3) sandy loam; weak fine granular structure; very friable; many very fine and fine roots; about 10 percent, by volume, ironstone nodules; strongly acid; abrupt wavy boundary.

Bt1—5 to 12 inches; yellowish red (5YR 4/6) sandy clay loam; moderate medium subangular blocky structure; friable; many very fine and fine roots; common distinct clay films on faces of peds; about 5 percent, by volume, ironstone nodules; strongly acid; gradual wavy boundary.

Bt2—12 to 17 inches; yellowish red (5YR 4/6) clay; moderate medium subangular blocky structure; firm; few fine roots; many distinct clay films on faces of peds; about 4 percent, by volume, plinthite; about 5 percent, by volume, ironstone nodules; strongly acid; gradual wavy boundary.

Btv1—17 to 22 inches; yellowish red (5YR 4/6) clay; moderate medium subangular blocky structure; firm; many distinct clay films on faces of peds; about 10 percent, by volume, plinthite; very strongly acid; gradual wavy boundary.

Btv2—22 to 38 inches; multicolored, about 40 percent red (2.5YR 4/6), 40 percent light reddish brown (2.5YR 6/4), and 20 percent pale red (2.5YR 7/3) clay; moderate medium subangular blocky structure; firm; common distinct clay films on faces of peds; about 10 percent, by volume, plinthite; red and light reddish brown areas are relic iron accumulations; pale red areas are relic iron depletions; very strongly acid; gradual wavy boundary.

Btv3—38 to 72 inches; multicolored, about 25 percent red (2.5YR 4/6), 25 percent light reddish brown (2.5YR 6/4), 25 percent pale red (2.5YR 7/3), and 25 percent light gray (5Y 7/1) clay in a variegated pattern; weak medium subangular blocky structure; friable; about 6 percent, by volume, plinthite; red and light reddish brown areas are relic iron accumulations; pale red and light gray areas are relic iron depletions; very strongly acid.

Range in Characteristics

Thickness of the solum: More than 60 inches

Content of gravel: 5 to 25 percent, by volume, ironstone nodules in the A or Ap horizon and 0 to 10 percent, by volume, in the Bt horizons

Content of plinthite: More than 5 percent between depths of about 20 and 50 inches

Reaction: Very strongly acid or strongly acid throughout, except where the surface layer has been limed

A, Ap, or Apc horizon:

Color—hue of 7.5YR or 10YR, value of 3 to 5, and chroma of 2 to 6
Texture—sandy loam or gravelly sandy loam

Upper part of the Bt or Btc horizon:

Color—hue of 5YR to 10YR, value of 4 or 5, and chroma of 6 to 8
Relic redoximorphic features—no or few in shades of red or yellow
Texture—sandy clay loam or sandy clay

Lower part of the Bt or B´t horizon (where present):
Color—multicolored in shades of red, brown, yellow, or gray
Relic redoximorphic features—few or common relict accumulations in shades of red, brown, or yellow and relic depletions in shades of gray
Texture—sandy clay or clay

Btv horizon:
Color—hue of 2.5YR to 10YR, value of 4 or 5, and chroma of 6 to 8; or multicolored in shades of red, brown, yellow, or gray
Relic redoximorphic features—few to many relict accumulations in shades of red, brown, or yellow and depletions in shades of gray
Texture—sandy clay or clay

C horizon (where present):
Color—multicolored in shades similar to those in the lower part of the Bt horizon
Texture—sandy clay or sandy clay loam

Clarendon Series

Depth class: Very deep
Drainage class: Moderately well drained
Permeability: Moderately slow
Parent material: Loamy marine sediments
Landscape: Coastal Plain
Landform: Uplands
Landform position: Concavities
Slope: 0 to 5 percent
Taxonomic class: Fine-loamy, siliceous, semiactive, thermic Plinthaquic Paleudults

Commonly Associated Soils

Goldsboro, Grady, Marlboro, and Norfolk soils are commonly associated with the Clarendon series.

- The Goldsboro soils are in positions similar to those of the Clarendon soils or slightly higher and have less than 5 percent plinthite.
- The Grady soils are in the lower positions, are poorly drained, and have a fine control section.
- The Marlboro soils are in the higher positions, are well drained, and have a fine control section.
- The Norfolk soils are in the higher positions and are well drained.

Typical Pedon

Clarendon sandy loam, 0 to 2 percent slopes (fig. 8); about 500 feet south of the Shellman city limit on Georgia Highway 41, about 160 feet west of the highway; Randolph County, Georgia; USGS Doverel topographic quadrangle; lat. 31 degrees 44 minutes 27.2 seconds N. and long. 84 degrees 36 minutes 52.9 seconds W., NAD27.

Ap—0 to 8 inches; very dark grayish brown (10YR 3/2) sandy loam; weak medium granular structure; very friable; common fine and medium roots; about 8 percent, by volume, iron-manganese concretions; moderately acid; abrupt smooth boundary.

Bt1—8 to 20 inches; yellowish brown (10YR 5/8) sandy clay loam; weak fine subangular blocky structure; friable; common fine and medium roots; few faint clay films on faces of peds; about 5 percent, by volume, iron-manganese concretions; strongly acid; clear smooth boundary.

Figure 8.—Profile of Clarendon sandy loam, 0 to 2 percent slopes.

Bt2—20 to 29 inches; yellowish brown (10YR 5/6) sandy clay loam; weak medium subangular blocky structure; friable; common fine and medium roots; few faint clay films on faces of peds; about 5 percent, by volume, iron-manganese concretions; common fine distinct strong brown (7.5YR 4/6) and common fine prominent red (2.5YR 4/8) masses in which iron has accumulated; the masses have sharp boundaries and are within the matrix; strongly acid; clear wavy boundary.

Bt3—29 to 34 inches; yellowish brown (10YR 5/6) sandy clay loam; moderate medium subangular blocky structure; friable; few fine roots; common faint clay films on faces of peds; about 3 percent, by volume, plinthite; about 4 percent, by volume, iron-manganese concretions; common medium distinct strong brown (7.5YR 4/6) and common medium prominent red (2.5YR 4/8) masses in which iron has accumulated; common medium distinct light brownish gray (10YR 6/2) areas from which iron has depleted; strongly acid; clear wavy boundary.

Btv1—34 to 42 inches; yellowish brown (10YR 5/6) sandy clay loam; moderate medium subangular blocky structure; friable; few fine roots; common distinct clay films on faces of peds; about 10 percent, by volume, plinthite; 2 percent, by volume, iron-manganese concretions; common medium distinct light brownish gray (10YR 6/2) areas from which iron has depleted; strongly acid; gradual wavy boundary.

Btv2—42 to 50 inches; pale brown (10YR 6/3) sandy clay loam; moderate medium subangular blocky structure; friable; few fine roots; common distinct clay films on faces of peds; about 5 percent, by volume, plinthite; about 2 percent, by volume, iron-manganese concretions; common medium distinct strong brown (7.5YR 5/6) and common medium prominent red (2.5YR 4/8) masses in which iron has accumulated; strongly acid; gradual wavy boundary.

Btv3—50 to 72 inches; pale brown (10YR 6/3) sandy clay loam; moderate medium subangular blocky structure; friable; common distinct continuous clay films on faces of peds; about 5 percent, by volume, plinthite; about 2 percent, by volume, iron-manganese concretions; many medium distinct strong brown (7.5YR 5/6) and many medium prominent red (2.5YR 4/8) masses in which iron has accumulated and which have sharp boundaries; strongly acid.

Range in Characteristics

Thickness of the solum: More than 60 inches

Content of gravel: 0 to 10 percent, by volume, in the A and E horizons and the upper part of the Bt horizon; 0 to 2 percent in the lower part of the Bt horizon

Content of plinthite: 5 percent or more beginning at a depth of 20 to 58 inches

Reaction: Very strongly acid to moderately acid in the upper part of the solum and very strongly acid to strongly acid in the lower part, except where the surface layer has been limed

A or Ap horizon:

Color—hue of 10YR, value of 3 to 6, and chroma of 1 or 2
Texture—loamy sand or sandy loam

Bt horizon:

Color—hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 4 to 8
Redoximorphic features—few or common in shades of gray, red, and brown
Texture—sandy clay loam

Btv horizon:

Color—hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 3 to 6
Redoximorphic features—few to many in shades of gray, red, and brown
Texture—sandy clay loam

Cowarts Series

Depth class: Very deep
Drainage class: Well drained and moderately well drained
Permeability: Moderately slow or slow
Parent material: Loamy marine sediments
Landscape: Coastal Plain
Landform: Uplands
Landform position: Narrow ridges; side slopes
Slope: 2 to 25 percent
Taxonomic class: Fine-loamy, kaolinitic, thermic Typic Kanhapludults

Commonly Associated Soils

Ailey, Bibb, Carnegie, Kinston, Lakeland, Lucy, Nankin, and Troup soils are commonly associated with the Cowarts series.

- The Ailey soils are in positions similar to those of the Cowarts soils and have sandy surface and subsurface layers with a combined thickness of 20 to 40 inches over dense, brittle layers.
- The Bibb soils are on flood plains, have a coarse-loamy control section, and are poorly drained.
- The Carnegie soils are in positions similar to those of the Cowarts soils or slightly higher, have a fine control section, and have more than 5 percent plinthite, by volume.
- The Kinston soils are on flood plains and are poorly drained.
- The Lakeland soils are in the higher positions, are excessively drained, and are sandy throughout.
- The Lucy soils are in positions similar to those of the Cowarts soils or slightly higher and have sandy surface and subsurface layers with a combined thickness of 20 to 40 inches.
- The Nankin soils are in positions similar to those of the Cowarts soils, have a solum that is less than 60 inches thick, and have a fine control section.
- The Troup soils are in the higher positions, are somewhat excessively drained, and have surface and subsurface layers with a combined thickness of 40 to 80 inches.

Typical Pedon

Cowarts loamy sand in an area of Nankin-Cowarts complex, 15 to 35 percent slopes; about 0.6 mile north of Sharon Church, 2,960 feet south of the Stewart County line, and 3,200 feet west of County Road 28; Randolph County, Georgia; USGS Sanford topographic quadrangle; lat. 31 degrees 54 minutes 58 seconds N. and long. 84 degrees 53 minutes 30 seconds W., NAD27.

Ap1—0 to 3 inches; dark grayish brown (10YR 4/2) loamy sand; weak fine granular structure; very friable; many fine and medium roots; strongly acid; clear smooth boundary.

Ap2—3 to 7 inches; brown (10YR 4/3) loamy sand; weak fine granular structure; very friable; many fine and medium roots; strongly acid; clear wavy boundary.

Bt1—7 to 15 inches; yellowish brown (10YR 5/6) sandy loam; weak coarse subangular blocky structure; very friable; many fine and medium roots; sand grains coated and bridged with clay; strongly acid; gradual wavy boundary.

Bt2—15 to 22 inches; brownish yellow (10YR 6/8) sandy clay loam; weak medium subangular blocky structure; friable; common fine and medium roots; few distinct clay films on faces of peds; strongly acid; gradual wavy boundary.

Bt3—22 to 31 inches; brownish yellow (10YR 6/8) sandy clay loam; moderate medium subangular blocky structure; firm; common medium roots and few fine roots; few distinct clay films on faces of peds; common medium distinct yellowish red (5YR 5/8) masses in which iron has accumulated; the masses have sharp boundaries and are within the matrix; strongly acid; gradual wavy boundary.

BC—31 to 40 inches; brownish yellow (10YR 6/8) sandy clay loam; weak medium subangular blocky structure; friable; few medium roots; few distinct clay films on faces of peds; common medium distinct yellowish red (5YR 5/6) and strong brown (7.5YR 5/6) masses in which iron has accumulated; the masses have sharp boundaries and are within the matrix; strongly acid; gradual wavy boundary.

C1—40 to 48 inches; brownish yellow (10YR 6/8) sandy loam; weak coarse subangular blocky structure parting to weak fine granular; friable; few fine distinct yellowish red (5YR 5/6) and reddish yellow (5YR 6/6) masses in which iron has accumulated; very strongly acid; gradual wavy boundary.

C2—48 to 59 inches; brownish yellow (10YR 6/6) sandy loam; massive parting to weak thin platy structure; firm, brittle; common thin strata of yellowish red (5YR 5/6) sandy clay loam; few fine distinct pale brown (10YR 6/3) areas from which iron has depleted; very strongly acid; gradual wavy boundary.
C3—59 to 80 inches; multicolored, about 50 percent brownish yellow (10YR 6/6), 30 percent light yellowish brown (10YR 6/4), and 20 percent yellowish red (5YR 5/6) stratified loamy sand; massive structure parting to loose single grained; firm in place, very friable if disturbed; areas of brownish yellow and yellowish red are iron accumulations; areas of light yellowish brown are iron depletions; very strongly acid.

Range in Characteristics

Thickness of the solum: 20 to 40 inches
Reaction: Very strongly acid or strongly acid throughout, except where the surface layer has been limed

A or Ap horizon:
Color—hue of 10YR, value of 4 or 5, and chroma of 2 to 4
Texture—loamy sand or sandy loam

E horizon (where present):
Color—hue of 10YR, value of 5 or 6, and chroma of 4 to 6
Texture—loamy sand or sandy loam

BE horizon (where present):
Color—hue of 10YR, value of 5 or 6, and chroma of 4 to 8
Texture—sandy loam

Bt horizon:
Color—hue of 5YR to 10YR, value of 5 or 6, and chroma of 4 to 8
Redoximorphic features—no, few, or common iron accumulations in shades of red, yellow, and brown
Texture—sandy loam or sandy clay loam

BC horizon (where present):
Color—hue of 2.5YR to 10YR, value of 4 to 6, and chroma of 4 to 8; or multicolored in shades of red, yellow, brown, and gray
Redoximorphic features—few to many iron or clay depletions in shades of gray and iron accumulations in shades of red, brown, and yellow
Texture—sandy loam or sandy clay loam

C horizon:
Color—hue of 2.5YR to 10YR, value of 4 to 6, and chroma of 4 to 8; or multicolored in shades of red, yellow, brown, and gray
Redoximorphic features—few to many iron or clay depletions in shades of gray and few to many iron accumulations in shades of red, brown, and yellow
Texture—loamy sand, sandy loam, or sandy clay loam or stratified in these textures

Faceville Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Parent material: Clayey marine sediments
Landscape: Coastal Plain
Landform: Uplands

Landform position: Broad ridges; side slopes
Slope: 0 to 10 percent
Taxonomic class: Fine, kaolinitic, thermic Typic Kandiudults

Commonly Associated Soils

Carnegie, Greenville, Marlboro, Norfolk, Orangeburg, and Red Bay soils are commonly associated with the Faceville series.

- The Carnegie soils are in positions similar to those of the Faceville soils or slightly lower and have more than 5 percent plinthite, by volume.
- The Greenville soils are in positions similar to those of the Faceville soils and have redder hues.
- The Marlboro soils are in positions similar to those of the Faceville soils or slightly lower and have hues that are more yellow.
- The Norfolk soils are in positions similar to those of the Faceville soils or slightly lower, have hues that are more yellow, and have a fine-loamy control section.
- The Orangeburg soils are in positions similar to those of the Faceville soils or slightly lower and have a fine-loamy control section.
- The Red Bay soils are in positions similar to those of the Faceville soils, have redder hues, and have a fine-loamy control section.

Typical Pedon

Faceville sandy loam, 0 to 2 percent slopes; about 1.8 miles north of the Quitman and Clay county line on Georgia Highway 39 and 700 feet west of the highway; Quitman County, Georgia; USGS Hatcher topographic quadrangle; lat. 31 degrees 48 minutes 19 seconds N. and long. 85 degrees 5 minutes 42 seconds W., NAD27.

Ap—0 to 10 inches; reddish brown (5YR 4/4) sandy loam; weak fine granular structure; very friable; many fine roots; moderately acid; abrupt smooth boundary.

Bt1—10 to 30 inches; red (2.5YR 4/6) sandy clay; moderate medium subangular blocky structure; firm; few fine roots; few fine pores; common distinct clay films on faces of peds; strongly acid; gradual wavy boundary.

Bt2—30 to 72 inches; red (2.5YR 4/6) sandy clay; moderate fine subangular blocky structure; firm; common fine pores; common distinct clay films on faces of peds; strongly acid; gradual wavy boundary.

Bt3—72 to 80 inches; red (2.5YR 5/6) sandy clay; moderate fine subangular blocky structure; firm; common fine pores; common distinct clay films on faces of peds; few fine prominent strong brown (7.5YR 5/6) masses in which iron has accumulated; strongly acid.

Range in Characteristics

Thickness of the solum: More than 65 inches
Reaction: Very strongly acid or strongly acid throughout, except where the surface layer has been limed

A or Ap horizon:
Color—hue of 5YR to 10YR, value of 4 or 5, and chroma of 2 to 6
Texture—sandy loam

Bt horizon:
Color—hue of 2.5YR or 5YR, value of 4 or 5, and chroma of 4 to 8
Texture—clay loam, sandy clay, or clay

BC horizon (where present):
Color—hue of 2.5YR or 5YR, value of 4 or 5, and chroma of 4 to 8; or multicolored in shades of red, brown, and yellow

Redoximorphic features—no, few, or common iron accumulations in shades of red, brown, and yellow
Texture—sandy clay loam or sandy clay

Goldsboro Series

Depth class: Very deep
Drainage class: Moderately well drained
Permeability: Moderate
Parent material: Loamy marine sediments
Landscape: Coastal Plain
Landform: Uplands
Landform position: Interstream divides
Slope: 0 to 5 percent
Taxonomic class: Fine-loamy, siliceous, subactive, thermic Aquic Paleudults

Commonly Associated Soils

Clarendon and Norfolk soils are commonly associated with the Goldsboro series.

- The Clarendon soils are in positions similar to those of the Goldsboro soils or slightly lower and have more than 5 percent plinthite, by volume.
- The Norfolk soils are in the higher positions and are well drained.

Typical Pedon

Goldsboro loamy sand, 0 to 2 percent slopes; about 1.8 miles south of the Quitman and Clay county line on Georgia Highway 39 and 200 feet south of the highway; Clay County, Georgia; USGS Hatcher topographic quadrangle; lat. 31 degrees 45 minutes 30 seconds N. and long. 85 degrees 4 minutes 6 seconds W., NAD27.

Ap—0 to 10 inches; brown (10YR 5/3) loamy sand; weak fine granular structure; very friable; moderately acid; clear smooth boundary.
Bt1—10 to 18 inches; light yellowish brown (10YR 6/4) sandy loam; weak fine subangular blocky structure; friable; sand grains coated and bridged with clay; few faint discontinuous clay films on faces of peds; moderately acid; clear smooth boundary.
Bt2—18 to 33 inches; light yellowish brown (10YR 6/4) sandy clay loam; moderate medium subangular blocky structure; friable; sand grains coated and bridged with clay; few faint clay films on faces of peds; many medium distinct yellowish brown (10YR 5/8) masses in which iron has accumulated; common medium distinct light gray (10YR 7/2) areas from which iron or clay has depleted; strongly acid; clear smooth boundary.
Btg1—33 to 60 inches; light gray (10YR 7/2) sandy clay loam; moderate medium subangular blocky structure; friable; sand grains coated and bridged with clay; few faint clay films on faces of peds; few 5-millimeter pockets of clean sand grains in the lower part; common medium prominent red (2.5YR 4/8) and yellowish brown (10YR 5/8) masses in which iron has accumulated; common medium faint light gray (10YR 7/1) areas from which iron or clay has depleted; strongly acid; clear smooth boundary.
Btg2—60 to 80 inches; light gray (10YR 7/1) sandy clay loam; moderate medium subangular blocky structure; friable; sand grains coated and bridged with clay; few faint clay films on faces of peds; few 5-millimeter pockets of clean sand grains; common medium prominent red (2.5YR 4/8) and yellowish brown (10YR 5/8) masses in which iron has accumulated; common medium faint light gray (10YR 7/2) areas from which iron or clay has depleted; strongly acid.

Range in Characteristics

Thickness of the solum: More than 60 inches
Reaction: Very strongly acid or strongly acid throughout, except where the surface layer has been limed

A or Ap horizon:
Color—hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 1 to 4
Texture—loamy sand or sandy loam

E horizon (where present):
Color—hue of 10YR or 2.5YR, value of 5 to 7, and chroma of 2 to 6
Texture—loamy sand or sandy loam

Bt horizon, upper part:
Color—hue of 10YR, value of 5 to 7, and chroma of 4 to 6
Texture—sandy loam or sandy clay loam

Bt horizon, lower part:
Color—hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 3 to 6
Redoximorphic features—few or common iron or clay depletions and accumulations in shades of gray, red, yellow, and brown
Texture—sandy loam or sandy clay loam

Btg horizon (where present):
Color—hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 1 or 2
Redoximorphic features—common or many iron or clay accumulations in shades, red, yellow, and brown and depletions in shades of gray
Texture—sandy loam or sandy clay loam

Grady Series

Depth class: Very deep
Drainage class: Poorly drained
Permeability: Slow
Parent material: Clayey marine sediments
Landscape: Coastal Plain
Landform: Depressions
Landform position: Concavities
Slope: 0 to 2 percent
Taxonomic class: Fine, kaolinitic, thermic Typic Paleaquults

Commonly Associated Soils

Clarendon and Marlboro soils are commonly associated with the Grady series.

- The Clarendon soils are in the higher positions, are moderately well drained, and have a fine-loamy control section.
- The Marlboro soils are in the higher positions and are well drained.

Typical Pedon

Grady clay loam, ponded; about 0.4 mile south of Five Points and 250 feet west of County Road 154; Randolph County, Georgia; USGS Doverel topographic quadrangle; lat. 31 degrees 41 minutes 42 seconds N. and long. 84 degrees 33 minutes 35 seconds W., NAD27.

Ap—0 to 5 inches; very dark grayish brown (10YR 3/2) clay loam; moderate medium granular structure; friable; many fine roots; very strongly acid; clear smooth boundary.

Btg1—5 to 10 inches; gray (10YR 5/1) clay; moderate medium subangular blocky structure; very firm; common fine roots; common distinct clay films on faces of peds; very strongly acid; gradual smooth boundary.
Btg2—10 to 30 inches; light brownish gray (10YR 6/2) clay; moderate medium subangular blocky structure; very firm; few fine roots; common distinct clay films on faces of peds; very strongly acid; gradual smooth boundary.
Btg3—30 to 65 inches; light brownish gray (10YR 6/2) clay; moderate medium subangular blocky structure; very firm; common distinct clay films on faces of peds; common medium distinct yellowish brown (10YR 5/8) and common medium prominent yellowish red (5YR 4/6) masses in which iron has accumulated; very strongly acid.

Range in Characteristics

Thickness of the solum: More than 60 inches
Reaction: Extremely acid to strongly acid throughout, except where the surface layer has been limed

A or Ap horizon:
Color—hue of 10YR, value of 2 or 3, and chroma of 1 or 2
Texture—loam or clay loam

Btg horizon:
Color—hue of 10YR to 5Y, value of 5 or 6, and chroma of 1 or 2
Redoximorphic features—no, few, or common iron or clay depletions in shades of gray and iron accumulations in shades of yellow, brown, and red
Texture—sandy clay or clay in the upper part and clay in the lower part

Greenville Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Parent material: Clayey marine sediments
Landscape: Coastal Plain
Landform: Uplands
Landform position: Broad ridges; side slopes
Slope: 0 to 18 percent
Taxonomic class: Fine, kaolinitic, thermic Rhodic Kandiudults

Commonly Associated Soils

Faceville, Henderson, Orangeburg, and Red Bay soils are commonly associated with the Greenville series.

- The Faceville soils are in positions similar to those of the Greenville soils and have hues that are more yellow.
- The Henderson soils are in the slightly lower positions, have hues that are more yellow, and have chert fragments throughout.
- The Orangeburg soils are in positions similar to those of the Greenville soils or slightly lower, have hues that are more yellow, and have a fine-loamy control section.
- The Red Bay soils are in positions similar to those of the Greenville soils or slightly lower and have a fine-loamy control section.

Typical Pedon

Greenville sandy clay loam, 0 to 2 percent slopes; about 0.5 mile east of Carter Creek on County Road 22, about 0.8 mile north on County Road 73, and 150 feet west; Randolph County, Georgia; USGS Martins Crossroads topographic quadrangle; lat.

31 degrees 39 minutes 16 seconds N. and long. 84 degrees 42 minutes 47 seconds W., NAD27.

Ap—0 to 8 inches; dark reddish brown (5YR 3/3) sandy clay loam; weak medium granular structure; very friable; few fine roots; strongly acid; abrupt smooth boundary.
Bt1—8 to 45 inches; dark red (10R 3/6) sandy clay; moderate medium subangular blocky structure; firm; common fine pores; common distinct clay films on faces of peds; strongly acid; gradual wavy boundary.
Bt2—45 to 80 inches; dark red (2.5YR 3/6) sandy clay; moderate medium subangular blocky structure; firm; few fine pores; common distinct clay films on faces of peds; strongly acid.

Range in Characteristics

Thickness of the solum: More than 60 inches
Reaction: Very strongly acid to moderately acid throughout, except where the surface layer has been limed

A or Ap horizon:
Color—hue of 2.5YR or 5YR, value of 3 or 4, and chroma of 2 to 6
Texture—sandy clay loam

Bt horizon:
Color—hue of 10R or 2.5YR, value of 2 or 3, and chroma of 2 to 6
Texture—clay loam, sandy clay, or clay

Henderson Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Slow
Parent material: Clayey marine sediments and impure limestone
Landscape: Coastal Plain
Landform: Uplands
Landform position: Ridge, knolls, and side slopes
Slope: 2 to 20 percent
Taxonomic class: Fine, kaolinitic, thermic Typic Paleudults

Commonly Associated Soils

Carnegie, Greenville, Marlboro, and Nankin soils are commonly associated with the Henderson series.

- The Carnegie soils are in positions similar to those of the Henderson soils or slightly higher, do not have chert fragments, and contain more than 5 percent plinthite, by volume.
- The Greenville soils are in the slightly higher positions, do not have chert fragments, and have redder hues.
- The Marlboro soils are in positions similar to those of the Henderson soils or slightly higher and do not have chert fragments.
- The Nankin soils are in positions similar to those of the Henderson soils or slightly lower, do not have chert fragments, and have a solum that is less than 60 inches thick.

Typical Pedon

Henderson gravelly sandy loam, 2 to 8 percent slopes; about 2.7 miles south of the intersection of U.S. Highway 82 and Georgia Highway 266 and about 30 feet west of

Georgia Highway 266; Randolph County, Georgia; USGS Carnegie topographic quadrangle; lat. 31 degrees 43 minutes 20 seconds N. and long. 84 degrees 51 minutes 31 seconds W., NAD27.

Ap—0 to 4 inches; very dark grayish brown (10YR 3/2) gravelly sandy loam; weak fine granular structure; very friable; many fine roots; about 20 percent chert pebbles and 3 percent chert stones; strongly acid; clear wavy boundary.

E—4 to 13 inches; yellowish brown (10YR 5/4) gravelly sandy loam; weak fine granular structure; very friable; common medium roots; about 20 percent chert pebbles; strongly acid; abrupt irregular boundary.

Bt1—13 to 18 inches; strong brown (7.5YR 5/6) gravelly sandy clay; moderate fine subangular blocky structure; friable; common medium roots; about 20 percent chert pebbles and 5 percent chert stones; very strongly acid; abrupt irregular boundary.

Bt2—18 to 33 inches; strong brown (7.5YR 5/6) gravelly clay; strong medium subangular blocky structure; firm; common distinct clay films on faces of peds; few large roots; about 20 percent chert pebbles and 5 percent chert stones; common medium distinct yellowish red (5YR 5/6) and reddish brown (2.5YR 4/4) masses in which iron has accumulated; very strongly acid; gradual irregular boundary.

Bt3—33 to 49 inches; strong brown (7.5YR 5/6) gravelly clay; moderate medium subangular blocky structure; firm; common distinct clay films on faces of peds; about 20 percent chert pebbles, 2 percent chert cobbles, and 3 percent chert stones; common fine distinct yellowish red (5YR 5/6) and reddish brown (2.5YR 4/4) masses in which iron has accumulated; very strongly acid; gradual irregular boundary.

Bt4—49 to 65 inches; multicolored, about 40 percent yellowish brown (10YR 5/6), 35 percent light gray (2.5Y 7/2), and 25 percent reddish brown (2.5YR 4/4) gravelly clay; moderate medium and coarse subangular blocky structure; very firm; many pebbles and fragments of chert, few stones; the areas of yellowish brown and reddish brown are areas in which iron has accumulated; the areas of light gray are areas from which iron or clay has depleted; very strongly acid.

Range in Characteristics

Thickness of the solum: More than 65 inches

Reaction: Very strongly acid or strongly acid throughout, except where the surface layer has been limed

A or Ap horizon:
- Color—hue of 10YR or 2.5Y, value of 3 or 4, and chroma of 2 or 3
- Texture—gravelly sandy loam or gravelly loam

E horizon (where present):
- Color—hue of 10YR or 2.5Y, value of 5, and chroma of 3 to 6
- Texture—gravelly sandy loam or gravelly loam

Bt horizon, upper part:
- Color—hue of 2.5YR to 10YR, value of 4 or 5, and chroma of 6 to 8
- Texture—gravelly sandy clay loam or gravelly sandy clay

Bt horizon, lower part:
- Color—hue of 2.5YR to 10YR, value of 4 or 5, and chroma of 6 to 8; or multicolored in shades of red, brown, yellow, and, below a depth of 40 inches, gray
- Redoximorphic features—common or many iron or clay depletions in shades of gray and iron accumulations in shades of red, brown, or yellow; the gray depletions are below a depth of 40 inches.
- Texture—gravelly sandy clay or gravelly clay

Kinston Series

Depth class: Very deep
Drainage class: Poorly drained
Permeability: Moderate
Parent material: Stratified loamy and sandy alluvium
Landscape: Coastal Plain
Landform: Flood plains
Landform position: Planer to concave slopes
Slope: 0 to 2 percent
Taxonomic class: Fine-loamy, siliceous, semiactive, acid, thermic Typic Fluvaquents

Commonly Associated Soils

Bibb, Cowarts, Lakeland, Lucy, Nankin, and Troup soils are commonly associated with the Kinston series.

- The Bibb soils are in positions similar to those of the Kinston soils and have a coarse-loamy control section.
- The Cowarts soils are on side slopes on uplands and are well drained.
- The Lakeland soils are on uplands, are excessively drained, and are sandy throughout.
- The Lucy soils are on uplands, are well drained, and have sandy surface and subsurface layers with a combined thickness of 20 to 40 inches.
- The Nankin soils are on side slopes on uplands, are well drained, and have a fine control section.
- The Troup soils are on uplands, are somewhat excessively drained, and have sandy surface and subsurface layers with a combined thickness of 40 to 80 inches.

Typical Pedon

Kinston loam, in an area of Kinston and Bibb soils, 0 to 1 percent slopes, frequently flooded; about 3,800 feet west of the Randolph and Terrell county line on County Road 155 and 400 feet north in the flood plain along Ichawaynochaway Creek; Randolph County, Georgia; USGS Parrot topographic quadrangle; lat. 31 degrees 54 minutes 5 seconds N. and long. 84 degrees 36 minutes 53 seconds W., NAD27.

A1—0 to 3 inches; dark gray (10YR 4/1) loam; weak fine subangular blocky structure; friable; many fine and medium and common coarse roots; many faint yellowish red (5YR 5/6) coatings on faces of peds; strongly acid; clear wavy boundary.

A2—3 to 8 inches; very dark gray (10YR 3/1) silt loam; weak fine subangular blocky structure; friable; many medium and common fine and coarse roots; common faint yellowish red (5YR 5/6) clay films on faces of peds; strongly acid; clear wavy boundary.

