United States Department of Agriculture

Natural Resources Conservation Service

In cooperation with South Carolina Agricultural Experiment Station and South Carolina Department of Natural Resources, Land, Water and Conservation Division

Soil Survey of Darlington County, South Carolina

How To Use This Soil Survey

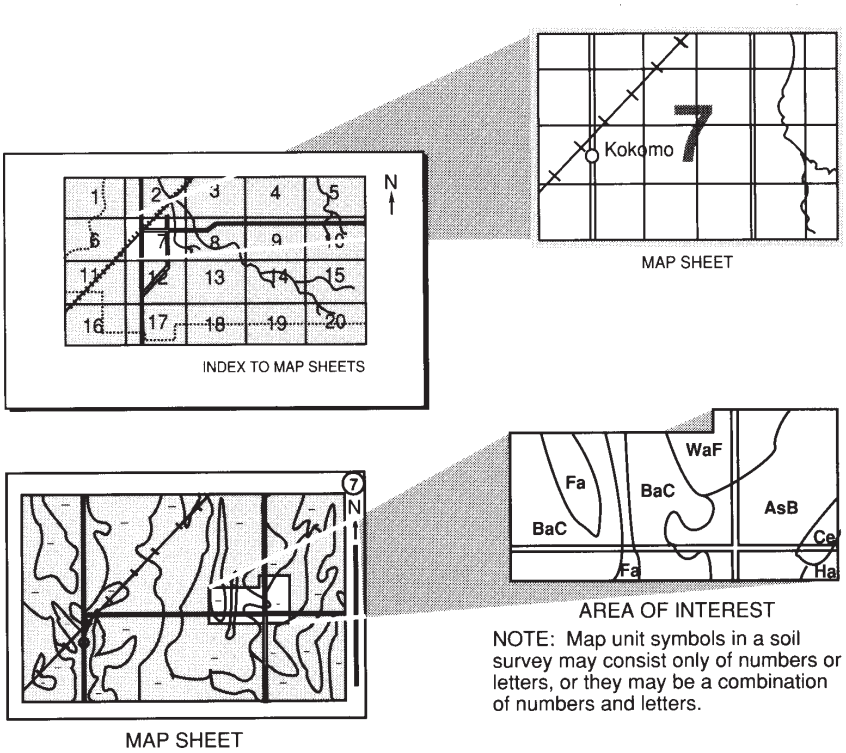
Detailed Soil Maps

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.

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.

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.



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.

National Cooperative Soil Survey

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 Agricultural Research Services, 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 1996. Soil names and descriptions were approved in 1998. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1996. This soil survey was made cooperatively by the Natural Resources Conservation Service, the South Carolina Agricultural Experiment Station, and the South Carolina Department of Natural Resources, Land, Water and Conservation Division. The survey is part of the technical assistance furnished to the Darlington County Soil and Water Conservation District.

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

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Cover: Growing soybeans in wheat stubble helps to conserve moisture in an area of Noboco loamy sand, 0 to 2 percent slopes, and Bonneau sand, 0 to 6 percent slopes.

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 2006

Foreword

This soil survey contains information that affects land use planning in Darlington 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 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 decisions for land use or land treatment. Statements made in this report are intended to help the land users identify and reduce the effects of soil limitations on 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. 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.

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Soil Survey of Darlington County, South Carolina

By Ronald Morton, Natural Resources Conservation Service

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United States Department of Agriculture, Natural Resources Conservation Service,
in cooperation with
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Natural Resources, Land, Water and Conservation Division

DARLINGTON COUNTY is in the northeastern part of South Carolina (fig. 1). It is about 80 miles east of Columbia, the state capital, 35 miles south of the North Carolina state line, and about 80 miles from the Atlantic Ocean. The county is bounded on the north by Chesterfield County and on the south by Florence County. It is bounded on the east by the Pee Dee River, which separates it from Marlboro County, and on the west by the Lynches River, which separates it from Lee County. Elevation ranges from 50 feet at the Pee Dee River to more than 400 feet in the northwestern part of the county.

Darlington County has a total land area of 362,300 acres, or 566 square miles. Darlington, the county seat, is in the eastern part of the county and has a population of about 7,300. In 1994, the county had a population of about 64,700.

Figure 1.—Location of Darlington County in South Carolina.

Most of the county is rural. Farming is a major economic enterprise. The climate and soils of the county are suited to a diversified row-crop agriculture. Cotton, tobacco, soybeans, wheat, and corn are major crops.

The lumber industry in the county started in the 1880's and has become an important enterprise. Much formerly cultivated land is now used for timber production.

This soil survey updates the survey of Darlington County published in 1960 *(6)*. It provides additional information.

General Nature of the County

This section provides general information about Darlington County. It describes the history, the physiography, relief, and drainage, and the climate.

History

The first European settlers arrived in the survey area in 1758. Before this, the area was occupied by a few small Native American tribes, mainly the Cheraws and Pee Dees.

In 1736, the British Government set aside large land grants on both sides of the Great Pee Dee River for the use of Welsh Baptists from Delaware. The entire length of Darlington County is within the limits of these two royal grants.

The Welsh settled within the bend of the river, called Welsh Neck, opposite the area of the present-day town of Society Hill. The settlers cleared the land on both sides of the river and planted hemp and indigo. They also raised cattle and hogs.

By the late 1750's, a trading post, a boat landing, and a village were established on the west bank of the Great Pee Dee River, across from the original settlement in Welsh Neck. By 1760, this area was known as Long Bluff. It was eventually abandoned for a new village on the hill. This village was named Society Hill.

Darlington County was one of three counties created out of the Old Cheraws District in 1785. Around 1868, the name Darlington District was changed to Darlington County *(5)*. The county was one of the largest counties in the state.

Physiography, Relief, and Drainage

Darlington County is made up of three Major Land Resource Areas: the Carolina and Georgia Sand Hills, the Southern Coastal Plain, and the Atlantic Coast Flatwoods.

The Carolina and Georgia Sand Hills

About 13 percent of the soils in the county formed in sandy and loamy sediments of the Carolina and Georgia Sand Hills. This region is mainly in the northern part of Darlington County. It consists of broad nearly level to very steep ridges and side slopes. Alpin, Candor, and Ailey soils are the major soils in these areas. Geologic erosion on the side slopes has exposed infertile, compact sediments. Vaucluse and Cowarts soils developed in these sediments.

The Southern Coastal Plain

About 73 percent of the soils in the county formed in loamy and clayey sediments of the Southern Coastal Plain. The soils are deep and consist mainly of kaolinitic clay and siliceous sand. Although they are inherently low in fertility, they are productive because of additions of fertilizer. Norfolk, Noboco, Goldsboro, Faceville, Orangeburg, and Emporia soils are examples of these soils. Oval depressions known as Carolina bays occur throughout the Southern Coastal Plain. The poorly drained Rains and Coxville soils typically occur in the bays but also occur in irregularly shaped areas. Bonneau and Blanton soils are on the narrow rims around the bays and in flat upland areas.

The Atlantic Coast Flatwoods

About 3 percent of the soils in the county formed in loamy and clayey sediments of the Atlantic Coast Flatwoods. This region is in the eastern part of Darlington County, east of Society Hill and Mont Clare. It is at elevations below 100 feet. Clayey soils that have a high percentage of silt occur in this region. Persanti, Smithboro, Hornsville, and Coxville soils are the dominant soils.

Alluvial Soils

Many streams dissect Darlington County. About 11 percent of the soils in the county formed in alluvium deposited by streams. The very poorly drained Johnston and Pamlico soils are on the stream flood plains. Flood plain sediments from the Lynches River and the Great Pee Dee River were derived from Piedmont material. Chastain and Wehadkee soils are adjacent to the Lynches River. Chastain, Chewacla, and Riverview soils are associated with the Great Pee Dee River.

Climate

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

In winter, the average temperature is 46.2 degrees F and the average daily minimum temperature is 34.4 degrees. The lowest temperature on record, which occurred on January 21, 1985, is -4 degrees. In summer, the average temperature is 78.9 degrees and the average daily maximum temperature is 90.0 degrees. The highest recorded temperature, which occurred on July 21, 1977, is 108 degrees.

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

The total average annual precipitation is about 46.2 inches. Of this, 28.40 inches, or about 61 percent, usually falls in April through October. The growing season for most crops falls within this period. The heaviest 1-day rainfall during the period of record was 5.55 inches on September 5, 1979. Thunderstorms occur on about 53 days each year, and most occur between May and August.

The average seasonal snowfall is 1.4 inches. The greatest snow depth at any one time during the period of record was 17 inches, recorded on February 10, 1973. On an average, less than 1 day per year has at least 1 inch of snow on the ground. The heaviest 1-day snowfall on record was 18.0 inches, recorded on February 10, 1973.

The average relative humidity in midafternoon is about 51 percent. Humidity is higher at night, and the average at dawn is about 87 percent. The sun shines 66 percent of the time possible in summer and 58 percent in winter. The prevailing wind is from the southwest for most of the year, except during September and October when it is from the northeast. Average windspeed is highest, about 8 miles per hour, in March and April.

How This Survey Was Made

This survey was made to provide information about the soils and miscellaneous areas in the survey area. The information includes a description of the soils and miscellaneous areas and their location and a discussion of their suitability, limitations, and management for specified uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native

plants; and the kinds of bedrock. They dug many holes to study the soil profile, which is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

The soils and miscellaneous areas in the survey area are in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they 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-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify the soils. After describing the soils 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 are generally collected for laboratory analyses and for engineering tests. The data from these analyses and tests and from field-observed characteristics and soil properties are used to predict behavior of the soils under different uses. Interpretations are field tested through observation of the soils in different uses under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

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

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

Detailed Soil Map Units

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

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

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

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

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

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

Soils of one series can differ in texture of the surface layer, slope, stoniness, 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, Noboco loamy sand, 0 to 2 percent slopes, is a phase of the Noboco series.

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

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Chastain-Chewacla complex, 0 to 2 percent slopes, frequently flooded, 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. Dorovan and Ponzer soils, 0 to 2 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. Urban land, 0 to 2 percent slopes, is an example.

Table 4 gives the acreage and proportionate extent of each map unit. Other tables (see “Contents”) 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.

AaB—Ailey sand, moderately wet, 0 to 6 percent slopes

Setting

Major Land Resource Area: Carolina and Georgia Sand Hills
Slope length: Typically 100 to 250 feet, ranging from 50 to 300 feet
Shape of areas: Irregular
Size of areas: Typically 20 to 40 acres, ranging from 5 to 150 acres

Typical Profile

Surface layer:
0 to 3 inches—brownish sand

Subsurface layer:
3 to 28 inches—brownish sand

Subsoil:
28 to 43 inches—yellowish sandy loam over yellowish sandy clay loam that has brownish mottles
43 to 53 inches—yellowish sandy clay loam that has reddish and grayish mottles

Substratum:
53 to 62 inches—yellowish sandy loam
62 to 72 inches—yellowish, grayish, and reddish clay loam

Inclusions

Similar (0 to 15 percent of map unit):
- The somewhat excessively drained Blanton, Candor, and Troup soils in the higher landscape positions

- The well drained Lucy and Uchee soils in landscape positions similar to those of the Ailey soil
- Small areas that have slopes of more than 6 percent

Dissimilar (0 to 10 percent of map unit):
- The well drained Cowarts soils in the higher landscape positions
- The moderately well drained Pelion soils in the lower landscape positions
- Small clayey areas

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Slow
Depth to high water table: 4.0 to 6.0 feet
Available water capacity: Low
Slope class: Gently sloping
Hazard of water erosion: Moderate
Surface runoff: Slow
Organic matter content: Low

Use and Management

Major Uses: Woodland and pasture

Agricultural Development

Cropland
Suitable crops: Corn and soybeans
Management concerns: Droughtiness, low nutrient-holding capacity, and soil blowing
Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping that uses close-growing grains or legumes, the use of cover crops, and crop residue management help to increase the available water capacity and the nutrient-holding capacity and reduce the hazard of soil blowing.
- Fertilizers should be applied at intervals.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Droughtiness and low nutrient-holding capacity
Management measures and considerations:
- Seedbeds should be prepared on the contour or across the slope if possible.
- Frequent applications of fertilizer are needed.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Suitable trees: Longleaf pine
Management concerns: Equipment limitation, seedling mortality, and windthrow hazard
Management measures and considerations:
- The sandy surface layer restricts the use of wheeled equipment, especially when the soil is very dry.
- The use of wide, low-pressure tires helps to overcome the equipment limitation.
- The seedling mortality rate, which is increased by droughtiness, can be reduced by planting seedlings in furrows.
- Trees are subject to windthrow because of the limited rooting depth.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: Slow permeability
Management measures and considerations:
- The permeability limitation can be reduced by specially designing a septic system and increasing the size of the absorption area.

Dwellings without basements
Restrictive features: None

Lawns and landscaping
Restrictive features: Droughtiness
Management measures and considerations:
- The droughtiness limitation can be reduced by selecting well adapted plants and by providing supplemental irrigation during the growing season.

AeC—Ailey sand, 6 to 10 percent slopes

Setting

Major Land Resource Area: Carolina and Georgia Sand Hills
Slope length: Typically 100 to 200 feet, ranging from 50 to 300 feet
Shape of areas: Irregular
Size of areas: Typically 20 to 40 acres, ranging from 5 to 150 acres

Typical Profile

Surface layer:
0 to 6 inches—brownish sand

Subsurface layer:
6 to 24 inches—brownish sand

Subsoil:
24 to 38 inches—yellowish sandy clay loam
38 to 42 inches—yellowish coarse sandy clay loam
42 to 60 inches—yellowish clay and sandy clay loam having yellowish mottles and gray and white balls of kaolin

Substratum:
60 to 72 inches—yellowish coarse sandy loam that has yellowish mottles and grayish balls of kaolin

Inclusions

Similar (0 to 15 percent of map unit):
- The somewhat excessively drained Blanton, Candor, and Troup soils and the well drained Uchee soils in the higher landscape positions
- Small areas that have slopes of more than 10 percent

Dissimilar (0 to 10 percent of map unit):
- The well drained Cowarts and the moderately well drained Pelion soils in the lower landscape positions
- The very poorly drained Pamlico and Johnston soils along drainageways
- Small areas that have a clayey subsoil

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Slow
Depth to high water table: More than 6.0 feet
Available water capacity: Low
Slope class: Moderately sloping
Hazard of water erosion: Moderate
Surface runoff: Medium
Organic matter content: Low

Use and Management

Major Uses: Woodland and pasture

Agricultural Development

Cropland
Suitable crops: None
Management concerns: Droughtiness, low nutrient-holding capacity, and soil blowing

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Droughtiness and low nutrient-holding capacity
Management measures and considerations:
- Seedbeds should be prepared on the contour or across the slope if possible.
- Frequent applications of fertilizer are needed.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Suitable trees: Longleaf pine
Management concerns: Equipment limitation, seedling mortality, and windthrow hazard
Management measures and considerations:
- The sandy surface layer restricts the use of wheeled equipment, especially when the soil is very dry.
- The use of wide, low-pressure tires helps to overcome the equipment limitation.
- The seedling mortality rate, which is increased by droughtiness, can be reduced by planting seedlings in furrows.
- Trees are subject to windthrow because of the limited rooting depth.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: Slow permeability
Management measures and considerations:
- The permeability limitation can be reduced by specially designing a septic system and increasing the size of the absorption area.