Bg—8 to 15 inches; dark gray (2.5Y 4/1) clay loam; weak medium subangular blocky structure; firm; few fine and common medium and coarse roots; strongly acid; clear wavy boundary.

Ab—15 to 33 inches; very dark gray (10YR 3/1) sandy loam; massive parting to weak fine subangular structure; friable; common medium and coarse roots; common medium distinct pale brown (10YR 6/3) areas in which iron has accumulated and common medium distinct light brownish gray (10YR 6/2) areas from which iron has depleted; very strongly acid; clear wavy boundary.

Cg1—33 to 52 inches; dark gray (10YR 4/1) sandy clay loam; massive; firm; few coarse roots; common fine and medium distinct dark yellowish brown (10YR 4/4) areas in which iron has accumulated; very strongly acid; gradual wavy boundary.

Cg2—52 to 80 inches; dark gray (10YR 4/1) loamy sand; massive; friable; very strongly acid.

Range in Characteristics

Reaction: Very strongly acid or strongly acid throughout, except where the surface layer has been limed

A or Ap horizon:
Color—hue of 10YR, value of 2 to 5, and chroma of 1 to 3; or neutral in hue and value of 5
Redoximorphic features—no, few, or common iron or clay depletions in shades of gray and iron accumulations or stains in shades of brown, yellow, and red
Texture—loamy sand, sandy loam, fine sandy loam, silt loam, or loam

Ab horizon (where present):
Color—hue of 10YR, value of 3, and chroma of 1 or 2
Redoximorphic features—none to common in shades of brown, yellow, and gray
Texture—sandy loam, fine sandy loam, loam, or sandy clay loam

Ag horizon (where present):
Color—hue of 10YR, value of 5, and chroma of 1; or neutral in hue with value of 5
Texture—same range as that of the A or Ap horizon

Bg horizon:
Color—hue of 10YR to 5Y, value of 3 to 7, and chroma of 1 or 2; hue of 5GY to 5BG, value of 6, and chroma of 1; or neutral in hue with value of 4 to 6
Redoximorphic features—few or common iron accumulations in shades of yellow, brown, and red
Texture—sandy loam, fine sandy loam, loam, sandy clay loam, or clay loam

Cg or C´g horizon:
Color—hue of 10YR to 5Y, value of 3 to 7, and chroma of 1 or 2; hue of 5GY to 5BG, value of 6, and chroma of 1; or neutral in hue with value of 4 to 6
Redoximorphic features—few or common iron accumulations in shades of yellow, brown, and red
Texture—sandy loam, sandy clay loam, clay loam, or, below a depth of 40 inches, loamy sand or loamy fine sand

Lakeland Series

Depth class: Very deep
Drainage class: Excessively drained
Permeability: Rapid
Parent material: Sandy marine sediments
Landscape: Coastal Plain
Landform: Uplands
Landform position: Broad ridges; side slopes
Slope: 0 to 15 percent
Taxonomic class: Thermic, coated Typic Quartzipsamments

Commonly Associated Soils

Ailey, Benevolence, Bibb, Cowarts, Kinston, and Troup soils are commonly associated with the Lakeland series.

- The Ailey soils are in the slightly lower positions and on adjacent side slopes and have sandy surface and subsurface layers with a combined thickness of 20 to 40 inches over dense, brittle subsoils.
- The Benevolence and Cowarts soils are in the lower positions, are well drained, and do not have thick, sandy surface and subsurface layers.

- The Bibb and Kinston soils are on flood plains and are poorly drained.
- The Troup soils are in positions similar to those of the Lakeland soils, are somewhat excessively drained, and have sandy surface and subsurface layers with a combined thickness of 40 to 80 inches.

Typical Pedon

Lakeland sand, 0 to 8 percent slopes; about 0.7 mile north of Cemochechobee Creek on Cemetery Road, 0.1 mile east on a field road, and 100 feet north of the road; Randolph County, Georgia; USGS Coleman topographic quadrangle; lat. 31 degrees 38 minutes 45 seconds N. and long. 84 degrees 55 minutes 2 seconds W., NAD27.

Ap—0 to 4 inches; dark yellowish brown (10YR 4/4) sand; single grained; loose; common fine and medium roots; common uncoated sand grains; strongly acid; clear wavy boundary.

C1—4 to 25 inches; yellowish brown (10YR 5/6) sand; single grained; loose; common fine and medium roots; few uncoated sand grains; strongly acid; gradual smooth boundary.

C2—25 to 60 inches; yellowish brown (10YR 5/8) sand; single grained; loose; few fine roots; common uncoated sand grains; few coarse sand grains; strongly acid; clear smooth boundary.

C3—60 to 80 inches; strong brown (7.5YR 5/8) sand; single grained; loose; many uncoated sand grains; few coarse sand grains; strongly acid.

Range in Characteristics

Thickness of the sandy epipedon: More than 80 inches
Reaction: Very strongly acid or strongly acid throughout, except where the surface layer has been limed

A or Ap horizon:
Color—hue of 10YR, value of 3 or 4, and chroma of 2 to 4
Texture—sand

C horizon:
Color—hue of 5YR to 10YR, value of 5 to 7, and chroma of 4 to 8
Texture—sand

Lucy Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Parent material: Sandy and loamy marine sediments
Landscape: Coastal Plain
Landform: Uplands
Landform position: Ridges and side slopes
Slope: 0 to 15 percent
Taxonomic class: Loamy, kaolinitic, thermic Arenic Kandiudults

Commonly Associated Soils

Benevolence, Bibb, Cowarts, Kinston, Orangeburg, and Troup soils are commonly associated with the Lucy series.

- The Benevolence and Orangeburg soils are in positions similar to those of the Lucy soils and do not have thick, sandy surface and subsurface layers.
- The Bibb and Kinston soils are on flood plains adjacent to the Lucy soils and are poorly drained.

- The Cowarts soils are in the slightly lower positions and do not have thick, sandy surface and subsurface layers.
- The Troup soils are in positions similar to those of the Lucy soils or slightly higher and have sandy surface and subsurface layers with a combined thickness of 40 to 80 inches.

Typical Pedon

Lucy loamy sand, 0 to 5 percent slopes (fig. 9); about 1.5 miles west of Coleman on Georgia Highway 266 and 550 feet south of the highway; Randolph County, Georgia; USGS Coleman topographic quadrangle; lat. 31 degrees 40 minutes 8 seconds N. and long. 84 degrees 54 minutes 38 seconds W., NAD27.

Ap—0 to 8 inches; grayish brown (10YR 5/2) loamy sand; weak fine granular structure; very friable; many fine and medium roots; moderately acid; clear smooth boundary.

E—8 to 24 inches; brown (7.5YR 5/4) loamy sand; weak fine granular structure; very friable; many fine and medium roots; moderately acid; gradual smooth boundary.

Bt1—24 to 48 inches; yellowish red (5YR 5/8) sandy loam; weak fine subangular blocky structure; very friable; common fine and medium roots; strongly acid; gradual wavy boundary.

Bt2—48 to 72 inches; red (2.5YR 4/8) sandy clay loam; weak medium subangular blocky structure; friable; common fine and medium roots; strongly acid.

Range in Characteristics

Thickness of the solum: More than 60 inches

Thickness of the sandy epipedon: 20 to 40 inches

Reaction: Very strongly acid to moderately acid in the A and E horizons and very strongly acid or strongly acid in the Bt horizons, except where the surface layer has been limed

Figure 9.—Profile of Lucy loamy sand, 0 to 5 percent slopes.

A or Ap horizon:
Color—hue of 7.5YR or 10YR, value of 3 to 5, and chroma of 2 to 4
Texture—loamy sand or loamy fine sand

E horizon:
Color—hue of 5YR to 10YR, value of 4 to 6, and chroma of 4 to 6
Texture—loamy sand or loamy fine sand

BE horizon (where present):
Color—hue of 2.5YR to 7.5YR, value of 4 to 6, and chroma of 6 to 8
Texture—loamy sand, loamy fine sand, or sandy loam

Bt horizon:
Color—dominantly hue of 2.5YR or 5YR, value of 4 to 6, and chroma of 6 to 8; the upper 10 inches or less, however, has hue of 7.5YR or 10YR in some pedons.
Redoximorphic features—no, few, or common iron accumulations in shades of brown, red, and yellow below a depth of 40 inches
Texture—sandy loam, sandy clay loam, or, below a depth of 50 inches, sandy clay

Marlboro Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Parent material: Clayey marine sediments
Landscape: Coastal Plain
Landform: Uplands
Landform position: Broad ridges; side slopes
Slope: 0 to 8 percent
Taxonomic class: Fine, kaolinitic, thermic Typic Paleudults

Commonly Associated Soils

Clarendon, Faceville, Grady, Henderson, and Nankin soils are commonly associated with the Marlboro series.

- The Clarendon soils are in the lower positions, are moderately well drained, and have a fine-loamy control section.
- The Faceville soils are in positions similar to those of the Marlboro soils or slightly higher and have redder hues.
- The Grady soils are in the lower, depressional positions and are poorly drained.
- The Henderson soils are in positions similar to those of the Marlboro soils or slightly lower and have chert fragments throughout.
- The Nankin soils are in the slightly lower positions and have a solum that is less than 60 inches thick.

Typical Pedon

Marlboro sandy loam, 0 to 2 percent slopes; about 1.8 miles south of the Clay and Quitman County line on Georgia Highway 39, northeast 0.4 mile on County Road 129, north 0.2 mile on a field road, and 400 feet west of the road; Clay County, Georgia; USGS Hatcher topographic quadrangle; lat. 31 degrees 45 minutes 19 seconds N. and long. 85 degrees 4 minutes 19 seconds W., NAD27.

Ap—0 to 8 inches; brown (10YR 4/3) sandy loam; weak fine granular structure; very friable; few fine and medium roots; moderately acid; clear smooth boundary.

Bt1—8 to 13 inches; yellowish brown (10YR 5/8) sandy clay loam; weak medium subangular blocky structure; friable; few fine roots; few distinct clay films on faces of peds; moderately acid; clear smooth boundary.
Bt2—13 to 36 inches; yellowish brown (10YR 5/8) clay loam; moderate medium subangular blocky structure; firm; few fine roots; common distinct clay films on faces of peds; few fine distinct strong brown (7.5YR 5/8) masses in which iron has accumulated; strongly acid; clear smooth boundary.
Bt3—36 to 70 inches; yellowish brown (10YR 5/8) clay loam; moderate medium subangular blocky structure; firm; few very fine roots; many distinct continuous clay films on faces of peds; few medium prominent yellowish red (5YR 5/8), common medium distinct strong brown (7.5YR 5/8), and few fine distinct yellow (10YR 7/8) masses in which iron has accumulated; about 1 percent, by volume, ironstone nodules; strongly acid; clear smooth boundary.
BC—70 to 80 inches; brownish yellow (10YR 6/8) sandy clay loam; weak medium subangular blocky structure; friable; few very fine roots; few faint clay films on faces of peds; few medium prominent red (2.5YR 4/6), common medium prominent yellowish red (5YR 5/8), common fine distinct strong brown (7.5YR 5/8), and common fine faint yellow (10YR 7/8) masses in which iron has accumulated; strongly acid.

Range in Characteristics

Thickness of the solum: More than 60 inches
Reaction: Very strongly acid to moderately acid throughout, except where the surface layer has been limed

A or Ap horizon:
Color—hue of 10YR, value of 4 or 5, and chroma of 1 to 4
Texture—loamy sand, loamy fine sand, or sandy loam

E horizon (where present):
Color—hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 3 to 5
Texture—loamy sand, loamy fine sand, or sandy loam

Bt horizon:
Color—hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 4 to 8
Redoximorphic features—iron accumulations in shades of red, brown, and yellow in the middle and lower parts; no, few, or common iron or clay depletions in shades of gray below a depth of 40 inches
Texture—dominantly clay loam, sandy clay, or clay; a thin layer of sandy clay loam in the upper part of the horizon in some pedons

BC horizon (where present):
Color—hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 4 to 8
Redoximorphic features—few to many iron or clay depletions in shades of gray and iron accumulations in shades of red, brown, or yellow
Texture—sandy loam or sandy clay loam

Nankin Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately slow
Parent material: Stratified loamy and clayey marine sediments
Landscape: Coastal Plain
Landform: Uplands

Landform position: Narrow ridges; side slopes
Slope: 2 to 40 percent
Taxonomic class: Fine, kaolinitic, thermic Typic Kanhapludults

Commonly Associated Soils

Ailey, Bibb, Carnegie, Cowarts, Henderson, Kinston, Marlboro, Norfolk, and Orangeburg soils are commonly associated with the Nankin series.

- The Ailey soils are in positions similar to those of the Nankin soils or slightly higher and have sandy surface and subsurface layers with a combined thickness of 20 to 40 inches over a dense, brittle subsoil.
- The Bibb soils are on flood plains, are coarse-loamy, and are poorly drained.
- The Carnegie soils are in positions similar to those of the Nankin soils or slightly higher; have more than 5 percent plinthite, by volume; and have a solum that is more than 60 inches thick.
- The Cowarts soils are in positions similar to those of the Nankin soils, have a solum that ranges from 20 to 40 inches in thickness, and have a fine-loamy control section.
- The Henderson soils are in positions similar to those of the Nankin soils or slightly higher, have a solum that is more than 60 inches thick, and are cherty throughout.
- The Kinston soils are on flood plains, are fine-loamy, and are poorly drained.
- The Marlboro soils are in the slightly higher positions and have a solum that is more than 60 inches thick.
- The Norfolk and Orangeburg soils are in the higher positions, have a solum that is more than 60 inches thick, and have a fine-loamy control section.

Typical Pedon

Nankin loamy sand, in an area of Nankin-Cowarts complex, 15 to 35 percent slopes; about 0.6 mile north of Sharon Church, 2,800 feet west of County Road 28, and 3,100 feet south of the Stewart County line; Randolph County, Georgia; USGS Sanford topographic quadrangle; lat. 31 degrees 54 minutes 57 seconds N. and long. 84 degrees 53 minutes 28 seconds W., NAD27.

Ap—0 to 4 inches; very dark grayish brown (10YR 3/2) loamy sand; weak fine granular structure; very friable; many fine and medium roots; strongly acid; abrupt smooth boundary.

BA—4 to 10 inches; dark yellowish brown (10YR 4/4) sandy loam; weak coarse subangular blocky structure; very friable; many fine and medium roots; pockets of very dark grayish brown (10YR 3/2) loamy sand in old root channels; strongly acid; gradual wavy boundary.

Bt1—10 to 16 inches; yellowish brown (10YR 5/8) sandy clay loam; moderate coarse subangular blocky structure; friable; many fine and medium roots; few faint clay films on faces of peds; few medium distinct strong brown (7.5YR 5/8) masses in which iron has accumulated; strongly acid; gradual wavy boundary.

Bt2—16 to 34 inches; yellowish red (5YR 5/8) sandy clay; moderate medium subangular blocky structure; firm; common fine and medium roots; common distinct clay films on faces of peds; strongly acid; gradual wavy boundary.

Bt3—34 to 39 inches; yellowish red (5YR 5/8) sandy clay; weak medium subangular blocky structure; friable; few medium roots; common distinct clay films on faces of peds; common fine and medium distinct red (2.5YR 5/8) masses in which iron has accumulated; the masses have sharp boundaries and are within the matrix; strongly acid; gradual wavy boundary.

BC—39 to 44 inches; strong brown (7.5YR 5/6) sandy clay loam; weak fine subangular blocky structure; friable; few faint clay films on faces of peds; common

fine and medium distinct yellowish red (5YR 5/6) masses in which iron has accumulated; very strongly acid; gradual wavy boundary.

C1—44 to 48 inches; yellowish brown (10YR 5/6) sandy loam; weak coarse subangular blocky structure parting to weak fine granular; very friable; common medium prominent red (2.5YR 5/8) masses in which iron has accumulated; strongly acid; gradual wavy boundary.

C2—48 to 55 inches; yellowish brown (10YR 5/6) sandy loam; weak fine granular structure; very friable; about 3 percent, by volume, ironstone fragments; common medium prominent red (2.5YR 5/8) masses in which iron has accumulated; very strongly acid; gradual wavy boundary.

C3—55 to 80 inches; yellowish brown (10YR 5/6) sandy loam; massive parting to weak thin platy structure; firm in place, friable when disturbed, brittle in about 10 percent of the volume; about 15 percent, by volume, ironstone fragments; common medium prominent red (2.5YR 5/8) masses in which iron has accumulated; few medium distinct light brownish gray (10YR 6/2) areas from which iron has depleted; very strongly acid.

Range in Characteristics

Thickness of the solum: 40 to 60 inches

Reaction: Very strongly acid or strongly acid throughout, except where the surface layer has been limed

A or Ap horizon:
- Color—hue of 10YR, value of 3 or 4, and chroma of 2 to 4
- Texture—loamy sand or sandy loam

AB or BA horizon (where present):
- Color—hue of 5YR to 10YR, value of 4 or 5, and chroma of 2 to 4
- Texture—sandy loam

Bt horizon, upper part:
- Color—hue of 2.5YR to 10YR, value of 4 or 5, and chroma of 6 to 8; or hue of 10YR, value of 5 or 6, and chroma of 4 to 8
- Redoximorphic features—no, few, or common iron accumulations in shades of red, brown, and yellow
- Texture—dominantly sandy clay or clay loam; a thin Bt1 horizon of sandy clay loam in some pedons

Bt horizon, lower part:
- Color—hue of 2.5YR to 10YR, value of 4 or 5, and chroma of 6 to 8
- Redoximorphic features—few to many iron accumulations in shades of red, brown, and yellow
- Texture—sandy clay, clay loam, or clay

BC horizon (where present):
- Color—hue of 2.5YR to 10YR, value of 4 or 5, and chroma of 6 to 8; or no dominant color and multicolored in shades of yellow, brown, red, and gray
- Redoximorphic features—few to many iron or clay depletions in shades of gray and iron accumulations in shades of red and brown
- Texture—sandy clay loam

C horizon:
- Color—hue of 2.5YR to 10YR, value of 4 or 5, and chroma of 6; or no dominant color and multicolored in shades of yellow, brown, red, and gray
- Redoximorphic features—few to many iron or clay depletions in shades of gray and iron accumulations in shades of red and brown
- Texture—sandy loam or sandy clay loam

Norfolk Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Parent material: Loamy marine sediments
Landscape: Coastal Plain
Landform: Uplands
Landform position: Broad ridges
Slope: 0 to 5 percent
Taxonomic class: Fine-loamy, kaolinitic, thermic Typic Kandiudults

Commonly Associated Soils

Bonneau, Carnegie, Clarendon, Faceville, Goldsboro, Nankin, Orangeburg, and Red Bay soils are commonly associated with the Norfolk series.

- The Bonneau soils are in positions similar to those of the Norfolk soils or slightly higher and have sandy surface and subsurface layers with a combined thickness of 20 to 40 inches.
- The Carnegie soils are in positions similar to those of the Norfolk soils or slightly higher; have more than 5 percent plinthite, by volume; and have a fine control section.
- The Clarendon soils are in the lower, more concave positions; have more than 5 percent plinthite, by volume; and are moderately well drained.
- The Faceville soils are in positions similar to those of the Norfolk soils or slightly higher and have a fine control section.
- The Goldsboro soils are in the lower positions and are moderately well drained.
- The Nankin soils are on adjacent, lower slopes; have a fine control section; and have a solum that is less than 60 inches thick.
- The Orangeburg and Red Bay soils are in positions similar to those of the Norfolk soils or slightly higher and have redder hues.

Typical Pedon

Norfolk loamy sand, 0 to 2 percent slopes; about 1.2 miles south of Pataula Creek on Georgia Highway 39, west 0.4 mile along a field border, and 85 feet north of a ditch; Clay County, Georgia; USGS Fort Gaines NE topographic quadrangle; lat. 31 degrees 44 minutes 5 seconds N. and long. 85 degrees 3 minutes 7 seconds W., NAD27.

Ap—0 to 6 inches; brown (10YR 4/3) loamy sand; weak fine granular structure; very friable; common fine roots; moderately acid; abrupt clear boundary.

Bt1—6 to 10 inches; brownish yellow (10YR 6/8) sandy loam; weak medium subangular blocky structure; very friable; common fine roots; sand grains coated and bridged with clay; strongly acid; clear smooth boundary.

Bt2—10 to 30 inches; yellowish brown (10YR 5/6) sandy clay loam; moderate medium subangular blocky structure; friable; few distinct clay films on faces of peds; strongly acid; gradual wavy boundary.

Bt3—30 to 55 inches; brownish yellow (10YR 6/8) sandy clay loam; moderate medium subangular blocky structure; friable; common distinct clay films on faces of peds; strongly acid; gradual wavy boundary.

Bt4—55 to 70 inches; brownish yellow (10YR 6/8) sandy clay loam; weak medium subangular blocky structure; firm; about 1 percent, by volume, nodular plinthite; few distinct clay films on faces of peds; few medium prominent yellowish red (5YR 5/8) and few medium distinct strong brown (7.5YR 4/6) masses in which iron has accumulated; few fine prominent light brownish gray (10YR 6/2) areas from which iron has depleted; strongly acid; gradual wavy boundary.

BC—70 to 80 inches; yellowish brown (10YR 5/8) sandy loam; weak fine granular structure; very friable; about 3 percent, by volume, nodular plinthite; few medium distinct red (2.5YR 4/8) and strong brown (7.5YR 5/8) and few fine distinct brownish yellow (10YR 6/8) masses in which iron has accumulated; strongly acid.

Range in Characteristics

Thickness of the solum: More than 60 inches
Reaction: Extremely acid to strongly acid throughout, except where the surface layer has been limed

A or Ap horizon:
Color—hue of 10YR or 2.5Y, value of 4 to 7, and chroma of 2 to 4
Texture—loamy sand or sandy loam

E horizon (where present):
Color—hue of 10YR or 2.5Y, value of 4 to 7, and chroma of 2 to 6
Texture—loamy sand or sandy loam

Bt horizon:
Color—hue of 7.5YR to 2.5Y, value of 5 to 8, and chroma of 3 to 8
Redoximorphic features—below a depth of 48 inches no, few, common, or many iron depletions in shades of gray and iron accumulations in shades of red, brown, and yellow
Texture—sandy loam or sandy clay loam

BC horizon (where present):
Color—hue of 5YR to 2.5Y, value of 4 to 7, and chroma of 2 to 8; or no dominant color and multicolored in shades of yellow, brown, red, and gray
Redoximorphic features—few to many iron or clay depletions in shades of gray and iron accumulations in shades of red, brown, and yellow
Texture—sandy loam or sandy clay loam

Orangeburg Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Parent material: Loamy and clayey marine sediments
Landscape: Coastal Plain
Landform: Uplands
Landform position: Broad ridges; side slopes
Slope: 0 to 15 percent
Taxonomic class: Fine-loamy, kaolinitic, thermic Typic Kandiudults

Commonly Associated Soils

Benevolence, Bonneau, Faceville, Greenville, Lucy, Nankin, Norfolk, Red Bay, and Troup soils are commonly associated with the Orangeburg series.

- The Benevolence soils are in positions similar to those of the Orangeburg soils and have a coarse-loamy control section.
- The Bonneau and Lucy soils are in positions similar to those of the Orangeburg soils and have sandy surface and subsurface layers with a combined thickness of 20 to 40 inches.
- The Faceville soils are in positions similar to those of the Orangeburg soils or slightly higher and have a fine control section.

- The Greenville soils are in positions similar to those of the Orangeburg soils or slightly higher, have a fine control section, and have redder hues.
- The Nankin soils are on lower slopes adjacent to the Orangeburg soils and have a fine control section.
- The Norfolk soils are in positions similar to those of the Orangeburg soils or slightly lower and have hues that are more yellow.
- The Red Bay soils are in positions similar to those of the Orangeburg soils or slightly higher and have redder hues.
- The Troup soils are in the slightly higher positions, are somewhat excessively drained, and have sandy surface and subsurface layers with a combined thickness of 40 to 80 inches.

Typical Pedon

Orangeburg loamy sand, 0 to 2 percent slopes (fig. 10); about 0.3 mile southeast of the Clay and Quitman County line on Georgia Highway 291 and 400 feet north of the highway; Clay County, Georgia; USGS Hatcher topographic quadrangle; lat. 31 degrees 46 minutes 10 seconds N. and long. 85 degrees 3 minutes 11 seconds W., NAD27.

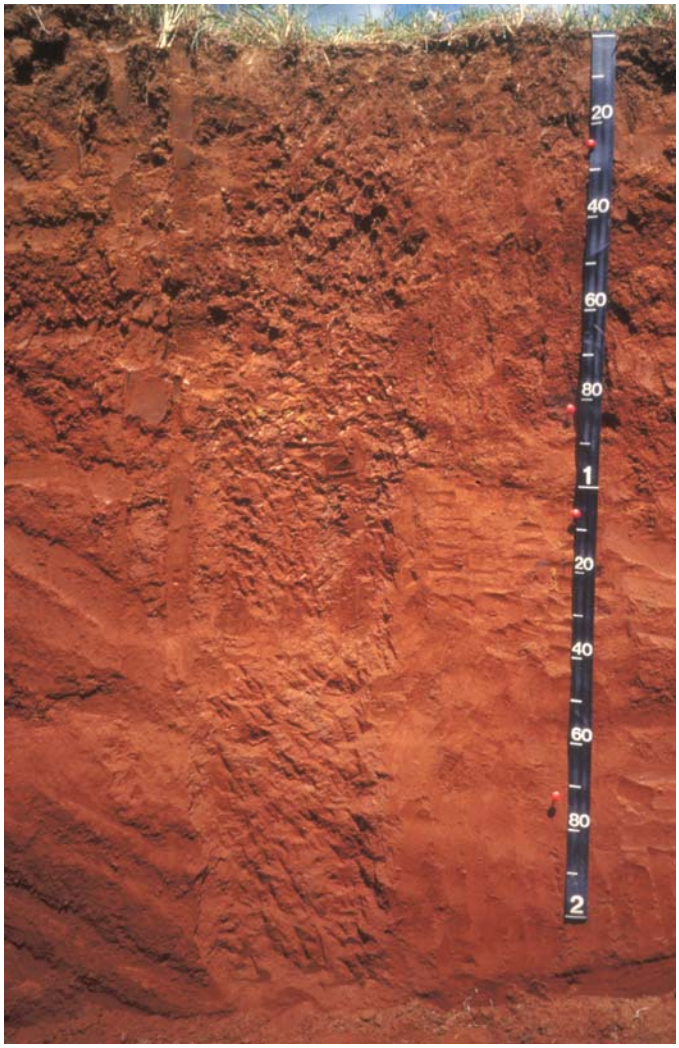


Figure 10.—Profile of Orangeburg loamy sand, 0 to 2 percent slopes.

Ap—0 to 7 inches; dark brown (10YR 3/3) loamy sand; weak fine granular structure; very friable; many fine and medium roots; slightly acid; abrupt smooth boundary.
BA—7 to 11 inches; yellowish red (5YR 4/6) sandy loam; weak fine subangular blocky structure; friable; many fine and medium roots; sand grains coated and bridged with clay; slightly acid; clear smooth boundary.
Bt1—11 to 22 inches; red (2.5YR 4/8) sandy clay loam; moderate medium subangular blocky structure; friable; common fine and medium roots; common distinct clay films on faces of most peds; strongly acid; gradual wavy boundary.
Bt2—22 to 80 inches; red (2.5YR 4/8) sandy clay loam; weak medium subangular blocky structure; friable; few fine roots; common distinct clay films on faces of most peds; strongly acid.

Range in Characteristics

Thickness of the solum: More than 70 inches
Reaction: Very strongly acid to moderately acid in the upper part of the solum and very strongly acid or strongly acid in the lower part, except where the surface layer has been limed

A or Ap horizon:
Color—hue of 7.5YR or 10YR, value of 3 to 5, and chroma of 2 to 4
Texture—loamy sand or sandy loam

E horizon (where present):
Color—hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 3 or 4
Texture—loamy sand

BA horizon (where present):
Color—hue of 2.5YR to 7.5YR, value of 4 or 5, and chroma of 4 to 6
Texture—sandy loam

Bt horizon:
Color—hue of 2.5YR or 5YR, value of 4 or 5, and chroma of 6 to 8
Redoximorphic features—no, few, or common iron accumulations in shades of brown in the part of the lower horizon
Texture—dominantly sandy clay loam; sandy clay in lower part of the horizon in some pedons

Red Bay Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Parent material: Loamy marine sediments
Landscape: Coastal Plain
Landform: Uplands
Landform position: Broad ridges; side slopes
Slope: 0 to 15 percent
Taxonomic class: Fine-loamy, kaolinitic, thermic Rhodic Kandiudults

Commonly Associated Soils

Benevolence, Faceville, Greenville, Norfolk, and Orangeburg soils are commonly associated with the Red Bay series.

- The Benevolence soils are in positions similar to those of the Red Bay soils or slightly lower, have hues that are more yellow, and have a coarse-loamy control section.

- The Faceville soils are in positions similar to those of the Red Bay soils, have hues that are more yellow, and have a fine control section.
- The Greenville soils are in positions similar to those of the Red Bay soils or slightly higher and have a fine control section.
- The Norfolk soils are in the slightly lower positions and have hues that are more yellow.
- The Orangeburg soils are in positions similar to those of the Red Bay soils or slightly lower and have hues that are more yellow.

Typical Pedon

Red Bay loamy sand, 2 to 5 percent slopes; about 0.3 mile east of the intersection of Benevolence Road and County Road 105 and 200 feet south of the county road; Randolph County, Georgia; USGS Benevolence topographic quadrangle; lat. 31 degrees 51 minutes 4 seconds N. and long. 84 degrees 44 minutes 49 seconds W., NAD27.

Ap—0 to 8 inches; dark reddish brown (2.5YR 3/3) loamy sand; weak fine granular structure; very friable; common fine roots; slightly acid; clear smooth boundary.

Bt1—8 to 40 inches; dark red (2.5YR 3/6) sandy loam; weak medium subangular blocky structure; friable; few fine roots; sand grains coated and bridged with clay; moderately acid; gradual smooth boundary.

Bt2—40 to 80 inches; dark red (10R 3/6) sandy clay loam; moderate medium subangular blocky structure; friable; common faint clay films on faces of peds; strongly acid.

Range in Characteristics

Thickness of the solum: More than 60 inches

Reaction: Very strongly acid to moderately acid in the upper part of the solum and very strongly acid or strongly acid in the lower part, except where the surface layer has been limed

A or Ap horizon:
Color—hue of 2.5YR or 5YR, value of 3 or 4, and chroma of 2 to 4
Texture—loamy sand or sandy loam

BA horizon (where present):
Color—hue of 10R to 5YR, value of 3 or 4, and chroma of 4 to 6
Texture—sandy loam or sandy clay loam
Other features—The horizon is less than 10 inches thick.

Bt horizon:
Color—hue of 10R or 2.5YR, value of 3, and chroma of 4 to 6
Texture—sandy loam or sandy clay loam

Troup Series

Depth class: Very deep
Drainage class: Somewhat excessively drained
Permeability: Moderate
Parent material: Sandy and loamy marine sediments
Landscape: Coastal Plain
Landform: Uplands
Landform position: Ridges and side slopes
Slope: 0 to 15 percent
Taxonomic class: Loamy, kaolinitic, thermic Grossarenic Kandiudults

Commonly Associated Soils

Ailey, Bibb, Benevolence, Bonneau, Cowarts, Kinston, Lakeland, Lucy, and Orangeburg soils are commonly associated with the Troup series.

- The Ailey soils are in the slightly lower positions, are well drained, and have sandy surface and subsurface layers with a combined thickness of 20 to 40 inches over a dense, brittle subsoil.
- The Bibb and Kinston soils are on flood plains and are poorly drained.
- The Benevolence soils are in the slightly lower positions, are well drained, and do not have thick, sandy surface and subsurface layers.
- The Bonneau soils are in the slightly lower positions, are well drained, and have sandy surface and subsurface layers with a combined thickness of 20 to 40 inches.
- The Cowarts soils are in the lower positions, are well drained, and do not have thick, sandy surface and subsurface layers.
- The Lakeland soils are in positions similar to those of the Troup soils, are excessively drained, and are sandy throughout.
- The Lucy soils are in positions similar to those of the Troup soils or slightly lower, are well drained, and have sandy surface and subsurface layers with a combined thickness of 20 to 40 inches.
- The Orangeburg soils are in positions similar to those of the Troup soils or slightly lower, are well drained, and do not have thick, sandy surface and subsurface layers.

Typical Pedon

Troup loamy sand, 0 to 5 percent slopes (fig. 11); about 0.5 mile north of Ichawaynochaway Creek on Georgia Highway 41 and 500 feet west in a field; Randolph County, Georgia; USGS Benevolence topographic quadrangle; lat. 31 degrees 53 minutes 55 seconds N. and long. 84 degrees 38 minutes 32 seconds W., NAD27.

Ap—0 to 9 inches; brown (7.5YR 4/3) loamy sand; weak fine granular structure; very friable; few fine roots; slightly acid; clear smooth boundary.

E1—9 to 50 inches; strong brown (7.5YR 5/6) loamy sand; weak fine granular structure; very friable; few fine roots; moderately acid; gradual smooth boundary.

E2—50 to 60 inches; yellowish red (5YR 5/6) loamy sand; weak fine granular structure; very friable; strongly acid; gradual smooth boundary.

Bt—60 to 80 inches; red (2.5YR 4/8) sandy loam; weak medium subangular blocky structure; friable; very strongly acid.

Range in Characteristics

Thickness of the solum: More than 80 inches

Thickness of the sandy epipedon: 40 to 80 inches

Reaction: Very strongly acid or strongly acid throughout, except where the surface layer has been limed

A or Ap horizon:

Color—hue of 7.5YR or 10YR, value of 3 to 6, and chroma of 2 to 4

Texture—sand or loamy sand

E horizon:

Color—hue of 5YR to 10YR, value of 5 to 7, and chroma of 4 to 8

Texture—sand or loamy sand

Bt horizon:

Color—hue of 10R to 5YR, value of 4 to 7, and chroma of 4 to 8

Texture—sandy loam or sandy clay loam

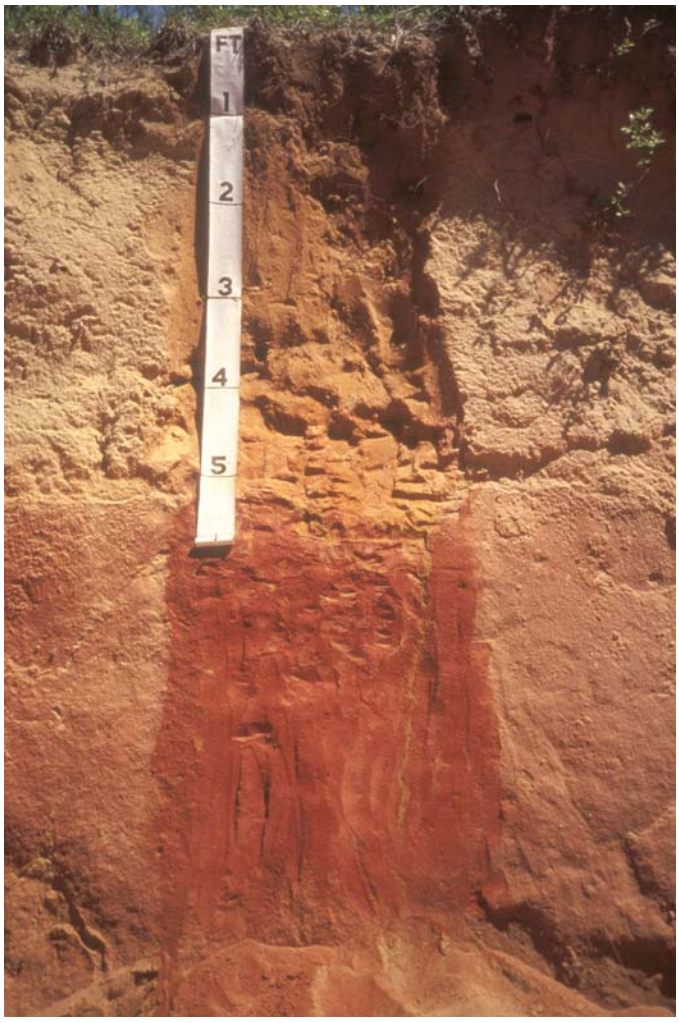


Figure 11.—Profile of Troup loamy sand, 0 to 5 percent slopes.

Formation of the Soils

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. 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 are 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 largely derived from the parent material. Randolph County is underlain by Coastal Plain sedimentary rock (Georgia Department of Natural Resources, 1976). Sandy to clayey marine sediments overlie the rock. Throughout Randolph County, there is a network of geologic formations.

A nearly level to undulating rolling body of land composed of the Altamaha Formation is in central and southern portions of the county. The dominant soils that formed in the materials weathered from the Altamaha Formation are characterized by brownish, sandy surface and subsurface layers and brownish or reddish subsoils. Greenville, Faceville, Norfolk, Orangeburg, and Red Bay soils are the main soils that formed in these parent materials. The Claiborne Formation is also in the central and southern portions of the county. Soils that formed in material weathered from the Claiborne Formation are sandy throughout, such as the Lakeland soil, or have thick, sandy surface and subsurface layers, such as the Bonneau, Lucy, and Troup soils.

The Clayton, Nanafalia, Providence, and Tuscahoma Formations are in the western and northern portions of the county. These formations contain layered beds of clayey and sandy materials. Land surfaces are primarily narrow ridges and side slopes. Ailey, Cowarts, and Nankin soils are the primary soils that formed in these materials. These soils have a yellowish brown or red subsoil and commonly have dense and slowly permeable layers.

Alluvial depositional material is present near streams and adjacent low lying areas throughout the survey area. Soils that formed in alluvial material are more recent in origin than soils that formed on uplands. Kinston and Bibb soils formed in sandy and loamy alluvium along the Ichawaynochaway Creek and several smaller creeks throughout the area.

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 most important climatic features related 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 ranged from 59 to 72 degrees Fahrenheit. The rate of chemical reactions and other processes in the soil depends to some extent on temperature. In addition, temperature affects the type and quantity of vegetation, the amount and kind of organic matter, and the rate of decomposition of organic matter.

Plants and Animals

The role of plants, animals, and other organisms is significant in soil formation. Plants and animals increase the amount of organic matter and nitrogen in a soil, increase or decrease the 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 roughening the surface, forming and filling channels, and shaping peds and voids. The soil is mixed by ants, wasps, worms, and spiders that make channels; by crustacea, such as crayfish; and by turtles and mammals, such as foxes, that dig burrows. Humans affect the soil-forming process by tilling crops, removing natural vegetation, establishing different plants, and 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. 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.

Relief

Relief is the elevations, or inequalities, of land surface considered collectively. Color and wetness of the soil, thickness of the topsoil, content of organic matter, and plant cover are commonly related to relief. In the survey area, the most obvious effects of relief are variations in the color of the soil and the degree of soil wetness. For example, Greenville and Red Bay soils primarily have a dark red subsoil and Bibb, Grady, and Kinston soils primarily are gray throughout because of differences in relief and corresponding differences in internal drainage. The Greenville and Red Bay soils, which are on uplands, are better drained than the Bibb, Grady, and Kinston soils, which are in the wetter, low lying areas. The Greenville and Red Bay soils, therefore, are better oxidized and brighter in color than the Bibb, Grady, and Kinston soils. 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 in the steeper areas. Lower areas receive the water that flows off and through the higher soils. The lower areas, therefore, are commonly wetter than the higher areas.

Time

The length of time that soil-forming factors act on the parent material determines to a large degree the characteristics of the soil. Most of the soils in the survey area are considered 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 Greenville and Red Bay soils are on 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 well developed pedogenic horizons and have a content of carbon that decreases irregularly with increasing depth.

Physiography and Geology

Mark D. Cocker, geologist, Georgia Geologic Survey, prepared this section.

Physiography

Randolph County lies within the Coastal Plain physiographic province. Terrain in the eastern part of the county is characteristic of the edges of the Dougherty Plain physiographic district and consists of gently rolling to moderately rolling upland surfaces incised by only a few streams. Terrain in the western and northern parts of the county consists of somewhat moderately rolling upland areas that are characteristic of the Fall Line Hills physiographic district. Major streams in the western and northern parts of the county are incised with base stream levels established after relatively rapid downcutting. Stream valleys are generally wide and flat, typically on the order of 0.25 to 0.5 miles in width, and have relatively steep slopes. Elevation of the upland (interfluve) areas rises gradually from 70 meters in the southeastern part of the county to 170 meters in the northwestern part of the county. Streams on the eastern and southern sides of the county drain into the Flint River, those on the western side drain into the Chattahoochee River. The divide between the Chattahoochee and Flint Rivers runs through the west-central part of the county in a southwest-northeast direction.

Geology

This description of the geology of Randolph County is derived principally from the Geologic Map of Georgia (Georgia Geologic Survey, 1976) supplemented by fieldwork by Cocker (2001 and 2002). Mapping for the Geologic Map of Georgia was reconnaissance in nature and was compiled on a scale of 1:500,000. The more recent mapping along the eastern side of Randolph County extends further to the east and north and is more detailed in scope (scale of 1:24,000). The recent maps are being drawn with a Geographic Information System.

Based on the Digital Geologic Map of Georgia (Cocker, 1999), younger Tertiary sediments of Upper Paleocene to Miocene age are exposed over approximately 87 percent of Randolph County. Older Paleocene and Upper Cretaceous sediments are exposed in the remaining 13 percent in the northwestern corner of the county. In this part of the state, mapping for the Geologic Map of Georgia did not include alluvial deposits of Quaternary to Recent age. The younger Tertiary sediments consist of the Miocene Altamaha Formation, the Eocene Claiborne Group, and the Upper Paleocene Tuscahoma Formation. Older Tertiary sediments consist of the Paleocene Nanafalia and Clayton Formations and the Upper Cretaceous Providence Formation. Regional dip of Tertiary sediments older than the Altamaha Formation is on the order of 20 to 30 feet per mile to the southeast. Erosion and the regional dip result in the exposure of older sediments in the northwestern part of the county.

Quaternary to Recent alluvial deposits are generally found along the basal, generally flatter portions of creek valleys. Alluvium is described as consisting of variably micaceous, poorly-sorted sand, clayey sand, and clayey silt; minor amounts of quartz and local chert gravel; and variable amounts of organic matter. The large swampy areas in the larger creek valleys probably contain a greater portion of organic matter than swampy areas in the smaller stream valleys.

Predominantly red, argillaceous sandstone of the Miocene Altamaha Formation

formerly covered most, if not all, of the present map area. The Altamaha Formation consists of fluvial sandstones, clayey sandstones, and conglomerates. The dominant lithology is a massive, brick-red, argillaceous, fine-grained to gritty sandstone. Exposures of the argillaceous sandstone in road cuts are commonly layered with a massive sandstone overlying a more clayey, mottled sandstone. Mottling with shades of white, yellow, and red may represent oxidation and remobilization of iron by ground water during weathering. This clay-rich lithology is believed to be the kandic zone formed by downward mobilization of clay during weathering. Concentration and precipitation of iron may also form irregular, black masses of plinthite. Conglomerates, usually found at or near the base of the Altamaha Formation, generally contain abundant ironstone pebbles and locally abundant chert clasts. Ironstone pebbles are relatively resistant to erosion and are commonly found as a surficial lag deposit on dirt roads and farm fields. The source of these ironstone pebbles is unknown but is believed to be the Piedmont north of the Fall Line. The Geologic Map of Georgia shows the area corresponding to the Altamaha Formation as residuum of older carbonate rocks. The recent geologic mapping in this area suggests that the Altamaha Formation is the dominant lithology with relatively smaller amounts of the older residuum.

Within and below the Altamaha formation is a chert-bearing, red to brown, sticky, clay residuum derived from pre-Altamaha weathering of predominantly Eocene and Oligocene carbonate rocks. Areas underlain by this residuum are generally identified by an abundance of chert boulders that may be up to 6 feet in diameter. Chert clasts derived from this residuum may also be found within basal conglomerate of the Altamaha Formation. This residuum will probably be identified on the geologic map of the county as small, presently unmapped areas within the Altamaha Formation.

Soft, permeable and easily eroded sands of the Claiborne Group are on slopes below the Altamaha Formation and along stream valleys. The Claiborne Group consists generally of shallow marine, massive to finely laminated, white to light tan to brick-red, locally kaolinitic, fine- to coarse-grained sand and sandstone. The uppermost ground water aquifer underlying most of Randolph County is hosted in the porous sands of the Claiborne Group. This aquifer is confined by the overlying Altamaha Formation and the clay-rich residuum and by clays of the underlying Tuscahoma Formation.

The Tuscahoma Formation consists of deeper marine, nonfossiliferous, gray, inter-laminated clay, silty clay, and fine quartzose sand. The Tuscahoma Formation is generally on the lower slopes of stream valleys and underlies many of the stream valleys. Seeps and springs may be found at the contact between the overlying Claiborne Group sands and the underlying Tuscahoma Formation.

Much of the present topography in Randolph County may be related to the geologic units. The Altamaha Formation sandstone is relatively resistant to erosion and caps the upland areas over much of the county. Where streams have cut down through the Altamaha Formation, erosion of the Claiborne Group sands has been relatively rapid. The steep-sided drainages result from rapid erosion and downcutting through these sands. The underlying shales of the Tuscahoma Formation inhibit the downward migration of surface water, allowing the development of swampy areas in these relatively flat stream valleys. Much of the present alluvium in the stream valleys may be derived from agricultural practices during the late 1800s and early 1900s. Erosion of croplands led to excessive sedimentation in many of the stream valleys (Cocker, 1996).

Fluvial and near-shore, marine sediments of the Nanafalia Formation and marine sediments of the Clayton Formation cover most of the northwestern corner of Randolph County. These two geologic units were not mapped separately in this part of the state on the Geologic Map of Georgia. The Nanafalia Formation consists of cross-bedded, fine to very coarse, light greenish-gray to yellowish-brown, highly micaceous quartz sandstone with local concentrations of kaolin and bauxite clasts or lenses. The

Clayton Formation is composed of yellow to buff-brown, interbedded, micaceous silty clay, calcareous sandstone, and bioclastic limestone (Reinhardt and others, 1994). Commonly, the Clayton Formation is present as a residuum consisting of olive-black to black clay with irregular masses of iron oxide and minor amounts of chert. The Clayton aquifer is composed principally of permeable limestones within the middle limestone unit of the Clayton Formation. Relatively impermeable silt and clay in the upper part of the Clayton Formation and overlying Nanafalia Formation, the lower part of the Clayton Formation, and the upper part of the underlying Providence Sand are the principal confining lithologies of the Clayton aquifer (McFadden and Perriello, 1983).

The Upper Cretaceous Providence Formation is on the lower slopes of Pataula Creek and its tributaries in the northwestern part of Randolph County. These near-shore, shallow marine sediments consist of pale yellow to white, cross-bedded, fine to coarse, soft sandstones with interbedded, yellowish brown to olive, massive to thinly bedded sandy clay lenses (Reinhardt and others, 1994). Erosion of the Providence Formation is similar to that of the Claiborne Group sands. Formation of Providence canyon to the north is a prime example of the effects of uncontrolled erosion in these sediments. Sands of the Providence Formation are the host for the Providence aquifer, which is confined by overlying clay of the Clayton Formation and underlying clay of the Ripley Formation.

Relation of Soils to Geology

The large area of Randolph County underlain by the Altamaha Formation, the Claiborne Group, and the Tuscahoma Formation is geologically similar to that of adjacent Terrell County. Soil types in Terrell County based on older soil classifications (Long and Baldwin, 1915) were related to their source materials, that is, to the underlying rock units (Cocker, 2001). Soil profiles described in Long and Baldwin and weathered sedimentary outcrops described in Cocker are essentially based of the same exposures but are described using different terminologies.

Soils in the area reflect intensive subtropical weathering of the exposed Tertiary and Upper Cretaceous stratigraphy. Red to brown, sandy to locally gravelly or clayey soils in upland areas are derived mainly from gravelly sands and clayey sandstone of the Altamaha Formation. Brown to yellowish red, clay rich, cherty soils may have formed in the chert and clay residuum derived from Eocene and Oligocene carbonates. Soils that formed in areas underlain by the Claiborne Group, Nanafalia Formation, and Providence Formation sandstones tend to be sandier and more permeable. Soils are clay-rich in areas underlain by clays and shales of the Tuscahoma and Clayton Formations. Soils that formed in Quaternary to Recent alluvium in the flat stream valleys may be sandy, rich in organic material, and wet.

Intensive subtropical weathering has produced a commonly striking profile in the soils and subsoils of the county, particularly in those soils derived from the Altamaha Formation and, to a lesser extent, those derived from chert and clay residuum. The upper portion of the profile is commonly sand-rich or slightly argillaceous sand and/or sandstone. This portion of the profile may be as much as 10 feet thick. The thickness of this sandy portion of the profile is commonly dependent on the degree of erosion (Long and Baldwin, 1915). A clay-rich zone is generally found beneath the upper sandy zone or may be present by itself where the upper, sandy unit has been removed by recent erosion. Clay particles are mobilized by downward percolating surface water and accumulate in the subsoil. Mottling, probably related to oxidizing ground water, is typically developed in the clay-rich lower zone. In places, irregular concentrations of iron-oxide cemented sediments (plinthite) developed in this lower clay-rich zone. These concentrations formed in situ and result from remobilization of iron from other parts of the soil and subsoil.

References

American Association of State Highway and Transportation Officials (AASHTO). 2000. Standard specifications for transportation materials and methods of sampling and testing. 20th edition, 2 volumes.

American Society for Testing and Materials (ASTM). 2001. Standard classification of soils for engineering purposes. ASTM Standard D 2487–00.

Cocker, M.D. 1996. Distribution of selected elements in stream sediments, stream hydrogeochemistry and geology of the Oconee River basin, Georgia. Georgia Geologic Survey Bulletin 121.

Cocker, M.D. 1999. Digital geologic map of Georgia. Version 2. Georgia Geologic Survey Documentation Report 99–20.

Cocker, M.D. 2001. Geologic atlas of the Bottsford, Dawson, Parrot, and Shellman 7.5-minute quadrangles, Georgia. Georgia Geologic Survey Open-File Report 01–1.

Cocker, M.D. 2002. Geologic atlas of the Americus, Lake Collins, Plains, and Preston 7.5-minute quadrangles, Georgia. Georgia Geologic Survey Open-File Report 02–1.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS–79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. February 24, 1995. Hydric soils of the United States.

Georgia Department of Natural Resources, Geology, and Water Resources. 1976. Geological map of Georgia.

Georgia Geologic Survey. 1976. Geologic map of Georgia.

Hurt, G.W., P.M. Whited, and R.F. Pringle, editors. Version 4.0. 1998. Field indicators of hydric soils in the United States.

Long, D.D., and M. Baldwin. 1915. Soil survey of Terrel County, Georgia. U.S. Department of Agriculture, Advance Sheets—Field operations of the Bureau of Soils, 1914.

McFadden, S.S., and P.D. Perriello. 1983. Hydrogeology of the Clayton and Clairborne aquifers in southwestern Georgia. Georgia Geologic Survey Information Circular 55.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Phillips, S.W., E.D. Fowler, E.W. Knobel, J.W. Moon, and G.L. Fuller. 1928. Soil survey of Randolph County, Georgia. U.S. Department of Agriculture, Bureau of Chemistry and Soils.

Reinhardt, J., J.S. Schindler, and T.G. Gibson. 1994. Geologic map of the Americas 30' x 60' quadrangle, Georgia and Alabama. United States Geological Survey Miscellaneous Investigations Series Map I–2174.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1998. Keys to soil taxonomy. 8th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y–87–1.

United States Department of Agriculture, Forest Service, Southern Research Station. 1998. Forest statistics for Georgia, 1997. Forest Service Resource Bulletin SRS–36.

United States Department of Agriculture, Natural Resources Conservation Service. National engineering handbook. (Available in the State Office of the Natural Resources Conservation Service at Athens, Georgia, and at http://soils.usda.gov/technical/).

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. (http://soils.usda.gov/technical/)

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. (http://soils.usda.gov/technical/)

United States Department of Agriculture, Natural Resources Conservation Service. 1996. Soil survey laboratory methods manual. Soil Survey Investigations Report 42.

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210.

University of Georgia, Center for Agribusiness and Economic Development. 2002. Georgia county guide. 21st edition.

Glossary

Aeration, soil. The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

Aggregate, soil. Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

Alluvium. Material, such as sand, silt, or clay, deposited on land by streams.

Alpha,alpha-dipyridyl. A dye that when dissolved in 1N ammonium acetate is used to detect the presence of reduced iron (Fe II) in the soil. A positive reaction indicates a type of redoximorphic feature.

Animal unit month (AUM). The amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

Aquic conditions. Current soil wetness characterized by saturation, reduction, and redoximorphic features.

Argillic horizon. A subsoil horizon characterized by an accumulation of illuvial clay.

Aspect. The direction in which a slope faces.

Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:

Very low	0 to 3
Low	3 to 6
Moderate	6 to 9
High	9 to 12
Very high	more than 12

Backslope. The position that forms the steepest and generally linear, middle portion of a hillslope. In profile, backslopes are commonly bounded by a convex shoulder above and a concave footslope below.

Basal area. The area of a cross section of a tree, generally referring to the section at breast height and measured outside the bark. It is a measure of stand density, commonly expressed in square feet.

Base saturation. The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, and K), expressed as a percentage of the total cation-exchange capacity.

Bedding planes. Fine strata, less than 5 millimeters thick, in unconsolidated alluvial, eolian, lacustrine, or marine sediment.

Bedding system. A drainage system made by plowing, grading, or otherwise shaping the surface of a flat field. It consists of a series of low ridges separated by shallow, parallel dead furrows.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Bisequum. Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.

Bottom land. The normal flood plain of a stream, subject to flooding.
Breaks. The steep and very steep broken land at the border of an upland summit that is dissected by ravines.
Breast height. An average height of 4.5 feet above the ground surface; the point on a tree where diameter measurements are ordinarily taken.
Brush management. Use of mechanical, chemical, or biological methods to make conditions favorable for reseeding or to reduce or eliminate competition from woody vegetation and thus allow understory grasses and forbs to recover. Brush management increases forage production and thus reduces the hazard of erosion. It can improve the habitat for some species of wildlife.
Cable yarding. A method of moving felled trees to a nearby central area for transport to a processing facility. Most cable yarding systems involve use of a drum, a pole, and wire cables in an arrangement similar to that of a rod and reel used for fishing. To reduce friction and soil disturbance, felled trees generally are reeled in while one end is lifted or the entire log is suspended.
California bearing ratio (CBR). The load-supporting capacity of a soil as compared to that of standard crushed limestone, expressed as a ratio. First standardized in California. A soil having a CBR of 16 supports 16 percent of the load that would be supported by standard crushed limestone, per unit area, with the same degree of distortion.
Canopy. The leafy crown of trees or shrubs. (See Crown.)
Capillary water. Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.
Catena. A sequence, or "chain," of soils on a landscape that formed in similar kinds of parent material but have different characteristics as a result of differences in relief and drainage.
Cation. An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.
Cation-exchange capacity. The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.
Chemical treatment. Control of unwanted vegetation through the use of chemicals.
Chiseling. Tillage with an implement having one or more soil-penetrating points that shatter or loosen hard, compacted layers to a depth below normal plow depth.
Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.
Clay depletions. Low-chroma zones having a low content of iron, manganese, and clay because of the chemical reduction of iron and manganese and the removal of iron, manganese, and clay. A type of redoximorphic depletion.
Clay film. A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.
Claypan. A slowly permeable soil horizon that contains much more clay than the horizons above it. A claypan is commonly hard when dry and plastic or stiff when wet.
Climax plant community. 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.
Coarse textured soil. Sand or loamy sand.
Cobble (or cobblestone). A rounded or partly rounded fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter.
Cobbly soil material. Material that has 15 to 35 percent, by volume, rounded or

partially rounded rock fragments 3 to 10 inches (7.6 to 25 centimeters) in diameter. Very cobbly soil material has 35 to 60 percent of these rock fragments, and extremely cobbly soil material has more than 60 percent.

COLE (coefficient of linear extensibility). See Linear extensibility.

Complex slope. Irregular or variable slope. Planning or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.

Complex, soil. A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.

Concretions. Cemented bodies with crude internal symmetry organized around a point, a line, or a plane. They typically take the form of concentric layers visible to the naked eye. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up concretions. If formed in place, concretions of iron oxide or manganese oxide are generally considered a type of redoximorphic concentration.

Conservation cropping system. Growing crops in combination with needed cultural and management practices. In a good conservation cropping system, the soil-improving crops and practices more than offset the effects of the soil-depleting crops and practices. Cropping systems are needed on all tilled soils. Soil-improving practices in a conservation cropping system include the use of rotations that contain grasses and legumes and the return of crop residue to the soil. Other practices include the use of green manure crops of grasses and legumes, proper tillage, adequate fertilization, and weed and pest control.

Conservation tillage. A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

Consistence, soil. Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the "Soil Survey Manual."

Contour stripcropping. Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

Control section. The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

Cord. Approximately 70 to 90 cubic feet of wood.

Corrosion. Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.

Cover crop. A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

Cropping system. Growing crops according to a planned system of rotation and management practices.

Crop residue management. Returning crop residue to the soil, which helps to maintain soil structure, organic matter content, and fertility and helps to control erosion.

Cross-slope farming. Deliberately conducting farming operations on sloping farmland in such a way that tillage is across the general slope.

Crown. The upper part of a tree or shrub, including the living branches and their foliage.

Culmination of the mean annual increment (CMAI). The average annual increase per acre in the volume of a stand. Computed by dividing the total volume of the stand by its age. As the stand increases in age, the mean annual increment

continues to increase until mortality begins to reduce the rate of increase. The point where the stand reaches its maximum annual rate of growth is called the culmination of the mean annual increment.

Cutbanks cave (in tables). The walls of excavations tend to cave in or slough.

Decreasers. The most heavily grazed climax range plants. Because they are the most palatable, they are the first to be destroyed by overgrazing.

Deferred grazing. Postponing grazing or resting grazing land for a prescribed period.

Dense layer (in tables). A very firm, massive layer that has a bulk density of more than 1.8 grams per cubic centimeter. Such a layer affects the ease of digging and can affect filling and compacting.

Depth, soil. Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep soils, 40 to 60 inches; moderately deep, 20 to 40 inches; shallow, 10 to 20 inches; and very shallow, less than 10 inches.

Diversion (or diversion terrace). A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

Divided-slope farming. A form of field stripcropping in which crops are grown in a systematic arrangement of two strips, or bands, across the slope to reduce the hazard of water erosion. One strip is in a close-growing crop that provides protection from erosion, and the other strip is in a crop that provides less protection from erosion. This practice is used where slopes are not long enough to permit a full stripcropping pattern to be used.

Drainage class (natural). Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized—*excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained,* and *very poorly drained*. These classes are defined in the "Soil Survey Manual."

Drainage, surface. Runoff, or surface flow of water, from an area.

Draw. A small stream valley that generally is more open and has broader bottom land than a ravine or gulch.

Duff. A generally firm organic layer on the surface of mineral soils. It consists of fallen plant material that is in the process of decomposition and includes everything from the litter on the surface to underlying pure humus.

Eluviation. The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.

Endosaturation. A type of saturation of the soil in which all horizons between the upper boundary of saturation and a depth of 2 meters are saturated.

Ephemeral stream. A stream, or reach of a stream, that flows only in direct response to precipitation. It receives no long-continued supply from melting snow or other source, and its channel is above the water table at all times.

Episaturation. A type of saturation indicating a perched water table in a soil in which saturated layers are underlain by one or more unsaturated layers within 2 meters of the surface.

Erosion. The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.

Escarpment. A relatively continuous and steep slope or cliff breaking the general continuity of more gently sloping land surfaces and resulting from erosion or faulting. Synonym: scarp.

Fallow. Cropland left idle in order to restore productivity through accumulation of moisture. Summer fallow is common in regions of limited rainfall where cereal grain is grown. The soil is tilled for at least one growing season for weed control and decomposition of plant residue.

Fertility, soil. The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

Field moisture capacity. The moisture content of a soil, expressed as a percentage of the ovendry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity, normal moisture capacity,* or *capillary capacity*.

Fill slope. A sloping surface consisting of excavated soil material from a road cut. It commonly is on the downhill side of the road.

Fine textured soil. Sandy clay, silty clay, or clay.

Firebreak. Area cleared of flammable material to stop or help control creeping or running fires. It also serves as a line from which to work and to facilitate the movement of firefighters and equipment. Designated roads also serve as firebreaks.

First bottom. The normal flood plain of a stream, subject to frequent or occasional flooding.

Flagstone. A thin fragment of sandstone, limestone, slate, shale, or (rarely) schist 6 to 15 inches (15 to 38 centimeters) long.

Flood plain. A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

Fluvial. Of or pertaining to rivers; produced by river action, as a fluvial plain.

Foothill. A steeply sloping upland that has relief of as much as 1,000 feet (300 meters) and fringes a mountain range or high-plateau escarpment.

Footslope. The position that forms the inner, gently inclined surface at the base of a hillslope. In profile, footslopes are commonly concave. A footslope is a transition zone between upslope sites of erosion and transport (shoulders and backslopes) and downslope sites of deposition (toeslopes).

Forb. Any herbaceous plant not a grass or a sedge.

Forest cover. All trees and other woody plants (underbrush) covering the ground in a forest.

Forest type. A stand of trees similar in composition and development because of given physical and biological factors by which it may be differentiated from other stands.

Fragipan. A loamy, brittle subsurface horizon low in porosity and content of organic matter and low or moderate in clay but high in silt or very fine sand. A fragipan appears cemented and restricts roots. When dry, it is hard or very hard and has a higher bulk density than the horizon or horizons above. When moist, it tends to rupture suddenly under pressure rather than to deform slowly.

Genesis, soil. The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

Gilgai. Commonly, a succession of microbasins and microknolls in nearly level areas or of microvalleys and microridges parallel with the slope. Typically, the microrelief of clayey soils that shrink and swell considerably with changes in moisture content.

Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.

Graded stripcropping. Growing crops in strips that grade toward a protected waterway.

Grassed waterway. A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.

Gravel. Rounded or angular fragments of rock as much as 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.

Gravelly soil material. Material that has 15 to 35 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter.

Green manure crop (agronomy). A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.

Ground water. Water filling all the unblocked pores of the material below the water table.

Gully. A miniature valley with steep sides cut by running water and through which water ordinarily runs only after rainfall. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.

Hardpan. A hardened or cemented soil horizon, or layer. The soil material is sandy, loamy, or clayey and is cemented by iron oxide, silica, calcium carbonate, or other substance.

High-residue crops. Such crops as small grain and corn used for grain. If properly managed, residue from these crops can be used to control erosion until the next crop in the rotation is established. These crops return large amounts of organic matter to the soil.

Hill. A natural elevation of the land surface, rising as much as 1,000 feet above surrounding lowlands, commonly of limited summit area and having a well defined outline; hillsides generally have slopes of more than 15 percent. The distinction between a hill and a mountain is arbitrary and is dependent on local usage.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the "Soil Survey Manual." The major horizons of mineral soil are as follows:

O horizon.—An organic layer of fresh and decaying plant residue.

A horizon.—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

E horizon.—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

B horizon.—The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

C horizon.—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

Cr horizon.—Soft, consolidated bedrock beneath the soil.

R layer.—Consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon, but it can be directly below an A or a B horizon.

Humus. The well decomposed, more or less stable part of the organic matter in mineral soils.