Dwellings without basements
Restrictive features: None

Lawns and landscaping
Restrictive features: Slope and droughtiness
Management measures and considerations:
- The slope and droughtiness limitations can be reduced by selecting well adapted plants and by providing supplemental irrigation during the growing season.

AeD—Ailey sand, 10 to 15 percent slopes

Setting

Major Land Resource Area: Carolina and Georgia Sand Hills
Slope length: Typically 100 to 200 feet, ranging from 50 to 300 feet
Shape of areas: Irregular
Size of areas: Typically 20 to 40 acres, ranging from 5 to 150 acres

Typical Profile

Surface layer:
0 to 6 inches—brownish sand

Subsurface layer:
6 to 24 inches—brownish sand

Subsoil:
24 to 38 inches—yellowish sandy clay loam
38 to 42 inches—yellowish coarse sandy clay loam
42 to 60 inches—yellowish clay and sandy clay loam having yellowish mottles and gray and white balls of kaolin

Substratum:
60 to 72 inches—yellowish coarse sandy loam that has yellowish mottles and grayish balls of kaolin

Inclusions

Similar (0 to 15 percent of map unit):
- The somewhat excessively drained Candor and Troup soils in the higher landscape positions

Dissimilar (0 to 10 percent of map unit):
- The well drained Cowarts and the moderately well drained Pelion soils in the lower landscape positions
- The very poorly drained Pamlico and Johnston soils along drainageways
- Small areas that have a clayey subsoil

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Slow
Depth to high water table: More than 6.0 feet
Available water capacity: Low
Slope class: Strongly sloping
Hazard of water erosion: Moderate
Surface runoff: Medium
Organic matter content: Low

Use and Management

Major Uses: Woodland and pasture

Agricultural Development

Cropland
Suitable crops: None
Management concerns: Droughtiness, low nutrient-holding capacity, and soil blowing

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Erosion
Management measures and considerations:
- Seedbeds should be prepared on the contour or across the slope if possible.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Suitable trees: Longleaf pine
Management concerns: Equipment limitation, seedling mortality, and windthrow hazard
Management measures and considerations:
- The sandy surface layer restricts the use of wheeled equipment, especially when the soil is very dry.
- The use of wide, low-pressure tires helps to overcome the equipment limitation.
- The seedling mortality rate, which is increased by droughtiness, can be reduced by planting seedlings in furrows.
- Trees are subject to windthrow because of the limited rooting depth.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: Slow permeability
Management measures and considerations:
- The permeability limitation can be reduced by specially designing a septic system and increasing the size of the absorption area.

Dwellings without basements
Restrictive features: None

Lawns and landscaping
Restrictive features: Slope and droughtiness
Management measures and considerations:
- The slope and droughtiness limitations can be reduced by selecting well adapted plants and by providing supplemental irrigation during the growing season.

ApB—Alpin sand, 0 to 6 percent slopes

Setting

Major Land Resource Area: Carolina and Georgia Sand Hills
Slope length: Typically 100 to 300 feet, ranging from 50 to 1,000 feet
Shape of areas: Irregular and broad
Size of areas: Typically 25 to 150 acres, ranging from 10 to 200 acres

Typical Profile

Surface layer:
0 to 10 inches—brownish sand

Subsurface layer:
10 to 27 inches—yellowish sand
27 to 44 inches—brownish sand
44 to 49 inches—yellowish sand

Subsoil:
49 to 88 inches—brownish sand that has thin alternating bands of loamy sand

Inclusions

Similar (less than 15 percent of map unit):
- The somewhat excessively drained Foxworth soils in the slightly lower landscape positions
- Small areas that do not have lamellae

Dissimilar (0 to 10 percent of map unit):
- The well drained Cowarts and Ailey soils on side slopes near drainageways
- The very poorly drained Pamlico and Johnston soils along drainageways

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Excessively drained
Permeability: Moderately rapid
Depth to high water table: More than 6.0 feet
Available water capacity: Low
Slope class: Nearly level or gently sloping
Hazard of water erosion: Slight
Surface runoff: Slow
Organic matter content: Low

Use and Management

Major Uses: Woodland and pasture

Agricultural Development

Cropland
Suitable crops: Truck crops
Management concerns: Droughtiness, low nutrient-holding capacity, and soil blowing
Management measures and considerations:
- Contour farming, contour stripcropping that uses close-growing grains or legumes, the use of cover crops, and crop residue management help to increase the available water capacity and the nutrient-holding capacity and reduce the hazard of soil blowing.
- Fertilizers should be applied at intervals rather than used in single applications.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Droughtiness and low nutrient-holding capacity
Management measures and considerations:
- Frequent applications of fertilizer are needed.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Suitable trees: Loblolly pine
Management concerns: Equipment limitation and seedling mortality
Management measures and considerations:
- The sandy surface layer restricts the use of wheeled equipment, especially when the soil is very dry.
- The use of wide, low-pressure tires helps to overcome the equipment limitation.
- The seedling mortality rate, which is increased by droughtiness, can be reduced by planting seedlings in furrows.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: None

Dwellings without basements
Restrictive features: None

Lawns and landscaping
Restrictive features: Droughtiness
Management measures and considerations:
- The droughtiness limitation can be reduced by using well adapted plants and providing supplemental irrigation during the growing season.

ApC—Alpin sand, 6 to 10 percent slopes

Setting

Major Land Resource Area: Carolina and Georgia Sand Hills
Slope length: Typically 100 to 200 feet, ranging from 50 to 250 feet
Shape of areas: Irregular or elongated
Size of areas: Typically 25 to 125 acres, ranging from 10 to 150 acres

Typical Profile

Surface layer:
0 to 10 inches—brownish sand

Subsurface layer:
10 to 27 inches—yellowish sand
27 to 44 inches—brownish sand
44 to 49 inches—yellowish sand

Subsoil:
49 to 88 inches—brownish sand that has thin alternating bands of loamy sand

Inclusions

Similar (less than 20 percent of map unit):
- The somewhat excessively drained Foxworth soils in the slightly lower landscape positions
- The well drained Ailey soils on side slopes near drainageways
- Small areas that do not have lamellae

Dissimilar (0 to 10 percent of map unit):
- The well drained Cowarts and Ailey soils on side slopes near drainageways
- The very poorly drained Pamlico and Johnston soils along drainageways

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Excessively drained
Permeability: Moderately rapid
Depth to high water table: More than 6.0 feet
Available water capacity: Low
Slope class: Moderately sloping
Hazard of water erosion: Slight
Surface runoff: Slow
Organic matter content: Low

Use and Management

Major Uses: Woodland and pasture

Agricultural Development

Cropland
Suitable crops: Truck crops
Management concerns: Droughtiness, low nutrient-holding capacity, and soil blowing
Management measures and considerations:
- Contour farming, contour stripcropping that uses close-growing grains or legumes, the use of cover crops, and crop residue management help to increase the available water capacity and the nutrient-holding capacity and reduce the hazard of soil blowing.
- Fertilizers should be applied at intervals rather than used in single applications.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Droughtiness and low nutrient-holding capacity
Management measures and considerations:
- Seedbeds should be prepared on the contour or across the slope if possible.
- Frequent applications of fertilizer are needed.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Suitable trees: Loblolly pine
Management concerns: Equipment limitation and seedling mortality
Management measures and considerations:
- The sandy surface layer restricts the use of wheeled equipment, especially when the soil is very dry.
- The use of wide, low-pressure tires helps to overcome the equipment limitation.
- The seedling mortality rate, which is increased by droughtiness, can be reduced by planting seedlings in furrows.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: Slope
Management measures and considerations:
- Installing the absorption lines on the contour helps to overcome the slope.

Dwellings without basements
Restrictive features: Slope
Management measures and considerations:
- Cutting and filling or modifying the design of the building helps to overcome the slope.

Lawns and landscaping
Restrictive features: Droughtiness
Management measures and considerations:
- The droughtiness limitation can be reduced by using well adapted plants and providing supplemental irrigation during the growing season.

ApD—Alpin sand, 10 to 15 percent slopes

Setting

Major Land Resource Area: Carolina and Georgia Sand Hills
Slope length: Typically 100 to 200 feet, ranging from 50 to 250 feet

Shape of areas: Irregular or elongated
Size of areas: Typically 25 to 125 acres, ranging from 10 to 150 acres

Typical Profile

Surface layer:
0 to 10 inches—brownish sand

Subsurface layer:
10 to 27 inches—yellowish sand
27 to 44 inches—brownish sand
44 to 49 inches—yellowish sand

Subsoil:
49 to 88 inches—brownish sand that has thin alternating bands of loamy sand

Inclusions

Similar (less than 20 percent of map unit):
- The somewhat excessively drained Foxworth soils in the slightly lower landscape positions
- Small areas that do not have lamellae

Dissimilar (0 to 10 percent of map unit):
- The well drained Cowarts and Ailey soils on side slopes near drainageways

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Excessively drained
Permeability: Moderately rapid
Depth to high water table: More than 6.0 feet
Available water capacity: Low
Slope class: Strongly sloping
Hazard of water erosion: Moderate
Surface runoff: Low
Organic matter content: Low

Use and Management

Major Uses: Woodland and pasture

Agricultural Development

Cropland
Suitable crops: Truck crops
Management concerns: Droughtiness, low nutrient-holding capacity, and soil blowing
Management measures and considerations:
- Contour farming, contour stripcropping that uses close-growing grains or legumes, the use of cover crops, and crop residue management help to increase the available water capacity and the nutrient-holding capacity and reduce the hazard of soil blowing.
- Fertilizers should be applied at intervals rather than used in single applications.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Droughtiness and low nutrient-holding capacity
Management measures and considerations:
- Seedbeds should be prepared on the contour or across the slope if possible.
- Frequent applications of fertilizer are needed.

- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Suitable trees: Loblolly pine
Management concerns: Equipment limitation and seedling mortality
Management measures and considerations:
- The sandy surface layer restricts the use of wheeled equipment, especially when the soil is very dry.
- The use of wide, low-pressure tires helps to overcome the equipment limitation.
- The seedling mortality rate, which is increased by droughtiness, can be reduced by planting seedlings in furrows.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: Slope
Management measures and considerations:
- Installing the absorption lines on the contour helps to overcome the slope.

Dwellings without basements
Restrictive features: Slope
Management measures and considerations:
- Cutting and filling or modifying the design of the building helps to overcome the slope.

Lawns and landscaping
Restrictive features: Droughtiness
Management measures and considerations:
- The droughtiness limitation can be reduced by selecting well adapted plants and providing supplemental irrigation during the growing season.

AuB—Autryville sand, 0 to 4 percent slopes

Setting

Major Land Resource Area: Southern Coastal Plain
Slope length: Typically 100 to 200 feet, ranging from 50 to 300 feet
Shape of areas: Irregular
Size of areas: Typically 25 to 100 acres, ranging from 10 to 300 acres

Typical Profile

Surface layer:
0 to 9 inches—dark grayish sand

Subsurface layer:
9 to 23 inches—brownish sand
23 to 28 inches—brownish loamy sand

Subsoil:
28 to 36 inches—brownish sandy loam
36 to 42 inches—yellowish loamy sand
42 to 68 inches—brownish sand
68 to 72 inches—brownish sandy clay loam that has strong brown, light gray, and light brownish gray mottles

Inclusions

Similar (less than 15 percent of map unit):
- The somewhat excessively drained Blanton soils in the higher landscape positions
- The well drained Bonneau and Wagram soils in landscape positions that are similar to or slightly higher than those of the Autryville soil

Dissimilar (0 to 10 percent of map unit):
- The poorly drained Leon and Rains soils in depressions and along shallow drainageways

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Depth to high water table: 4.0 to 6.0 feet
Available water capacity: Low
Slope class: Nearly level or gently sloping
Hazard of water erosion: Slight
Surface runoff: Slow
Organic matter content: Low

Use and Management

Major Uses: Cropland and woodland

Agricultural Development

Cropland
Suitable crops: Soybeans, cotton, tobacco, corn, and wheat
Management concerns: Droughtiness, low nutrient-holding capacity, and soil blowing
Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping that uses close-growing grains or legumes, the use of cover crops, and crop residue management help to increase the available water capacity and the nutrient-holding capacity and reduce the hazard of soil blowing.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Droughtiness and low nutrient-holding capacity
Management measures and considerations:
- Frequent applications of fertilizer are needed.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Suitable trees: Loblolly pine
Management concerns: Equipment limitation, seedling mortality, and plant competition
Management measures and considerations:
- The sandy surface layer restricts the use of wheeled equipment, especially when the soil is very dry.
- The use of wide, low-pressure tires helps to overcome the equipment limitation.
- The seedling mortality rate, which is increased by droughtiness, can be reduced by planting seedlings in furrows.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: Wetness

Management measures and considerations:
- The wetness limitation can be reduced by specially designing a septic system.

Dwellings without basements
Restrictive features: None

Lawns and landscaping
Restrictive features: Droughtiness
Management measures and considerations:
- The droughtiness limitation can be reduced by selecting well adapted plants and providing supplemental irrigation during the growing season.

BfA—Bibb sandy loam, 0 to 2 percent slopes, frequently flooded

Setting

Major Land Resource Area: Southern Coastal Plain
Landform: Flood plains
Slope length: Typically 100 to 500 feet, ranging from 50 to 800 feet
Shape of areas: Elongated
Size of areas: Typically 150 to 250 acres, ranging from 10 to 600 acres

Typical Profile

Surface layer:
0 to 7 inches—grayish loam

Substratum:
7 to 35 inches—grayish loam
35 to 50 inches—grayish sandy loam
50 to 60 inches—grayish sand

Inclusions

Similar (15 percent of map unit):
- The very poorly drained Johnston and the poorly drained Wehadkee soils in landscape positions similar to those of the Bibb soil
- Small areas that have a fine-loamy control section

Dissimilar (0 to 15 percent of map unit):
- The moderately well drained Johns soils in the slightly higher landscape positions
- The very poorly drained Pamlico and Johnston soils in the lower landscape positions

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Poorly drained
Permeability: Moderate rapid
High water table: Within a depth of 1.0 foot
Available water capacity: High
Slope class: Nearly level
Hazard of water erosion: None
Surface runoff: Very slow
Organic matter content: Moderate
Flooding: Frequent

Use and Management

Major Uses: Woodland

Agricultural Development

Cropland
Suitable crops: None
Management concerns: Flooding and wetness
Management measures and considerations:
- Protecting areas of this map unit from flooding is generally not economically feasible.

Hayland and pasture
Suitable grasses: None
Management concerns: Flooding and wetness
Management measures and considerations:
- Protecting areas of this map unit from flooding is generally not economically feasible.

Woodland
Suitable trees: Water-tolerant species
Management concerns: Equipment limitation, seedling mortality, windthrow hazard, and plant competition
Management measures and considerations:
- Removing excess water, using wider tires on equipment, and harvesting trees during dry periods help to reduce the equipment limitation.
- Seedling mortality rates can be reduced by planting suitable species at the proper times and by planting on raised beds.
- Trees are subject to windthrow when winds are strong because of the restricted rooting depth resulting from the high water table.
- Competing vegetation can be controlled by good site preparation, including burning, spraying, cutting, and girdling.

Septic tank absorption fields
Restrictive features: Flooding and wetness
Management measures and considerations:
- Because of the difficulty and expense of reducing the flooding and wetness limitations, this soil generally is not used for septic tank absorption fields.

Dwellings without basements
Restrictive features: Flooding and wetness
Management measures and considerations:
- Because of the difficulty and expense of reducing the flooding and wetness limitations, this soil generally is not used for dwellings.

Lawns and landscaping
Restrictive features: Flooding and wetness
Management measures and considerations:
- Because of the difficulty and expense of reducing the flooding and wetness limitations, this soil generally is not used for lawns and landscaping.

BnB—Blanton sand, 0 to 6 percent slopes

Setting

Major Land Resource Areas: Carolina and Georgia Sand Hills and Southern Coastal Plain
Slope length: Typically 100 to 300 feet, ranging from 50 to 500 feet

Shape of areas: Irregular
Size of areas: Typically 25 to 80 acres, ranging from 10 to 125 acres

Typical Profile

Surface layer:
0 to 5 inches—brownish sand

Subsurface layer:
5 to 44 inches—brownish sand
44 to 54 inches—brownish sand that has yellow and gray mottles

Subsoil:
54 to 64 inches—brownish sandy loam
64 to 72 inches—brownish sandy clay loam that has reddish and grayish mottles

Inclusions

Similar (less than 15 percent of map unit):
- The somewhat excessively drained Candor soils in the higher landscape positions
- The well drained Autryville and Bonneau soils in the slightly lower landscape positions
- The well drained Uchee soils on side slopes near drainageways

Dissimilar (0 to 10 percent of map unit):
- The poorly drained Rains and Coxville soils in depressions

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Somewhat excessively drained to moderately well drained
Permeability: Moderate or moderately slow
Depth to high water table: 4.0 to 6.0 feet
Available water capacity: Low
Slope class: Nearly level or gently sloping
Hazard of water erosion: Slight
Surface runoff: Very slow
Organic matter content: Low

Use and Management

Major Uses: Cropland, woodland, and pasture

Agricultural Development

Cropland
Suitable crops: Corn and soybeans
Management concerns: Droughtiness, low nutrient-holding capacity, and soil blowing
Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping that uses close-growing grains or legumes, the use of cover crops, and crop residue management help to increase the available water capacity and the nutrient-holding capacity and reduce the hazard of soil blowing.
- Fertilizers should be applied at intervals rather used in single applications.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Droughtiness and low nutrient-holding capacity
Management measures and considerations:
- Frequent applications of fertilizer are needed.

- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Suitable trees: Loblolly pine
Management concerns: Equipment limitation and seedling mortality
Management measures and considerations:
- The sandy surface layer restricts the use of wheeled equipment, especially when the soil is very dry.
- The use of wide, low-pressure tires helps to overcome the equipment limitation.
- The seedling mortality rate, which is increased by droughtiness, can be reduced by planting seedlings in furrows.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: Wetness
Management measures and considerations:
- The wetness limitation can be reduced by specially designing a septic system.

Dwellings without basements
Restrictive features: None

Lawns and landscaping
Restrictive features: Droughtiness
Management measures and considerations:
- The droughtiness limitation can be reduced by selecting well adapted plants and providing supplemental irrigation during the growing season.

BoB—Bonneau sand, 0 to 6 percent slopes

Setting

Major Land Resource Area: Southern Coastal Plain
Slope length: Typically 100 to 300 feet, ranging from 50 to 200 feet
Shape of areas: Irregular and broad
Size of areas: Typically 15 to 65 acres, ranging from 10 to 150 acres

Typical Profile

Surface layer:
0 to 10 inches—brownish sand

Subsurface layer:
10 to 19 inches—brownish sand
19 to 38 inches—brownish loamy sand

Subsoil:
38 to 54 inches—brownish sandy clay loam that has reddish mottles
54 to 60 inches—yellowish sandy clay loam that has reddish and grayish mottles

Inclusions

Similar (less than 15 percent of map unit):
- The somewhat excessively drained Blanton and Troup soils in the higher landscape positions
- The well drained Wagram and Lucy soils in landscape positions similar to those of the Bonneau soil

Dissimilar (0 to 10 percent of map unit):
- The well drained Emporia and Uchee soils on side slopes near drainageways

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Depth to high water table: 3.5 to 5.0 feet
Available water capacity: Moderate
Slope class: Nearly level or gently sloping
Hazard of water erosion: Slight
Surface runoff: Slow
Organic matter content: Low

Use and Management

Major Uses: Cropland and woodland

Agricultural Development

Cropland
Suitable crops: Cotton, soybeans, corn, tobacco, and wheat
Management concerns: Droughtiness, low nutrient-holding capacity, and soil blowing
Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping that uses close-growing grains or legumes, the use of cover crops, and crop residue management help to increase the available water capacity and the nutrient-holding capacity and reduce the hazard of soil blowing.
- Fertilizers should be applied at intervals rather than used in single applications.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Droughtiness and low nutrient-holding capacity
Management measures and considerations:
- Frequent applications of fertilizer are needed.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Suitable trees: Loblolly pine
Management concerns: Equipment limitation and seedling mortality
Management measures and considerations:
- The sandy surface layer restricts the use of wheeled equipment, especially when the soil is very dry.
- The use of wide, low-pressure tires helps to overcome the equipment limitation.
- The seedling mortality rate, which is increased by droughtiness, can be reduced by planting seedlings in furrows.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: Wetness
Management measures and considerations:
- The wetness limitation can be reduced by specially designing a septic system.

Dwellings without basements
Restrictive features: None or slight limitations

Lawns and landscaping
Restrictive features: Droughtiness
Management measures and considerations:
- The droughtiness limitation can be reduced by selecting well adapted plants and providing supplemental irrigation during the growing season.

CaB—Candor sand, 0 to 6 percent slopes

Setting

Major Land Resource Area: Carolina and Georgia Sand Hills
Slope length: Typically 100 to 350 feet, ranging from 50 to 500 feet
Shape of areas: Irregular and broad
Size of areas: Typically 25 to 125 acres, ranging from 10 to 150 acres

Typical Profile

Surface layer:
0 to 3 inches—brownish sand

Subsurface layer:
3 to 24 inches—brownish sand

Subsoil:
24 to 42 inches—brownish loamy sand
42 to 70 inches—yellowish sand
70 to 80 inches—yellowish sandy loam that has reddish mottles

Inclusions

Similar (less than 15 percent of map unit):
- The excessively drained Alpin and the somewhat excessively drained Foxworth soils in the higher landscape positions
- The somewhat excessively drained Blanton soils in the lower landscape positions
- The well drained Ailey soils on side slopes near drainageways

Dissimilar (0 to 10 percent of map unit):
- The very poorly drained Pamlico and Johnston soils along drainageways

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Somewhat excessively drained
Permeability: Moderate
Depth to high water table: More than 6.0 feet
Available water capacity: Very low
Slope class: Nearly level or gently sloping
Hazard of water erosion: Slight
Surface runoff: Slow
Organic matter content: Low

Use and Management

Major Uses: Woodland and cropland

Agricultural Development

Cropland
Suitable crops: Corn and soybeans
Management concerns: Droughtiness, low nutrient-holding capacity, and soil blowing

Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping that uses close-growing grains or legumes, the use of cover crops, and crop residue management help to increase the available water capacity and the nutrient-holding capacity and reduce the hazard of soil blowing.
- Fertilizers should be applied at intervals rather than used in single applications.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Droughtiness and low nutrient-holding capacity
Management measures and considerations:
- Frequent applications of fertilizer are needed.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Suitable trees: Loblolly pine
Management concerns: Equipment limitation and seedling mortality
Management measures and considerations:
- The sandy surface layer restricts the use of wheeled equipment, especially when the soil is very dry.
- The use of wide, low-pressure tires helps to overcome the equipment limitation.
- The seedling mortality rate, which is increased by droughtiness, can be reduced by planting seedlings in furrows.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: None

Dwellings without basements
Restrictive features: None

Lawns and landscaping
Restrictive features: Droughtiness
Management measures and considerations:
- The droughtiness limitation can be reduced by selecting well adapted plants and providing supplemental irrigation during the growing season.

CaC—Candor sand, 6 to 10 percent slopes

Setting

Major Land Resource Area: Carolina and Georgia Sand Hills
Slope length: Typically 100 to 250 feet, ranging from 50 to 500 feet
Shape of areas: Irregular
Size of areas: Typically 25 to 125 acres, ranging from 10 to 150 acres

Typical Profile

Surface layer:
0 to 3 inches—brownish sand

Subsurface layer:
3 to 24 inches—brownish sand

Subsoil:
24 to 42 inches—brownish loamy sand

42 to 70 inches—yellowish sand
70 to 80 inches—yellowish sandy loam that has reddish mottles

Inclusions

Similar (less than 15 percent of map unit):
- The excessively drained Alpin and the somewhat excessively drained Foxworth soils in the higher landscape positions
- The somewhat excessively drained Blanton soils in the lower landscape positions
- The well drained Ailey soils on side slopes near drainageways

Dissimilar (0 to 10 percent of map unit):
- The very poorly drained Pamlico and Johnston soils along drainageways

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Somewhat excessively drained
Permeability: Moderate
Depth to high water table: More than 6.0 feet
Available water capacity: Low
Slope class: Moderately sloping
Hazard of water erosion: Moderate
Surface runoff: Slow
Organic matter content: Low

Use and Management

Major Uses: Woodland and pasture

Agricultural Development

Cropland
Suitable crops: Corn and soybeans
Management concerns: Droughtiness, low nutrient-holding capacity, and soil blowing
Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping that uses close-growing grains or legumes, the use of cover crops, and crop residue management help to increase the available water capacity and the nutrient-holding capacity and reduce the hazard of soil blowing.
- Fertilizers should be applied at intervals rather than used in single applications.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Droughtiness and low nutrient-holding capacity
Management measures and considerations:
- Frequent applications of fertilizer are needed.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Suitable trees: Loblolly pine
Management concerns: Equipment limitation and seedling mortality
Management measures and considerations:
- The sandy surface layer restricts the use of wheeled equipment, especially when the soil is very dry.
- The use of wide, low-pressure tires helps to overcome the equipment limitation.
- The seedling mortality rate, which is increased by droughtiness, can be reduced by planting seedlings in furrows.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: Slope
Management measures and considerations:
- Installing the absorption lines on the contour helps to overcome the slope.

Dwellings without basements
Restrictive features: Slope
Management measures and considerations:
- Cutting and filling or modifying the design of the building helps to overcome the slope.

Lawns and landscaping
Restrictive features: Droughtiness
Management measures and considerations:
- The droughtiness limitation can be reduced by selecting well adapted plants and providing supplemental irrigation during the growing season.

CaD—Candor sand, 10 to 15 percent slopes

Setting

Major Land Resource Area: Carolina and Georgia Sand Hills
Slope length: Typically 100 to 350 feet, ranging from 50 to 500 feet
Shape of areas: Irregular
Size of areas: Typically 25 to 125 acres, ranging from 10 to 150 acres

Typical Profile

Surface layer:
0 to 3 inches—brownish sand

Subsurface layer:
3 to 24 inches—brownish sand

Subsoil:
24 to 42 inches—brownish loamy sand
42 to 70 inches—yellowish sand
70 to 80 inches—yellowish sandy loam that has reddish mottles

Inclusions

Similar (less than 20 percent of map unit):
- The excessively drained Alpin and the somewhat excessively drained Foxworth soils in the higher landscape positions
- The somewhat excessively drained Blanton soils in the lower landscape positions
- The well drained Ailey soils on side slopes near drainageways

Dissimilar (0 to 10 percent of map unit):
- The very poorly drained Pamlico and Johnston soils along drainageways

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Somewhat excessively drained
Permeability: Moderate
Depth to high water table: More than 6.0 feet
Available water capacity: Low
Slope class: Strongly sloping

Hazard of water erosion: Moderate
Surface runoff: Slow
Organic matter content: Low

Use and Management

Major Uses: Woodland and pasture

Agricultural Development

Cropland
Suitable crops: None
Management concerns: Droughtiness, low nutrient-holding capacity, slope, and soil blowing

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Droughtiness and low nutrient-holding capacity
Management measures and considerations:
- Frequent applications of fertilizer are needed.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Suitable trees: Loblolly pine
Management concerns: Equipment limitation and seedling mortality
Management measures and considerations:
- The sandy surface layer restricts the use of wheeled equipment, especially when the soil is very dry.
- The use of wide, low-pressure tires helps to overcome the equipment limitation.
- The seedling mortality rate, which is increased by droughtiness, can be reduced by planting seedlings in furrows.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: Slope
Management measures and considerations:
- Installing the absorption lines on the contour helps to overcome the slope.

Dwellings without basements
Restrictive features: Slope
Management measures and considerations:
- Cutting and filling or modifying the design of the building helps to overcome the slope.

Lawns and landscaping
Restrictive features: Droughtiness
Management measures and considerations:
- The droughtiness limitation can be reduced by selecting well adapted plants and providing supplemental irrigation during the growing season.

CeA—Chastain-Chewacla complex, 0 to 2 percent slopes, frequently flooded

Setting

Major Land Resource Areas: Southern Piedmont, Southern Coastal Plain, and Atlantic Coast Flatwoods

Landform: Flood plains along streams
Slope length: Typically 100 to 300 feet, ranging from 50 to 500 feet
Shape of areas: Irregular
Size of areas: Typically 50 to 150 acres, ranging from 10 to 400 acres

Composition

Chastain soil: 60 percent
Chewacla soil: 30 percent
Inclusions: 10 percent

Typical Profile

Chastain
Surface layer:
0 to 5 inches—grayish loam

Subsoil:
5 to 10 inches—grayish clay loam
10 to 52 inches—grayish clay that has brownish mottles

Substratum:
52 to 72 inches—grayish sand

Chewacla
Surface layer:
0 to 7 inches—brownish clay loam

Subsoil:
7 to 14 inches—yellowish loam that has grayish mottles
14 to 22 inches—yellowish loam that has grayish and reddish mottles
22 to 38 inches—mottled grayish, brownish, and reddish loam
38 to 50 inches—mottled grayish and brownish sandy loam and sandy clay loam

Substratum:
50 to 65 inches—stratified grayish loamy sand, sandy loam, and sandy clay loam

Inclusions

Similar (less than 10 percent of map unit):
- The poorly drained Wehadkee soils in landscape positions similar to those of the Chastain and Chewacla soils
- Small areas that are protected from flooding

Dissimilar (0 to 10 percent of map unit):
- The well drained Riverview and Wickham soils and the excessively drained Lakeland soils in the higher landscape positions
- Small areas of sandy soils on natural levees near the river and along drainageways

Soil Properties and Qualities

Chastain
Depth class: Very deep
Drainage class: Poorly drained
Permeability: Slow
High water table: Within a depth of 1.5 feet
Available water capacity: Moderate
Slope class: Nearly level
Hazard of water erosion: Slight
Surface runoff: Very slow

Organic matter content: Moderately low
Flooding: Frequent

Chewacla
Depth class: Very deep
Drainage class: Somewhat poorly drained
Permeability: Moderate
Depth to high water table: 0.5 foot to 1.5 feet
Available water capacity: High
Slope class: Nearly level
Hazard of water erosion: Slight
Surface runoff: Slow
Organic matter content: Moderately low
Flooding: Frequent

Use and Management

Major Uses: Woodland

Agricultural Development

Cropland
Suitable crops: None
Management concerns: Flooding and wetness

Hayland and pasture
Suitable grasses: Bahiagrass
Management concerns: Flooding and wetness
Management measures and considerations:
- Protecting areas of this map unit from flooding is generally not economically feasible.
- Drainage can be provided by maintaining open ditches and surface drains.
- Grazing should be delayed until the soils have drained sufficiently and are firm enough to withstand trampling by livestock.
- Proper stocking rates, pasture rotation, and restricted use during wet periods help to keep the pasture in good condition.