Hydrologic soil groups. Refers to soils grouped according to their runoff potential. The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties are depth to a seasonal high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

Illuviation. The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Impervious soil. A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

Increasers. Species in the climax vegetation that increase in amount as the more desirable plants are reduced by close grazing. Increasers commonly are the shorter plants and the less palatable to livestock.

Infiltration. The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

Infiltration capacity. The maximum rate at which water can infiltrate into a soil under a given set of conditions.

Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Intake rate. The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net irrigation application. The rate of water intake, in inches per hour, is expressed as follows:

Less than 0.2	very low
0.2 to 0.4	low
0.4 to 0.75	moderately low
0.75 to 1.25	moderate
1.25 to 1.75	moderately high
1.75 to 2.5	high
More than 2.5	very high

Interfluve. An elevated area between two drainageways that sheds water to those drainageways.

Intermittent stream. A stream, or reach of a stream, that flows for prolonged periods only when it receives ground-water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

Invaders. On range, plants that encroach into an area and grow after the climax vegetation has been reduced by grazing. Generally, plants invade following disturbance of the surface.

Iron depletions. Low-chroma zones having a low content of iron and manganese oxide because of chemical reduction and removal, but having a clay content similar to that of the adjacent matrix. A type of redoximorphic depletion.

Irrigation. Application of water to soils to assist in production of crops. Methods of irrigation are:

Drip (or trickle).—Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.

Sprinkler.—Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

Knoll. A small, low, rounded hill rising above adjacent landforms.

K_{sat}. Saturated hydraulic conductivity. (See Permeability.)

Large stones (in tables). Rock fragments 3 inches (7.6 centimeters) or more across. Large stones adversely affect the specified use of the soil.

Leaching. The removal of soluble material from soil or other material by percolating water.

Linear extensibility. Refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. Linear extensibility is used to determine the shrink-swell potential of soils. It is an expression of the volume change between the water content of the clod at 1/3- or 1/10-bar tension (33kPa or 10kPa tension) and oven dryness. Volume change is influenced by the amount and type of clay minerals in the soil. The volume change is the percent change for the whole soil. If it is expressed as a fraction, the resulting value is COLE, coefficient of linear extensibility.

Liquid limit. The moisture content at which the soil passes from a plastic to a liquid state.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Low-residue crops. Such crops as corn used for silage, peas, beans, and potatoes. Residue from these crops is not adequate to control erosion until the next crop in the rotation is established. These crops return little organic matter to the soil.

Low strength. The soil is not strong enough to support loads.

Masses. Concentrations of substances in the soil matrix that do not have a clearly defined boundary with the surrounding soil material and cannot be removed as a discrete unit. Common compounds making up masses are calcium carbonate, gypsum or other soluble salts, iron oxide, and manganese oxide. Masses consisting of iron oxide or manganese oxide generally are considered a type of redoximorphic concentration.

Mechanical treatment. Use of mechanical equipment for seeding, brush management, and other management practices.

Medium textured soil. Very fine sandy loam, loam, silt loam, or silt.

Mineral soil. Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

Minimum tillage. Only the tillage essential to crop production and prevention of soil damage.

Miscellaneous area. An area that has little or no natural soil and supports little or no vegetation.

Moderately coarse textured soil. Coarse sandy loam, sandy loam, or fine sandy loam.

Moderately fine textured soil. Clay loam, sandy clay loam, or silty clay loam.

Morphology, soil. The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mottling, soil. Irregular spots of different colors that vary in number and size. Descriptive terms are as follows: abundance—*few, common,* and *many;* size—*fine, medium,* and *coarse;* and contrast—*faint, distinct,* and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium,* from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse,* more than 15 millimeters (about 0.6 inch).

Munsell notation. A designation of color by degrees of three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.

Neutral soil. A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)

Nodules. Cemented bodies lacking visible internal structure. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up nodules. If formed in place, nodules of iron oxide or manganese oxide are considered types of redoximorphic concentrations.

Nutrient, plant. Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

Organic matter. Plant and animal residue in the soil in various stages of decomposition. The content of organic matter in the surface layer is described as follows:

Very low	less than 0.5 percent
Low	0.5 to 1.0 percent
Moderately low	1.0 to 2.0 percent
Moderate	2.0 to 4.0 percent
High	4.0 to 8.0 percent
Very high	more than 8.0 percent

Pan. A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan, fragipan, claypan, plowpan,* and *traffic pan*.

Parent material. The unconsolidated organic and mineral material in which soil forms.

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Pedon. The smallest volume that can be called "a soil." A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

Percolation. The movement of water through the soil.

Permeability. The quality of the soil that enables water or air to move downward through the profile. The rate at which a saturated soil transmits water is accepted as a measure of this quality. In soil physics, the rate is referred to as "saturated hydraulic conductivity," which is defined in the "Soil Survey Manual." In line with conventional usage in the engineering profession and with traditional usage in published soil surveys, this rate of flow continues to be expressed as "permeability." Terms describing permeability, measured in inches per hour, are as follows:

Impermeable	less than 0.0015 inch
Very slow	0.0015 to 0.06 inch
Slow	0.06 to 0.2 inch
Moderately slow	0.2 to 0.6 inch
Moderate	0.6 inch to 2.0 inches
Moderately rapid	2.0 to 6.0 inches
Rapid	6.0 to 20 inches
Very rapid	more than 20 inches

Phase, soil. A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Piping (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Plinthite. The sesquioxide-rich, humus-poor, highly weathered mixture of clay with

quartz and other diluents. It commonly appears as red mottles, usually in platy, polygonal, or reticulate patterns. Plinthite changes irreversibly to an ironstone hardpan or to irregular aggregates on repeated wetting and drying, especially if it is exposed also to heat from the sun. In a moist soil, plinthite can be cut with a spade. It is a form of laterite.

Plowpan. A compacted layer formed in the soil directly below the plowed layer.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poorly graded. Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

Potential native plant community. See Climax plant community.

Potential rooting depth (effective rooting depth). Depth to which roots could penetrate if the content of moisture in the soil were adequate. The soil has no properties restricting the penetration of roots to this depth.

Prescribed burning. Deliberately burning an area for specific management purposes, under the appropriate conditions of weather and soil moisture and at the proper time of day.

Productivity, soil. The capability of a soil for producing a specified plant or sequence of plants under specific management.

Profile, soil. A vertical section of the soil extending through all its horizons and into the parent material.

Proper grazing use. Grazing at an intensity that maintains enough cover to protect the soil and maintain or improve the quantity and quality of the desirable vegetation. This practice increases the vigor and reproduction capacity of the key plants and promotes the accumulation of litter and mulch necessary to conserve soil and water.

Reaction, soil. A measure of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Ultra acid	less than 3.5
Extremely acid	3.5 to 4.4
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Moderately acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Slightly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

Redoximorphic concentrations. Nodules, concretions, soft masses, pore linings, and other features resulting from the accumulation of iron or manganese oxide. An indication of chemical reduction and oxidation resulting from saturation.

Redoximorphic depletions. Low-chroma zones from which iron and manganese oxide or a combination of iron and manganese oxide and clay has been removed. These zones are indications of the chemical reduction of iron resulting from saturation.

Redoximorphic features. Redoximorphic concentrations, redoximorphic depletions, reduced matrices, a positive reaction to alpha,alpha-dipyridyl, and other features

indicating the chemical reduction and oxidation of iron and manganese compounds resulting from saturation.

Reduced matrix. A soil matrix that has low chroma in situ because of chemically reduced iron (Fe II). The chemical reduction results from nearly continuous wetness. The matrix undergoes a change in hue or chroma within 30 minutes after exposure to air as the iron is oxidized (Fe III). A type of redoximorphic feature.

Regolith. The unconsolidated mantle of weathered rock and soil material on the earth's surface; the loose earth material above the solid rock.

Relief. The elevations or inequalities of a land surface, considered collectively.

Residuum (residual soil material). Unconsolidated, weathered or partly weathered mineral material that accumulated as consolidated rock disintegrated in place.

Rill. A steep-sided channel resulting from accelerated erosion. A rill generally is a few inches deep and not wide enough to be an obstacle to farm machinery.

Road cut. A sloping surface produced by mechanical means during road construction. It is commonly on the uphill side of the road.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

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.

Saturation. Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.

Scarification. The act of abrading, scratching, loosening, crushing, or modifying the surface to increase water absorption or to provide a more tillable soil.

Second bottom. The first terrace above the normal flood plain (or first bottom) of a river.

Sedimentary rock. Rock made up of particles deposited from suspension in water. The chief kinds of sedimentary rock are conglomerate, formed from gravel; sandstone, formed from sand; shale, formed from clay; and limestone, formed from soft masses of calcium carbonate. There are many intermediate types. Some wind-deposited sand is consolidated into sandstone.

Sequum. A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)

Series, soil. A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Sheet erosion. The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

Shoulder. The position that forms the uppermost inclined surface near the top of a hillslope. It is a transition from backslope to summit. The surface is dominantly convex in profile and erosional in origin.

Shrink-swell (in tables). The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Side slope. A geomorphic component of hills consisting of a laterally planar area of a hillside. The overland waterflow is predominantly parallel.

Silica. A combination of silicon and oxygen. The mineral form is called quartz.

Silica-sesquioxide ratio. The ratio of the number of molecules of silica to the number of molecules of alumina and iron oxide. The more highly weathered soils or their clay fractions in warm-temperate, humid regions, and especially those in the tropics, generally have a low ratio.

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.

Similar soils. Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.

Sinkhole. A depression in the landscape where limestone has been dissolved.

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.

Slickensides. Polished and grooved surfaces produced by one mass sliding past another. In soils, slickensides may occur at the bases of slip surfaces on the steeper slopes; on faces of blocks, prisms, and columns; and in swelling clayey soils, where there is marked change in moisture content.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance. In this survey, classes for simple slopes are as follows:

Level	0 to 2 percent
Nearly level	0 to 5 percent
Gently sloping	2 to 5 percent
Moderately sloping	5 to 8 percent
Strongly sloping	8 to 12 percent
Moderately steep	12 to 15 percent
Steep	15 to 25 percent
Very steep	25 percent and higher

Soil. A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief over periods of time.

Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand	2.0 to 1.0
Coarse sand	1.0 to 0.5
Medium sand	0.5 to 0.25
Fine sand	0.25 to 0.10
Very fine sand	0.10 to 0.05
Silt	0.05 to 0.002
Clay	less than 0.002

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.

Stone line. A concentration of coarse fragments in a soil. Generally, it is indicative of an old weathered surface. In a cross section, the line may be one fragment or more thick. It generally overlies material that weathered in place and is overlain by recent sediment of variable thickness.

Stones. Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.

Stony. Refers to a soil containing stones in numbers that interfere with or prevent tillage.

Stripcropping. Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to wind erosion and water erosion.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grained* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Stubble mulch. Stubble or other crop residue left on the soil or partly worked into the soil. It protects the soil from wind erosion and water erosion after harvest, during preparation of a seedbed for the next crop, and during the early growing period of the new crop.

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Subsoiling. Tilling a soil below normal plow depth, ordinarily to shatter a hardpan or claypan.

Substratum. The part of the soil below the solum.

Subsurface layer. Any surface soil horizon (A, E, AB, or EB) below the surface layer.

Summer fallow. The tillage of uncropped land during the summer to control weeds and allow storage of moisture in the soil for the growth of a later crop. A practice common in semiarid regions, where annual precipitation is not enough to produce a crop every year. Summer fallow is frequently practiced before planting winter grain.

Summit. The topographically highest position of a hillslope. It has a nearly level (planar or only slightly convex) surface.

Surface layer. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the “plow layer,” or the “Ap horizon.”

Surface soil. The A, E, AB, and EB horizons, considered collectively. It includes all subdivisions of these horizons.

Taxadjuncts. Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior. Soils are recognized as taxadjuncts only when one or more of their characteristics are slightly outside the range defined for the family of the series for which the soils are named.

Terrace. An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field generally is built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.

Terrace (geologic). An old alluvial plain, ordinarily flat or undulating, bordering a river, a lake, or the sea.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam,*

silty clay loam, sandy clay, silty clay, and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Toeslope. The position that forms the gently inclined surface at the base of a hillslope. Toeslopes in profile are commonly gentle and linear and are constructional surfaces forming the lower part of a hillslope continuum that grades to valley or closed-depression floors.

Topsoil. The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Trace elements. Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.

Upland. Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

Variegation. Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.

Water bars. Smooth, shallow ditches or depressional areas that are excavated at an angle across a sloping road. They are used to reduce the downward velocity of water and divert it off and away from the road surface. Water bars can easily be driven over if constructed properly.

Weathering. All physical and chemical changes produced in rocks or other deposits at or near the earth's surface by atmospheric agents. These changes result in disintegration and decomposition of the material.

Well graded. Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

Wilting point (or permanent wilting point). The moisture content of soil, on an ovendry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

Windthrow. The uprooting and tipping over of trees by the wind.

Tables

Table 1.--Temperature and Precipitation

[Recorded in the period 1971-2000 at Cuthbert, Georgia]

Month	Temperature			Precipitation				
					30 % chance to have--			
	Average daily maximum	Average daily minimum	Average	Average	Less than--	More than--	Average number of days with 0.10 inch or more	Average snowfall
	°F	*°F*	*°F*	*In*	*In*	*In*		*In*
January----	59.7	38.5	49.1	5.60	4.01	6.61	7	0.0
February---	64.2	40.7	52.5	5.09	3.36	6.10	6	.2
March------	72.0	46.9	59.5	5.54	3.87	6.58	7	.0
April------	78.9	52.8	65.9	3.92	2.38	4.76	5	.0
May--------	85.5	61.4	73.4	3.58	1.75	4.67	5	.0
June-------	90.5	68.1	79.3	4.72	2.94	5.71	7	.0
July-------	92.3	71.1	81.7	6.38	3.66	7.76	8	.0
August-----	91.4	70.4	80.9	3.48	2.50	4.11	6	.0
September--	87.5	66.1	76.8	3.66	1.67	4.46	4	.0
October----	78.8	55.3	67.1	2.57	0.86	3.08	3	.0
November---	69.9	47.0	58.4	3.91	2.31	4.75	5	.0
December---	62.0	40.8	51.4	4.15	2.69	4.99	6	.0
Annual----	---	---	---	---	45.09	56.99	---	---
Average---	77.7	54.9	66.3	---	---	---	---	---
Total-----	---	---	---	52.60	---	---	69	.3

Table 2.--Growing Season

[Recorded in the period 1961-1990 at Camilla, Georgia]

Probability*	Beginning and ending dates; length of growing season		
	24 °F or higher	28 °F or higher	32 °F or higher
50 percent---------	Feb. 5 to Dec. 28; 327 days	Feb. 19 to Dec. 9; 294 days	Mar. 10 to Nov. 22; 253 days
70 percent---------	Jan. 21 to Dec. 31; 357 days	Feb. 12 to Dec. 17; 308 days	Mar. 6 to Nov. 23; 263 days

* Chance of the growing season occurring between the listed dates.

Table 3.--Acreage and Proportionate Extent of the Soils

Map symbol	Map unit name	Acres	Percent
AeB	Ailey loamy sand, 2 to 5 percent slopes	860	0.3
AeC	Ailey loamy sand, 5 to 8 percent slopes	2,215	0.8
AoE	Ailey-Cowarts complex, 8 to 25 percent slopes	10,625	3.9
BeB	Benevolence loamy sand, 0 to 5 percent slopes	880	0.3
BoB	Bonneau loamy sand, 0 to 5 percent slopes	965	0.3
CaB2	Carnegie sandy loam, 2 to 5 percent slopes, eroded	2,170	0.8
CkC2	Carnegie-Nankin complex, 5 to 8 percent slopes, eroded	7,675	2.8
CkD2	Carnegie-Nankin complex, 8 to 15 percent slopes, eroded	1,495	0.5
CnA	Clarendon sandy loam, 0 to 2 percent slopes	710	0.3
CoB	Cowarts loamy sand, 2 to 5 percent slopes	695	0.3
CoC	Cowarts loamy sand, 5 to 8 percent slopes	5,225	1.9
FeA	Faceville sandy loam, 0 to 2 percent slopes	7,335	2.7
FeB	Faceville sandy loam, 2 to 5 percent slopes	21,790	7.9
FeC	Faceville sandy loam, 5 to 8 percent slopes	2,450	0.9
GoA	Goldsboro loamy sand, 0 to 2 percent slopes	220	*
GrA	Grady clay loam, ponded	2,155	0.8
GsA	Greenville sandy clay loam, 0 to 2 percent slopes	8,405	3.0
GsB	Greenville sandy clay loam, 2 to 5 percent slopes	12,110	4.4
GsC	Greenville sandy clay loam, 5 to 8 percent slopes	5,050	1.8
GsD2	Greenville clay loam, 8 to 15 percent slopes, eroded	50	*
HnC	Henderson gravelly sandy loam, 2 to 8 percent slopes	5,870	2.1
HnD	Henderson gravelly sandy loam, 8 to 15 percent slopes	4,280	1.6
KBA	Kinston and Bibb soils, 0 to 1 percent slopes, frequently flooded	23,455	8.5
LkC	Lakeland sand, 0 to 8 percent slopes	17,350	6.3
LkD	Lakeland sand, 8 to 15 percent slopes	8,315	3.0
LmB	Lucy loamy sand, 0 to 5 percent slopes	13,965	5.1
LmC	Lucy loamy sand, 5 to 8 percent slopes	6,290	2.3
LmD	Lucy loamy sand, 8 to 15 percent slopes	2,535	0.9
MaA	Marlboro sandy loam, 0 to 2 percent slopes	805	0.3
MaB	Marlboro sandy loam, 2 to 5 percent slopes	530	0.2
NcB	Nankin-Cowarts complex, 2 to 5 percent slopes	3,210	1.2
NcD	Nankin-Cowarts complex, 5 to 15 percent slopes	7,995	2.9
NcF	Nankin-Cowarts complex, 15 to 35 percent slopes	35,735	13.0
NoA	Norfolk loamy sand, 0 to 2 percent slopes	560	0.2
NoB	Norfolk loamy sand, 2 to 5 percent slopes	555	0.2
OeA	Orangeburg loamy sand, 0 to 2 percent slopes	6,225	2.3
OeB	Orangeburg loamy sand, 2 to 5 percent slopes	14,935	5.4
OeC2	Orangeburg sandy loam, 5 to 8 percent slopes, eroded	5,240	1.9
OeD2	Orangeburg sandy loam, 8 to 15 percent slopes, eroded	715	0.3
Pt	Pits	50	*
ReA	Red Bay loamy sand, 0 to 2 percent slopes	4,250	1.5
ReB	Red Bay loamy sand, 2 to 5 percent slopes	6,980	2.5
ReC2	Red Bay sandy loam, 5 to 8 percent slopes, eroded	2,140	0.8
ReD2	Red Bay sandy loam, 8 to 15 percent slopes, eroded	530	0.2
TrB	Troup loamy sand, 0 to 5 percent slopes	3,830	1.4
TrC	Troup loamy sand, 5 to 8 percent slopes	1,850	0.7
TrD	Troup loamy sand, 8 to 15 percent slopes	2,950	1.1
W	Water	1,575	0.6
	Total	275,800	100.0

* Less than 0.1 percent.

Table 4.--Land Capability Classification and Yields per Acre of Cropland

[Yields are those that can be expected for nonirrigated areas under a high level of management. Absence of an entry indicates that the soil is not suited to the crop or the crop generally is not grown on the soil]

Map symbol and soil name	Land capability	Corn	Cotton lint	Peanuts	Soybeans
		Bu	*Lbs*	*Lbs*	*Bu*
AeB:					
Ailey	3s	50	400	2,300	20
AeC:					
Ailey	4s	45	350	2,000	18
AoE:					
Ailey	7e	---	---	---	---
Cowarts	6e	---	---	---	---
BeB:					
Benevolence	2e	75	650	2,800	25
BoB:					
Bonneau	2s	85	700	2,900	30
CaB2:					
Carnegie	3e	65	500	3,200	30
CkC2:					
Carnegie	4e	55	400	1,800	25
Nankin	4e	50	400	1,800	20
CkD2:					
Carnegie	6e	---	---	---	---
Nankin	6e	---	---	---	---
CnA:					
Clarendon	2w	125	700	3,600	45
CoB:					
Cowarts	2e	80	650	2,400	35
CoC:					
Cowarts	3e	60	500	1,600	20
FeA:					
Faceville	1	115	875	4,000	45
FeB:					
Faceville	2e	115	875	4,000	45
FeC:					
Faceville	3e	90	650	3,000	30
GoA:					
Goldsboro	2w	125	700	3,600	42
GrA:					
Grady	5w	---	---	---	---
GsA:					
Greenville	1	100	825	3,200	45

Table 4.--Land Capability Classification and Yields per Acre of Cropland--Continued

Map symbol and soil name	Land capability	Corn	Cotton lint	Peanuts	Soybeans
		Bu	*Lbs*	*Lbs*	*Bu*
GsB:					
Greenville	3e	95	800	3,000	35
GsC:					
Greenville	4e	85	700	2,600	25
GsD2:					
Greenville	6e	---	---	---	---
HnC:					
Henderson	4e	---	---	---	---
HnD:					
Henderson	7e	---	---	---	---
KBA:					
Kinston	6w	---	---	---	---
Bibb	6w	---	---	---	---
LkC:					
Lakeland	4s	55	550	2,000	20
LkD:					
Lakeland	7s	---	---	---	---
LmB:					
Lucy	2s	80	650	3,000	33
LmC:					
Lucy	3s	70	600	2,500	25
LmD:					
Lucy	4s	---	---	---	---
MaA:					
Marlboro	1	100	1,000	3,500	40
MaB:					
Marlboro	2e	100	1,000	3,200	40
NcB:					
Nankin	2e	75	600	2,200	30
Cowarts	2e	80	650	2,400	25
NcD:					
Nankin	4e	---	---	---	---
Cowarts	4e	---	---	---	---
NcF:					
Nankin	6e	---	---	---	---
Cowarts	6e	---	---	---	---
NoA:					
Norfolk	1	100	750	3,700	35
NoB:					
Norfolk	2e	100	650	3,700	35

Table 4.--Land Capability Classification and Yields per Acre of Cropland--Continued

Map symbol and soil name	Land capability	Corn	Cotton lint	Peanuts	Soybeans
		Bu	*Lbs*	*Lbs*	*Bu*
OeA:					
Orangeburg	1	120	900	4,000	45
OeB:					
Orangeburg	2e	120	900	4,000	45
OeC2:					
Orangeburg	3e	95	800	3,200	35
OeD2:					
Orangeburg	4e	75	600	2,600	30
Pt:					
Pits	8s	---	---	---	---
ReA:					
Red Bay	1	90	750	3,500	40
ReB:					
Red Bay	2e	90	750	3,200	40
ReC2:					
Red Bay	3e	85	700	2,800	30
ReD2:					
Red Bay	4e	75	600	2,600	25
TrB:					
Troup	3s	70	600	2,500	25
TrC:					
Troup	4s	60	550	2,200	20
TrD:					
Troup	6s	---	---	---	---

Table 5.--Land Capability Classification and Yields per Acre of Pasture

[Yields are those that can be expected for nonirrigated areas under a high level of management. Absence of an entry indicates that the soil is not suited to the crop or the crop generally is not grown on the soil]

Map symbol and soil name	Land capability	Bahiagrass	Grass hay	Improved bermudagrass
		AUM	*Tons*	*AUM*
AeB:				
Ailey	3s	6	4	6
AeC:				
Ailey	4s	5	3.5	5
AoE:				
Ailey	7e	---	---	---
Cowarts	6e	---	---	---
BeB:				
Benevolence	2e	8	5.5	10
BoB:				
Bonneau	2s	8	5.5	8.5
CaB2:				
Carnegie	3e	7	4	6.5
CkC2:				
Carnegie	4e	6.5	3.5	6
Nankin	4e	6	4.5	6
CkD2:				
Carnegie	6e	5.5	3	6
Nankin	6e	5.5	4	6
CnA:				
Clarendon	2w	10	---	10.5
CoB:				
Cowarts	2e	7.5	4	8
CoC:				
Cowarts	3e	7.5	3.5	7.5
FeA:				
Faceville	1	7	6	10
FeB:				
Faceville	2e	7	6	10
FeC:				
Faceville	3e	6	5.5	9.5
GoA:				
Goldsboro	2w	9.5	6.5	10
GrA:				
Grady	5w	---	---	---
GsA:				
Greenville	1	11	6.5	11

Table 5.--Land Capability Classification and Yields per Acre of Pasture--Continued

Map symbol and soil name	Land capability	Bahiagrass	Grass hay	Improved bermudagrass
		AUM	*Tons*	*AUM*
GsB:				
Greenville	3e	7	6.5	11
GsC:				
Greenville	4e	6	6	10
GsD2:				
Greenville	6e	4.5	5	8.5
HnC:				
Henderson	4e	6	3.5	7
HnD:				
Henderson	7e	---	---	---
KBA:				
Kinston	6w	---	---	---
Bibb	6w	---	---	---
LkC:				
Lakeland	4s	7	3.5	7
LkD:				
Lakeland	7s	6	3	6
LmB:				
Lucy	2s	8.5	5.5	8
LmC:				
Lucy	3s	8.5	5	7.5
LmD:				
Lucy	4s	7.5	4	6
MaA:				
Marlboro	1	7	6.5	10
MaB:				
Marlboro	2e	7	6	10
NcB:				
Nankin	2e	7	5.5	9
Cowarts	2e	7.5	4	7.5
NcD:				
Nankin	4e	5.5	4	6
Cowarts	4e	6.5	3.5	7.5
NcF:				
Nankin	6e	---	---	---
Cowarts	6e	---	---	---
NoA:				
Norfolk	1	8.5	6.5	10
NoB:				
Norfolk	2e	8.5	6.5	10

Table 5.--Land Capability Classification and Yields per Acre of Pasture--Continued

Map symbol and soil name	Land capability	Bahiagrass	Grass hay	Improved bermudagrass
		AUM	*Tons*	*AUM*
OeA:				
Orangeburg	1	8.5	6.5	10.5
OeB:				
Orangeburg	2e	8.5	6	10.5
OeC2:				
Orangeburg	3e	8	5.5	10
OeD2:				
Orangeburg	4e	7	5	9
Pt:				
Pits	8s	---	---	---
ReA:				
Red Bay	1	10	6.5	10
ReB:				
Red Bay	2e	9.5	6.5	9.5
ReC2:				
Red Bay	3e	9	5.5	8
ReD2:				
Red Bay	4e	7	5	7
TrB:				
Troup	3s	6	4	7
TrC:				
Troup	4s	5	3	6.5
TrD:				
Troup	6s	5	3	6.5

Table 6.--Acreage by Capability Class and Subclass

Capability class	Capability subclass	Acreage
Unclassified	---	1,575
1	---	24,714
2	e	42,084
2	w	744
2	s	12,690
3	e	24,826
3	s	9,098
4	e	22,717
4	s	20,154
5	w	1,724
6	e	34,876
6	w	18,764
6	s	2,360
7	e	9,371
7	s	7,068
8	s	50

Table 7.--Farmland Classification

[Only the soils considered prime or important farmland are listed. Urban or built-up areas of the soils listed are not considered prime or important farmland]

Map symbol	Map unit name	Farmland classification
BeB	Benevolence loamy sand, 0 to 5 percent slopes	All areas are prime farmland
CaB2	Carnegie sandy loam, 2 to 5 percent slopes, eroded	All areas are prime farmland
CnA	Clarendon sandy loam, 0 to 2 percent slopes	All areas are prime farmland
CoB	Cowarts loamy sand, 2 to 5 percent slopes	All areas are prime farmland
CoC	Cowarts loamy sand, 5 to 8 percent slopes	All areas are prime farmland
FeA	Faceville sandy loam, 0 to 2 percent slopes	All areas are prime farmland
FeB	Faceville sandy loam, 2 to 5 percent slopes	All areas are prime farmland
FeC	Faceville sandy loam, 5 to 8 percent slopes	All areas are prime farmland
GoA	Goldsboro loamy sand, 0 to 2 percent slopes	All areas are prime farmland
GsA	Greenville sandy clay loam, 0 to 2 percent slopes	All areas are prime farmland
GsB	Greenville sandy clay loam, 2 to 5 percent slopes	All areas are prime farmland
MaA	Marlboro sandy loam, 0 to 2 percent slopes	All areas are prime farmland
MaB	Marlboro sandy loam, 2 to 5 percent slopes	All areas are prime farmland
NcB	Nankin-Cowarts complex, 2 to 5 percent slopes	All areas are prime farmland
NoA	Norfolk loamy sand, 0 to 2 percent slopes	All areas are prime farmland
NoB	Norfolk loamy sand, 2 to 5 percent slopes	All areas are prime farmland
OeA	Orangeburg loamy sand, 0 to 2 percent slopes	All areas are prime farmland
OeB	Orangeburg loamy sand, 2 to 5 percent slopes	All areas are prime farmland
OeC2	Orangeburg sandy loam, 5 to 8 percent slopes, eroded	All areas are prime farmland
ReA	Red Bay loamy sand, 0 to 2 percent slopes	All areas are prime farmland
ReB	Red Bay loamy sand, 2 to 5 percent slopes	All areas are prime farmland
ReC2	Red Bay sandy loam, 5 to 8 percent slopes, eroded	All areas are prime farmland
BoB	Bonneau loamy sand, 0 to 5 percent slopes	Farmland of statewide importance
CkC2	Carnegie-Nankin complex, 5 to 8 percent slopes, eroded	Farmland of statewide importance
GsC	Greenville sandy clay loam, 5 to 8 percent slopes	Farmland of statewide importance
HnC	Henderson gravelly sandy loam, 2 to 8 percent slopes	Farmland of statewide importance
LmB	Lucy loamy sand, 0 to 5 percent slopes	Farmland of statewide importance
LmC	Lucy loamy sand, 5 to 8 percent slopes	Farmland of statewide importance

Table 8.--Forestland Productivity

[The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value column range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table]

Map symbol and soil name	Potential for seedling mortality		Potential productivity			Trees to manage
	Rating class and limiting features	Value	Common trees	Site index	Volume of wood fiber	
					cu ft/ac	
AeB:						
Ailey	Moderate		Loblolly pine	75	100	Loblolly pine,
	Available water	0.50	Longleaf pine	60	57	longleaf pine
AeC:						
Ailey	Moderate		Loblolly pine	75	100	Loblolly pine,
	Available water	0.50	Longleaf pine	60	57	longleaf pine
AoE:						
Ailey	High		Loblolly pine	75	100	Loblolly pine,
	Available water	1.00	Longleaf pine	60	57	longleaf pine
Cowarts	Moderate		Loblolly pine	86	129	Loblolly pine,
	Available water	0.50	Longleaf pine	67	72	longleaf pine
BeB:						
Benevolence	Low		Loblolly pine	90	129	Loblolly pine
			Shortleaf pine	72	114	
BoB:						
Bonneau	Low		Hickory	---	---	Loblolly pine,
			Loblolly pine	95	143	longleaf pine
			Longleaf pine	75	86	
			White oak	---	---	
CaB2:						
Carnegie	Low		Loblolly pine	86	129	Loblolly pine
			Longleaf pine	72	86	
CkC2:						
Carnegie	Low		Loblolly pine	86	129	Loblolly pine
			Longleaf pine	72	86	
Nankin	Low		Loblolly pine	80	114	Loblolly pine
			Longleaf pine	70	86	
CkD2:						
Carnegie	Low		Loblolly pine	86	129	Loblolly pine
			Longleaf pine	72	86	
Nankin	Low		Loblolly pine	80	114	Loblolly pine
			Longleaf pine	70	86	
CnA:						
Clarendon	Low		Loblolly pine	90	129	American sycamore,
			Sweetgum	85	86	loblolly pine, sweetgum, yellow-poplar
CoB:						
Cowarts	Low		Loblolly pine	86	129	Loblolly pine,
			Longleaf pine	67	72	longleaf pine