Woodland
Suitable trees: Water-tolerant species (fig. 2)
Management concerns: Equipment limitation, seedling mortality, and plant competition
Management measures and considerations:
- Removing excess water, using wider tires on equipment, bedding, and harvesting trees during dry periods help to reduce the equipment limitation.
- Reducing the flooding hazard on these soils is generally not economically feasible.
- Seedling mortality rates can be reduced by planting suitable species at the proper times and by planting on raised beds.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: Flooding and wetness
Management measures and considerations:
- Because of the difficulty and expense of reducing the flooding and wetness limitations, these soils generally are not used for septic tank absorption fields.

Dwellings without basements
Restrictive features: Flooding and wetness

Figure 2.—Water-tolerant hardwoods are the dominant vegetation in areas of Chastain-Chewacla complex, 0 to 2 percent slopes, frequently flooded.

Management measures and considerations:
- Because of the difficulty and expense of reducing the flooding and wetness limitations, these soils generally are not used for dwellings.

Lawns and landscaping
Restrictive features: Flooding and wetness
Management measures and considerations:
- Because of the difficulty and expense of reducing the flooding and wetness limitations, these soils generally are not used for lawns and landscaping.

CkA—Chewacla clay loam, 0 to 2 percent slopes, frequently flooded

Setting

Major Land Resource Areas: Southern Piedmont, Southern Coastal Plain, and Atlantic Coast Flatwoods
Landform: Flood plains
Slope length: Typically 100 to 300 feet, ranging from 50 to 500 feet
Shape of areas: Irregular
Size of areas: Typically 50 to 150 acres, ranging from 10 to 200 acres

Typical Profile

Surface layer:
0 to 7 inches—brownish clay loam

Subsoil:
7 to 14 inches—yellowish loam that has grayish mottles
14 to 22 inches—yellowish loam that has grayish and reddish mottles
22 to 38 inches—mottled grayish, brownish, and reddish loam
38 to 50 inches—mottled grayish and brownish sandy loam and sandy clay loam

Substratum:
50 to 65 inches—stratified grayish loamy sand, sandy loam, and sandy clay loam

Inclusions

Similar (less than 10 percent of map unit):
- The poorly drained Wehadkee and Chastain soils in the slightly lower landscape positions
- Small areas that are protected from flooding

Dissimilar (0 to 10 percent of map unit):
- The well drained Riverview and Wickham soils and the excessively drained Lakeland soils in the higher landscape positions
- Small areas of sandy soils along natural levees near the river and along drainageways

Soil Properties and Qualities

Depth class: Deep
Drainage class: Somewhat poorly drained
Permeability: Moderate
Depth to high water table: 0.5 foot to 1.5 feet
Available water capacity: High
Slope class: Nearly level
Hazard of water erosion: Slight
Surface runoff: Slow
Organic matter content: Moderately low
Flooding: Frequent

Use and Management

Major Uses: Woodland and cropland

Agricultural Development

Cropland
Suitable crops: Corn, soybeans, and wheat
Management concerns: Flooding and wetness
Management measures and considerations:
- Protecting areas of this map unit from flooding is generally impractical.
- The effect of flooding can be reduced by planting crops that have a short growing season and can be planted after the flooding in spring and harvested before the flooding in fall and winter.
- Returning crop residue to the soil and growing cover crops help to maintain the organic matter content and improve fertility.

Hayland and pasture
Suitable grasses: Bahiagrass
Management concerns: Flooding and wetness
Management measures and considerations:
- Protecting areas of this map unit from flooding is generally not economically feasible.
- Drainage can be provided by maintaining open ditches and surface drains.

- Grazing should be delayed until the soil has drained sufficiently and is firm enough to withstand trampling by livestock.
- Proper stocking rates, pasture rotation, and restricted use during wet periods help to keep the pasture in good condition.

Woodland
Suitable trees: Loblolly pine, sweetgum, and yellow-poplar
Management concerns: Equipment limitation, seedling mortality, and plant competition
Management measures and considerations:
- Removing excess water, using wider tires on equipment, bedding, and harvesting trees during dry periods help to reduce the equipment limitation.
- Reducing the flooding hazard on this soil is generally not economically feasible.
- Seedling mortality rates can be reduced by planting suitable species at the proper times and by planting on raised beds.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: Flooding and wetness
Management measures and considerations:
- Because of the difficulty and expense of reducing the flooding and wetness limitations, this soil generally is not used for septic tank absorption fields.

Dwellings without basements
Restrictive features: Flooding and wetness
Management measures and considerations:
- Because of the difficulty and expense of reducing the flooding and wetness limitations, this soil generally is not used for dwellings.

Lawns and landscaping
Restrictive features: Flooding and wetness
Management measures and considerations:
- Because of the difficulty and expense of reducing the flooding and wetness limitations, this soil generally is not used for lawns and landscaping.

CmA—Chewacla-Chastain complex, 0 to 2 percent slopes, frequently flooded

Setting

Major Land Resource Areas: Southern Piedmont, Southern Coastal Plain, and Atlantic Coast Flatwoods
Landform: Flood plains along streams
Slope length: Typically 100 to 300 feet, ranging from 50 to 500 feet
Shape of areas: Irregular
Size of areas: Typically 50 to 150 acres, ranging from 10 to 400 acres

Composition

Chewacla soil: 45 percent
Chastain soil: 40 percent
Inclusions: 15 percent

Typical Profile

Chewacla
Surface layer:
0 to 7 inches—brownish clay loam

Subsoil:
7 to 14 inches—yellowish loam that has grayish mottles
14 to 22 inches—yellowish loam that has grayish and reddish mottles
22 to 38 inches—mottled grayish, brownish, and reddish loam
38 to 50 inches—mottled grayish and brownish sandy loam and sandy clay loam

Substratum:
50 to 65 inches—stratified grayish loamy sand, sandy loam, and sandy clay loam

Chastain
Surface layer:
0 to 5 inches—grayish loam

Subsoil:
5 to 10 inches—grayish clay loam
10 to 52 inches—grayish clay that has brownish mottles

Substratum:
52 to 72 inches—grayish sand

Inclusions

Similar (less than 10 percent of map unit):
- The poorly drained Wehadkee soils in landscape positions similar to those of the Chewacla and Chastain soils
- Small areas that are protected from flooding

Dissimilar (0 to 10 percent of map unit):
- The well drained Riverview and Wickham soils and the excessively drained Lakeland soils in the higher landscape positions
- Small areas of sandy soils along natural levees near the river and along drainageways

Soil Properties and Qualities

Chewacla
Depth class: Very deep
Drainage class: Somewhat poorly drained
Permeability: Moderate
Depth to high water table: 0.5 foot to 1.5 feet
Available water capacity: High
Slope class: Nearly level
Hazard of water erosion: Slight
Surface runoff: Slow
Organic matter content: Moderately low
Flooding: Frequent

Chastain
Depth class: Very deep
Drainage class: Poorly drained
Permeability: Slow
High water table: Within a depth of 1.5 feet

Available water capacity: Moderate
Slope class: Nearly level
Hazard of water erosion: Slight
Surface runoff: Very slow
Organic matter content: Moderately low
Flooding: Frequent

Use and Management

Major Uses: Woodland

Agricultural Development

Cropland
Suitable crops: None
Management concerns: Flooding and wetness

Hayland and pasture
Suitable grasses: Bahiagrass
Management concerns: Flooding and wetness
Management measures and considerations:
- Protecting areas of this map unit from flooding is generally not economically feasible.
- Drainage can be provided by maintaining open ditches and surface drains.
- Grazing should be delayed until the soils have drained sufficiently and are firm enough to withstand trampling by livestock.
- Proper stocking rates, pasture rotation, and restricted use during wet periods help to keep the pasture in good condition.

Woodland
Suitable trees: Water-tolerant species
Management concerns: Equipment limitation, seedling mortality, and plant competition
Management measures and considerations:
- Removing excess water, using wider tires on equipment, bedding, and harvesting trees during dry periods help to reduce the equipment limitation.
- Reducing the flooding hazard in this map unit is generally not economically feasible.
- Seedling mortality rates can be reduced by planting suitable species at the proper times and by planting on raised beds.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: Flooding and wetness
Management measures and considerations:
- Because of the difficulty and expense of reducing the flooding and wetness limitations, these soils generally are not used for septic tank absorption fields.

Dwellings without basements
Restrictive features: Flooding and wetness
Management measures and considerations:
- Because of the difficulty and expense of reducing the flooding and wetness limitations, these soils generally are not used for dwellings.

Lawns and landscaping
Restrictive features: Flooding and wetness
Management measures and considerations:
- Because of the difficulty and expense of reducing the flooding and wetness limitations, these soils generally are not used for lawns and landscaping.

CoC—Cowarts-Vaucluse complex, 6 to 10 percent slopes

Setting

Major Land Resource Areas: Carolina and Georgia Sand Hills and Southern Coastal Plain
Slope length: Typically 75 to 150 feet, ranging from 50 to 250 feet
Shape of areas: Irregular
Size of areas: Typically 30 to 50 acres, ranging from 5 to 250 acres

Composition

Cowarts soil: 60 percent
Vaucluse soil: 30 percent
Inclusions: 10 percent

Typical Profile

Cowarts
Surface layer:
0 to 6 inches—brownish loamy sand

Subsoil:
6 to 10 inches—brownish sandy clay loam that has reddish and yellowish mottles
10 to 29 inches—reddish sandy clay loam that has yellowish mottles

Substratum:
29 to 62 inches—reddish sandy loam and sandy clay loam

Vaucluse
Surface layer:
0 to 2 inches—grayish loamy sand

Subsurface layer:
2 to 6 inches—brownish loamy sand

Subsoil:
6 to 16 inches—reddish sandy clay loam
16 to 50 inches—reddish sandy clay loam that has yellowish mottles and that is dense and compact

Substratum:
50 to 60 inches—reddish sandy loam

Inclusions

Similar (less than 15 percent of map unit):
- The moderately well drained Pelion soils in the lower landscape positions
- Small areas that have a clayey subsoil
- Small areas that have a gravelly surface layer
- Small areas that have moderate permeability in the substratum

Dissimilar (0 to 10 percent of map unit):
- The well drained Ailey soils in the lower landscape positions
- The excessively drained Alpin soils on ridgetops and side slopes
- The somewhat excessively drained Candor soils on ridgetops
- The very poorly drained Pamlico and Johnston soils along narrow drainageways

Soil Properties and Qualities

Cowarts
Depth class: Very deep

Drainage class: Well drained
Permeability: Moderate slow
Depth to high water table: More than 6.0 feet
Available water capacity: Low
Slope class: Moderately sloping
Hazard of water erosion: Moderate
Surface runoff: Medium
Organic matter content: Low

Vaucluse
Depth class: Very deep
Drainage class: Well drained
Permeability: Slow
Depth to high water table: More than 6.0 feet
Available water capacity: Low
Slope class: Moderately sloping
Hazard of water erosion: Moderate
Surface runoff: Medium
Organic matter content: Low

Use and Management

Major Uses: Woodland

Agricultural Development

Cropland
Suitable crops: None
Management concerns: Slope and erosion

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Slope and erosion
Management measures and considerations:
- Seedbeds should be prepared on the contour or across the slope if possible.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Suitable trees: Loblolly pine and longleaf pine
Management concerns: Plant competition
Management measures and considerations:
- Harvesting methods that disturb the soil as little as possible, such as locating skid trails, log landings, and temporary logging roads so that they do not lead to drainageways, moving logs on the contour, and plowing fire lanes on the contour, help to reduce the hazard of erosion and the equipment limitation.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: Moderately slow permeability and slope
Management measures and considerations:
- The permeability and slope limitations can be reduced by increasing the size of the absorption field and installing the absorption lines on the contour.

Dwellings without basements
Restrictive features: Slope

Management measures and considerations:
- Cutting and filling or modifying the design of the building helps to overcome the slope.

Lawns and landscaping
Restrictive features: Droughtiness and slope
Management measures and considerations:
- Proper fertilization, seeding, mulching, and land shaping help to establish and maintain plant cover.

CoD—Cowarts-Vaucluse complex, 10 to 15 percent slopes

Setting

Major Land Resource Areas: Carolina and Georgia Sand Hills and Southern Coastal Plain
Slope length: Typically 75 to 150 feet, ranging from 50 to 250 feet
Shape of areas: Irregular
Size of areas: Typically 30 to 50 acres, ranging from 5 to 250 acres

Composition

Cowarts soil: 70 percent
Vaucluse soil: 20 percent
Inclusions: 10 percent

Typical Profile

Cowarts
Surface layer:
0 to 6 inches—brownish loamy sand

Subsoil:
6 to 10 inches—brownish sandy clay loam that has reddish and yellowish mottles
10 to 29 inches—reddish sandy clay loam that has yellowish mottles

Substratum:
29 to 62 inches—reddish sandy loam and sandy clay loam

Vaucluse
Surface layer:
0 to 2 inches—grayish loamy sand

Subsurface layer:
2 to 6 inches—brownish loamy sand

Subsoil:
6 to 16 inches—reddish sandy clay loam
16 to 50 inches—reddish sandy clay loam that has yellowish mottles and that is dense and compact

Substratum:
50 to 60 inches—reddish sandy loam

Inclusions

Similar (less than 20 percent of map unit):
- The moderately well drained Pelion soils in the lower landscape positions
- Small areas that have a clayey subsoil

- Small areas that have a gravelly surface layer
- Small areas that have moderate permeability in the substratum

Dissimilar (0 to 10 percent of map unit):
- The excessively drained Alpin and the somewhat excessively drained Candor soils in the highest landscape positions
- The well drained Ailey soils in the lower landscape positions
- The very poorly drained Pamlico and Johnston soils along narrow drainageways

Soil Properties and Qualities

Cowarts
Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately slow
Depth to high water table: More than 6.0 feet
Available water capacity: Low
Slope class: Strongly sloping
Hazard of water erosion: Moderate
Surface runoff: Medium
Organic matter content: Low

Vaucluse
Depth class: Very deep
Drainage class: Well drained
Permeability: Slow
Depth to high water table: More than 6.0 feet
Available water capacity: Low
Slope class: Strongly sloping
Hazard of water erosion: Moderate
Surface runoff: Medium
Organic matter content: Low

Use and Management

Major Uses: Woodland

Agricultural Development

Cropland
Suitable crops: None
Management concerns: Slope and erosion

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Slope and erosion
Management measures and considerations:
- Seedbeds should be prepared on the contour or across the slope if possible.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Suitable trees: Loblolly pine and longleaf pine
Management concerns: Plant competition
Management measures and considerations:
- Harvesting methods that disturb the soil as little as possible, such as locating skid trails, log landings, and temporary logging roads so that they do not lead to

drainageways, moving logs on the contour, and plowing fire lanes on the contour, help to reduce the hazard of erosion and the equipment limitation.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: Moderately slow permeability and slope
Management measures and considerations:
- The permeability and slope limitations can be reduced by increasing the size of the absorption field and installing the absorption lines on the contour.

Dwellings without basements
Restrictive features: Slope
Management measures and considerations:
- Cutting and filling or modifying the design of the building helps to overcome the slope.

Lawns and landscaping
Restrictive features: Droughtiness and slope
Management measures and considerations:
- Proper fertilization, seeding, mulching, and land shaping help to establish and maintain plant cover.

CoE—Cowarts-Vaucluse complex, 15 to 25 percent slopes

Setting

Major Land Resource Areas: Carolina and Georgia Sand Hills and Southern Coastal Plain
Slope length: Typically 75 to 150 feet, ranging from 50 to 250 feet
Shape of areas: Irregular
Size of areas: Typically 30 to 50 acres, ranging from 5 to 250 acres

Composition

Cowarts soil: 60 percent
Vaucluse soil: 30 percent
Inclusions: 10 percent

Typical Profile

Cowarts
Surface layer:
0 to 6 inches—brownish loamy sand

Subsoil:
6 to 10 inches—brownish sandy clay loam that has reddish and yellowish mottles
10 to 29 inches—reddish sandy clay loam that has yellowish mottles

Substratum:
29 to 62 inches—reddish sandy loam and sandy clay loam

Vaucluse
Surface layer:
0 to 2 inches—grayish loamy sand

Subsurface layer:
2 to 6 inches—brownish loamy sand

Subsoil:
6 to 16 inches—reddish sandy clay loam
16 to 50 inches—reddish sandy clay loam that has yellowish mottles and that is dense and compact

Substratum:
50 to 60 inches—reddish sandy loam

Inclusions

Similar (less than 15 percent of map unit):
- The moderately well drained Pelion soils in the lower landscape positions
- Small areas that have a clayey subsoil
- Small areas that have a gravelly surface layer
- Small areas that have moderate permeability in the substratum

Dissimilar (0 to 10 percent of map unit):
- The well drained Ailey soils in the lower landscape positions
- The excessively drained Alpin soils on ridgetops and side slopes
- The somewhat excessively drained Candor soils on ridgetops
- The very poorly drained Pamlico and Johnston soils along narrow drainageways

Soil Properties and Qualities

Cowarts
Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate in the solum; moderately slow in the substratum
Depth to high water table: More than 6.0 feet
Available water capacity: Low
Slope class: Moderately steep
Hazard of water erosion: Severe
Surface runoff: Medium
Organic matter content: Low

Vaucluse
Depth class: Very deep
Drainage class: Well drained
Permeability: Slow
Depth to high water table: More than 6.0 feet
Available water capacity: Low
Slope class: Moderately steep
Hazard of water erosion: Moderate
Surface runoff: Medium
Organic matter content: Low

Use and Management

Major Uses: Woodland

Agricultural Development

Cropland
Suitable crops: None
Management concerns: Slope and erosion

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Slope and erosion
Management measures and considerations:
- Seedbeds should be prepared on the contour or across the slope if possible.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Suitable trees: Loblolly pine and longleaf pine
Management concerns: Plant competition
Management measures and considerations:
- Harvesting methods that disturb the soil as little as possible, such as locating skid trails, log landings, and temporary logging roads so that they do not lead to drainageways, moving logs on the contour, and plowing fire lanes on the contour, help to reduce the hazard of erosion and the equipment limitation.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: Moderately slow permeability and slope
Management measures and considerations:
- The permeability and slope limitations can be reduced by increasing the size of the absorption field and installing the absorption lines on the contour.

Dwellings without basements
Restrictive features: Slope
Management measures and considerations:
- Cutting and filling or modifying the design of the building helps to overcome the slope.

Lawns and landscaping
Restrictive features: Droughtiness and slope
Management measures and considerations:
- Proper fertilization, seeding, mulching, and land shaping help to establish and maintain plant cover.

CxA—Coxville sandy loam, 0 to 2 percent slopes

Setting

Major Land Resource Areas: Southern Coastal Plain and Atlantic Coast Flatwoods
Landform: Broad, nearly level areas or oval depressions
Shape of areas: Irregular or oval
Size of areas: Typically 50 to 150 acres, ranging from 5 to 300 acres

Typical Profile

Surface layer:
0 to 9 inches—dark gray sandy loam

Subsoil:
9 to 19 inches—gray sandy clay that has brownish yellow mottles
19 to 36 inches—gray sandy clay that has red and brownish yellow mottles
36 to 62 inches—gray sandy clay that has red and reddish yellow mottles

Inclusions

Similar (less than 10 percent of map unit):
- The poorly drained Rains soils in landscape positions similar to those of the Coxville soil
- The somewhat poorly drained Lynchburg and Smithboro soils in the higher landscape positions

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Poorly drained
Permeability: Moderately slow
High water table: Within a depth of 1.0 foot
Available water capacity: High
Slope class: Nearly level
Hazard of water erosion: Slight
Surface runoff: Slow
Organic matter content: Moderate

Use and Management

Major Uses: Cropland and woodland

Agricultural Development

Cropland
Suitable crops: Soybeans, corn, and wheat
Management concerns: Wetness and moderately slow permeability
Management measures and considerations:
- Because of the moderately slow permeability, shallow surface drains and open ditches are commonly used to control the water table.
- Returning crop residue to the soil helps to maintain good tilth and the organic matter content.

Hayland and pasture
Suitable grasses: Bahiagrass
Management concerns: Wetness
Management measures and considerations:
- Needed surface drainage can be provided by open ditches, surface drains, or a combination of these.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during wet periods help to keep the pasture in good condition.

Woodland
Suitable trees: Loblolly pine
Management concerns: Equipment limitation, seedling mortality, windthrow hazard, and plant competition
Management measures and considerations:
- Removing excess water, using wider tires on equipment, and harvesting trees during dry periods help to reduce the equipment limitation.
- Seedling mortality rates can be reduced by planting suitable species at the proper times and by planting on raised beds.
- Trees are subject to windthrow when winds are strong because of the restricted rooting depth resulting from the high water table.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: Wetness and moderately slow permeability
Management measures and considerations:
- Because of the difficulty and expense of reducing the wetness and permeability limitations, this soil generally is not used for septic tank absorption fields.

Dwellings without basements
Restrictive features: Wetness
Management measures and considerations:
- The wetness limitation can be reduced by adding suitable fill material, land shaping so that excess surface water is removed, and installing a drainage system.

Lawns and landscaping
Restrictive features: Wetness
Management measures and considerations:
- The wetness limitation can be reduced by artificial drainage systems, land shaping so that runoff is increased, and selecting plants that can tolerate a high water table.

DpA—Dorovan and Ponzer soils, 0 to 2 percent slopes, frequently flooded

Setting

Major Land Resource Area: Southern Coastal Plain
Landform: Flood plains
Shape of areas: Irregular or elongated
Size of areas: Typically 150 to 250 acres, ranging from 10 to 600 acres

Composition

Dorovan soil: 45 percent
Ponzer soil: 40 percent
Inclusions: 15 percent

Typical Profile

Dorovan
Surface layer:
0 to 66 inches—black muck

Substratum:
66 to 80 inches—gray sand

Ponzer
Surface layer:
0 to 42 inches—black muck

Substratum:
42 to 55 inches—gray silty clay loam
55 to 65 inches—gray clay

Inclusions

Similar (less than 10 percent of map unit):
- The very poorly drained Johnston and Pamlico soils in landscape positions similar to those of the Dorovan and Ponzer soils
- Small areas that have less than 16 inches of organic surface material

Dissimilar (less than 15 percent of map unit):
- The poorly drained Chastain and Wehadkee soils in landscape positions similar to those of the Dorovan and Ponzer soils
- The well drained Ailey soils in the higher landscape positions

Soil Properties and Qualities

Dorovan
Depth class: Very deep
Drainage class: Very poorly drained
Permeability: Moderate
High water table: 1.0 foot above the surface to 0.5 foot below
Available water capacity: Very high
Slope class: Nearly level
Hazard of water erosion: Very low
Surface runoff: Very slow
Organic matter content: Very high
Flooding: Frequent

Ponzer
Depth class: Very deep
Drainage class: Very poorly drained
Permeability: Slow
High water table: Within a depth of 1.0 foot
Available water capacity: Very high
Slope class: Nearly level
Hazard of water erosion: Very low
Surface runoff: Very slow
Organic matter content: Very high
Flooding: Frequent

Use and Management

Major Uses: Woodland

Agricultural Development

Cropland
Suitable crops: None
Management concerns: Flooding
Management measures and considerations:
- Protecting areas of this map unit from flooding is generally not economically feasible.

Hayland and pasture
Suitable grasses: None
Management concerns: Flooding
Management measures and considerations:
- Protecting areas of this map unit from flooding is generally not economically feasible.
- Proper stocking rates, pasture rotation, and restricted use during wet periods help to keep the pasture in good condition.

Woodland
Suitable trees: Water-tolerant species
Management concerns: Equipment limitation and seedling mortality
Management measures and considerations:
- Removing excess water, using wider tires on equipment, and harvesting trees during dry periods helps to reduce the equipment limitation.
- Seedling mortality rates can be reduced by planting suitable species at the proper times and by planting on raised beds.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: Flooding
Management measures and considerations:
- Because of the difficulty and expense of reducing the flooding limitation, these soils generally are not used for septic tank absorption fields.

Dwellings without basements
Restrictive features: Flooding
Management measures and considerations:
- Because of the difficulty and expense of reducing the flooding limitation, these soils generally are not used for dwellings.

Lawns and landscaping
Restrictive features: Flooding
Management measures and considerations:
- Because of the difficulty and expense of reducing the flooding limitation, these soils generally are not used for lawns and landscaping.

EmB—Emporia loamy sand, 2 to 6 percent slopes

Setting

Major Land Resource Area: Southern Coastal Plain
Landform: Areas mainly near drainageways
Slope length: Typically 125 to 250 feet, ranging from 50 to 300 feet
Shape of areas: Irregular
Size of areas: Typically 60 to 150 acres, ranging from 10 to 200 acres

Typical Profile

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

Subsoil:
4 to 21 inches—brownish yellow fine sandy loam
21 to 37 inches—yellowish brown sandy clay loam
37 to 45 inches—brownish yellow sandy clay that has red, yellow, and gray mottles
45 to 60 inches—mottled reddish yellow, red, and gray coarse sandy loam

Inclusions

Similar (about 10 percent of map unit):
- The well drained Faceville, Noboco, and Norfolk soils in the slightly higher landscape positions
- The well drained Nankin soils on side slopes near drainageways

Dissimilar (0 to 10 percent of map unit):
- The well drained Wagram and Bonneau soils in the higher landscape positions
- The well drained Uchee soils on side slopes near drainageways
- The moderately well drained Eunola soils on stream terraces
- The poorly drained Coxville and Rains soils in depressions

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately slow or slow

Depth to high water table: 3.0 to 4.5 feet
Available water capacity: Moderate
Slope class: Gently sloping
Hazard of water erosion: Moderate
Surface runoff: Medium
Organic matter content: Low

Use and Management

Major Uses: Cropland

Agricultural Development

Cropland
Suitable crops: Cotton, soybeans, corn, tobacco, and wheat
Management concerns: Erosion
Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping, terraces, grassed waterways, cover crops, and a cropping system that includes grasses and legumes help to reduce runoff and control erosion.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Erosion
Management measures and considerations:
- Seedbeds should be prepared on the contour or across the slope if possible.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Suitable trees: Loblolly pine
Management concerns: Plant competition
Management measures and considerations:
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: Wetness and moderately slow permeability
Management measures and considerations:
- The wetness and permeability limitations can be reduced by specially designing a septic system and increasing the size of the absorption area.

Dwellings without basements
Restrictive features: None or slight limitations

Lawns and landscaping
Restrictive features: Droughtiness
Management measures and considerations:
- The droughtiness limitation can be reduced by selecting well adapted plants and providing supplemental irrigation during the growing season.

EmC—Emporia loamy sand, 6 to 10 percent slopes

Setting

Major Land Resource Area: Southern Coastal Plain
Landform: Areas near drainageways and around the rims of bays

Slope length: Typically 75 to 150 feet, ranging from 50 to 200 feet
Shape of areas: Irregular
Size of areas: Typically 20 to 60 acres, ranging from 10 to 100 acres

Typical Profile

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

Subsoil:
4 to 21 inches—brownish yellow fine sandy loam
21 to 37 inches—yellowish brown sandy clay loam
37 to 45 inches—brownish yellow sandy clay that has red, yellow, and gray mottles
45 to 60 inches—mottled reddish yellow, red, and gray coarse sandy loam

Inclusions

Similar (about 10 percent of map unit):
- The well drained Faceville, Noboco, Norfolk, and Vaucluse soils in the slightly higher landscape positions
- The well drained Nankin soils on side slopes near drainageways

Dissimilar (0 to 10 percent of map unit):
- The well drained Wagram and Bonneau soils in the higher landscape positions
- The well drained Uchee soils on side slopes near drainageways
- The moderately well drained Eunola soils on stream terraces
- The poorly drained Coxville and Rains soils in depressions

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately slow or slow
Depth to high water table: 3.0 to 4.5 feet
Slope class: Moderately sloping
Hazard of water erosion: Moderate
Surface runoff: Medium
Organic matter content: Low

Use and Management

Major Uses: Cropland

Agricultural Development

Cropland
Suitable crops: Cotton, soybeans, corn, tobacco, and wheat
Management concerns: Erosion
Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping, terraces, grassed waterways, cover crops, and a cropping system that includes grasses and legumes help to reduce runoff and control erosion.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Erosion and slope
Management measures and considerations:
- Seedbeds should be prepared on the contour or across the slope if possible.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Suitable trees: Loblolly pine
Management concerns: Plant competition
Management measures and considerations:
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: Wetness, moderately slow permeability, and slope
Management measures and considerations:
- The main limitations can be reduced by specially designing a septic system, installing the absorption lines on the contour, and increasing the size of the absorption area.

Dwellings without basements
Restrictive features: Slope
Management measures and considerations:
- Cutting and filling or modifying the design of the building helps to overcome the slope.

Lawns and landscaping
Restrictive features: Droughtiness and slope
Management measures and considerations:
- The main limitations can be reduced by selecting well adapted plants, land shaping, and providing supplemental irrigation during the growing season.

EuA—Eunola loamy sand, 0 to 2 percent slopes

Setting

Major Land Resource Area: Southern Coastal Plain
Slope length: Typically 100 to 450 feet, ranging from 50 to 500 feet
Shape of areas: Irregular
Size of areas: Typically 10 to 150 acres, ranging from 10 to 200 acres

Typical Profile

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

Subsurface layer:
8 to 12 inches—yellowish brown sandy clay loam

Subsoil:
12 to 19 inches—yellowish brown sandy clay loam that has reddish yellow and pale brown mottles
19 to 23 inches—light yellowish brown sandy clay loam that has gray mottles
23 to 46 inches—gray sandy clay loam that has brownish yellow and pale brown mottles
46 to 60 inches—light gray sandy clay loam that has brownish yellow mottles
60 to 80 inches—brownish yellow sandy clay loam that has red and gray mottles

Inclusions

Similar (0 to 10 percent of map unit):
- The moderately well drained Pelion soils in the higher landscape positions
- The moderately well drained Johns soils in landscape positions similar to those of the Eunola soil

Dissimilar (0 to 10 percent of map unit):
- The moderately well drained Goldsboro soils in the slightly higher landscape positions
- The moderately well drained Hornsville soils in landscape positions similar to those of the Eunola soil
- The poorly drained Lumbee and Rains soils in the lower landscape positions, in depressions, and along the edge of drainageways

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Moderately well drained
Permeability: Moderate
Depth to high water table: 1.5 to 2.5 feet
Available water capacity: Moderate
Slope class: Nearly level
Hazard of water erosion: Slight
Surface runoff: Slow
Organic matter content: Low

Use and Management

Major Uses: Woodland and some cropland

Agricultural Development

Cropland
Suitable crops: Cotton, soybeans, corn, tobacco, and wheat
Management concerns: Wetness
Management measures and considerations:
- Surface drains, open ditches, and tile drainage help to control the water table.
- Returning crop residue to the soil and growing cover crops help to maintain the organic matter content and improve fertility.