Table 8.--Forestland Productivity--Continued

Map symbol and soil name	Potential for seedling mortality		Potential productivity			Trees to manage
	Rating class and limiting features	Value	Common trees	Site index	Volume of wood fiber	
					cu ft/ac	
CoC:						
Cowarts	Low		Loblolly pine	86	129	Loblolly pine,
			Longleaf pine	67	72	longleaf pine
FeA:						
Faceville	Low		Loblolly pine	82	114	Loblolly pine
			Longleaf pine	65	72	
FeB:						
Faceville	Low		Loblolly pine	82	114	Loblolly pine
			Longleaf pine	65	72	
FeC:						
Faceville	Low		Loblolly pine	82	114	Loblolly pine
			Longleaf pine	65	72	
GoA:						
Goldsboro	Low		Loblolly pine	90	129	Loblolly pine
			Longleaf pine	73	86	
			Red maple	---	---	
			Southern red oak	---	---	
			Sweetgum	---	---	
			Water oak	---	---	
			White oak	---	---	
			Yellow-poplar	---	---	
GrA:						
Grady	High		Baldcypress	65	43	American sycamore,
	Wetness	1.00	Water oak	65	57	water tupelo
			Water tupelo	68	86	
GsA:						
Greenville	Low		Loblolly pine	82	114	Loblolly pine,
			Longleaf pine	70	86	longleaf pine
GsB:						
Greenville	Low		Loblolly pine	82	114	Loblolly pine,
			Longleaf pine	70	86	longleaf pine
GsC:						
Greenville	Low		Loblolly pine	82	114	Loblolly pine,
			Longleaf pine	70	86	longleaf pine
GsD2:						
Greenville	Low		Loblolly pine	82	114	Loblolly pine,
			Longleaf pine	70	86	longleaf pine
HnC:						
Henderson	Low		Loblolly pine	80	114	Loblolly pine
			Longleaf pine	70	86	
HnD:						
Henderson	Low		Loblolly pine	80	114	Loblolly pine
			Longleaf pine	70	86	

Table 8.--Forestland Productivity--Continued

Map symbol and soil name	Potential for seedling mortality		Potential productivity			Trees to manage
	Rating class and limiting features	Value	Common trees	Site index	Volume of wood fiber	
					cu ft/ac	
KBA:						
Kinston	High		Cherrybark oak	95	57	American sycamore,
	Wetness	1.00	Eastern cottonwood	100	129	cherrybark oak,
			Loblolly pine	100	129	eastern
			Sweetgum	95	114	cottonwood, green
			White oak	90	57	ash, loblolly
						pine, sweetgum,
						yellow-poplar
Bibb	High		Atlantic white cedar	---	---	Eastern cottonwood,
	Wetness	1.00	Blackgum	---	---	loblolly pine,
			Loblolly pine	100	157	sweetgum, yellow-
			Sweetgum	90	100	poplar
			Water oak	90	86	
			Yellow-poplar	---	---	
LkC:						
Lakeland	Moderate		Blackjack oak	---	---	Loblolly pine,
	Available water	0.50	Loblolly pine	75	100	longleaf pine
			Longleaf pine	60	57	
			Post oak	---	---	
			Turkey oak	---	---	
LkD:						
Lakeland	Moderate		Blackjack oak	---	---	Loblolly pine,
	Available water	0.50	Loblolly pine	75	100	longleaf pine
			Longleaf pine	60	57	
			Post oak	---	---	
			Turkey oak	---	---	
LmB:						
Lucy	Low		Loblolly pine	80	114	Loblolly pine,
			Longleaf pine	70	86	longleaf pine
LmC:						
Lucy	Low		Loblolly pine	80	114	Loblolly pine,
			Longleaf pine	70	86	longleaf pine
LmD:						
Lucy	Low		Loblolly pine	80	114	Loblolly pine,
			Longleaf pine	70	86	longleaf pine
MaA:						
Marlboro	Low		Loblolly pine	82	114	Loblolly pine
			Longleaf pine	62	57	
MaB:						
Marlboro	Low		Loblolly pine	82	114	Loblolly pine
			Longleaf pine	62	57	
NcB:						
Nankin	Low		Loblolly pine	80	114	Loblolly pine
			Longleaf pine	70	86	
Cowarts	Low		Loblolly pine	86	129	Loblolly pine,
			Longleaf pine	67	72	longleaf pine

Table 8.--Forestland Productivity--Continued

Map symbol and soil name	Potential for seedling mortality		Potential productivity			Trees to manage
	Rating class and limiting features	Value	Common trees	Site index	Volume of wood fiber	
					cu ft/ac	
NcD:						
Nankin	Low		Loblolly pine	80	114	Loblolly pine
			Longleaf pine	70	86	
Cowarts	Low		Loblolly pine	86	129	Loblolly pine,
			Longleaf pine	67	72	longleaf pine
NcF:						
Nankin	Moderate		Loblolly pine	80	114	Loblolly pine
	Available water	0.50	Longleaf pine	70	86	
Cowarts	Moderate		Loblolly pine	86	129	Loblolly pine,
	Available water	0.50	Longleaf pine	67	72	longleaf pine
NoA:						
Norfolk	Low		Blackgum	---	---	Loblolly pine
			Hickory	---	---	
			Loblolly pine	84	114	
			Longleaf pine	77	100	
			Southern red oak	---	---	
			White oak	---	---	
			Yellow-poplar	---	---	
NoB:						
Norfolk	Low		Blackgum	---	---	Loblolly pine
			Hickory	---	---	
			Loblolly pine	84	114	
			Longleaf pine	77	100	
			Southern red oak	---	---	
			White oak	---	---	
			Yellow-poplar	---	---	
OeA:						
Orangeburg	Low		Loblolly pine	80	114	Loblolly pine
			Longleaf pine	77	100	
OeB:						
Orangeburg	Low		Loblolly pine	80	114	Loblolly pine
			Longleaf pine	77	100	
OeC2:						
Orangeburg	Low		Loblolly pine	80	114	Loblolly pine
			Longleaf pine	77	100	
OeD2:						
Orangeburg	Low		Loblolly pine	80	114	Loblolly pine
			Longleaf pine	77	100	
Pt:						
Pits	Not rated		---	---	---	---
ReA:						
Red Bay	Low		Loblolly pine	90	129	Loblolly pine,
			Longleaf pine	77	100	longleaf pine
ReB:						
Red Bay	Low		Loblolly pine	90	129	Loblolly pine,
			Longleaf pine	77	100	longleaf pine

Table 8.--Forestland Productivity--Continued

Map symbol and soil name	Potential for seedling mortality		Potential productivity			Trees to manage
	Rating class and limiting features	Value	Common trees	Site index	Volume of wood fiber	
					cu ft/ac	
ReC2:						
Red Bay	Low		Loblolly pine	90	129	Loblolly pine,
			Longleaf pine	77	100	longleaf pine
ReD2:						
Red Bay	Low		Loblolly pine	90	129	Loblolly pine,
			Longleaf pine	77	100	longleaf pine
TrB:						
Troup	Moderate		Loblolly pine	80	114	Loblolly pine,
	Available water	0.50	Longleaf pine	70	86	longleaf pine
TrC:						
Troup	Moderate		Loblolly pine	80	114	Loblolly pine,
	Available water	0.50	Longleaf pine	70	86	longleaf pine
TrD:						
Troup	Moderate		Loblolly pine	80	114	Loblolly pine,
	Available water	0.50	Longleaf pine	70	86	longleaf pine

Table 9a.--Forestland Management (Part 1)

[The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table]

Map symbol and soil name	Suitability for log landings		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AeB:						
Ailey	Moderately suited		Slight		Moderately suited	
	Sandiness	0.50			Sandiness	0.50
AeC:						
Ailey	Moderately suited		Moderate		Moderately suited	
	Sandiness	0.50	Slope/erodibility	0.50	Sandiness	0.50
	Slope	0.50			Slope	0.50
AoE:						
Ailey	Poorly suited		Severe		Poorly suited	
	Slope	1.00	Slope/erodibility	0.95	Slope	1.00
	Sandiness	0.50			Sandiness	0.50
Cowarts	Poorly suited		Severe		Poorly suited	
	Slope	1.00	Slope/erodibility	0.95	Slope	1.00
BeB:						
Benevolence	Well suited		Slight		Well suited	
BoB:						
Bonneau	Well suited		Slight		Well suited	
CaB2:						
Carnegie	Well suited		Moderate		Well suited	
			Slope/erodibility	0.50		
CkC2:						
Carnegie	Moderately suited		Moderate		Moderately suited	
	Slope	0.50	Slope/erodibility	0.50	Slope	0.50
Nankin	Moderately suited		Moderate		Moderately suited	
	Slope	0.50	Slope/erodibility	0.50	Slope	0.50
CkD2:						
Carnegie	Moderately suited		Severe		Moderately suited	
	Slope	0.50	Slope/erodibility	0.95	Slope	0.50
Nankin	Moderately suited		Moderate		Moderately suited	
	Slope	0.50	Slope/erodibility	0.50	Slope	0.50
CnA:						
Clarendon	Well suited		Slight		Well suited	
CoB:						
Cowarts	Well suited		Slight		Well suited	
CoC:						
Cowarts	Moderately suited		Moderate		Moderately suited	
	Slope	0.50	Slope/erodibility	0.50	Slope	0.50
FeA:						
Faceville	Well suited		Slight		Well suited	

Table 9a.--Forestland Management (Part 1)--Continued

Map symbol and soil name	Suitability for log landings		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
FeB:						
Faceville	Well suited		Moderate		Well suited	
			Slope/erodibility	0.50		
FeC:						
Faceville	Moderately suited		Moderate		Moderately suited	
	Slope	0.50	Slope/erodibility	0.50	Slope	0.50
GoA:						
Goldsboro	Well suited		Slight		Well suited	
GrA:						
Grady	Poorly suited		Slight		Poorly suited	
	Ponding	1.00			Ponding	1.00
	Wetness	1.00			Wetness	1.00
	Low strength	0.50			Low strength	0.50
GsA:						
Greenville	Moderately suited		Slight		Moderately suited	
	Low strength	0.50			Low strength	0.50
GsB:						
Greenville	Moderately suited		Moderate		Moderately suited	
	Low strength	0.50	Slope/erodibility	0.50	Low strength	0.50
GsC:						
Greenville	Moderately suited		Moderate		Moderately suited	
	Low strength	0.50	Slope/erodibility	0.50	Low strength	0.50
	Slope	0.50			Slope	0.50
GsD2:						
Greenville	Moderately suited		Severe		Moderately suited	
	Slope	0.50	Slope/erodibility	0.95	Slope	0.50
	Low strength	0.50			Low strength	0.50
HnC:						
Henderson	Well suited		Moderate		Well suited	
			Slope/erodibility	0.50		
HnD:						
Henderson	Poorly suited		Moderate		Poorly suited	
	Slope	1.00	Slope/erodibility	0.50	Slope	1.00
KBA:						
Kinston	Poorly suited		Slight		Poorly suited	
	Flooding	1.00			Flooding	1.00
	Wetness	1.00			Wetness	1.00
Bibb	Poorly suited		Slight		Poorly suited	
	Flooding	1.00			Flooding	1.00
	Wetness	1.00			Wetness	1.00
LkC:						
Lakeland	Moderately suited		Slight		Moderately suited	
	Sandiness	0.50			Sandiness	0.50
LkD:						
Lakeland	Poorly suited		Moderate		Poorly suited	
	Slope	1.00	Slope/erodibility	0.50	Slope	1.00
	Sandiness	0.50			Sandiness	0.50

Table 9a.--Forestland Management (Part 1)--Continued

Map symbol and soil name	Suitability for log landings		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
LmB:						
Lucy	Well suited		Slight		Well suited	
LmC:						
Lucy	Moderately suited		Moderate		Moderately suited	
	Slope	0.50	Slope/erodibility	0.50	Slope	0.50
LmD:						
Lucy	Moderately suited		Moderate		Moderately suited	
	Slope	0.50	Slope/erodibility	0.50	Slope	0.50
MaA:						
Marlboro	Well suited		Slight		Well suited	
MaB:						
Marlboro	Well suited		Slight		Well suited	
NcB:						
Nankin	Well suited		Slight		Well suited	
Cowarts	Well suited		Slight		Well suited	
NcD:						
Nankin	Moderately suited		Moderate		Moderately suited	
	Slope	0.50	Slope/erodibility	0.50	Slope	0.50
Cowarts	Moderately suited		Moderate		Moderately suited	
	Slope	0.50	Slope/erodibility	0.50	Slope	0.50
NcF:						
Nankin	Poorly suited		Severe		Poorly suited	
	Slope	1.00	Slope/erodibility	0.95	Slope	1.00
Cowarts	Poorly suited		Severe		Poorly suited	
	Slope	1.00	Slope/erodibility	0.95	Slope	1.00
NoA:						
Norfolk	Well suited		Slight		Well suited	
NoB:						
Norfolk	Well suited		Slight		Well suited	
OeA:						
Orangeburg	Well suited		Slight		Well suited	
OeB:						
Orangeburg	Well suited		Slight		Well suited	
OeC2:						
Orangeburg	Moderately suited		Moderate		Moderately suited	
	Slope	0.50	Slope/erodibility	0.50	Slope	0.50
OeD2:						
Orangeburg	Moderately suited		Moderate		Moderately suited	
	Slope	0.50	Slope/erodibility	0.50	Slope	0.50
Pt:						
Pits	Not rated		Not rated		Not rated	

Table 9a.--Forestland Management (Part 1)--Continued

Map symbol and soil name	Suitability for log landings		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
ReA:						
Red Bay	Well suited		Slight		Well suited	
ReB:						
Red Bay	Well suited		Slight		Well suited	
ReC2:						
Red Bay	Moderately suited		Moderate		Moderately suited	
	Slope	0.50	Slope/erodibility	0.50	Slope	0.50
ReD2:						
Red Bay	Moderately suited		Moderate		Moderately suited	
	Slope	0.50	Slope/erodibility	0.50	Slope	0.50
TrB:						
Troup	Well suited		Slight		Well suited	
TrC:						
Troup	Moderately suited		Moderate		Moderately suited	
	Slope	0.50	Slope/erodibility	0.50	Slope	0.50
TrD:						
Troup	Moderately suited		Moderate		Moderately suited	
	Slope	0.50	Slope/erodibility	0.50	Slope	0.50

Table 9b.--Forestland Management (Part 2)

[The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table]

Map symbol and soil name	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AeB:						
Ailey	Moderately suited Sandiness	 0.50	Moderately suited Sandiness	 0.50	Moderately suited Sandiness	 0.50
AeC:						
Ailey	Moderately suited Sandiness	 0.50	Moderately suited Slope Sandiness	 0.50 0.50	Moderately suited Sandiness	 0.50
AoE:						
Ailey	Moderately suited Sandiness	 0.50	Poorly suited Slope Sandiness	 0.75 0.50	Moderately suited Sandiness	 0.50
Cowarts	Well suited		Poorly suited Slope	 0.75	Well suited	
BeB:						
Benevolence	Well suited		Well suited		Well suited	
BoB:						
Bonneau	Well suited		Well suited		Well suited	
CaB2:						
Carnegie	Moderately suited Stickiness; high plasticity index	 0.50	Moderately suited Stickiness; high plasticity index	 0.50	Well suited	
CkC2:						
Carnegie	Moderately suited Stickiness; high plasticity index	 0.50	Moderately suited Slope Stickiness; high plasticity index	 0.50 0.50	Well suited	
Nankin	Well suited		Moderately suited Slope	 0.50	Well suited	
CkD2:						
Carnegie	Moderately suited Stickiness; high plasticity index	 0.50	Moderately suited Slope Stickiness; high plasticity index	 0.50 0.50	Well suited	
Nankin	Well suited		Moderately suited Slope	 0.50	Well suited	
CnA:						
Clarendon	Well suited		Well suited		Well suited	
CoB:						
Cowarts	Well suited		Well suited		Well suited	
CoC:						
Cowarts	Well suited		Moderately suited Slope	 0.50	Well suited	

Table 9b.--Forestland Management (Part 2)--Continued

Map symbol and soil name	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
FeA:						
Faceville	Poorly suited		Poorly suited		Well suited	
	Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75		
FeB:						
Faceville	Poorly suited		Poorly suited		Well suited	
	Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75		
FeC:						
Faceville	Poorly suited		Poorly suited		Well suited	
	Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75		
			Slope	0.50		
GoA:						
Goldsboro	Well suited		Well suited		Well suited	
GrA:						
Grady	Poorly suited		Poorly suited		Moderately suited	
	Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75	Low strength	0.50
GsA:						
Greenville	Poorly suited		Poorly suited		Moderately suited	
	Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75	Low strength	0.50
GsB:						
Greenville	Poorly suited		Poorly suited		Moderately suited	
	Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75	Low strength	0.50
GsC:						
Greenville	Poorly suited		Poorly suited		Moderately suited	
	Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75	Low strength	0.50
			Slope	0.50		
GsD2:						
Greenville	Poorly suited		Poorly suited		Moderately suited	
	Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75	Low strength	0.50
			Slope	0.50		
HnC:						
Henderson	Well suited		Moderately suited		Well suited	
			Slope	0.50		
			Rock fragments	0.50		
HnD:						
Henderson	Well suited		Moderately suited		Well suited	
			Slope	0.50		
			Rock fragments	0.50		
KBA:						
Kinston	Moderately suited		Moderately suited		Well suited	
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50		

Table 9b.--Forestland Management (Part 2)--Continued

Map symbol and soil name	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
KBA:						
Bibb	Well suited		Well suited		Well suited	
LkC:						
Lakeland	Moderately suited Sandiness	 0.50	Moderately suited Sandiness	 0.50	Moderately suited Sandiness	 0.50
LkD:						
Lakeland	Moderately suited Sandiness	 0.50	Moderately suited Slope Sandiness	 0.50 0.50	Moderately suited Sandiness	 0.50
LmB:						
Lucy	Well suited		Well suited		Well suited	
LmC:						
Lucy	Well suited		Moderately suited Slope	 0.50	Well suited	
LmD:						
Lucy	Well suited		Moderately suited Slope	 0.50	Well suited	
MaA:						
Marlboro	Well suited		Well suited		Well suited	
MaB:						
Marlboro	Well suited		Well suited		Well suited	
NcB:						
Nankin	Well suited		Well suited		Well suited	
Cowarts	Well suited		Well suited		Well suited	
NcD:						
Nankin	Well suited		Moderately suited Slope	 0.50	Well suited	
Cowarts	Well suited		Moderately suited Slope	 0.50	Well suited	
NcF:						
Nankin	Well suited		Poorly suited Slope	 0.75	Moderately suited Slope	 0.50
Cowarts	Well suited		Poorly suited Slope	 0.75	Moderately suited Slope	 0.50
NoA:						
Norfolk	Well suited		Well suited		Well suited	
NoB:						
Norfolk	Well suited		Well suited		Well suited	
OeA:						
Orangeburg	Well suited		Well suited		Well suited	
OeB:						
Orangeburg	Well suited		Well suited		Well suited	

Table 9b.--Forestland Management (Part 2)--Continued

Map symbol and soil name	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
OeC2:						
Orangeburg	Well suited		Moderately suited Slope	 0.50	Well suited	
OeD2:						
Orangeburg	Well suited		Moderately suited Slope	 0.50	Well suited	
Pt:						
Pits	Not rated		Not rated		Not rated	
ReA:						
Red Bay	Well suited		Well suited		Well suited	
ReB:						
Red Bay	Well suited		Well suited		Well suited	
ReC2:						
Red Bay	Well suited		Moderately suited Slope	 0.50	Well suited	
ReD2:						
Red Bay	Well suited		Moderately suited Slope	 0.50	Well suited	
TrB:						
Troup	Well suited		Well suited		Well suited	
TrC:						
Troup	Well suited		Moderately suited Slope	 0.50	Well suited	
TrD:						
Troup	Well suited		Moderately suited Slope	 0.50	Well suited	

Table 10.--Recreation Site Development

[The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table]

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds		Paths and trails	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AeB:								
Ailey	Somewhat limited		Somewhat limited		Somewhat limited		Somewhat limited	
	Too sandy	0.79	Too sandy	0.79	Too sandy	0.79	Too sandy	0.79
					Slope	0.50		
AeC:								
Ailey	Somewhat limited		Somewhat limited		Very limited		Somewhat limited	
	Too sandy	0.79	Too sandy	0.79	Slope	1.00	Too sandy	0.79
					Too sandy	0.79		
AoE:								
Ailey	Very limited		Very limited		Very limited		Somewhat limited	
	Slope	1.00	Slope	1.00	Slope	1.00	Too sandy	0.79
	Too sandy	0.79	Too sandy	0.79	Too sandy	0.79	Slope	0.08
Cowarts	Very limited		Very limited		Very limited		Somewhat limited	
	Slope	1.00	Slope	1.00	Slope	1.00	Slope	0.08
BeB:								
Benevolence	Not limited		Not limited		Somewhat limited		Not limited	
					Slope	0.12		
BoB:								
Bonneau	Somewhat limited		Somewhat limited		Somewhat limited		Somewhat limited	
	Too sandy	0.91	Too sandy	0.91	Too sandy	0.91	Too sandy	0.91
					Slope	0.12		
CaB2:								
Carnegie	Somewhat limited		Somewhat limited		Somewhat limited		Not limited	
	Restricted permeability	0.26	Restricted permeability	0.26	Slope	0.50		
					Restricted permeability	0.26		
					Gravel content	0.22		
CkC2:								
Carnegie	Somewhat limited		Somewhat limited		Very limited		Not limited	
	Restricted permeability	0.26	Restricted permeability	0.26	Slope	1.00		
					Restricted permeability	0.26		
					Gravel content	0.22		

Table 10.--Recreation Site Development--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds		Paths and trails	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CkC2:								
Nankin	Somewhat limited Restricted permeability	0.26	Somewhat limited Restricted permeability	0.26	Very limited Slope Restricted permeability	1.00 0.26	Not limited	
CkD2:								
Carnegie	Somewhat limited Restricted permeability Slope	0.26 0.16	Somewhat limited Restricted permeability Slope	0.26 0.16	Very limited Slope Restricted permeability Gravel content	1.00 0.26 0.22	Not limited	
Nankin	Somewhat limited Restricted permeability Slope	0.26 0.16	Somewhat limited Restricted permeability Slope	0.26 0.16	Very limited Slope Restricted permeability	1.00 0.26	Not limited	
CnA:								
Clarendon	Somewhat limited Restricted permeability	0.26	Somewhat limited Restricted permeability	0.26	Somewhat limited Restricted permeability	0.26	Not limited	
CoB:								
Cowarts	Not limited		Not limited		Somewhat limited Slope	0.50	Not limited	
CoC:								
Cowarts	Not limited		Not limited		Very limited Slope	1.00	Not limited	
FeA:								
Faceville	Not limited		Not limited		Not limited		Not limited	
FeB:								
Faceville	Not limited		Not limited		Somewhat limited Slope	0.50	Not limited	
FeC:								
Faceville	Not limited		Not limited		Very limited Slope	1.00	Not limited	
GoA:								
Goldsboro	Not limited		Not limited		Not limited		Not limited	

Table 10.--Recreation Site Development--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds		Paths and trails	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
GrA:								
Grady	Very limited		Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Restricted permeability	0.96	Restricted permeability	0.96	Restricted permeability	0.96		
GsA:								
Greenville	Not limited		Not limited		Not limited		Not limited	
GsB:								
Greenville	Not limited		Not limited		Somewhat limited		Not limited	
					Slope	0.50		
GsC:								
Greenville	Not limited		Not limited		Very limited		Not limited	
					Slope	1.00		
GsD2:								
Greenville	Somewhat limited		Somewhat limited		Very limited		Not limited	
	Slope	0.16	Slope	0.16	Slope	1.00		
HnC:								
Henderson	Somewhat limited		Somewhat limited		Somewhat limited		Not limited	
	Restricted permeability	0.96	Restricted permeability	0.96	Restricted permeability	0.96		
					Gravel content	0.88		
					Slope	0.88		
					Content of large stones	0.01		
HnD:								
Henderson	Somewhat limited		Somewhat limited		Very limited		Not limited	
	Restricted permeability	0.96	Restricted permeability	0.96	Slope	1.00		
	Slope	0.84	Slope	0.84	Restricted permeability	0.96		
					Gravel content	0.88		
					Content of large stones	0.01		

Table 10.--Recreation Site Development--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds		Paths and trails	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
KBA:								
Kinston	Very limited		Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Flooding	0.40	Flooding	1.00	Flooding	0.40
Bibb	Very limited		Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Flooding	0.40	Flooding	1.00	Flooding	0.40
LkC:								
Lakeland	Very limited		Very limited		Very limited		Very limited	
	Too sandy	1.00	Too sandy	1.00	Too sandy	1.00	Too sandy	1.00
					Slope	0.50		
LkD:								
Lakeland	Very limited		Very limited		Very limited		Very limited	
	Too sandy	1.00	Too sandy	1.00	Slope	1.00	Too sandy	1.00
	Slope	0.84	Slope	0.84	Too sandy	1.00		
LmB:								
Lucy	Somewhat limited		Somewhat limited		Somewhat limited		Somewhat limited	
	Too sandy	0.84	Too sandy	0.84	Too sandy	0.84	Too sandy	0.84
					Slope	0.12		
LmC:								
Lucy	Somewhat limited		Somewhat limited		Very limited		Somewhat limited	
	Too sandy	0.84	Too sandy	0.84	Slope	1.00	Too sandy	0.84
					Too sandy	0.84		
LmD:								
Lucy	Somewhat limited		Somewhat limited		Very limited		Somewhat limited	
	Too sandy	0.84	Too sandy	0.84	Slope	1.00	Too sandy	0.84
	Slope	0.63	Slope	0.63	Too sandy	0.84		
MaA:								
Marlboro	Not limited		Not limited		Not limited		Not limited	
MaB:								
Marlboro	Not limited		Not limited		Somewhat limited		Not limited	
					Slope	0.50		

Table 10.--Recreation Site Development--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds		Paths and trails	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
NcB:								
Nankin	Somewhat limited Restricted permeability	0.26	Somewhat limited Restricted permeability	0.26	Somewhat limited Slope Restricted permeability	0.50 0.26	Not limited	
Cowarts	Not limited		Not limited		Somewhat limited Slope	0.50	Not limited	
NcD:								
Nankin	Somewhat limited Restricted permeability Slope	0.26 0.16	Somewhat limited Restricted permeability Slope	0.26 0.16	Very limited Slope Restricted permeability	1.00 0.26	Not limited	
Cowarts	Somewhat limited Slope	0.16	Somewhat limited Slope	0.16	Very limited Slope	1.00	Not limited	
NcF:								
Nankin	Very limited Slope Restricted permeability	1.00 0.26	Very limited Slope Restricted permeability	1.00 0.26	Very limited Slope Restricted permeability	1.00 0.26	Somewhat limited Slope	0.50
Cowarts	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00	Somewhat limited Slope	0.50
NoA:								
Norfolk	Not limited		Not limited		Somewhat limited Slope	0.50	Not limited	
NoB:								
Norfolk	Not limited		Not limited		Somewhat limited Slope	0.50	Not limited	
OeA:								
Orangeburg	Not limited		Not limited		Not limited		Not limited	
OeB:								
Orangeburg	Not limited		Not limited		Somewhat limited Slope	0.50	Not limited	
OeC2:								
Orangeburg	Not limited		Not limited		Very limited Slope	1.00	Not limited	

Table 10.--Recreation Site Development--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds		Paths and trails	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
OeD2:								
Orangeburg	Somewhat limited		Somewhat limited		Very limited		Not limited	
	Slope	0.63	Slope	0.63	Slope	1.00		
Pt:								
Pits	Not Rated		Not Rated		Not Rated		Not Rated	
ReA:								
Red Bay	Not limited		Not limited		Not limited		Not limited	
ReB:								
Red Bay	Not limited		Not limited		Somewhat limited		Not limited	
					Slope	0.50		
ReC2:								
Red Bay	Not limited		Not limited		Very limited		Not limited	
					Slope	1.00		
ReD2:								
Red Bay	Somewhat limited		Somewhat limited		Very limited		Not limited	
	Slope	0.63	Slope	0.63	Slope	1.00		
TrB:								
Troup	Somewhat limited		Somewhat limited		Somewhat limited		Somewhat limited	
	Too sandy	0.84	Too sandy	0.84	Too sandy	0.84	Too sandy	0.84
					Slope	0.12		
TrC:								
Troup	Somewhat limited		Somewhat limited		Very limited		Somewhat limited	
	Too sandy	0.84	Too sandy	0.84	Slope	1.00	Too sandy	0.84
	Slope	0.63	Slope	0.63	Too sandy	0.84		
TrD:								
Troup	Somewhat limited		Somewhat limited		Very limited		Somewhat limited	
	Too sandy	0.84	Too sandy	0.84	Slope	1.00	Too sandy	0.84
	Slope	0.63	Slope	0.63	Too sandy	0.84		

Table 11.--Building Site Development

[The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table]

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Local roads and streets		Shallow excavations	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AeB:								
Ailey	Not limited		Not limited		Not limited		Very limited	
							Cutbanks cave	1.00
							Dense layer	0.50
AeC:								
Ailey	Not limited		Not limited		Not limited		Very limited	
							Cutbanks cave	1.00
							Dense layer	0.50
AoE:								
Ailey	Very limited		Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00	Cutbanks cave	1.00
							Slope	1.00
							Dense layer	0.50
Cowarts	Very limited		Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00	Slope	1.00
BeB:								
Benevolence	Not limited		Not limited		Not limited		Not limited	
BoB:								
Bonneau	Not limited		Somewhat limited		Not limited		Very limited	
			Depth to saturated zone	0.15			Cutbanks cave	1.00
							Depth to saturated zone	0.15
CaB2:								
Carnegie	Not limited		Not limited		Somewhat limited		Somewhat limited	
					Low strength	0.50	Too clayey	0.15
CkC2:								
Carnegie	Not limited		Not limited		Somewhat limited		Somewhat limited	
					Low strength	0.50	Too clayey	0.15
Nankin	Not limited		Not limited		Not limited		Somewhat limited	
							Too clayey	0.03

Table 11.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Local roads and streets		Shallow excavations	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CkD2:								
Carnegie	Somewhat limited		Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.16	Slope	0.16	Low strength	0.50	Slope	0.16
					Slope	0.16	Too clayey	0.15
Nankin	Somewhat limited		Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.16	Slope	0.16	Slope	0.16	Slope	0.16
							Too clayey	0.03
CnA:								
Clarendon	Not limited		Very limited		Not limited		Very limited	
			Depth to saturated zone	1.00			Depth to saturated zone	1.00
CoB:								
Cowarts	Not limited		Not limited		Not limited		Not limited	
CoC:								
Cowarts	Not limited		Not limited		Not limited		Not limited	
FeA:								
Faceville	Not limited		Not limited		Somewhat limited		Somewhat limited	
					Low strength	0.50	Too clayey	0.12
FeB:								
Faceville	Not limited		Not limited		Somewhat limited		Somewhat limited	
					Low strength	0.50	Too clayey	0.12
FeC:								
Faceville	Not limited		Not limited		Somewhat limited		Somewhat limited	
					Low strength	0.50	Too clayey	0.12
GoA:								
Goldsboro	Not limited		Very limited		Not limited		Very limited	
			Depth to saturated zone	1.00			Depth to saturated zone	1.00
GrA:								
Grady	Very limited		Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50	Too clayey	0.88
					Low strength	0.50		