Hayland and pasture
Suitable grasses: Bahiagrass
Management concerns: Wetness
Management measures and considerations:
- Drainage can be provided by open ditches and surface drains.
- Proper stocking rates, pasture rotation, and restricted use during wet periods help to keep the pasture in good condition.

Woodland
Suitable trees: Loblolly pine
Management concerns: Equipment limitation and plant competition
Management measures and considerations:
- Removing excess water, using wider tires on equipment, and harvesting trees during dry periods help to reduce the equipment limitation.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: Wetness
Management measures and considerations:
- The shallow placement of filter lines, the use of fill material, or other alternate systems help absorption fields to function properly.

Dwellings without basements
Restrictive features: Wetness
Management measures and considerations:
- The wetness limitation can be reduced by adding fill material, land shaping so that excess surface water is removed, and installing a drainage system.

Lawns and landscaping
Restrictive features: None or slight limitations

FaA—Faceville loamy sand, 0 to 2 percent slopes

Setting

Major Land Resource Area: Southern Coastal Plain
Slope length: Typically 100 to 300 feet, ranging from 50 to 500 feet
Shape of areas: Irregular
Size of areas: Typically 25 to 125 acres, ranging from 10 to 175 acres

Typical Profile

Surface layer:
0 to 11 inches—brown loamy sand

Subsoil:
11 to 48 inches—red clay loam
48 to 70 inches—red clay
70 to 73 inches—red clay loam

Inclusions

Similar (10 percent of map unit):
- The well drained Orangeburg soils in landscape positions similar to those of the Faceville soil

Dissimilar (0 to 10 percent of map unit):
- The well drained Lucy soils in the slightly higher landscape positions
- The well drained Norfolk soils in the slightly lower landscape positions
- The poorly drained Coxville and the somewhat poorly drained Smithboro soils in depressions

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate
Depth to high water table: More than 6.0 feet
Slope class: Nearly level
Hazard of water erosion: Slight
Surface runoff: Slow
Organic matter content: Low

Use and Management

Major Uses: Cropland (fig. 3) and some woodland

Cropland
Suitable crops: Cotton, soybeans, corn, tobacco, and wheat
Management concerns:
- This soil has no major management problems affecting cropland.

Figure 3.—Faceville loamy sand, 0 to 2 percent slopes, is well suited to specialty crops grown in the county, such as collards.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns:
- This soil has no major management problems affecting hayland and pasture.

Woodland
Suitable trees: Loblolly pine
Management concerns: Plant competition
Management measures and considerations:
- Competing vegetation can be controlled by proper site preparation, including burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: None or slight limitations

Dwellings without basements
Restrictive features: None or slight limitations

Lawns and landscaping
Restrictive features: None or slight limitations

FaB—Faceville loamy sand, 2 to 6 percent slopes

Setting

Major Land Resource Area: Southern Coastal Plain
Slope length: Typically 100 to 200 feet, ranging from 50 to 300 feet

Shape of areas: Irregular
Size of areas: Typically 25 to 75 acres, ranging from 10 to 150 acres

Typical Profile

Surface layer:
0 to 11 inches—brown loamy sand

Subsoil:
11 to 48 inches—red clay loam
48 to 70 inches—red clay
70 to 73 inches—red clay loam

Inclusions

Similar (10 percent of map unit):
- The well drained Orangeburg soils in landscape positions similar to those of the Faceville soil

Dissimilar (0 to 10 percent of map unit):
- The well drained Lucy soils in the slightly higher landscape positions
- The well drained Norfolk soils in the slightly lower landscape positions
- The poorly drained Coxville and the somewhat poorly drained Smithboro soils in depressions

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate
Depth to high water table: More than 6.0 feet
Slope class: Gently sloping
Hazard of water erosion: Moderate
Surface runoff: Medium
Organic matter content: Low

Use and Management

Major Uses: Cropland and some woodland

Agricultural Development

Cropland
Suitable crops: Cotton, soybeans, corn, tobacco, and wheat
Management concerns: Erosion
Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping, terraces, grassed waterways, cover crops, and a cropping system that includes grasses and legumes help to reduce runoff and control erosion.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Erosion
Management measures and considerations:
- Seedbeds should be prepared on the contour or across the slope if possible.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Suitable trees: Loblolly pine

Management concerns: Plant competition
Management measures and considerations:
- Competing vegetation can be controlled by proper site preparation, including burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: None or slight limitations

Dwellings without basements
Restrictive features: None or slight limitations

Lawns and landscaping
Restrictive features: None or slight limitations

FcB2—Faceville sandy clay loam, 2 to 6 percent slopes, eroded

Setting

Major Land Resource Area: Southern Coastal Plain
Slope length: Typically 100 to 200 feet, ranging from 50 to 300 feet
Shape of areas: Irregular
Size of areas: Typically 25 to 75 acres, ranging from 10 to 150 acres

Typical Profile

Surface layer:
0 to 3 inches—reddish sandy clay loam

Subsoil:
3 to 36 inches—reddish clay loam
36 to 60 inches—reddish clay

Inclusions

Similar (10 percent of map unit):
- The well drained Orangeburg soils in landscape positions similar to those of the Faceville soil

Dissimilar (0 to 10 percent of map unit):
- The well drained Lucy soils in the slightly higher landscape positions
- The well drained Norfolk soils in the slightly lower landscape positions
- The poorly drained Coxville and the somewhat poorly drained Smithboro soils in depressions

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate
Depth to high water table: More than 6.0 feet
Slope class: Gently sloping
Hazard of water erosion: Moderate
Surface runoff: Medium
Organic matter content: Low

Use and Management

Major Uses: Cropland

Agricultural Development

Cropland
Suitable crops: Cotton, soybeans, corn, tobacco, and wheat
Management concerns: Erosion
Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping, terraces, grassed waterways, cover crops, and a cropping system that includes grasses and legumes help to reduce runoff and control erosion.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Erosion
Management measures and considerations:
- Seedbeds should be prepared on the contour or across the slope if possible.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Suitable trees: Loblolly pine
Management concerns: Plant competition
Management measures and considerations:
- Competing vegetation can be controlled by proper site preparation, including burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: None or slight limitations

Dwellings without basements
Restrictive features: None or slight limitations

Lawns and landscaping
Restrictive features: None or slight limitations

FxB—Foxworth sand, 0 to 6 percent slopes

Setting

Major Land Resource Area: Southern Coastal Plain
Slope length: Typically 100 to 150 feet, ranging from 50 to 300 feet
Shape of areas: Irregular
Size of areas: Typically 25 to 100 acres, ranging from 10 to 150 acres

Typical Profile

Surface layer:
0 to 3 inches—gray sand

Substratum:
3 to 44 inches—brown sand
44 to 52 inches—yellow sand
52 to 70 inches—light gray sand
70 to 80 inches—white sand

Inclusions

Similar (less than 20 percent of map unit):
- The excessively drained Alpin and Lakeland soils in the higher landscape positions
- The somewhat excessively drained Candor soils and the well drained Autryville soils in the lower landscape positions

Dissimilar (0 to 10 percent of map unit):
- The poorly drained Rains and Leon soils in depressions
- The very poorly drained Pamlico and Johnston soils along drainageways

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Somewhat excessively drained
Permeability: Rapid
Depth to high water table: 4.0 to 6.0 feet
Available water capacity: Low
Slope class: Nearly level or gently sloping
Hazard of water erosion: Slight
Surface runoff: Very slow
Organic matter content: Low

Use and Management

Major Uses: Woodland and pasture

Agricultural Development

Cropland
Suitable crops: Truck crops
Management concerns: Droughtiness, low nutrient-holding capacity, and soil blowing
Management measures and considerations:
- Contour farming, contour stripcropping that uses close-growing grains or legumes, the use of cover crops, and crop residue management help to increase the available water capacity and the nutrient-holding capacity and reduce the hazard of soil blowing.
- Fertilizers should be applied at intervals rather than used in single applications.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Droughtiness and low nutrient-holding capacity
Management measures and considerations:
- Frequent applications of fertilizer are needed.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Suitable trees: Loblolly pine
Management concerns: Equipment limitation, seedling mortality, and plant competition
Management measures and considerations:
- The sandy surface layer restricts the use of wheeled equipment, especially when the soil is very dry.
- The use of wide, low-pressure tires helps to overcome the equipment limitation.
- The seedling mortality rate, which is increased by droughtiness, can be reduced by planting seedlings in furrows.
- Competing vegetation can be controlled by proper site preparation, including burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: Wetness
Management measures and considerations:
- The wetness limitation can be reduced by specially designing a septic system.

Dwellings without basements
Restrictive features: None or slight limitations

Lawns and landscaping
Restrictive features: Droughtiness
Management measures and considerations:
- The droughtiness limitation can be reduced by selecting well adapted plants and providing supplemental irrigation during the growing season.

GoA—Goldsboro sandy loam, 0 to 2 percent slopes

Setting

Major Land Resource Area: Southern Coastal Plain
Slope length: Typically 100 to 450 feet, ranging from 50 to 500 feet
Shape of areas: Irregular
Size of areas: Typically 10 to 150 acres, ranging from 10 to 200 acres

Typical Profile

Surface layer:
0 to 8 inches—grayish sandy loam

Subsoil:
8 to 24 inches—brownish sandy clay loam
24 to 35 inches—brownish sandy clay loam that has grayish and reddish mottles
35 to 47 inches—grayish sandy clay loam that has brownish and reddish mottles
47 to 60 inches—grayish sandy clay loam that has yellowish and grayish mottles

Inclusions

Similar (less than 15 percent of map unit):
- The moderately well drained Eunola and the somewhat poorly drained Lynchburg soils in the lower landscape positions
- Small areas of moderately well drained soils that have a high water table within a depth of 2 feet

Dissimilar (0 to 10 percent of map unit):
- The poorly drained Coxville and Rains soils in depressions

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Moderately well drained
Permeability: Moderate
Depth to high water table: 1.5 to 2.5 feet
Available water capacity: Moderate
Slope class: Nearly level
Hazard of water erosion: Slight
Surface runoff: Slow
Organic matter content: Low

Use and Management

Major Uses: Cropland and woodland

Agricultural Development

Cropland
Suitable crops: Cotton, soybeans, corn (fig. 4), tobacco, and wheat
Management concerns: Wetness
Management measures and considerations:
- Surface drains, open ditches, and tile drainage help to control the water table.
- Returning crop residue to the soil and growing cover crops help to maintain the organic matter content and improve fertility.

Hayland and pasture
Suitable grasses: Bahiagrass
Management concerns: Wetness
Management measures and considerations:
- Needed surface drainage can be provided by open ditches, surface drains, or a combination of these.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during wet periods help to keep the pasture in good condition.

Woodland
Suitable trees: Loblolly pine
Management concerns: Plant competition
Management measures and considerations:
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Figure 4.—An area of Goldsboro sandy loam, 0 to 2 percent slopes. This soil is well suited to the production of corn.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: Wetness
Management measures and considerations:
- The shallow placement of filter lines, the use of fill material, or other alternate systems help absorption fields to function properly.

Dwellings without basements
Restrictive features: Wetness
Management measures and considerations:
- The wetness limitation can be reduced by adding fill material, land shaping so that excess surface water is removed, and installing a drainage system.

Lawns and landscaping
Restrictive features: None or slight limitations

HnA—Hornsville sandy loam, 0 to 2 percent slopes

Setting

Major Land Resource Areas: Southern Coastal Plain and Atlantic Coast Flatwoods
Landform: Uplands and stream terraces
Slope length: Typically 100 to 450 feet, ranging from 50 to 500 feet
Shape of areas: Irregular
Size of areas: Typically 10 to 80 acres, ranging from 10 to 200 acres

Typical Profile

Surface layer:
0 to 7 inches—brownish sandy loam

Subsoil:
7 to 18 inches—yellowish clay that has reddish mottles
18 to 36 inches—brownish sandy clay that has yellowish, reddish, and grayish mottles
36 to 45 inches—mottled yellowish, grayish, and reddish sandy loam and sandy clay loam

Substratum:
45 to 60 inches—mottled grayish and yellowish sandy loam

Inclusions

Similar (less than 15 percent of map unit):
- The moderately well drained Persanti soils in the slightly higher landscape positions
- The somewhat poorly drained Smithboro soils in the slightly lower landscape positions

Dissimilar (0 to 10 percent of map unit):
- The moderately well drained Eunola soils in landscape positions similar to or slightly higher than those of the Hornsville soil
- The poorly drained Coxville soils in the lower landscape positions or in depressions
- The poorly drained Chastain and Bibb soils on flood plains

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Moderately well drained

Permeability: Moderately slow
Depth to high water table: 2.5 to 3.5 feet
Available water capacity: Moderate
Slope class: Nearly level
Hazard of water erosion: Slight
Surface runoff: Slow
Organic matter content: Moderately low

Use and Management

Major Uses: Cropland and some woodland

Agricultural Development

Cropland
Suitable crops: Cotton, soybeans, corn, and wheat
Management concerns: Wetness and moderately slow permeability
Management measures and considerations:
- Because of the moderately slow permeability, shallow surface drains and open ditches are commonly used to lower the water table.
- Returning crop residue to the soil and growing cover crops help to maintain the organic matter content and improve fertility.

Hayland and pasture
Suitable grasses: Bahiagrass
Management concerns: Wetness
Management measures and considerations:
- Needed surface drainage can be provided by open ditches, surface drains, or a combination of these.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during wet periods help to keep the pasture in good condition.

Woodland
Suitable trees: Loblolly pine
Management concerns: Equipment limitation, seedling mortality, and plant competition
Management measures and considerations:
- Removing excess water, using wider tires on equipment, and harvesting trees during dry periods help to reduce the equipment limitation.
- Seedling mortality rates can be reduced by planting suitable species at the proper times and by planting on raised beds.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: Wetness and moderately slow permeability
Management measures and considerations:
- The wetness and permeability limitations can be reduced by specially designing a septic system.

Dwellings without basements
Restrictive features: Wetness
Management measures and considerations:
- The wetness limitation can be reduced by adding fill material, land shaping so that excess surface water is removed, and installing a drainage system.