Table 11.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Local roads and streets		Shallow excavations	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
GsA:								
Greenville	Not limited		Not limited		Somewhat limited		Somewhat limited	
					Low strength	0.26	Too clayey	0.12
GsB:								
Greenville	Not limited		Not limited		Somewhat limited		Somewhat limited	
					Low strength	0.26	Too clayey	0.12
GsC:								
Greenville	Not limited		Not limited		Somewhat limited		Somewhat limited	
					Low strength	0.26	Too clayey	0.12
GsD2:								
Greenville	Somewhat limited		Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.16	Slope	0.16	Low strength	0.50	Slope	0.16
					Slope	0.16	Too clayey	0.12
HnC:								
Henderson	Not limited		Not limited		Somewhat limited		Very limited	
					Low strength	0.50	Cutbanks cave	1.00
							Too clayey	0.50
HnD:								
Henderson	Somewhat limited		Somewhat limited		Somewhat limited		Very limited	
	Slope	0.84	Slope	0.84	Slope	0.84	Cutbanks cave	1.00
					Low strength	0.50	Slope	0.84
							Too clayey	0.50
KBA:								
Kinston	Very limited		Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00	Cutbanks cave	1.00
							Flooding	0.80
Bibb	Very limited		Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00	Flooding	0.80
LkC:								
Lakeland	Not limited		Not limited		Not limited		Very limited	
							Cutbanks cave	1.00

Table 11.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Local roads and streets		Shallow excavations	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
LkD:								
Lakeland	Somewhat limited		Somewhat limited		Somewhat limited		Very limited	
	Slope	0.84	Slope	0.84	Slope	0.84	Cutbanks cave	1.00
							Slope	0.84
LmB:								
Lucy	Not limited		Not limited		Not limited		Very limited	
							Cutbanks cave	1.00
LmC:								
Lucy	Not limited		Not limited		Not limited		Very limited	
							Cutbanks cave	1.00
LmD:								
Lucy	Somewhat limited		Somewhat limited		Somewhat limited		Very limited	
	Slope	0.63	Slope	0.63	Slope	0.63	Cutbanks cave	1.00
							Slope	0.63
MaA:								
Marlboro	Not limited		Not limited		Not limited		Not limited	
MaB:								
Marlboro	Not limited		Not limited		Not limited		Not limited	
NcB:								
Nankin	Not limited		Not limited		Not limited		Somewhat limited	
							Too clayey	0.03
Cowarts	Not limited		Not limited		Not limited		Not limited	
NcD:								
Nankin	Somewhat limited		Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.16	Slope	0.16	Slope	0.16	Slope	0.16
							Too clayey	0.03
Cowarts	Somewhat limited		Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.16	Slope	0.16	Slope	0.16	Slope	0.16
NcF:								
Nankin	Very limited		Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00	Slope	1.00
							Too clayey	0.03

Table 11.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Local roads and streets		Shallow excavations	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
NcF:								
Cowarts	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
NoA:								
Norfolk	Not limited		Somewhat limited Depth to saturated zone	0.15	Not limited		Somewhat limited Depth to saturated zone	0.15
NoB:								
Norfolk	Not limited		Somewhat limited Depth to saturated zone	0.15	Not limited		Somewhat limited Depth to saturated zone	0.15
OeA:								
Orangeburg	Not limited		Not limited		Not limited		Not limited	
OeB:								
Orangeburg	Not limited		Not limited		Not limited		Not limited	
OeC2:								
Orangeburg	Not limited		Not limited		Not limited		Not limited	
OeD2:								
Orangeburg	Somewhat limited Slope	0.63	Somewhat limited Slope	0.63	Somewhat limited Slope	0.63	Somewhat limited Slope	0.63
Pt:								
Pits	Not rated		Not rated		Not Rated		Not Rated	
ReA:								
Red Bay	Not limited		Not limited		Not limited		Not limited	
ReB:								
Red Bay	Not limited		Not limited		Not limited		Not limited	
ReC2:								
Red Bay	Not limited		Not limited		Not limited		Not limited	
ReD2:								
Red Bay	Somewhat limited Slope	0.63	Somewhat limited Slope	0.63	Somewhat limited Slope	0.63	Somewhat limited Slope	0.63

Table 11.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Local roads and streets		Shallow excavations	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
TrB:								
Troup	Not limited		Not limited		Not limited		Very limited	
							Cutbanks cave	1.00
TrC:								
Troup	Somewhat limited		Somewhat limited		Somewhat limited		Very limited	
	Slope	0.63	Slope	0.63	Slope	0.63	Cutbanks cave	1.00
							Slope	0.63
TrD:								
Troup	Somewhat limited		Somewhat limited		Somewhat limited		Very limited	
	Slope	0.63	Slope	0.63	Slope	0.63	Cutbanks cave	1.00
							Slope	0.63

Table 12.--Sanitary Facilities

[The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table]

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
AeB:				
Ailey	Very limited		Very limited	
	Restricted permeability	1.00	Seepage	1.00
			Slope	0.32
AeC:				
Ailey	Very limited		Very limited	
	Restricted permeability	1.00	Seepage	1.00
			Slope	1.00
AoE:				
Ailey	Very limited		Very limited	
	Restricted permeability	1.00	Slope	1.00
			Seepage	1.00
	Slope	1.00		
Cowarts	Very limited		Very limited	
	Restricted permeability	1.00	Slope	1.00
			Seepage	0.50
	Slope	1.00		
BeB:				
Benevolence	Not limited		Very limited	
			Seepage	0.99
			Slope	0.08
BoB:				
Bonneau	Somewhat limited		Very limited	
	Restricted permeability	0.50	Seepage	1.00
			Slope	0.08
	Depth to saturated zone	0.40		
CaB2:				
Carnegie	Very limited		Somewhat limited	
	Restricted permeability	1.00	Slope	0.32
CkC2:				
Carnegie	Very limited		Very limited	
	Restricted permeability	1.00	Slope	1.00
Nankin	Very limited		Very limited	
	Restricted permeability	1.00	Slope	1.00
			Seepage	0.50
CkD2:				
Carnegie	Very limited		Very limited	
	Restricted permeability	1.00	Slope	1.00
	Slope	0.16		

Table 12.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
CkD2:				
Nankin	Very limited		Very limited	
	Restricted permeability	1.00	Slope	1.00
	Slope	0.16	Seepage	0.50
CnA:				
Clarendon	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Seepage	0.50
CoB:				
Cowarts	Very limited		Somewhat limited	
	Restricted permeability	1.00	Seepage	0.50
			Slope	0.32
CoC:				
Cowarts	Very limited		Very limited	
	Restricted permeability	1.00	Slope	1.00
			Seepage	0.50
FeA:				
Faceville	Somewhat limited		Somewhat limited	
	Restricted permeability	0.50	Seepage	0.50
FeB:				
Faceville	Somewhat limited		Somewhat limited	
	Restricted permeability	0.50	Seepage	0.50
			Slope	0.32
FeC:				
Faceville	Somewhat limited		Very limited	
	Restricted permeability	0.50	Slope	1.00
			Seepage	0.50
GoA:				
Goldsboro	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.50	Seepage	0.50
GrA:				
Grady	Very limited		Very limited	
	Restricted permeability	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00		
GsA:				
Greenville	Somewhat limited		Somewhat limited	
	Restricted permeability	0.50	Seepage	0.50

Table 12.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
GsB:				
Greenville	Somewhat limited		Somewhat limited	
	Restricted permeability	0.50	Seepage	0.50
			Slope	0.32
GsC:				
Greenville	Somewhat limited		Very limited	
	Restricted permeability	0.50	Slope	1.00
			Seepage	0.50
GsD2:				
Greenville	Somewhat limited		Very limited	
	Restricted permeability	0.50	Slope	1.00
			Seepage	0.50
	Slope	0.16		
HnC:				
Henderson	Very limited		Very limited	
	Restricted permeability	1.00	Seepage	1.00
			Slope	0.68
HnD:				
Henderson	Very limited		Very limited	
	Restricted permeability	1.00	Slope	1.00
			Seepage	1.00
	Slope	0.84		
KBA:				
Kinston	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Seepage	1.00
			Depth to saturated zone	1.00
	Seepage	1.00		
	Restricted permeability	0.50		
Bibb	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.50	Seepage	0.50
LkC:				
Lakeland	Very limited		Very limited	
	Seepage	1.00	Seepage	1.00
			Slope	0.32
LkD:				
Lakeland	Very limited		Very limited	
	Seepage	1.00	Slope	1.00
	Slope	0.84	Seepage	1.00
LmB:				
Lucy	Somewhat limited		Very limited	
	Restricted permeability	0.50	Seepage	1.00
			Slope	0.08

Table 12.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
LmC:				
Lucy	Somewhat limited		Very limited	
	Restricted permeability	0.50	Seepage	1.00
			Slope	1.00
LmD:				
Lucy	Somewhat limited		Very limited	
	Slope	0.63	Slope	1.00
	Restricted permeability	0.50	Seepage	1.00
MaA:				
Marlboro	Somewhat limited		Very limited	
	Restricted permeability	0.50	Seepage	1.00
MaB:				
Marlboro	Somewhat limited		Very limited	
	Restricted permeability	0.50	Seepage	1.00
			Slope	0.32
NcB:				
Nankin	Very limited		Somewhat limited	
	Restricted permeability	1.00	Seepage	0.50
			Slope	0.32
Cowarts	Very limited		Somewhat limited	
	Restricted permeability	1.00	Seepage	0.50
			Slope	0.32
NcD:				
Nankin	Very limited		Very limited	
	Restricted permeability	1.00	Slope	1.00
			Seepage	0.50
	Slope	0.16		
Cowarts	Very limited		Very limited	
	Restricted permeability	1.00	Slope	1.00
			Seepage	0.50
	Slope	0.16		
NcF:				
Nankin	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Restricted permeability	1.00	Seepage	0.50
Cowarts	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Restricted permeability	1.00	Seepage	0.50
NoA:				
Norfolk	Somewhat limited		Somewhat limited	
	Restricted permeability	0.50	Seepage	0.50
			Slope	0.32
	Depth to saturated zone	0.40		

Table 12.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
NoB:				
Norfolk	Somewhat limited		Somewhat limited	
	Restricted permeability	0.50	Seepage	0.50
	Depth to saturated zone	0.40	Slope	0.32
OeA:				
Orangeburg	Somewhat limited		Somewhat limited	
	Restricted permeability	0.50	Seepage	0.50
OeB:				
Orangeburg	Somewhat limited		Somewhat limited	
	Restricted permeability	0.50	Seepage	0.50
			Slope	0.32
OeC2:				
Orangeburg	Somewhat limited		Very limited	
	Restricted permeability	0.50	Slope	1.00
			Seepage	0.50
OeD2:				
Orangeburg	Somewhat limited		Very limited	
	Slope	0.63	Slope	1.00
	Restricted permeability	0.50	Seepage	0.50
Pt:				
Pits	Not rated		Not rated	
ReA:				
Red Bay	Somewhat limited		Very limited	
	Restricted permeability	0.50	Seepage	1.00
ReB:				
Red Bay	Somewhat limited		Very limited	
	Restricted permeability	0.50	Seepage	1.00
			Slope	0.32
ReC2:				
Red Bay	Somewhat limited		Very limited	
	Restricted permeability	0.50	Slope	1.00
			Seepage	1.00
ReD2:				
Red Bay	Somewhat limited		Very limited	
	Slope	0.63	Slope	1.00
	Restricted permeability	0.50	Seepage	1.00
TrB:				
Troup	Somewhat limited		Very limited	
	Restricted permeability	0.50	Seepage	1.00
			Slope	0.08

Table 12.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
TrC:				
Troup	Somewhat limited		Very limited	
	Slope	0.63	Slope	1.00
	Restricted permeability	0.50	Seepage	1.00
TrD:				
Troup	Somewhat limited		Very limited	
	Slope	0.63	Slope	1.00
	Restricted permeability	0.50	Seepage	1.00

Table 13.--Construction Materials

[The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 1.00. The smaller the value, the greater the limitation. See text for further explanation of ratings in this table]

Map symbol and soil name	Potential source of sand		Potential source of roadfill		Potential source of topsoil	
	Rating class	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AeB:						
Ailey	Poor		Good		Fair	
	Thickest layer	0.00			Too sandy	0.02
	Bottom layer	0.00			Too acid	0.98
AeC:						
Ailey	Poor		Good		Fair	
	Thickest layer	0.00			Too sandy	0.02
	Bottom layer	0.00			Too acid	0.98
AoE:						
Ailey	Poor		Fair		Poor	
	Thickest layer	0.00	Slope	0.92	Slope	0.00
	Bottom layer	0.00			Too sandy	0.02
					Too acid	0.98
Cowarts	Poor		Fair		Poor	
	Thickest layer	0.00	Slope	0.92	Slope	0.00
	Bottom layer	0.00			Too acid	0.98
BeB:						
Benevolence	Poor		Good		Fair	
	Thickest layer	0.00			Too acid	0.98
	Bottom layer	0.00				
BoB:						
Bonneau	Poor		Good		Poor	
	Thickest layer	0.00			Too sandy	0.00
	Bottom layer	0.00			Too acid	0.98
CaB2:						
Carnegie	Poor		Fair		Fair	
	Thickest layer	0.00	Low strength	0.50	Too clayey	0.37
	Bottom layer	0.00			Too acid	0.88
CkC2:						
Carnegie	Poor		Fair		Fair	
	Thickest layer	0.00	Low strength	0.50	Too clayey	0.37
	Bottom layer	0.00			Too acid	0.88
Nankin	Poor		Good		Poor	
	Thickest layer	0.00			Too clayey	0.00
	Bottom layer	0.00			Too acid	0.88
CkD2:						
Carnegie	Poor		Fair		Fair	
	Thickest layer	0.00	Low strength	0.50	Too clayey	0.37
	Bottom layer	0.00			Slope	0.84
					Too acid	0.88
Nankin	Poor		Good		Poor	
	Thickest layer	0.00			Too clayey	0.00
	Bottom layer	0.00			Slope	0.84
					Too acid	0.88

Table 13.--Construction Materials--Continued

Map symbol and soil name	Potential source of sand		Potential source of roadfill		Potential source of topsoil	
	Rating class	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CnA:						
Clarendon	Poor		Fair		Fair	
	Thickest layer	0.00	Depth to saturated zone	0.89	Too clayey	0.58
	Bottom layer	0.00			Too acid	0.88
					Depth to saturated zone	0.89
CoB:						
Cowarts	Poor		Good		Fair	
	Thickest layer	0.00			Too clayey	0.33
	Bottom layer	0.00			Too acid	0.98
CoC:						
Cowarts	Poor		Good		Fair	
	Thickest layer	0.00			Too clayey	0.33
	Bottom layer	0.00			Too acid	0.98
FeA:						
Faceville	Poor		Fair		Poor	
	Thickest layer	0.00	Low strength	0.50	Too clayey	0.00
	Bottom layer	0.00			Too acid	0.88
FeB:						
Faceville	Poor		Fair		Poor	
	Thickest layer	0.00	Low strength	0.50	Too clayey	0.00
	Bottom layer	0.00			Too acid	0.88
FeC:						
Faceville	Poor		Fair		Poor	
	Thickest layer	0.00	Low strength	0.50	Too clayey	0.00
	Bottom layer	0.00			Too acid	0.88
GoA:						
Goldsboro	Poor		Fair		Fair	
	Thickest layer	0.00	Low strength	0.24	Too acid	0.88
	Bottom layer	0.00	Depth to saturated zone	0.89	Depth to saturated zone	0.89
GrA:						
Grady	Poor		Poor		Poor	
	Thickest layer	0.00	Depth to saturated zone	0.00	Too clayey	0.00
	Bottom layer	0.00			Depth to saturated zone	0.00
			Low strength	0.50		
			Shrink-swell	0.87	Too acid	0.59
GsA:						
Greenville	Poor		Fair		Poor	
	Thickest layer	0.00	Low strength	0.74	Too clayey	0.00
	Bottom layer	0.00			Too acid	0.98
GsB:						
Greenville	Poor		Fair		Poor	
	Thickest layer	0.00	Low strength	0.74	Too clayey	0.00
	Bottom layer	0.00			Too acid	0.98
GsC:						
Greenville	Poor		Fair		Poor	
	Thickest layer	0.00	Low strength	0.74	Too clayey	0.00
	Bottom layer	0.00			Too acid	0.98

Table 13.--Construction Materials--Continued

Map symbol and soil name	Potential source of sand		Potential source of roadfill		Potential source of topsoil	
	Rating class	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
GsD2:						
Greenville	Poor		Fair		Poor	
	Thickest layer	0.00	Low strength	0.50	Too clayey	0.00
	Bottom layer	0.00			Slope	0.84
					Too acid	0.98
HnC:						
Henderson	Poor		Fair		Poor	
	Thickest layer	0.00	Low strength	0.50	Too clayey	0.00
	Bottom layer	0.00	Stone content	0.99	Rock fragments	0.12
					Too acid	0.88
HnD:						
Henderson	Poor		Fair		Poor	
	Thickest layer	0.00	Low strength	0.50	Too clayey	0.00
	Bottom layer	0.00	Stone content	0.99	Rock fragments	0.12
					Slope	0.16
					Too acid	0.88
KBA:						
Kinston	Poor		Poor		Poor	
	Thickest layer	0.00	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Bottom layer	0.00			Too acid	0.88
Bibb	Poor		Poor		Poor	
	Thickest layer	0.00	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Bottom layer	0.00			Too acid	0.88
LkC:						
Lakeland	Fair		Good		Poor	
	Thickest layer	0.85			Too sandy	0.00
	Bottom layer	0.99			Too acid	0.98
LkD:						
Lakeland	Fair		Good		Poor	
	Thickest layer	0.85			Too sandy	0.00
	Bottom layer	0.99			Slope	0.16
					Too acid	0.98
LmB:						
Lucy	Poor		Good		Fair	
	Thickest layer	0.00			Too sandy	0.14
	Bottom layer	0.00				
LmC:						
Lucy	Poor		Good		Fair	
	Thickest layer	0.00			Too sandy	0.14
	Bottom layer	0.00				
LmD:						
Lucy	Poor		Good		Fair	
	Thickest layer	0.00			Too sandy	0.14
	Bottom layer	0.00			Slope	0.37
MaA:						
Marlboro	Poor		Good		Fair	
	Thickest layer	0.00			Too clayey	0.15
	Bottom layer	0.00			Too acid	0.98

Table 13.--Construction Materials--Continued

Map symbol and soil name	Potential source of sand		Potential source of roadfill		Potential source of topsoil	
	Rating class	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
MaB:						
Marlboro	Poor		Good		Fair	
	Thickest layer	0.00			Too clayey	0.15
	Bottom layer	0.00			Too acid	0.98
NcB:						
Nankin	Poor		Good		Poor	
	Thickest layer	0.00			Too clayey	0.00
	Bottom layer	0.00			Too acid	0.88
Cowarts	Poor		Good		Fair	
	Thickest layer	0.00			Too clayey	0.33
	Bottom layer	0.00			Too acid	0.88
NcD:						
Nankin	Poor		Good		Poor	
	Thickest layer	0.00			Too clayey	0.00
	Bottom layer	0.00			Slope	0.84
					Too acid	0.88
Cowarts	Poor		Good		Fair	
	Thickest layer	0.00			Too clayey	0.33
	Bottom layer	0.00			Slope	0.84
					Too acid	0.88
NcF:						
Nankin	Poor		Fair		Poor	
	Thickest layer	0.00	Slope	0.50	Slope	0.00
	Bottom layer	0.00			Too clayey	0.00
					Too acid	0.88
Cowarts	Poor		Fair		Poor	
	Thickest layer	0.00	Slope	0.50	Slope	0.00
	Bottom layer	0.00			Too clayey	0.33
					Too acid	0.88
NoA:						
Norfolk	Poor		Good		Fair	
	Thickest layer	0.00			Too acid	0.50
	Bottom layer	0.00			Too clayey	0.58
NoB:						
Norfolk	Poor		Good		Fair	
	Thickest layer	0.00			Too acid	0.50
	Bottom layer	0.00			Too clayey	0.58
OeA:						
Orangeburg	Poor		Good		Fair	
	Thickest layer	0.00			Too clayey	0.33
	Bottom layer	0.00			Too acid	0.88
OeB:						
Orangeburg	Poor		Good		Fair	
	Thickest layer	0.00			Too clayey	0.33
	Bottom layer	0.00			Too acid	0.88
OeC2:						
Orangeburg	Poor		Good		Fair	
	Thickest layer	0.00			Too clayey	0.33
	Bottom layer	0.00			Too acid	0.88

Table 13.--Construction Materials--Continued

Map symbol and soil name	Potential source of sand		Potential source of roadfill		Potential source of topsoil	
	Rating class	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
OeD2:						
Orangeburg	Poor		Good		Fair	
	Thickest layer	0.00			Too clayey	0.33
	Bottom layer	0.00			Slope	0.37
					Too acid	0.88
Pt:						
Pits	Not Rated		Not rated		Not Rated	
ReA:						
Red Bay	Poor		Good		Fair	
	Thickest layer	0.00			Too acid	0.98
	Bottom layer	0.00				
ReB:						
Red Bay	Poor		Good		Fair	
	Thickest layer	0.00			Too acid	0.98
	Bottom layer	0.00				
ReC2:						
Red Bay	Poor		Good		Fair	
	Thickest layer	0.00			Too acid	0.98
	Bottom layer	0.00				
ReD2:						
Red Bay	Poor		Good		Fair	
	Thickest layer	0.00			Slope	0.37
	Bottom layer	0.00			Too acid	0.98
TrB:						
Troup	Poor		Good		Poor	
	Thickest layer	0.00			Too sandy	0.00
	Bottom layer	0.00			Too acid	0.88
TrC:						
Troup	Poor		Good		Poor	
	Thickest layer	0.00			Too sandy	0.00
	Bottom layer	0.00			Slope	0.37
					Too acid	0.88
TrD:						
Troup	Poor		Good		Poor	
	Thickest layer	0.00			Too sandy	0.00
	Bottom layer	0.00			Slope	0.37
					Too acid	0.88

Table 14.--Water Management

[The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table]

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees	
	Rating class and limiting features	Value	Rating class and limiting features	Value
AeB:				
Ailey	Very limited		Somewhat limited	
	Seepage	1.00	Seepage	0.10
AeC:				
Ailey	Very limited		Somewhat limited	
	Seepage	1.00	Seepage	0.10
AoE:				
Ailey	Very limited		Somewhat limited	
	Seepage	1.00	Seepage	0.10
	Slope	0.44		
Cowarts	Somewhat limited		Somewhat limited	
	Seepage	0.70	Seepage	0.04
	Slope	0.44		
BeB:				
Benevolence	Very limited		Somewhat limited	
	Seepage	1.00	Seepage	0.03
BoB:				
Bonneau	Very limited		Not limited	
	Seepage	1.00		
CaB2:				
Carnegie	Somewhat limited		Not limited	
	Seepage	0.03		
CkC2:				
Carnegie	Somewhat limited		Not limited	
	Seepage	0.03		
Nankin	Somewhat limited		Not limited	
	Seepage	0.70		
CkD2:				
Carnegie	Somewhat limited		Not limited	
	Seepage	0.03		
	Slope	0.01		
Nankin	Somewhat limited		Not limited	
	Seepage	0.70		
	Slope	0.01		
CnA:				
Clarendon	Somewhat limited		Somewhat limited	
	Seepage	0.70	Depth to saturated zone	0.86
CoB:				
Cowarts	Somewhat limited		Not limited	
	Seepage	0.70		

Table 14.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees	
	Rating class and limiting features	Value	Rating class and limiting features	Value
CoC:				
Cowarts	Somewhat limited		Not limited	
	Seepage	0.70		
FeA:				
Faceville	Somewhat limited		Somewhat limited	
	Seepage	0.70	Hard to pack	0.41
			Seepage	0.04
FeB:				
Faceville	Somewhat limited		Somewhat limited	
	Seepage	0.70	Hard to pack	0.41
			Seepage	0.04
FeC:				
Faceville	Somewhat limited		Somewhat limited	
	Seepage	0.70	Hard to pack	0.41
			Seepage	0.04
GoA:				
Goldsboro	Somewhat limited		Somewhat limited	
	Seepage	0.70	Depth to saturated zone	0.86
GrA:				
Grady	Not limited		Very limited	
			Depth to saturated zone	1.00
			Ponding	1.00
			Hard to pack	0.99
GsA:				
Greenville	Somewhat limited		Somewhat limited	
	Seepage	0.70	Hard to pack	0.53
GsB:				
Greenville	Somewhat limited		Somewhat limited	
	Seepage	0.70	Hard to pack	0.53
GsC:				
Greenville	Somewhat limited		Somewhat limited	
	Seepage	0.70	Hard to pack	0.53
GsD2:				
Greenville	Somewhat limited		Somewhat limited	
	Seepage	0.70	Hard to pack	0.61
	Slope	0.01		
HnC:				
Henderson	Not limited		Somewhat limited	
			Hard to pack	0.57
HnD:				
Henderson	Somewhat limited		Somewhat limited	
	Slope	0.08	Hard to pack	0.57

Table 14.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees	
	Rating class and limiting features	Value	Rating class and limiting features	Value
KBA:				
Kinston	Very limited		Very limited	
	Seepage	1.00	Depth to saturated zone	1.00
			Seepage	0.10
Bibb	Somewhat limited		Very limited	
	Seepage	0.70	Depth to saturated zone	1.00
			Piping	1.00
			Seepage	0.03
LkC:				
Lakeland	Very limited		Somewhat limited	
	Seepage	1.00	Seepage	0.75
LkD:				
Lakeland	Very limited		Somewhat limited	
	Seepage	1.00	Seepage	0.75
	Slope	0.08		
LmB:				
Lucy	Very limited		Somewhat limited	
	Seepage	1.00	Seepage	0.03
LmC:				
Lucy	Very limited		Somewhat limited	
	Seepage	1.00	Seepage	0.03
LmD:				
Lucy	Very limited		Somewhat limited	
	Seepage	1.00	Seepage	0.03
	Slope	0.04		
MaA:				
Marlboro	Somewhat limited		Not limited	
	Seepage	0.70		
MaB:				
Marlboro	Somewhat limited		Not limited	
	Seepage	0.70		
NcB:				
Nankin	Somewhat limited		Not limited	
	Seepage	0.70		
Cowarts	Somewhat limited		Not limited	
	Seepage	0.70		
NcD:				
Nankin	Somewhat limited		Not limited	
	Seepage	0.70		
	Slope	0.01		
Cowarts	Somewhat limited		Not limited	
	Seepage	0.70		
	Slope	0.01		

Table 14.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees	
	Rating class and limiting features	Value	Rating class and limiting features	Value
NcF:				
Nankin	Somewhat limited		Not limited	
	Slope	0.77		
	Seepage	0.70		
Cowarts	Somewhat limited		Not limited	
	Slope	0.77		
	Seepage	0.70		
NoA:				
Norfolk	Somewhat limited		Somewhat limited	
	Seepage	0.70	Seepage	0.04
NoB:				
Norfolk	Somewhat limited		Somewhat limited	
	Seepage	0.70	Seepage	0.04
OeA:				
Orangeburg	Somewhat limited		Not limited	
	Seepage	0.70		
OeB:				
Orangeburg	Somewhat limited		Not limited	
	Seepage	0.70		
OeC2:				
Orangeburg	Somewhat limited		Not limited	
	Seepage	0.70		
OeD2:				
Orangeburg	Somewhat limited		Not limited	
	Seepage	0.70		
	Slope	0.04		
Pt:				
Pits	Not limited		Not rated	
ReA:				
Red Bay	Very limited		Somewhat limited	
	Seepage	1.00	Seepage	0.04
ReB:				
Red Bay	Very limited		Somewhat limited	
	Seepage	1.00	Seepage	0.04
ReC2:				
Red Bay	Very limited		Somewhat limited	
	Seepage	1.00	Seepage	0.04
ReD2:				
Red Bay	Very limited		Somewhat limited	
	Seepage	1.00	Seepage	0.04
	Slope	0.04		
TrB:				
Troup	Very limited		Somewhat limited	
	Seepage	1.00	Seepage	0.10

Table 14.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees	
	Rating class and limiting features	Value	Rating class and limiting features	Value
TrC:				
Troup	Very limited		Somewhat limited	
	Seepage	1.00	Seepage	0.10
	Slope	0.04		
TrD:				
Troup	Very limited		Somewhat limited	
	Seepage	1.00	Seepage	0.10
	Slope	0.04		

Table 15.--Engineering Index Properties

[Absence of an entry indicates that the data were not estimated. NP means nonplastic]

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
AeB:												
Ailey	0-3	Loamy sand	SM, SC-SM	A-2, A-2-4	0	0	90-100	80-100	50-80	5-20	17-24	2-6
	3-23	Loamy sand	SC-SM, SM	A-2	0	0	90-100	80-100	50-80	5-20	16-23	2-6
	23-42	Sandy loam, sandy clay loam	SC-SM, SC	A-2, A-4, A-6	0	0	90-100	70-100	60-90	30-40	24-44	9-25
	42-47	Sandy loam, sandy clay loam	SC, SC-SM	A-2, A-6	0	0	90-100	75-100	55-90	20-50	27-44	12-25
	47-80	Clay loam, coarse sandy loam, sandy loam, sandy clay loam	SC-SM, SC	A-2, A-6	0	0	85-100	75-100	50-85	15-40	33-49	17-28
AeC:												
Ailey	0-3	Loamy sand	SC-SM, SM	A-2, A-2-4	0	0	90-100	80-100	50-80	5-20	17-24	2-6
	3-23	Loamy sand	SC-SM, SM	A-2	0	0	90-100	80-100	50-80	5-20	16-23	2-6
	23-42	Sandy loam, sandy clay loam	SC-SM, SC	A-2, A-4, A-6	0	0	90-100	70-100	60-90	30-40	24-44	9-25
	42-47	Sandy loam, sandy clay loam	SC-SM, SC	A-2, A-6	0	0	90-100	75-100	55-90	20-50	27-44	12-25
	47-80	Clay loam, coarse sandy loam, sandy loam, sandy clay loam	SC-SM, SC	A-2, A-6	0	0	85-100	75-100	50-85	15-40	33-49	17-28

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
AoE:												
Ailey----------	0-3	Loamy sand	SM, SC-SM	A-2, A-2-4	0	0	90-100	80-100	50-80	5-20	17-24	2-6
	3-23	Loamy sand	SC-SM, SM	A-2	0	0	90-100	80-100	50-80	5-20	16-23	2-6
	23-42	Sandy loam, sandy clay loam	SC, SC-SM	A-2, A-4, A-6	0	0	90-100	70-100	60-90	30-40	24-44	9-25
	42-47	Sandy loam, sandy clay loam	SC-SM, SC	A-2, A-6	0	0	90-100	75-100	55-90	20-50	27-44	12-25
	47-80	Clay loam, coarse sandy loam, sandy loam, sandy clay loam	SC, SC-SM	A-2, A-6	0	0	85-100	75-100	50-85	15-40	33-49	17-28
Cowarts---------	0-7	Loamy sand	SM	A-2, A-2-4	0	0	90-100	85-100	50-80	13-30	0-26	NP-6
	7-31	Fine sandy loam, sandy loam, sandy clay loam	SC-SM, SC	A-2, A-4, A-6	0	0	95-100	90-100	60-95	23-45	21-41	6-21
	31-40	Sandy clay loam, sandy clay, clay loam	SC	A-2-6, A-6, A-7	0	0	95-100	90-100	60-95	25-50	33-49	17-28
	40-80	Sandy loam, sandy clay loam, clay loam	SC-SM, CL, SC	A-2, A-6, A-7	0	0	85-100	80-100	60-95	25-58	27-44	12-25
BeB:												
Benevolence-----	0-12	Loamy sand	SC-SM	A-4	0	0	90-100	85-100	70-85	36-45	21-31	6-10
	12-37	Sandy loam, loam	CL-ML, SC-SM, SC	A-4	0	0	90-100	85-100	60-85	36-55	20-30	6-12
	37-47	Sandy loam, loam	SC, SC-SM, CL-ML	A-4	0	0	90-100	85-100	60-85	36-55	20-30	6-12
	47-80	Sandy clay loam, sandy loam, loam	SC-SM, SC	A-6	0	0	90-100	85-100	60-85	36-55	27-40	12-21

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
BoB:												
Bonneau---------	0-6	Loamy sand	SM, SC-SM, SC	A-2, A-2-4	0	0	100	100	50-95	15-35	17-31	2-10
	6-33	Loamy sand	SM, SC-SM	A-2	0	0	100	100	50-95	15-35	16-27	2-10
	33-65	Sandy loam, sandy clay loam, fine sandy loam	SC-SM, SC	A-2, A-4, A-6	0	0	100	100	60-100	30-50	23-44	8-25
	65-80	Sandy loam, sandy clay loam, sandy clay	SC-SM, CL, SC	A-6, A-2, A-7	0	0	100	100	60-95	25-60	37-50	21-30
CaB2:												
Carnegie--------	0-5	Sandy loam, gravelly sandy loam	SC-SM, SM	A-2-4, A-2	0	0	85-100	75-95	51-75	13-30	0-25	NP-4
	5-22	Sandy clay, clay, sandy clay loam	CL	A-6, A-7	0	0	95-100	90-99	90-95	65-70	33-49	17-28
	22-38	Sandy clay, clay	CH, CL	A-7	0	0	92-100	90-98	89-98	63-76	42-57	25-37
	38-72	Sandy clay, clay	CL, CH	A-7	0	0	99-100	98-100	90-98	68-79	42-60	25-40
CkC2:												
Carnegie--------	0-5	Sandy loam, gravelly sandy loam	SM, SC-SM	A-2-4, A-2	0	0	85-100	75-95	51-75	13-30	0-25	NP-4
	5-22	Sandy clay, clay, sandy clay loam	CL	A-6, A-7	0	0	95-100	90-99	90-95	65-70	33-49	17-28
	22-38	Sandy clay, clay	CL, CH	A-7	0	0	92-100	90-98	89-98	63-76	42-57	25-37
	38-72	Sandy clay, clay	CL, CH	A-7	0	0	99-100	98-100	90-98	68-79	42-60	25-40
Nankin----------	0-4	Sandy loam, loamy sand	SP-SM, SM, SC-SM	A-2-4, A-2	0	0	85-100	85-100	50-85	10-35	17-26	2-7
	4-16	Sandy clay loam, sandy loam	SC, SC-SM	A-2, A-4, A-6	0	0	97-100	95-100	75-90	25-45	24-44	9-25
	16-44	Sandy clay, clay	CL, SC	A-7	0	0	98-100	95-100	75-95	40-70	42-57	24-36
	44-80	Sandy clay loam, sandy loam	SC-SM, CL, SC	A-4, A-6, A-2	0	0	98-100	95-100	70-85	25-55	24-44	9-25

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
CkD2:												
Carnegie---------	0-5	Sandy loam, gravelly sandy loam	SM, SC-SM	A-2-4, A-2	0	0	85-100	75-95	51-75	13-30	0-25	NP-4
	5-22	Sandy clay, clay, sandy clay loam	CL	A-6, A-7	0	0	95-100	90-99	90-95	65-70	33-49	17-28
	22-38	Sandy clay, clay	CH, CL	A-7	0	0	92-100	90-98	89-98	63-76	42-57	25-37
	38-72	Sandy clay, clay	CL, CH	A-7	0	0	99-100	98-100	90-98	68-79	42-60	25-40
Nankin----------	0-4	Sandy loam, loamy sand	SC-SM, SP-SM, SM	A-2-4, A-2	0	0	85-100	85-100	50-85	10-35	17-26	2-7
	4-16	Sandy clay loam, sandy loam	SC, SC-SM	A-2, A-4, A-6	0	0	97-100	95-100	75-90	25-45	24-44	9-25
	16-44	Sandy clay, clay	CL, SC	A-7	0	0	98-100	95-100	75-95	40-70	42-57	24-36
	44-80	Sandy clay loam, sandy loam	CL, SC, SC-SM	A-4, A-6, A-2	0	0	98-100	95-100	70-85	25-55	24-44	9-25
CnA:												
Clarendon-------	0-8	Sandy loam	SM, SP-SM	A-2, A-2-4	0	0	98-100	85-100	65-90	10-30	0-29	NP-6
	8-34	Sandy clay loam	CL, SC, SC-SM	A-6	0	0	98-100	85-100	75-95	36-55	27-44	12-25
	34-80	Sandy clay loam	SC-SM, SC, CL	A-6	0	0	98-100	85-100	75-95	36-55	27-44	12-25
CoB:												
Cowarts---------	0-7	Loamy sand	SM	A-2, A-2-4	0	0	90-100	85-100	50-80	13-30	0-26	NP-6
	7-22	Fine sandy loam, sandy loam, sandy clay loam	SC, SC-SM	A-2, A-4, A-6	0	0	95-100	90-100	60-95	23-45	21-41	6-21
	22-40	Sandy clay loam, sandy clay, clay loam	SC	A-2-6, A-6, A-7	0	0	95-100	90-100	60-95	25-50	33-49	17-28
	40-80	Sandy loam, sandy clay loam, clay loam	SC-SM, SC, CL	A-2, A-6, A-7	0	0	85-100	80-100	60-95	25-58	27-44	12-25

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
CoC:												
Cowarts---------	0-7	Loamy sand	SM	A-2, A-2-4	0	0	90-100	85-100	50-80	13-30	0-26	NP-6
	7-22	Fine sandy loam, sandy loam, sandy clay loam	SC, SC-SM	A-2, A-4, A-6	0	0	95-100	90-100	60-95	23-45	21-41	6-21
	22-40	Sandy clay loam, sandy clay, clay loam	SC	A-2-6, A-6, A-7	0	0	95-100	90-100	60-95	25-50	33-49	17-28
	40-80	Sandy loam, sandy clay loam, clay loam	SC, CL, SC-SM	A-2, A-6, A-7	0	0	85-100	80-100	60-95	25-58	27-44	12-25
FeA:												
Faceville-------	0-10	Sandy loam	SC, SM	A-2-4, A-2, A-4	0	0	90-100	85-100	72-97	17-38	17-35	2-13
	10-80	Sandy clay, clay, clay loam	CH, SC, CL	A-7	0	0	98-100	95-100	75-99	45-72	42-61	24-39
FeB:												
Faceville-------	0-10	Sandy loam	SM, SC	A-2-4, A-2, A-4	0	0	90-100	85-100	72-97	17-38	17-35	2-13
	10-80	Sandy clay, clay, clay loam	CH, SC, CL	A-7	0	0	98-100	95-100	75-99	45-72	42-61	24-39
FeC:												
Faceville-------	0-10	Sandy loam	SC, SM	A-2-4, A-2, A-4	0	0	90-100	85-100	72-97	17-38	17-35	2-13
	10-80	Sandy clay, clay, clay loam	CH, CL, SC	A-7	0	0	98-100	95-100	75-99	45-72	42-61	24-39
GoA:												
Goldsboro-------	0-10	Loamy sand	SM	A-2-4, A-2	0	0	95-100	95-100	50-95	13-30	0-25	NP-4
	10-33	Sandy clay loam, sandy loam	SC-SM, CL, SC	A-2, A-6	0	0	98-100	95-100	60-100	25-55	27-40	12-21
	33-85	Sandy clay loam, clay loam	CL, SC	A-6, A-7-6	0	0	95-100	90-100	65-95	36-70	29-43	13-24

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
GrA:												
Grady----------	0-5	Clay loam	CL	A-7, A-6	0	0	100	99-100	85-100	50-75	37-56	18-28
	5-65	Clay, sandy clay	CH	A-7	0	0	100	100	90-100	55-90	52-73	32-47
GsA:												
Greenville------	0-8	Sandy clay loam	CL, SC, SC-SM	A-4, A-6	0	0	95-100	95-100	75-95	45-75	27-45	9-21
	8-80	Clay loam, sandy clay, clay	CH, CL, SC	A-7	0	0	98-100	95-100	80-99	40-80	42-61	24-39
GsB:												
Greenville------	0-8	Sandy clay loam	CL, SC, SC-SM	A-4, A-6	0	0	95-100	95-100	75-95	45-75	27-45	9-21
	8-80	Clay loam, sandy clay, clay	CH, CL, SC	A-7	0	0	98-100	95-100	80-99	40-80	42-61	24-39
GsC:												
Greenville------	0-8	Sandy clay loam	SC, CL, SC-SM	A-4, A-6	0	0	95-100	95-100	75-95	45-75	27-45	9-21
	8-80	Clay loam, sandy clay, clay	SC, CH, CL	A-7	0	0	98-100	95-100	80-99	40-80	42-61	24-39
GsD2:												
Greenville------	0-8	Clay loam, sandy clay loam	SC, CL, SC-SM	A-7	0	0	95-100	95-100	75-95	45-75	41-52	22-27
	8-80	Clay loam, sandy clay, clay	CL, CH, SC	A-7	0	0	98-100	95-100	80-99	40-80	42-61	24-39
HnC:												
Henderson-------	0-4	Gravelly sandy loam	SC, SC-SM	A-2, A-2-4	0-15	0-15	70-90	65-90	45-75	15-30	23-39	7-17
	4-13	Gravelly sandy loam	SC, SC-SM	A-2	0-15	0-15	70-90	65-90	45-75	15-30	22-36	7-17
	13-49	Gravelly sandy clay, gravelly clay	CL, CH	A-7	0-15	0-15	75-90	65-85	60-80	50-70	46-66	28-43
	49-65	Gravelly sandy clay, gravelly clay	CL, CH	A-7	0-15	0-15	75-85	65-85	60-80	55-75	42-66	24-43

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
HnD:												
Henderson-------	0-4	Gravelly sandy loam	SC, SC-SM	A-2, A-2-4	0-15	0-15	70-90	65-90	45-75	15-30	23-39	7-17
	4-13	Gravelly sandy loam	SC, SC-SM	A-2	0-15	0-15	70-90	65-90	45-75	15-30	22-36	7-17
	13-49	Gravelly sandy clay, gravelly clay	CH, CL	A-7	0-15	0-15	75-90	65-85	60-80	50-70	46-66	28-43
	49-65	Gravelly sandy clay, gravelly clay	CL, CH	A-7	0-15	0-15	75-85	65-85	60-80	55-75	42-66	24-43
KBA:												
Kinston---------	0-3	Loam	SM	A-2, A-4, A-6	0	0	100	98-100	55-100	25-49	20-40	2-12
	3-8	Loam, sandy loam, silt loam	SC	A-2, A-4, A-6	0	0	100	98-100	55-100	25-49	16-35	2-12
	8-15	Clay loam	SC	A-2	0	0	100	98-100	55-100	25-49	33-46	17-28
	15-33	Sandy loam	SC	A-2	0	0	100	98-100	55-100	25-49	16-27	2-12
	33-52	Sandy clay loam	CL	A-4, A-7	0	0	100	95-100	75-100	60-95	27-42	12-24
	52-80	Loamy sand, sand, fine sand	SP-SM, SP, SM	A-2, A-3	0	0	90-100	85-100	51-90	4-25	0-29	NP-6
Bibb------------	0-5	Fine sandy loam	SC, SM, SC-SM, CL-ML, ML	A-2, A-4	0	0-5	95-100	90-100	60-90	30-60	0-35	NP-12
	5-27	Sandy loam, loam, silt loam	ML, SC-SM, SM, CL-ML	A-2, A-4	0	0-10	60-100	50-100	40-100	30-90	0-31	NP-12
	27-45	Sandy loam	SM, SC-SM, ML, CL-ML	A-2, A-4	0	0-5	95-100	90-100	60-90	30-60	0-35	NP-12
	45-80	Sandy loam, stratified sandy loam, loam, silt loam	CL-ML, SM, SC-SM, ML	A-2, A-4	0	0-10	60-100	50-100	40-100	30-90	0-31	NP-12
LkC:												
Lakeland--------	0-4	Sand	SP-SM	A-2-4, A-3	0	0	90-100	90-100	60-100	5-12	0-22	NP-4
	4-60	Sand	SP-SM	A-2-4, A-3	0	0	90-100	90-100	60-100	5-12	0-21	NP-4
	60-80	Sand, fine sand	SW-SM, SP-SM, SP	A-2-4, A-3	0	0	90-100	90-100	50-100	1-12	0-18	NP-3

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
LkD:												
Lakeland--------	0-4	Sand	SP-SM	A-2-4, A-3	0	0	90-100	90-100	60-100	5-12	0-22	NP-4
	4-60	Sand	SP-SM	A-2-4, A-3	0	0	90-100	90-100	60-100	5-12	0-21	NP-4
	60-80	Sand, fine sand	SP, SP-SM, SW-SM	A-2-4, A-3	0	0	90-100	90-100	50-100	1-12	0-18	NP-3
LmB:												
Lucy------------	0-8	Loamy sand	SM, SP-SM	A-2-4, A-2, A-4	0	0	98-100	95-100	50-90	10-40	0-26	NP-7
	8-24	Loamy sand	SM, SP-SM	A-2, A-4	0	0	98-100	95-100	50-90	10-40	0-25	NP-7
	24-48	Sandy loam, fine sandy loam, sandy clay loam	SC, SC-SM	A-2, A-4, A-6	0	0	97-100	95-100	55-95	15-50	20-32	6-13
	48-72	Sandy clay loam, clay loam, sandy clay	SC-SM, SC	A-2, A-6	0	0	100	95-100	60-95	20-50	29-53	13-32
LmC:												
Lucy------------	0-8	Loamy sand	SM, SP-SM	A-2-4, A-2, A-4	0	0	98-100	95-100	50-90	10-40	0-26	NP-7
	8-24	Loamy sand	SM, SP-SM	A-2, A-4	0	0	98-100	95-100	50-90	10-40	0-25	NP-7
	24-48	Sandy loam, fine sandy loam, sandy clay loam	SC, SC-SM	A-2, A-4, A-6	0	0	97-100	95-100	55-95	15-50	20-32	6-13
	48-72	Sandy clay loam, clay loam, sandy clay	SC, SC-SM	A-2, A-6	0	0	100	95-100	60-95	20-50	29-53	13-32
LmD:												
Lucy------------	0-8	Loamy sand	SM, SP-SM	A-2-4, A-2, A-4	0	0	98-100	95-100	50-90	10-40	0-26	NP-7
	8-24	Loamy sand	SM, SP-SM	A-2, A-4	0	0	98-100	95-100	50-90	10-40	0-25	NP-7
	24-48	Sandy loam, fine sandy loam, sandy clay loam	SC, SC-SM	A-2, A-4, A-6	0	0	97-100	95-100	55-95	15-50	20-32	6-13
	48-72	Sandy clay loam, clay loam, sandy clay	SC, SC-SM	A-2, A-6	0	0	100	95-100	60-95	20-50	29-53	13-32

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
MaA:												
Marlboro--------	0-8	Sandy loam	SC-SM, ML, SC, SM, CL-ML	A-2, A-4	0	0	98-100	95-100	75-100	30-60	17-35	2-13
	8-13	Sandy clay loam	SC, SC-SM	A-2, A-6	0	0	98-100	95-100	75-100	30-60	30-47	15-27
	13-70	Sandy clay, clay loam, clay	CL	A-6, A-7	0	0	98-100	95-100	78-100	51-70	33-53	17-32
	70-80	Sandy clay loam, sandy clay, clay	CL	A-6, A-7	0	0	98-100	95-100	74-100	45-70	33-50	17-30
MaB:												
Marlboro--------	0-8	Sandy loam	SM, SC, SC-SM, CL-ML, ML	A-2, A-4	0	0	98-100	95-100	75-100	30-60	17-35	2-13
	8-13	Sandy clay loam	SC, SC-SM	A-2, A-6	0	0	98-100	95-100	75-100	30-60	30-47	15-27
	13-70	Sandy clay, clay loam, clay	CL	A-6, A-7	0	0	98-100	95-100	78-100	51-70	33-53	17-32
	70-80	Sandy clay loam, sandy clay, clay	CL	A-6, A-7	0	0	98-100	95-100	74-100	45-70	33-50	17-30
NcB:												
Nankin----------	0-4	Loamy sand	SP-SM, SM, SC-SM	A-2-4, A-2	0	0	85-100	85-100	50-85	10-35	17-26	2-7
	4-16	Sandy clay loam, sandy loam	SC-SM, SC	A-2, A-4, A-6	0	0	97-100	95-100	75-90	25-45	24-44	9-25
	16-44	Sandy clay, sandy clay loam, clay	SC, CL	A-7	0	0	98-100	95-100	75-95	40-70	42-57	24-36
	44-80	Sandy clay loam, sandy loam	CL, SC, SC-SM	A-4, A-6, A-2	0	0	98-100	95-100	70-85	25-55	24-44	9-25

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
NcB:												
Cowarts---------	0-7	Loamy sand	SM	A-2, A-2-4	0	0	90-100	85-100	50-80	13-30	0-26	NP-6
	7-22	Fine sandy loam, sandy loam, sandy clay loam	SC, SC-SM	A-2, A-4, A-6	0	0	95-100	90-100	60-95	23-45	21-41	6-21
	22-40	Sandy clay loam, sandy clay, clay loam	SC	A-2-6, A-6, A-7	0	0	95-100	90-100	60-95	25-50	33-49	17-28
	40-80	Sandy loam, sandy clay loam, clay loam	SC, SC-SM, CL	A-2, A-6, A-7	0	0	85-100	80-100	60-95	25-58	27-44	12-25
NcD:												
Nankin----------	0-4	Loamy sand	SM, SP-SM, SC-SM	A-2-4, A-2	0	0	85-100	85-100	50-85	10-35	17-26	2-7
	4-16	Sandy clay loam, sandy loam	SC, SC-SM	A-2, A-4, A-6	0	0	97-100	95-100	75-90	25-45	24-44	9-25
	16-44	Sandy clay, sandy clay loam, clay	CL, SC	A-7	0	0	98-100	95-100	75-95	40-70	42-57	24-36
	44-80	Sandy clay loam, sandy loam	CL, SC-SM, SC	A-4, A-6, A-2	0	0	98-100	95-100	70-85	25-55	24-44	9-25
Cowarts---------	0-7	Loamy sand	SM	A-2, A-2-4	0	0	90-100	85-100	50-80	13-30	0-26	NP-6
	7-22	Fine sandy loam, sandy loam, sandy clay loam	SC, SC-SM	A-2, A-4, A-6	0	0	95-100	90-100	60-95	23-45	21-41	6-21
	22-40	Sandy clay loam, sandy clay, clay loam	SC	A-2-6, A-6, A-7	0	0	95-100	90-100	60-95	25-50	33-49	17-28
	40-80	Sandy loam, sandy clay loam, clay loam	CL, SC, SC-SM	A-2, A-6, A-7	0	0	85-100	80-100	60-95	25-58	27-44	12-25

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
NcF:												
Nankin----------	0-4	Loamy sand	SP-SM, SC-SM, SM	A-2-4, A-2	0	0	85-100	85-100	50-85	10-35	17-26	2-7
	4-16	Sandy clay loam, sandy loam	SC-SM, SC	A-2, A-4, A-6	0	0	97-100	95-100	75-90	25-45	24-44	9-25
	16-44	Sandy clay, sandy clay loam, clay	CL, SC	A-7	0	0	98-100	95-100	75-95	40-70	42-57	24-36
	44-80	Sandy clay loam, sandy loam	SC-SM, SC, CL	A-4, A-6, A-2	0	0	98-100	95-100	70-85	25-55	24-44	9-25
Cowarts---------	0-7	Loamy sand	SM	A-2, A-2-4	0	0	90-100	85-100	50-80	13-30	0-26	NP-6
	7-22	Fine sandy loam, sandy loam, sandy clay loam	SC-SM, SC	A-2, A-4, A-6	0	0	95-100	90-100	60-95	23-45	21-41	6-21
	22-40	Sandy clay loam, sandy clay, clay loam	SC	A-2-6, A-6, A-7	0	0	95-100	90-100	60-95	25-50	33-49	17-28
	40-80	Sandy loam, sandy clay loam, clay loam	CL, SC, SC-SM	A-2, A-6, A-7	0	0	85-100	80-100	60-95	25-58	27-44	12-25
NoA:												
Norfolk---------	0-6	Loamy sand	SM	A-2-4, A-2	0	0	95-100	92-100	50-95	13-30	0-25	NP-4
	6-30	Sandy loam, sandy clay loam	SC-SM, SC, CL	A-2, A-6	0	0	95-100	91-100	70-96	30-63	27-44	12-25
	30-70	Sandy clay loam, clay loam, sandy clay	SC-SM, SC, CL	A-6, A-7-6	0	0	100	98-100	65-98	36-72	29-51	13-31
	70-80	Sandy loam		A-6	0	0	95-100	90-100	50-90	24-55	20-30	6-13

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
NoB:												
Norfolk---------	0-6	Loamy sand	SM	A-2-4, A-2	0	0	95-100	92-100	50-95	13-30	0-25	NP-4
	6-30	Sandy loam, sandy clay loam	SC-SM, SC, CL	A-2, A-6	0	0	95-100	91-100	70-96	30-63	27-44	12-25
	30-70	Sandy clay loam, clay loam, sandy clay	SC-SM, SC, CL	A-6, A-7-6	0	0	100	98-100	65-98	36-72	29-51	13-31
	70-80	Sandy loam		A-6	0	0	95-100	90-100	50-90	24-55	20-30	6-13
OeA:												
Orangeburg------	0-7	Loamy sand	SM, SC-SM	A-2-4, A-2	0	0	98-100	95-100	60-87	14-28	16-24	1-6
	7-11	Sandy loam	SM, SC	A-2	0	0	98-100	95-100	70-96	25-35	18-30	3-12
	11-22	Sandy clay loam, sandy loam	CL, SC, SC-SM	A-6	0	0	98-100	95-100	71-96	38-58	27-44	12-25
	22-80	Sandy clay loam, sandy clay	CL, SC	A-7, A-6	0	0	98-100	95-100	70-97	40-65	29-53	13-32
OeB:												
Orangeburg------	0-7	Loamy sand	SC-SM, SM	A-2-4, A-2	0	0	98-100	95-100	60-87	14-28	16-24	1-6
	7-11	Sandy loam	SC, SM	A-2	0	0	98-100	95-100	70-96	25-35	18-30	3-12
	11-22	Sandy clay loam, sandy loam	CL, SC, SC-SM	A-6	0	0	98-100	95-100	71-96	38-58	27-44	12-25
	22-80	Sandy clay loam, sandy clay	CL, SC	A-7, A-6	0	0	98-100	95-100	70-97	40-65	29-53	13-32
OeC2:												
Orangeburg------	0-7	Sandy loam	SC-SM, SM	A-2-4, A-2	0	0	98-100	95-100	60-87	14-28	16-24	1-6
	7-11	Sandy loam	SM, SC	A-2	0	0	98-100	95-100	70-96	25-35	18-30	3-12
	11-22	Sandy clay loam, sandy loam	CL, SC, SC-SM	A-6	0	0	98-100	95-100	71-96	38-58	27-44	12-25
	22-80	Sandy clay loam, sandy clay	CL, SC	A-7, A-6	0	0	98-100	95-100	70-97	40-65	29-53	13-32

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
OeD2:												
Orangeburg------	0-7	Sandy loam	SM, SC-SM	A-2-4, A-2	0	0	98-100	95-100	60-87	14-28	16-24	1-6
	7-11	Sandy loam	SM, SC	A-2	0	0	98-100	95-100	70-96	25-35	18-30	3-12
	11-22	Sandy clay loam, sandy loam	CL, SC, SC-SM	A-6	0	0	98-100	95-100	71-96	38-58	27-44	12-25
	22-80	Sandy clay loam, sandy clay	CL, SC	A-7, A-6	0	0	98-100	95-100	70-97	40-65	29-53	13-32
Pt:												
Pits.												
ReA:												
Red Bay---------	0-8	Loamy sand	SC-SM, SM	A-2, A-2-4	0	0	100	90-100	51-75	15-30	16-28	1-7
	8-40	Sandy loam, sandy clay loam	SC, SC-SM	A-2, A-4	0	0	100	95-100	60-85	15-50	20-36	6-17
	40-80	Sandy clay loam	SC, SC-SM	A-2, A-6	0	0	100	95-100	70-90	24-50	27-44	12-25
ReB:												
Red Bay---------	0-8	Loamy sand	SM, SC-SM	A-2, A-2-4	0	0	100	90-100	51-75	15-30	16-28	1-7
	8-40	Sandy loam, sandy clay loam	SC-SM, SC	A-2, A-4	0	0	100	95-100	60-85	15-50	20-36	6-17
	40-80	Sandy clay loam	SC, SC-SM	A-2, A-6	0	0	100	95-100	70-90	24-50	27-44	12-25
ReC2:												
Red Bay---------	0-8	Sandy loam	SM, SC-SM	A-2, A-2-4	0	0	100	90-100	51-75	15-30	16-28	1-7
	8-40	Sandy loam, sandy clay loam	SC-SM, SC	A-2, A-4	0	0	100	95-100	60-85	15-50	20-36	6-17
	40-80	Sandy clay loam	SC-SM, SC	A-2, A-6	0	0	100	95-100	70-90	24-50	27-44	12-25
ReD2:												
Red Bay---------	0-8	Sandy loam	SM, SC-SM	A-2, A-2-4	0	0	100	90-100	51-75	15-30	16-28	1-7
	8-40	Sandy loam, sandy clay loam	SC-SM, SC	A-2, A-4	0	0	100	95-100	60-85	15-50	20-36	6-17
	40-80	Sandy clay loam	SC, SC-SM	A-2, A-6	0	0	100	95-100	70-90	24-50	27-44	12-25

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
TrB:												
Troup	0-9	Loamy sand, sand	SP-SM, SM	A-2, A-2-4	0	0	95-100	90-100	50-75	10-30	0-26	NP-7
	9-60	Loamy sand, sand	SP-SM, SM	A-2	0	0	95-100	90-100	50-75	10-30	0-23	NP-6
	60-80	Sandy clay loam, sandy loam, fine sandy loam	SC, SC-SM, CL-ML, CL	A-2, A-4, A-6	0	0	95-100	90-100	60-90	24-55	20-32	6-13
TrC:												
Troup	0-9	Loamy sand, sand	SM, SP-SM	A-2, A-2-4	0	0	95-100	90-100	50-75	10-30	0-26	NP-7
	9-60	Loamy sand, sand	SP-SM, SM	A-2	0	0	95-100	90-100	50-75	10-30	0-23	NP-6
	60-80	Sandy clay loam, sandy loam, fine sandy loam	SC-SM, SC, CL-ML, CL	A-2, A-4, A-6	0	0	95-100	90-100	60-90	24-55	20-32	6-13
TrD:												
Troup	0-9	Loamy sand, sand	SM, SP-SM	A-2, A-2-4	0	0	95-100	90-100	50-75	10-30	0-26	NP-7
	9-60	Loamy sand, sand	SM, SP-SM	A-2	0	0	95-100	90-100	50-75	10-30	0-23	NP-6
	60-80	Sandy clay loam, sandy loam, fine sandy loam	SC-SM, SC, CL-ML, CL	A-2, A-4, A-6	0	0	95-100	90-100	60-90	24-55	20-32	6-13

Table 16.--Water Features

[Depths of layers are in feet. See text for definitions of terms used in this table. Estimates of the frequency of ponding and flooding apply to the whole year rather than to individual months. Absence of an entry indicates that the feature is not a concern or that data were not estimated]

Map symbol and soil name	Hydrologic group	Months	Water table		Ponding			Flooding	
			Upper limit	Kind	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft		*Ft*				
AeB:									
Ailey	B	Jan-Dec	>6.0	---	---	---	None	---	None
AeC:									
Ailey	B	Jan-Dec	>6.0	---	---	---	None	---	None
AoE:									
Ailey	B	Jan-Dec	>6.0	---	---	---	None	---	None
Cowarts	C	Jan-Dec	>6.0	---	---	---	None	---	None
BeB:									
Benevolence	B	Jan-Dec	>6.0	---	---	---	None	---	None
BoB:									
Bonneau	A	Jan-Mar	4.0-6.0	Apparent	---	---	None	---	None
		Apr-Nov	---	---	---	---	None	---	None
		Dec	4.0-6.0	Apparent	---	---	None	---	None
CaB2:									
Carnegie	C	Jan-Dec	>6.0	---	---	---	None	---	None
CkC2:									
Carnegie	C	Jan-Dec	>6.0	---	---	---	None	---	None
Nankin	C	Jan-Dec	>6.0	---	---	---	None	---	None
CkD2:									
Carnegie	C	Jan-Dec	>6.0	---	---	---	None	---	None
Nankin	C	Jan-Dec	>6.0	---	---	---	None	---	None
CnA:									
Clarendon	C	Jan-Mar	2.0-3.0	Apparent	---	---	None	---	None
		Apr-Nov	---	---	---	---	None	---	None
		Dec	2.0-3.0	Apparent	---	---	None	---	None
CoB:									
Cowarts	C	Jan-Dec	>6.0	---	---	---	None	---	None
CoC:									
Cowarts	C	Jan-Dec	>6.0	---	---	---	None	---	None
FeA:									
Faceville	B	Jan-Dec	>6.0	---	---	---	None	---	None
FeB:									
Faceville	B	Jan-Dec	>6.0	---	---	---	None	---	None
FeC:									
Faceville	B	Jan-Dec	>6.0	---	---	---	None	---	None
GoA:									
Goldsboro	B	Jan-Apr	2.0-3.0	Apparent	---	---	None	---	None
		May-Nov	---	---	---	---	None	---	None
		Dec	2.0-3.0	Apparent	---	---	None	---	None

Table 16.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Months	Water table		Ponding			Flooding	
			Upper limit	Kind	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft		*Ft*				
GrA:									
Grady	D	Jan-Jun	0.0-1.0	Apparent	0.0-2.0	Long	Frequent	---	None
		Jul-Nov	---	---	---	---	None	---	None
		Dec	0.0-1.0	Apparent	0.0-2.0	Long	Frequent	---	None
GsA:									
Greenville	B	Jan-Dec	>6.0	---	---	---	None	---	None
GsB:									
Greenville	B	Jan-Dec	>6.0	---	---	---	None	---	None
GsC:									
Greenville	B	Jan-Dec	>6.0	---	---	---	None	---	None
GsD2:									
Greenville	B	Jan-Dec	>6.0	---	---	---	None	---	None
HnC:									
Henderson	B	Jan-Dec	>6.0	---	---	---	None	---	None
HnD:									
Henderson	B	Jan-Dec	>6.0	---	---	---	None	---	None
KBA:									
Kinston	B/D	Jan-Jun	0.0-1.0	Apparent	---	---	None	Brief	Frequent
		Jul-Oct	---	---	---	---	None	---	None
		Nov-Dec	0.0-1.0	Apparent	---	---	None	Brief	Frequent
Bibb	D	Jan-Apr	0.5-1.0	Apparent	---	---	None	Brief	Frequent
		May	---	---	---	---	None	Brief	Frequent
		Jun-Nov	---	---	---	---	None	---	None
		Dec	0.5-1.0	Apparent	---	---	None	Brief	Frequent
LkC:									
Lakeland	A	Jan-Dec	>6.0	---	---	---	None	---	None
LkD:									
Lakeland	A	Jan-Dec	>6.0	---	---	---	None	---	None
LmB:									
Lucy	A	Jan-Dec	>6.0	---	---	---	None	---	None
LmC:									
Lucy	A	Jan-Dec	>6.0	---	---	---	None	---	None
LmD:									
Lucy	A	Jan-Dec	>6.0	---	---	---	None	---	None
MaA:									
Marlboro	B	Jan-Dec	>6.0	---	---	---	None	---	None
MaB:									
Marlboro	B	Jan-Dec	>6.0	---	---	---	None	---	None
NcB:									
Nankin	C	Jan-Dec	>6.0	---	---	---	None	---	None
Cowarts	C	Jan-Dec	>6.0	---	---	---	None	---	None