Lawns and landscaping
Restrictive features: None or slight limitations

HnB—Hornsville sandy loam, 2 to 6 percent slopes

Setting

Major Land Resource Areas: Southern Coastal Plain and Atlantic Coast Flatwoods
Landform: Uplands and stream terraces
Slope length: Typically 100 to 450 feet, ranging from 50 to 500 feet
Shape of areas: Irregular
Size of areas: Typically 10 to 80 acres, ranging from 10 to 200 acres

Typical Profile

Surface layer:
0 to 7 inches—brownish sandy loam

Subsoil:
7 to 18 inches—yellowish clay that has reddish mottles
18 to 36 inches—brownish sandy clay that has yellowish, reddish, and grayish mottles
36 to 45 inches—mottled yellowish, grayish, and reddish sandy loam and sandy clay loam

Substratum:
45 to 60 inches—mottled grayish and yellowish sandy loam

Inclusions

Similar (less than 15 percent of map unit):
- The moderately well drained Persanti soils in the slightly higher landscape positions

Dissimilar (0 to 10 percent of map unit):
- The moderately well drained Eunola soils in landscape positions similar to or slightly higher than the Hornsville soil
- The poorly drained Coxville soils in the lower landscape positions or in depressions
- The poorly drained Chastain and Bibb soils on flood plains

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Moderately well drained
Permeability: Moderately slow
Depth to high water table: 2.5 to 3.5 feet
Available water capacity: Moderate
Slope class: Gently sloping
Hazard of water erosion: Moderate
Surface runoff: Medium
Organic matter content: Moderately low

Use and Management

Major Uses: Cropland and woodland

Agricultural Development

Cropland
Suitable crops: Cotton, soybeans, corn, and wheat
Management concerns: Erosion

Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping, terraces, grassed waterways, cover crops, and a cropping system that includes grasses and legumes help to reduce runoff and control erosion.
- Returning crop residue to the soil and growing cover crops help to maintain the organic matter content and improve fertility.

Hayland and pasture
Suitable grasses: Bahiagrass
Management concerns: Wetness
Management measures and considerations:
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during wet periods help to keep the pasture in good condition.

Woodland
Suitable trees: Loblolly pine
Management concerns: Equipment limitation, seedling mortality, and plant competition
Management measures and considerations:
- Removing excess water, using wider tires on equipment, and harvesting trees during dry periods help to reduce the equipment limitation.
- Seedling mortality rates can be reduced by planting suitable species at the proper times and by planting on raised beds.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: Wetness and moderately slow permeability
Management measures and considerations:
- The wetness and permeability limitations can be reduced by specially designing a septic system and increasing the size of the absorption area.

Dwellings without basements
Restrictive features: Wetness
Management measures and considerations:
- The wetness limitation can be reduced by adding fill material, land shaping so that excess surface water is removed, and installing a drainage system.

Lawns and landscaping
Restrictive features: None or slight limitations

JnA—Johns loamy sand, 0 to 2 percent slopes, rarely flooded

Setting

Major Land Resource Area: Southern Coastal Plain
Landform: Stream terraces
Slope length: Typically 100 to 450 feet, ranging from 50 to 500 feet
Shape of areas: Irregular
Size of areas: Typically 10 to 70 acres, ranging from 10 to 150 acres

Typical Profile

Surface layer:
0 to 9 inches—brownish loamy sand

Subsurface layer:
9 to 14 inches—brownish loamy sand

Subsoil:
14 to 21 inches—brownish sandy clay loam that has reddish mottles
21 to 37 inches—brownish sandy clay loam and sandy loam having grayish and brownish mottles

Substratum:
37 to 80 inches—grayish sand

Inclusions

Similar (less than 15 percent of map unit):
- The moderately well drained Eunola soils in landscape positions similar to those of the Johns soil

Dissimilar (0 to 10 percent of map unit):
- The poorly drained Lumbee and Johnston soils in the lower landscape positions

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Moderately well drained
Permeability: Moderate
Depth to high water table: 1.5 to 3.0 feet
Available water capacity: Moderate
Slope class: Nearly level
Hazard of water erosion: Slight
Surface runoff: Slow
Organic matter content: Low
Flooding: Rare

Use and Management

Major Uses: Cropland and woodland

Agricultural Development

Cropland
Suitable crops: Cotton, soybeans, corn, and wheat
Management concerns: Wetness
Management measures and considerations:
- Surface drains, open ditches, and tile drainage help to control the water table.
- Returning crop residue to the soil and growing cover crops help to maintain the organic matter content and improve fertility.

Hayland and pasture
Suitable grasses: Bahiagrass
Management concerns: Wetness
Management measures and considerations:
- Needed surface drainage can be provided by open ditches, surface drains, or a combination of these.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted grazing during wet periods help to keep the pasture in good condition.

Woodland
Suitable trees: Loblolly pine
Management concerns: Plant competition

Management measures and considerations:
- Competing vegetation can be controlled by good site preparation, including burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: Wetness and flooding
Management measures and considerations:
- The shallow placement of filter lines, the use of fill material, or other alternate systems help absorption fields to function properly.
- Because of the difficulty and expense of reducing the flooding limitation, this soil generally is not used for septic tank absorption fields.

Dwellings without basements
Restrictive features: Wetness
Management measures and considerations:
- The wetness limitation can be reduced by adding fill material, land shaping so that excess surface water is removed, and installing a drainage system.
- Because of the difficulty and expense of reducing the flooding limitation, this soil generally is not used for dwellings.

Lawns and landscaping
Restrictive features: Wetness
Management measures and considerations:
- The wetness limitation can be reduced by artificial drainage systems, land shaping so that runoff is increased, and selecting plants that can tolerate a high water table.

JoA—Johnston sandy loam, 0 to 2 percent slopes, frequently flooded

Setting

Major Land Resource Areas: Southern Coastal Plain and Carolina and Georgia Sand Hills
Landform: Flood plains
Shape of areas: Elongated
Size of areas: Typically 150 to 250 acres, ranging from 10 to 600 acres

Typical Profile

Surface layer:
0 to 25 inches—black sandy loam

Substratum:
25 to 45 inches—grayish loamy sand
45 to 60 inches—grayish sand

Inclusions

Similar (less than 10 percent of map unit):
- The very poorly drained Pamlico and Dorovan soils in landscape positions similar to those of the Johnston soil

Dissimilar (0 to 15 percent of map unit):
- The very poorly drained Dorovan, Pamlico, and Ponzer soils and the poorly drained Bibb soils in landscape positions similar to those of the Johnston soil

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Very poorly drained
Permeability: Moderately rapid or rapid
High water table: 1.0 foot above the surface to 1.5 feet below
Available water capacity: Moderate
Slope class: Nearly level
Hazard of water erosion: None or slight
Surface runoff: Very slow
Organic matter content: High
Flooding: Frequent (fig. 5)

Use and Management

Major Uses: Woodland

Agricultural Development

Cropland
Suitable crops: None
Management concerns: Flooding and wetness
Management measures and considerations:
- Protecting areas of this map unit from flooding is generally not economically feasible.

Hayland and pasture
Suitable grasses: None
Management concerns: Flooding and wetness
Management measures and considerations:
- Protecting areas of this map unit from flooding is generally not economically feasible.

Figure 5.—Flooding is a severe hazard on Johnston sandy loam, 0 to 2 percent slopes, frequently flooded.

- Proper stocking rates, pasture rotation, and restricted use during wet periods help to keep the pasture in good condition.

Woodland

Suitable trees: Water-tolerant species
Management concerns: Equipment limitation, seedling mortality, windthrow hazard, and plant competition
Management measures and considerations:
- Removing excess water, using wider tires on equipment, and harvesting trees during dry periods help to reduce the equipment limitation.
- Seedling mortality rates can be reduced by planting suitable species at the proper times and by planting on raised beds.
- Trees are subject to windthrow when winds are strong because of the restricted rooting depth resulting from the high water table.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: Flooding and wetness
Management measures and considerations:
- Because of the difficulty and expense of reducing the flooding and wetness limitations, this soil generally is not used for septic tank absorption fields.

Dwellings without basements
Restrictive features: Flooding and wetness
Management measures and considerations:
- Because of the difficulty and expense of reducing the flooding and wetness limitations, this soil generally is not used for dwellings.

Lawns and landscaping
Restrictive features: Flooding and wetness
Management measures and considerations:
- Because of the difficulty and expense of reducing the flooding and wetness limitations, this soil generally is not used for lawns and landscaping.

KeB—Kenansville sand, 0 to 4 percent slopes

Setting

Major Land Resource Areas: Carolina and Georgia Sand Hills and Southern Coastal Plain
Landform: Sandhills and stream terraces
Slope length: Typically 100 to 350 feet, ranging from 50 to 500 feet
Shape of areas: Irregular
Size of areas: Typically 25 to 125 acres, ranging from 10 to 150 acres

Typical Profile

Surface layer:
0 to 8 inches—brownish sand

Subsurface layer:
8 to 30 inches—brownish sand

Subsoil:
30 to 41 inches—yellowish sandy loam
41 to 52 inches—brownish loamy sand

Substratum:
52 to 70 inches—yellowish sand that has brownish mottles

Inclusions

Similar (less than 20 percent of map unit):
- The excessively drained Alpin and the somewhat excessively drained Candor, Foxworth, and Blanton soils in the higher landscape positions
- The well drained Ailey soils on side slopes near drainageways

Dissimilar (0 to 10 percent of map unit):
- The very poorly drained Bibb, Pamlico, and Johnston soils along drainageways

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately rapid
Depth to high water table: More than 6.0 feet
Available water capacity: Low
Slope class: Nearly level or gently sloping
Hazard of water erosion: Slight
Surface runoff: Slow
Organic matter content: Low

Use and Management

Major Uses: Woodland and cropland

Agricultural Development

Cropland
Suitable crops: Corn and soybeans
Management concerns: Droughtiness, low nutrient-holding capacity, and soil blowing
Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping that uses close-growing grains or legumes, the use of cover crops, and crop residue management help to increase the available water capacity and the nutrient-holding capacity and reduce the hazard of soil blowing.
- Fertilizers should be applied at intervals rather than used in single applications.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Droughtiness and low nutrient-holding capacity
Management measures and considerations:
- Frequent applications of fertilizer are needed.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Suitable trees: Loblolly pine
Management concerns: Equipment limitation and seedling mortality
Management measures and considerations:
- The sandy surface layer restricts the use of wheeled equipment, especially when the soil is very dry.

- The use of wide, low-pressure tires helps to overcome the equipment limitation.
- The seedling mortality rate, which is increased by droughtiness, can be reduced by planting seedlings in furrows.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: None or slight limitations

Dwellings without basements
Restrictive features: None or slight limitations

Lawns and landscaping
Restrictive features: Droughtiness
Management measures and considerations:
- The droughtiness limitation can be reduced by selecting well adapted plants and providing supplemental irrigation during the growing season.

LaB—Lakeland sand, 0 to 6 percent slopes

Setting

Major Land Resource Areas: Southern Coastal Plain and Atlantic Coast Flatwoods
Landform: Areas along drainageways and stream terraces
Slope length: Typically 100 to 125 feet, ranging from 50 to 300 feet
Shape of areas: Elongated
Size of areas: Typically 25 to 60 acres, ranging from 5 to 150 acres

Typical Profile

Surface layer:
0 to 7 inches—brownish sand

Substratum:
7 to 80 inches—brownish sand

Inclusions

Similar (less than 15 percent of map unit):
- The somewhat excessively drained Foxworth soils in the lower landscape positions

Dissimilar (0 to 10 percent of map unit):
- The somewhat excessively drained Candor soils in the lower landscape positions
- The somewhat poorly drained Chewacla soils, the poorly drained Chastain and Wehadkee soils, and the very poorly drained Johnston soils along drainageways

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Excessively drained
Permeability: Rapid
Depth to high water table: More than 6.0 feet
Available water capacity: Low
Slope class: Nearly level to moderately sloping
Hazard of water erosion: Slight
Surface runoff: Slow
Organic matter content: Low

Use and Management

Major Uses: Woodland

Agricultural Development

Cropland
Suitable crops: None
Management concerns: Droughtiness, low nutrient-holding capacity, and soil blowing

Hayland and pasture
Suitable grasses: Bermudagrass
Management concerns: Droughtiness and low nutrient-holding capacity
Management measures and considerations:
- Frequent applications of fertilizer are needed.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Suitable trees: Loblolly pine
Management concerns: Equipment limitation, seedling mortality, and plant competition
Management measures and considerations:
- The sandy surface layer restricts the use of wheeled equipment, especially when the soil is very dry.
- The use of wide, low-pressure tires helps to overcome the equipment limitation.
- The seedling mortality rate, which is increased by droughtiness, can be reduced by planting seedlings in furrows.
- Competing vegetation can be controlled by proper site preparation, including burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: None or slight limitations

Dwellings without basements
Restrictive features: None or slight limitations

Lawns and landscaping
Restrictive features: Droughtiness
Management measures and considerations:
- The droughtiness limitation can be reduced by selecting well adapted plants and providing supplemental irrigation during the growing season.

LaC—Lakeland sand, 6 to 10 percent slopes

Setting

Major Land Resource Areas: Southern Coastal Plain and Atlantic Coast Flatwoods
Landform: Areas along drainageways and stream terraces
Slope length: Typically 100 to 125 feet, ranging from 50 to 300 feet
Shape of areas: Irregular
Size of areas: Typically 25 to 60 acres, ranging from 5 to 150 acres

Typical Profile

Surface layer:
0 to 7 inches—brownish sand

Substratum:
7 to 80 inches—brownish sand

Inclusions

Similar (less than 15 percent of map unit):
- The somewhat excessively drained Foxworth soils in the lower landscape positions

Dissimilar (0 to 10 percent of map unit):
- The somewhat excessively drained Candor soils in the lower landscape positions
- The somewhat poorly drained Chewacla soils, the poorly drained Chastain and Wehadkee soils, and the very poorly drained Johnston soils along drainageways

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Excessively drained
Permeability: Rapid
Depth to high water table: More than 6.0 feet
Available water capacity: Low
Slope class: Moderately sloping
Hazard of water erosion: Slight
Surface runoff: Slow
Organic matter content: Low

Use and Management

Major Uses: Woodland

Agricultural Development

Cropland
Suitable crops: None
Management concerns: Droughtiness, low nutrient-holding capacity, and soil blowing

Hayland and pasture
Suitable grasses: Bermudagrass
Management concerns: Droughtiness and low nutrient-holding capacity
Management measures and considerations:
- Frequent applications of fertilizer are needed.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Suitable trees: Loblolly pine
Management concerns: Equipment limitation, seedling mortality, and plant competition
Management measures and considerations:
- The sandy surface layer restricts the use of wheeled equipment, especially when the soil is very dry.
- The use of wide, low-pressure tires helps to overcome the equipment limitation.
- The seedling mortality rate, which is increased by droughtiness, can be reduced by planting seedlings in furrows.
- Competing vegetation can be controlled by proper site preparation, including burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: Slope
Management measures and considerations:
- Installing the absorption lines on the contour helps to overcome the slope.

Dwellings without basements
Restrictive features: Slope

Management measures and considerations:
- Cutting and filling or modifying the design of the building helps to overcome the slope.

Lawns and landscaping
Restrictive features: Droughtiness and slope
Management measures and considerations:
- The droughtiness limitation can be reduced by selecting well adapted plants and providing supplemental irrigation during the growing season.