Table 16.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Months	Water table		Ponding			Flooding	
			Upper limit	Kind	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft		*Ft*				
NcD:									
Nankin	C	Jan-Dec	>6.0	---	---	---	None	---	None
Cowarts	C	Jan-Dec	>6.0	---	---	---	None	---	None
NcF:									
Nankin	C	Jan-Dec	>6.0	---	---	---	None	---	None
Cowarts	C	Jan-Dec	>6.0	---	---	---	None	---	None
NoA:									
Norfolk	B	Jan-Mar	4.0-6.0	Apparent	---	---	None	---	None
		Apr-Dec	---	---	---	---	None	---	None
NoB:									
Norfolk	B	Jan-Mar	4.0-6.0	Apparent	---	---	None	---	None
		Apr-Dec	---	---	---	---	None	---	None
OeA:									
Orangeburg	B	Jan-Dec	>6.0	---	---	---	None	---	None
OeB:									
Orangeburg	B	Jan-Dec	>6.0	---	---	---	None	---	None
OeC2:									
Orangeburg	B	Jan-Dec	>6.0	---	---	---	None	---	None
OeD2:									
Orangeburg	B	Jan-Dec	>6.0	---	---	---	None	---	None
Pt:									
Pits	---	Jan-Dec	>6.0	---	---	---	None	---	None
ReA:									
Red Bay	B	Jan-Dec	>6.0	---	---	---	None	---	None
ReB:									
Red Bay	B	Jan-Dec	>6.0	---	---	---	None	---	None
ReC2:									
Red Bay	B	Jan-Dec	>6.0	---	---	---	None	---	None
ReD2:									
Red Bay	B	Jan-Dec	>6.0	---	---	---	None	---	None
TrB:									
Troup	A	Jan-Dec	>6.0	---	---	---	None	---	None
TrC:									
Troup	A	Jan-Dec	>6.0	---	---	---	None	---	None
TrD:									
Troup	A	Jan-Dec	>6.0	---	---	---	None	---	None

Table 17.--Selected Physical and Chemical Properties of the Soils

[Entries under "Erosion factors--T" apply to the entire profile. Absence of an entry indicates that data were not estimated]

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Soil reaction	Organic matter	Erosion factors		
									Kw	Kf	T
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*pH*	*Pct*			
AeB:											
Ailey	0-3	5-10	1.35-1.45	6-20	0.03-0.05	0.0-2.9	4.5-5.5	0.5-2.0	.15	.15	4
	3-23	5-10	1.35-1.45	6-20	0.03-0.05	0.0-2.9	4.5-5.5	0.0-0.5	.15	.15	
	23-42	15-35	1.55-1.70	0.6-2	0.09-0.12	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
	42-47	18-35	1.70-1.80	0.06-0.2	0.06-0.10	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
	47-80	18-40	1.80-1.95	0.06-0.2	0.04-0.08	0.0-2.9	4.5-5.5	0.0-0.5	.15	.15	
AeC:											
Ailey	0-3	5-10	1.35-1.45	6-20	0.03-0.05	0.0-2.9	4.5-5.5	0.5-2.0	.15	.15	4
	3-23	5-10	1.35-1.45	6-20	0.03-0.05	0.0-2.9	4.5-5.5	0.0-0.5	.15	.15	
	23-42	15-35	1.55-1.70	0.6-2	0.09-0.12	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
	42-47	18-35	1.70-1.80	0.06-0.2	0.06-0.10	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
	47-80	18-40	1.80-1.95	0.06-0.2	0.04-0.08	0.0-2.9	4.5-5.5	0.0-0.5	.15	.15	
AoE:											
Ailey	0-3	5-10	1.35-1.45	6-20	0.03-0.05	0.0-2.9	4.5-5.5	0.5-2.0	.15	.15	4
	3-23	5-10	1.35-1.45	6-20	0.03-0.05	0.0-2.9	4.5-5.5	0.0-0.5	.15	.15	
	23-42	15-35	1.55-1.70	0.6-2	0.09-0.12	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
	42-47	18-35	1.70-1.80	0.06-0.2	0.06-0.10	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
	47-80	18-40	1.80-1.95	0.06-0.2	0.04-0.08	0.0-2.9	4.5-5.5	0.0-0.5	.15	.15	
Cowarts	0-7	3-10	1.30-1.70	2-6	0.06-0.10	0.0-2.9	4.5-5.5	0.5-2.0	.15	.15	4
	7-31	10-30	1.30-1.50	0.6-2	0.10-0.16	0.0-2.9	4.5-5.5	0.2-1.0	.28	.28	
	31-40	25-40	1.30-1.50	0.2-2	0.10-0.16	0.0-2.9	4.5-5.5	0.0-0.5	.28	.28	
	40-80	18-35	1.65-1.80	0.06-0.6	0.10-0.14	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
BeB:											
Benevolence	0-12	10-15	1.30-1.70	0.6-6	0.10-0.15	0.0-2.9	4.5-6.0	0.5-2.0	.20	.20	5
	12-37	10-18	1.30-1.70	0.6-6	0.10-0.15	0.0-2.9	4.5-6.0	0.0-0.5	.20	.20	
	37-47	10-18	1.30-1.70	0.6-6	0.10-0.15	0.0-2.9	4.5-6.0	0.0-0.5	.20	.20	
	47-80	18-30	1.30-1.70	0.6-6	0.10-0.15	0.0-2.9	4.5-6.0	0.0-0.5	.20	.20	
BoB:											
Bonneau	0-6	5-15	1.30-1.70	6-20	0.05-0.11	0.0-2.9	4.5-6.0	0.5-2.0	.10	.10	5
	6-33	5-15	1.30-1.70	6-20	0.05-0.11	0.0-2.9	4.5-6.0	0.0-0.5	.10	.10	
	33-65	13-35	1.40-1.60	0.6-2	0.10-0.15	0.0-2.9	4.5-6.0	0.0-0.5	.20	.20	
	65-80	18-42	1.40-1.60	0.6-2	0.10-0.16	0.0-2.9	4.5-6.0	0.0-0.5	.20	.20	
CaB2:											
Carnegie	0-5	3-8	1.45-1.65	2-6	0.05-0.10	0.0-2.9	4.5-5.5	1.0-2.0	.28	.28	3
	5-22	25-40	1.40-1.65	0.2-0.6	0.10-0.16	0.0-2.9	4.5-5.5	0.0-0.5	.32	.32	
	22-38	36-51	1.40-1.65	0.2-0.6	0.10-0.14	0.0-2.9	4.5-5.5	0.0-0.5	.28	.28	
	38-72	36-55	1.40-1.65	0.2-0.6	0.10-0.14	0.0-2.9	4.5-5.5	0.0-0.5	.28	.28	
CkC2:											
Carnegie	0-5	3-8	1.45-1.65	2-6	0.05-0.10	0.0-2.9	4.5-5.5	1.0-2.0	.28	.28	3
	5-22	25-40	1.40-1.65	0.2-0.6	0.10-0.16	0.0-2.9	4.5-5.5	0.0-0.5	.32	.32	
	22-38	36-51	1.40-1.65	0.2-0.6	0.10-0.14	0.0-2.9	4.5-5.5	0.0-0.5	.28	.28	
	38-72	36-55	1.40-1.65	0.2-0.6	0.10-0.14	0.0-2.9	4.5-5.5	0.0-0.5	.28	.28	
Nankin	0-4	5-12	1.45-1.65	2-6	0.05-0.10	0.0-2.9	4.5-5.5	0.5-2.0	.17	.17	3
	4-16	15-35	1.55-1.65	0.6-2	0.10-0.15	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
	16-44	30-50	1.30-1.70	0.2-0.6	0.11-0.16	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
	44-80	15-35	1.60-1.70	0.6-2	0.10-0.15	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	

Table 17.--Selected Physical and Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Soil reaction	Organic matter	Erosion factors		
									Kw	Kf	T
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*pH*	*Pct*			
CkD2:											
Carnegie----------	0-5	3-8	1.45-1.65	2-6	0.05-0.10	0.0-2.9	4.5-5.5	1.0-2.0	.28	.28	3
	5-22	25-40	1.40-1.65	0.2-0.6	0.10-0.16	0.0-2.9	4.5-5.5	0.0-0.5	.32	.32	
	22-38	36-51	1.40-1.65	0.2-0.6	0.10-0.14	0.0-2.9	4.5-5.5	0.0-0.5	.28	.28	
	38-72	36-55	1.40-1.65	0.2-0.6	0.10-0.14	0.0-2.9	4.5-5.5	0.0-0.5	.28	.28	
Nankin------------	0-4	5-12	1.45-1.65	2-6	0.05-0.10	0.0-2.9	4.5-5.5	0.5-2.0	.17	.17	3
	4-16	15-35	1.55-1.65	0.6-2	0.10-0.15	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
	16-44	30-50	1.30-1.70	0.2-0.6	0.11-0.16	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
	44-80	15-35	1.60-1.70	0.6-2	0.10-0.15	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
CnA:											
Clarendon---------	0-8	2-10	1.40-1.60	2-6	0.08-0.12	0.0-2.9	4.5-6.0	0.5-3.0	.15	.15	5
	8-34	18-35	1.40-1.60	0.6-2	0.10-0.15	0.0-2.9	4.5-5.5	0.0-0.5	.20	.20	
	34-80	18-35	1.40-1.60	0.2-0.6	0.10-0.15	0.0-2.9	4.5-5.5	0.0-0.5	.20	.20	
CoB:											
Cowarts-----------	0-7	3-10	1.30-1.70	2-6	0.06-0.10	0.0-2.9	4.5-5.5	0.5-2.0	.15	.15	4
	7-22	10-30	1.30-1.50	0.6-2	0.10-0.16	0.0-2.9	4.5-5.5	0.2-1.0	.28	.28	
	22-40	25-40	1.30-1.50	0.2-2	0.10-0.16	0.0-2.9	4.5-5.5	0.0-0.5	.28	.28	
	40-80	18-35	1.65-1.80	0.06-0.6	0.10-0.14	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
CoC:											
Cowarts-----------	0-7	3-10	1.30-1.70	2-6	0.06-0.10	0.0-2.9	4.5-5.5	0.5-2.0	.15	.15	4
	7-22	10-30	1.30-1.50	0.6-2	0.10-0.16	0.0-2.9	4.5-5.5	0.2-1.0	.28	.28	
	22-40	25-40	1.30-1.50	0.2-2	0.10-0.16	0.0-2.9	4.5-5.5	0.0-0.5	.28	.28	
	40-80	18-35	1.65-1.80	0.06-0.6	0.10-0.14	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
FeA:											
Faceville---------	0-10	5-20	1.40-1.65	6-20	0.06-0.09	0.0-2.9	4.5-5.5	0.5-2.0	.28	.28	5
	10-80	35-55	1.25-1.60	0.6-2	0.12-0.18	0.0-2.9	4.5-5.5	0.0-0.5	.37	.37	
FeB:											
Faceville---------	0-10	5-20	1.40-1.65	6-20	0.06-0.09	0.0-2.9	4.5-5.5	0.5-2.0	.28	.28	5
	10-80	35-55	1.25-1.60	0.6-2	0.12-0.18	0.0-2.9	4.5-5.5	0.0-0.5	.37	.37	
FeC:											
Faceville---------	0-10	5-20	1.40-1.65	6-20	0.06-0.09	0.0-2.9	4.5-5.5	0.5-2.0	.28	.28	5
	10-80	35-55	1.25-1.60	0.6-2	0.12-0.18	0.0-2.9	4.5-5.5	0.0-0.5	.37	.37	
GoA:											
Goldsboro---------	0-10	2-8	1.55-1.75	6-20	0.06-0.11	0.0-2.9	4.5-5.5	0.5-2.0	.17	.17	5
	10-33	18-30	1.30-1.50	0.6-2	0.11-0.17	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
	33-85	20-34	1.30-1.40	0.6-2	0.11-0.20	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
GrA:											
Grady-------------	0-5	27-40	1.20-1.45	0.6-2	0.10-0.18	0.0-2.9	3.6-5.5	1.0-4.0	.24	.24	5
	5-65	45-65	1.50-1.60	0.06-0.2	0.12-0.16	3.0-5.9	3.6-5.5	0.0-1.0	.10	.10	
GsA:											
Greenville--------	0-8	15-30	1.30-1.65	0.6-2	0.12-0.18	0.0-2.9	4.5-6.0	1.0-3.0	.24	.24	5
	8-80	35-55	1.35-1.55	0.6-2	0.14-0.18	0.0-2.9	4.5-6.0	0.0-0.5	.17	.17	
GsB:											
Greenville--------	0-8	15-30	1.30-1.65	0.6-2	0.12-0.18	0.0-2.9	4.5-6.0	1.0-3.0	.24	.24	5
	8-80	35-55	1.35-1.55	0.6-2	0.14-0.18	0.0-2.9	4.5-6.0	0.0-0.5	.17	.17	
GsC:											
Greenville--------	0-8	15-30	1.30-1.65	0.6-2	0.12-0.18	0.0-2.9	4.5-6.0	1.0-3.0	.24	.24	5
	8-80	35-55	1.35-1.55	0.6-2	0.14-0.18	0.0-2.9	4.5-6.0	0.0-0.5	.17	.17	

Table 17.--Selected Physical and Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Soil reaction	Organic matter	Erosion factors		
									Kw	Kf	T
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*pH*	*Pct*			
GsD2:											
Greenville--------	0-8	32-38	1.30-1.65	0.6-2	0.12-0.18	0.0-2.9	4.5-6.0	0.5-2.0	.24	.24	5
	8-80	35-55	1.35-1.55	0.6-2	0.14-0.18	0.0-2.9	4.5-6.0	0.0-0.5	.17	.17	
HnC:											
Henderson---------	0-4	12-25	1.25-1.55	0.6-6	0.10-0.15	0.0-2.9	4.5-5.5	0.5-2.0	.20	.28	4
	4-13	12-25	1.25-1.55	0.6-6	0.10-0.15	0.0-2.9	4.5-5.5	0.0-0.5	.20	.28	
	13-49	40-60	1.30-1.55	0.06-0.2	0.10-0.14	0.0-2.9	4.5-5.5	0.0-0.5	.28	.28	
	49-65	35-60	1.30-1.55	0.06-0.2	0.10-0.14	0.0-2.9	4.5-5.5	0.0-0.5	.32	.28	
HnD:											
Henderson---------	0-4	12-25	1.25-1.55	0.6-6	0.10-0.15	0.0-2.9	4.5-5.5	0.5-2.0	.20	.28	4
	4-13	12-25	1.25-1.55	0.6-6	0.10-0.15	0.0-2.9	4.5-5.5	0.0-0.5	.20	.28	
	13-49	40-60	1.30-1.55	0.06-0.2	0.10-0.14	0.0-2.9	4.5-5.5	0.0-0.5	.28	.28	
	49-65	35-60	1.30-1.55	0.06-0.2	0.10-0.14	0.0-2.9	4.5-5.5	0.0-0.5	.32	.28	
KBA:											
Kinston-----------	0-3	5-18	1.40-1.60	0.6-2	0.13-0.19	0.0-2.9	4.5-5.5	2.0-5.0	.24	.24	5
	3-8	5-18	1.40-1.60	0.6-2	0.13-0.19	0.0-2.9	4.5-5.5	2.0-5.0	.24	.24	
	8-15	25-40	1.40-1.60	0.6-2	0.13-0.19	0.0-2.9	4.5-5.5	2.0-5.0	.24	.24	
	15-33	5-18	1.40-1.60	0.6-2	0.13-0.19	0.0-2.9	4.5-5.5	2.0-5.0	.24	.24	
	33-52	18-34	1.30-1.50	0.6-2	0.14-0.18	0.0-2.9	4.5-5.5	0.0-3.0	.32	.32	
	52-80	2-10	1.50-1.70	6-20	0.03-0.06	0.0-2.9	4.5-5.5	0.0-3.0	.10	.10	
Bibb--------------	0-5	2-18	1.50-1.70	0.6-2	0.12-0.18	0.0-2.9	4.5-5.5	1.0-3.0	.20	.20	5
	5-27	2-18	1.45-1.75	0.6-2	0.10-0.20	0.0-2.9	4.5-5.5	0.5-1.0	.37	.37	
	27-45	2-18	1.50-1.70	0.6-2	0.12-0.18	0.0-2.9	4.5-5.5	1.0-3.0	.20	.20	
	45-80	2-18	1.45-1.75	0.6-2	0.10-0.20	0.0-2.9	4.5-5.5	0.5-1.0	.37	.37	
LkC:											
Lakeland----------	0-4	2-8	1.35-1.65	6-20	0.03-0.07	0.0-2.9	4.5-5.5	0.5-1.0	.10	.10	5
	4-60	2-8	1.35-1.65	6-20	0.03-0.07	0.0-2.9	4.5-5.5	0.1-0.5	.10	.10	
	60-80	1-6	1.50-1.60	6-20	0.02-0.06	0.0-2.9	4.5-5.5	0.0-0.0	.10	.10	
LkD:											
Lakeland----------	0-4	2-8	1.35-1.65	6-20	0.03-0.07	0.0-2.9	4.5-5.5	0.5-1.0	.10	.10	5
	4-60	2-8	1.35-1.65	6-20	0.03-0.07	0.0-2.9	4.5-5.5	0.1-0.5	.10	.10	
	60-80	1-6	1.50-1.60	6-20	0.02-0.06	0.0-2.9	4.5-5.5	0.0-0.0	.10	.10	
LmB:											
Lucy--------------	0-8	1-12	1.30-1.70	6-20	0.08-0.12	0.0-2.9	4.5-6.0	0.5-1.0	.10	.10	5
	8-24	1-12	1.30-1.70	6-20	0.08-0.12	0.0-2.9	4.5-6.0	0.0-0.5	.10	.10	
	24-48	10-20	1.40-1.60	2-6	0.10-0.12	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
	48-72	20-45	1.40-1.60	0.6-2	0.12-0.14	0.0-2.9	4.5-5.5	0.0-0.5	.28	.28	
LmC:											
Lucy--------------	0-8	1-12	1.30-1.70	6-20	0.08-0.12	0.0-2.9	4.5-6.0	0.5-1.0	.10	.10	5
	8-24	1-12	1.30-1.70	6-20	0.08-0.12	0.0-2.9	4.5-6.0	0.0-0.5	.10	.10	
	24-48	10-20	1.40-1.60	2-6	0.10-0.12	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
	48-72	20-45	1.40-1.60	0.6-2	0.12-0.14	0.0-2.9	4.5-5.5	0.0-0.5	.28	.28	
LmD:											
Lucy--------------	0-8	1-12	1.30-1.70	6-20	0.08-0.12	0.0-2.9	4.5-6.0	0.5-1.0	.10	.10	5
	8-24	1-12	1.30-1.70	6-20	0.08-0.12	0.0-2.9	4.5-6.0	0.0-0.5	.10	.10	
	24-48	10-20	1.40-1.60	2-6	0.10-0.12	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
	48-72	20-45	1.40-1.60	0.6-2	0.12-0.14	0.0-2.9	4.5-5.5	0.0-0.5	.28	.28	

Table 17.--Selected Physical and Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Soil reaction	Organic matter	Erosion factors		
									Kw	Kf	T
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*pH*	*Pct*			
MaA:											
Marlboro----------	0-8	5-20	1.30-1.60	2-6	0.09-0.14	0.0-2.9	4.5-6.0	0.5-2.0	.20	.20	5
	8-13	22-38	1.30-1.60	2-6	0.09-0.14	0.0-2.9	4.5-6.0	0.0-0.5	.20	.20	
	13-70	25-45	1.20-1.50	0.6-2	0.14-0.18	0.0-2.9	4.5-6.0	0.0-0.5	.20	.20	
	70-80	25-42	1.20-1.50	0.6-2	0.12-0.18	0.0-2.9	4.5-6.0	0.0-0.5	.20	.20	
MaB:											
Marlboro----------	0-8	5-20	1.30-1.60	2-6	0.09-0.14	0.0-2.9	4.5-6.0	0.5-2.0	.20	.20	5
	8-13	22-38	1.30-1.60	2-6	0.09-0.14	0.0-2.9	4.5-6.0	0.0-0.5	.20	.20	
	13-70	25-45	1.20-1.50	0.6-2	0.14-0.18	0.0-2.9	4.5-6.0	0.0-0.5	.20	.20	
	70-80	25-42	1.20-1.50	0.6-2	0.12-0.18	0.0-2.9	4.5-6.0	0.0-0.5	.20	.20	
NcB:											
Nankin------------	0-4	5-12	1.45-1.65	2-6	0.05-0.10	0.0-2.9	4.5-5.5	0.5-2.0	.17	.17	3
	4-16	15-35	1.55-1.65	0.6-2	0.10-0.15	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
	16-44	30-50	1.30-1.70	0.2-0.6	0.11-0.16	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
	44-80	15-35	1.60-1.70	0.6-2	0.10-0.15	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
Cowarts-----------	0-7	3-10	1.30-1.70	2-6	0.06-0.10	0.0-2.9	4.5-5.5	0.5-2.0	.15	.15	4
	7-22	10-30	1.30-1.50	0.6-2	0.10-0.16	0.0-2.9	4.5-5.5	0.2-1.0	.28	.28	
	22-40	25-40	1.30-1.50	0.2-2	0.10-0.16	0.0-2.9	4.5-5.5	0.0-0.5	.28	.28	
	40-80	18-35	1.65-1.80	0.06-0.6	0.10-0.14	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
NcD:											
Nankin------------	0-4	5-12	1.45-1.65	2-6	0.05-0.10	0.0-2.9	4.5-5.5	0.5-2.0	.17	.17	3
	4-16	15-35	1.55-1.65	0.6-2	0.10-0.15	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
	16-44	30-50	1.30-1.70	0.2-0.6	0.11-0.16	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
	44-80	15-35	1.60-1.70	0.6-2	0.10-0.15	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
Cowarts-----------	0-7	3-10	1.30-1.70	2-6	0.06-0.10	0.0-2.9	4.5-5.5	0.5-2.0	.15	.15	4
	7-22	10-30	1.30-1.50	0.6-2	0.10-0.16	0.0-2.9	4.5-5.5	0.2-1.0	.28	.28	
	22-40	25-40	1.30-1.50	0.2-2	0.10-0.16	0.0-2.9	4.5-5.5	0.0-0.5	.28	.28	
	40-80	18-35	1.65-1.80	0.06-0.6	0.10-0.14	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
NcF:											
Nankin------------	0-4	5-12	1.45-1.65	2-6	0.05-0.10	0.0-2.9	4.5-5.5	0.5-2.0	.17	.17	3
	4-16	15-35	1.55-1.65	0.6-2	0.10-0.15	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
	16-44	30-50	1.30-1.70	0.2-0.6	0.11-0.16	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
	44-80	15-35	1.60-1.70	0.6-2	0.10-0.15	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
Cowarts-----------	0-7	3-10	1.30-1.70	2-6	0.06-0.10	0.0-2.9	4.5-5.5	0.5-2.0	.15	.15	4
	7-22	10-30	1.30-1.50	0.6-2	0.10-0.16	0.0-2.9	4.5-5.5	0.2-1.0	.28	.28	
	22-40	25-40	1.30-1.50	0.2-2	0.10-0.16	0.0-2.9	4.5-5.5	0.0-0.5	.28	.28	
	40-80	18-35	1.65-1.80	0.06-0.6	0.10-0.14	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
NoA:											
Norfolk-----------	0-6	2-8	1.55-1.70	6-20	0.06-0.11	0.0-2.9	3.5-5.5	0.5-2.0	.17	.17	5
	6-30	18-35	1.30-1.65	0.6-2	0.10-0.18	0.0-2.9	3.5-5.5	0.0-0.5	.24	.24	
	30-70	20-43	1.20-1.65	0.6-2	0.12-0.18	0.0-2.9	3.5-5.5	0.0-0.5	.24	.24	
	70-80	10-20	1.40-1.60	0.6-2	0.10-0.13	0.0-2.9	3.5-5.5	0.0-0.5	.20	.20	
NoB:											
Norfolk-----------	0-6	2-8	1.55-1.70	6-20	0.06-0.11	0.0-2.9	3.5-5.5	0.5-2.0	.17	.17	5
	6-30	18-35	1.30-1.65	0.6-2	0.10-0.18	0.0-2.9	3.5-5.5	0.0-0.5	.24	.24	
	30-70	20-43	1.20-1.65	0.6-2	0.12-0.18	0.0-2.9	3.5-5.5	0.0-0.5	.24	.24	
	70-80	10-20	1.40-1.60	0.6-2	0.10-0.13	0.0-2.9	3.5-5.5	0.0-0.5	.20	.20	

Table 17.--Selected Physical and Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Soil reaction	Organic matter	Erosion factors		
									Kw	Kf	T
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*pH*	*Pct*			
OeA:											
Orangeburg--------	0-7	4-10	1.35-1.55	2-6	0.06-0.09	0.0-2.9	4.5-6.0	0.5-2.0	.10	.10	5
	7-11	7-18	1.50-1.65	2-6	0.09-0.12	0.0-2.9	4.5-6.0	0.0-0.5	.20	.20	
	11-22	18-35	1.60-1.75	0.6-2	0.11-0.14	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
	22-80	20-45	1.60-1.75	0.6-2	0.11-0.14	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
OeB:											
Orangeburg--------	0-7	4-10	1.35-1.55	2-6	0.06-0.09	0.0-2.9	4.5-6.0	0.5-2.0	.10	.10	5
	7-11	7-18	1.50-1.65	2-6	0.09-0.12	0.0-2.9	4.5-6.0	0.0-0.5	.20	.20	
	11-22	18-35	1.60-1.75	0.6-2	0.11-0.14	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
	22-80	20-45	1.60-1.75	0.6-2	0.11-0.14	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
OeC2:											
Orangeburg--------	0-7	4-10	1.35-1.55	2-6	0.06-0.09	0.0-2.9	4.5-6.0	0.5-2.0	.10	.10	5
	7-11	7-18	1.50-1.65	2-6	0.09-0.12	0.0-2.9	4.5-6.0	0.0-0.5	.20	.20	
	11-22	18-35	1.60-1.75	0.6-2	0.11-0.14	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
	22-80	20-45	1.60-1.75	0.6-2	0.11-0.14	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
OeD2:											
Orangeburg--------	0-7	4-10	1.35-1.55	2-6	0.06-0.09	0.0-2.9	4.5-6.0	0.5-2.0	.10	.10	5
	7-11	7-18	1.50-1.65	2-6	0.09-0.12	0.0-2.9	4.5-6.0	0.0-0.5	.20	.20	
	11-22	18-35	1.60-1.75	0.6-2	0.11-0.14	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
	22-80	20-45	1.60-1.75	0.6-2	0.11-0.14	0.0-2.9	4.5-5.5	0.0-0.5	.24	.24	
Pt:											
Pits.											
ReA:											
Red Bay-----------	0-8	4-12	1.45-1.60	6-20	0.06-0.11	0.0-2.9	4.5-6.0	0.5-2.0	.15	.15	5
	8-40	10-25	1.30-1.60	0.6-6	0.10-0.14	0.0-2.9	4.5-6.0	0.0-0.5	.15	.15	
	40-80	18-35	1.30-1.50	0.6-2	0.12-0.17	0.0-2.9	4.5-5.5	0.0-0.5	.17	.17	
ReB:											
Red Bay-----------	0-8	4-12	1.45-1.60	6-20	0.06-0.11	0.0-2.9	4.5-6.0	0.5-2.0	.15	.15	5
	8-40	10-25	1.30-1.60	0.6-6	0.10-0.14	0.0-2.9	4.5-6.0	0.0-0.5	.15	.15	
	40-80	18-35	1.30-1.50	0.6-2	0.12-0.17	0.0-2.9	4.5-5.5	0.0-0.5	.17	.17	
ReC2:											
Red Bay-----------	0-8	4-12	1.45-1.60	6-20	0.06-0.11	0.0-2.9	4.5-6.0	0.5-2.0	.15	.15	5
	8-40	10-25	1.30-1.60	0.6-6	0.10-0.14	0.0-2.9	4.5-6.0	0.0-0.5	.15	.15	
	40-80	18-35	1.30-1.50	0.6-2	0.12-0.17	0.0-2.9	4.5-5.5	0.0-0.5	.17	.17	
ReD2:											
Red Bay-----------	0-8	4-12	1.45-1.60	6-20	0.06-0.11	0.0-2.9	4.5-6.0	0.5-2.0	.15	.15	5
	8-40	10-25	1.30-1.60	0.6-6	0.10-0.14	0.0-2.9	4.5-6.0	0.0-0.5	.15	.15	
	40-80	18-35	1.30-1.50	0.6-2	0.12-0.17	0.0-2.9	4.5-5.5	0.0-0.5	.17	.17	
TrB:											
Troup-------------	0-9	1-12	1.30-1.70	6-20	0.03-0.70	0.0-2.9	4.5-5.5	0.5-1.0	.10	.10	5
	9-60	1-10	1.30-1.70	6-20	0.03-0.70	0.0-2.9	4.5-5.5	0.0-0.5	.10	.10	
	60-80	10-20	1.40-1.60	0.6-2	0.10-0.13	0.0-2.9	4.5-5.5	0.0-0.5	.20	.20	
TrC:											
Troup-------------	0-9	1-12	1.30-1.70	6-20	0.03-0.70	0.0-2.9	4.5-5.5	0.5-1.0	.10	.10	5
	9-60	1-10	1.30-1.70	6-20	0.03-0.70	0.0-2.9	4.5-5.5	0.0-0.5	.10	.10	
	60-80	10-20	1.40-1.60	0.6-2	0.10-0.13	0.0-2.9	4.5-5.5	0.0-0.5	.20	.20	
TrD:											
Troup-------------	0-9	1-12	1.30-1.70	6-20	0.03-0.70	0.0-2.9	4.5-5.5	0.5-1.0	.10	.10	5
	9-60	1-10	1.30-1.70	6-20	0.03-0.70	0.0-2.9	4.5-5.5	0.0-0.5	.10	.10	
	60-80	10-20	1.40-1.60	0.6-2	0.10-0.13	0.0-2.9	4.5-5.5	0.0-0.5	.20	.20	

Table 18.--Classification of the Soils

Soil name	Family or higher taxonomic class
Ailey	Loamy, kaolinitic, thermic Arenic Kanhapludults
Benevolence	Coarse-loamy, kaolinitic, thermic Typic Kandiudults
Bibb	Coarse-loamy, siliceous, active, acid, thermic Typic Fluvaquents
Bonneau	Loamy, siliceous, subactive, thermic Arenic Paleudults
Carnegie	Fine, kaolinitic, thermic Plinthic Kandiudults
Clarendon	Fine-loamy, siliceous, semiactive, thermic Plinthaquic Paleudults
Cowarts	Fine-loamy, kaolinitic, thermic Typic Kanhapludults
Faceville	Fine, kaolinitic, thermic Typic Kandiudults
Goldsboro	Fine-loamy, siliceous, subactive, thermic Aquic Paleudults
Grady	Fine, kaolinitic, thermic Typic Paleaquults
Greenville	Fine, kaolinitic, thermic Rhodic Kandiudults
Henderson	Fine, kaolinitic, thermic Typic Paleudults
Kinston	Fine-loamy, siliceous, acid, thermic Typic Fluvaquents
Lakeland	Thermic, coated Typic Quartzipsamments
Lucy	Loamy, kaolinitic, thermic Arenic Kandiudults
Marlboro	Fine, kaolinitic, thermic Typic Paleudults
Nankin	Fine, kaolinitic, thermic Typic Kanhapludults
Norfolk	Fine-loamy, kaolinitic, thermic Typic Kandiudults
Orangeburg	Fine-loamy, kaolinitic, thermic Typic Kandiudults
Red Bay	Fine-loamy, kaolinitic, thermic Rhodic Kandiudults
Troup	Loamy, kaolinitic, thermic Grossarenic Kandiudults

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