LeA—Leon sand, 0 to 2 percent slopes

Setting

Major Land Resource Areas: Southern Coastal Plain and Atlantic Coast Flatwoods
Landform: Oval depressions, stream terraces, and nearly level areas
Slope length: Typically 100 to 300 feet, ranging from 50 to 500 feet
Shape of areas: Oval or irregular
Size of areas: Typically 10 to 35 acres, ranging from 5 to 50 acres

Typical Profile

Surface layer:
0 to 5 inches—black sand

Subsurface layer:
5 to 13 inches—white sand

Subsoil:
13 to 19 inches—black sand
19 to 27 inches—brownish sand that has brownish mottles
27 to 38 inches—brownish sand
38 to 51 inches—black sand

Substratum:
51 to 65 inches—grayish sand that has grayish mottles

Inclusions

Similar (less than 15 percent of map unit):
- The poorly drained Rains soils in landscape positions similar to those of the Leon soil
- The very poorly drained Johnston soils along drainageways
- Soils that have a black surface layer more than 10 inches thick

Dissimilar (0 to 10 percent of map unit):
- The somewhat excessively drained Blanton and Foxworth soils in the higher landscape positions
- The moderately well drained Johns soils in the slightly higher landscape positions

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Poorly drained
Permeability: Moderately rapid
Depth to high water table: 0.5 foot to 1.5 feet
Available water capacity: Moderate
Slope class: Nearly level

Hazard of water erosion: None or slight
Surface runoff: Slow
Organic matter content: Moderate

Use and Management

Major Uses: Cropland and woodland

Agricultural Development

Cropland
Suitable crops: Soybeans, corn, wheat, and blueberries
Management concerns: Wetness
Management measures and considerations:
- Surface drains, open ditches, and tile drainage help to control the water table.
- Returning crop residue to the soil and growing cover crops help to maintain the organic matter content and improve fertility.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Wetness
Management measures and considerations:
- Drainage can be provided by maintaining open ditches and surface drains.
- Grazing should be delayed until the soil has been drained sufficiently.
- Proper stocking rates, pasture rotation, and restricted use during wet periods help to keep the pasture in good condition.

Woodland
Suitable trees: Loblolly pine
Management concerns: Equipment limitation, seedling mortality, windthrow hazard, and plant competition
Management measures and considerations:
- Removing excess water, using wider tires on equipment, and harvesting trees during dry periods help to reduce the equipment limitation.
- The seedling mortality rate can be reduced by planting suitable species at the proper times and by planting on raised beds.
- Trees are subject to windthrow when winds are strong because of the restricted rooting depth resulting from the high water table.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: Wetness
Management measures and considerations:
- Because of the difficulty and expense of overcoming the wetness limitation, this soil is generally not used for septic tank absorption fields.

Dwellings without basements
Restrictive features: Wetness
Management measures and considerations:
- The wetness limitation can be reduced by adding suitable fill material, land shaping so that excess surface water is removed, and installing a drainage system.

Lawns and landscaping
Restrictive features: Wetness

Management measures and considerations:
- The wetness limitation can be reduced by providing artificial drainage systems, land shaping so that runoff is increased, and selecting plants that can tolerate a high water table.

LmA—Lumbee sandy loam, 0 to 2 percent slopes

Setting

Major Land Resource Areas: Southern Coastal Plain and Atlantic Coast Flatwoods
Landform: Depressions and nearly level areas
Slope length: Typically 100 to 500 feet, ranging from 50 to 700 feet
Shape of areas: Oval or irregular
Size of areas: Typically 50 to 60 acres, ranging from 5 to 175 acres

Typical Profile

Surface layer:
0 to 5 inches—grayish sandy loam

Subsoil:
5 to 31 inches—grayish fine sandy loam and loam having brownish mottles

Substratum:
31 to 65 inches—grayish sand

Inclusions

Similar (15 percent of map unit):
- The poorly drained Rains soils in landscape positions similar to those of the Lumbee soil
- Small areas of soils that have a spodic horizon below the surface horizon
- Small areas that have a black surface layer more than 10 inches thick

Dissimilar (0 to 15 percent of map unit):
- The well drained Kenansville and the moderately well drained Johns and Eunola soils in the higher landscape positions
- The poorly drained Bibb and Johnston soils along drainageways

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Poorly drained
Permeability: Moderate
High water table: Within a depth of 1.0 foot
Available water capacity: Moderate
Slope class: Nearly level
Hazard of water erosion: Slight
Surface runoff: Moderate
Organic matter content: Moderate

Use and Management

Major Uses: Woodland

Agricultural Development

Cropland
Suitable crops: Soybeans, corn, and wheat
Management concerns: Wetness

Management measures and considerations:
- Surface drains, open ditches, and tile drainage help to control the water table.
- Returning crop residue to the soil and growing cover crops help to maintain the organic matter content and improve fertility.

Hayland and pasture
Suitable grasses: Bahiagrass
Management concerns: Wetness
Management measures and considerations:
- Needed surface drainage can be provided by open ditches, surface drains, or a combination of these.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during wet periods help to keep the pasture in good condition.

Woodland
Suitable trees: Loblolly pine
Management concerns: Equipment limitation, seedling mortality, windthrow hazard, and plant competition
Management measures and considerations:
- Removing excess water, using wider tires on equipment, and harvesting trees during dry periods help to reduce the equipment limitation.
- Seedling mortality rates can be reduced by planting suitable species at the proper times and by planting on raised beds.
- Trees are subject to windthrow when winds are strong because of the restricted rooting depth resulting from the high water table.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: Wetness
Management measures and considerations:
- Because of the difficulty and expense of reducing the wetness limitation, this soil generally is not used for septic tank absorption fields.

Dwellings without basements
Restrictive features: Wetness
Management measures and considerations:
- The wetness limitation can be reduced by adding suitable fill material, land shaping so that excess surface water is removed, and installing a drainage system.

Lawns and landscaping
Restrictive features: Wetness
Management measures and considerations:
- The wetness limitation can be reduced by providing artificial drainage systems, land shaping so that runoff is increased, and selecting plants that can tolerate a high water table.

LuB—Lucy sand, 0 to 4 percent slopes

Setting

Major Land Resource Area: Southern Coastal Plain
Slope length: Typically 100 to 200 feet, ranging from 50 to 300 feet
Shape of areas: Irregular
Size of areas: Typically 25 to 50 acres, ranging from 5 to 150 acres

Typical Profile

Surface layer:
0 to 8 inches—dark brown sand

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

Subsoil:
22 to 31 inches—yellowish brown sandy loam
31 to 39 inches—red sandy loam
39 to 67 inches—red sandy clay loam

Inclusions

Similar (less than 15 percent of map unit):
- The well drained Bonneau and Wagram soils in landscape positions similar to those of the Lucy soil
- The somewhat excessively drained Blanton and Troup soils in the higher landscape positions
- Small areas near drainageways that have a solum less that 40 inches thick

Dissimilar (0 to 15 percent of map unit):
- The well drained Emporia, Faceville, Orangeburg, and Noboco soils in the slightly lower landscape positions

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Depth to high water table: More than 6.0 feet
Available water capacity: Low
Slope class: Nearly level or gently sloping
Hazard of water erosion: Slight
Surface runoff: Slow
Organic matter content: Low

Use and Management

Major Uses: Cropland and woodland

Agricultural Development

Cropland
Suitable crops: Soybeans, corn, tobacco, and wheat
Management concerns: Droughtiness, low nutrient-holding capacity, and soil blowing
Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping that uses close-growing grains or legumes, the use of cover crops, and crop residue management help to increase the available water capacity and the nutrient-holding capacity and reduce the hazard of soil blowing.
- Fertilizers should be applied at intervals rather than used in single applications.

Hayland and pasture
Suitable grasses: Bahiagrass and bermudagrass
Management concerns: Droughtiness and low nutrient-holding capacity
Management measures and considerations:
- Frequent applications of fertilizer are needed.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Suitable trees: Loblolly pine
Management concerns: Equipment limitation, seedling mortality, and plant competition
Management measures and considerations:
- The sandy surface layer restricts the use of wheeled equipment, especially when the soil is very dry.
- The use of wide, low-pressure tires helps to overcome the equipment limitation.
- The seedling mortality rate, which is increased by droughtiness, can be reduced by planting seedlings in furrows.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: None or slight limitations

Dwellings without basements
Restrictive features: None or slight limitations

Lawns and landscaping
Restrictive features: Droughtiness
Management measures and considerations:
- The droughtiness limitation can be reduced by selecting well adapted plants and providing supplemental irrigation during the growing season.

LyA—Lynchburg sandy loam, 0 to 2 percent slopes

Setting

Major Land Resource Areas: Southern Coastal Plain and Atlantic Coast Flatwoods
Slope length: Typically 100 to 300 feet, ranging from 50 to 450 feet
Shape of areas: Irregular
Size of areas: Typically 10 to 75 acres, ranging from 10 to 150 acres

Typical Profile

Surface layer:
0 to 11 inches—dark gray sandy loam

Subsoil:
11 to 17 inches—pale brown sandy loam that has yellow and brownish gray mottles
17 to 26 inches—mottled light yellowish brown and light brownish gray sandy clay loam that has strong brown mottles
26 to 60 inches—gray sandy clay loam that has reddish yellow and brownish yellow mottles

Inclusions

Similar (less than 15 percent of map unit):
- The moderately well drained Goldsboro soils in the slightly higher landscape positions

Dissimilar (0 to 10 percent of map unit):
- The somewhat poorly drained Smithboro soils in landscape positions similar to those of the Lynchburg soil
- The poorly drained Coxville and Rains soils in the slightly lower landscape positions

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Somewhat poorly drained
Permeability: Moderate
Depth to high water table: 0.5 foot to 1.5 feet
Available water capacity: High
Slope class: Nearly level
Hazard of water erosion: Slight
Surface runoff: Slow
Organic matter content: Low

Use and Management

Major Uses: Cropland and woodland

Agricultural Development

Cropland
Suitable crops: Cotton, soybeans, corn, and wheat
Management concerns: Wetness
Management measures and considerations:
- Surface drains, open ditches, and tile drainage help to control the water table.
- Returning crop residue to the soil and growing cover crops help to maintain the organic matter content and improve fertility.

Hayland and pasture
Suitable grasses: Bahiagrass
Management concerns: Wetness
Management measures and considerations:
- Drainage can be provided by open ditches and surface drains.
- Grazing should be delayed until the soil has been drained sufficiently.
- Proper stocking rates, pasture rotation, and restricted use during wet periods help to keep the pasture in good condition.

Woodland
Suitable trees: Loblolly pine
Management concerns: Equipment limitation and plant competition
Management measures and considerations:
- Removing excess water, using wider tires on equipment, and harvesting trees during dry periods help to reduce the equipment limitation.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: Wetness
Management measures and considerations:
- The shallow placement of filter lines, the use of fill material, or other alternate systems can help absorption fields to function properly.

Dwellings without basements
Restrictive features: Wetness
Management measures and considerations:
- The wetness limitation can be reduced by adding fill material, land shaping so that excess surface water is removed, and installing a drainage system.

Lawns and landscaping
Restrictive features: Wetness
Management measures and considerations:
- The wetness limitation can be reduced by providing artificial drainage systems, land shaping so that runoff is increased, and selecting plants that can tolerate a high water table.

NbB2—Nankin sandy clay loam, 2 to 6 percent slopes, eroded

Setting

Major Land Resource Areas: Southern Coastal Plain and Atlantic Coast Flatwoods
Landform: Areas around rims of depressions and areas near drainageways
Slope length: Typically 100 to 200 feet, ranging from 50 to 300 feet
Shape of areas: Irregular or elongated
Size of areas: Typically 50 to 65 acres, ranging from 5 to 150 acres

Typical Profile

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

Subsoil:
5 to 25 inches—red clay
25 to 49 inches—yellowish red clay
49 to 52 inches—mottled yellowish red, red, and gray clay
52 to 62 inches—mottled red, yellow, and gray sandy clay loam and clay loam

Inclusions

Similar (0 to 10 percent of map unit):
- The well drained Faceville, Noboco, and Norfolk soils in the slightly higher landscape positions
- The well drained Emporia and Hornsville soils in landscape positions similar to those of the Nankin soil

Dissimilar (0 to 10 percent of map unit):
- The well drained Wagram and Bonneau soils in the higher landscape positions
- The well drained Uchee soils on side slopes near drainageways
- The poorly drained Coxville and Rains soils in depressions

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately slow
Depth to high water table: 4.0 to 6.0 feet
Available water capacity: Moderate
Slope class: Gently sloping
Hazard of water erosion: Moderate
Surface runoff: Medium
Organic matter content: Low

Use and Management

Major Uses: Cropland

Agricultural Development

Cropland
Suitable crops: Cotton, soybeans, corn, tobacco, and wheat
Management concerns: Erosion
Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping, terraces, grassed waterways, cover crops, and a cropping system that includes grasses and legumes help to reduce runoff and control erosion.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Erosion
Management measures and considerations:
- Seedbeds should be prepared on the contour or across the slope if possible.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during wet periods help to keep the pasture in good condition.

Woodland
Suitable trees: Loblolly pine
Management concerns: Plant competition
Management measures and considerations:
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: Moderately slow permeability
Management measures and considerations:
- The permeability limitation can be reduced by specially designing a septic system and increasing the size of the absorption area.

Dwellings without basements
Restrictive features: None or slight limitations

Lawns and landscaping
Restrictive features: None or slight limitations

NbC2—Nankin sandy clay loam, 6 to 10 percent slopes, eroded

Setting

Major Land Resource Areas: Southern Coastal Plain and Atlantic Coast Flatwoods
Landform: Areas around rims of depressions and areas near drainageways
Slope length: Typically 100 to 150 feet, ranging from 50 to 300 feet
Shape of areas: Irregular or elongated
Size of areas: Typically 50 to 65 acres, ranging from 5 to 150 acres

Typical Profile

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

Subsoil:
5 to 25 inches—red clay
25 to 49 inches—yellowish red clay

49 to 52 inches—mottled yellowish red, red, and gray clay
52 to 62 inches—mottled red, yellow, and gray sandy clay loam and clay loam

Inclusions

Similar (0 to 10 percent of map unit):
- The well drained Emporia and Hornsville soils in landscape positions similar to those of the Nankin soil

Dissimilar (0 to 10 percent of map unit):
- The well drained Uchee soils on side slopes near drainageways

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately slow
Depth to high water table: 4.0 to 6.0 feet
Available water capacity: Moderate
Slope class: Moderately sloping
Hazard of water erosion: Severe
Surface runoff: Medium
Organic matter content: Low

Use and Management

Major Uses: Cropland and woodland

Agricultural Development

Cropland
Suitable crops: Cotton, soybeans, corn, tobacco, and wheat
Management concerns: Erosion
Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping, terraces, grassed waterways, cover crops, and a cropping system that includes grasses and legumes help to reduce runoff and control erosion.

Hayland and pasture
Suitable grasses: Bahiagrass
Management concerns: Erosion
Management measures and considerations:
- Seedbeds should be prepared on the contour or across the slope if possible.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during wet periods help to keep the pasture in good condition.

Woodland
Suitable trees: Loblolly pine
Management concerns: Plant competition
Management measures and considerations:
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: Moderately slow permeability
Management measures and considerations:
- The permeability limitation can be reduced by specially designing a septic system and increasing the size of the absorption area.

Dwellings without basements
Restrictive features: Slope
Management measures and considerations:
- Cutting and filling or modifying the design of the building helps to overcome the slope.

Lawns and landscaping
Restrictive features: Slope
Management measures and considerations:
- Proper fertilization, seeding, mulching, and land shaping help to establish and maintain plant cover.

NcA—Noboco loamy sand, 0 to 2 percent slopes

Setting

Major Land Resource Areas: Southern Coastal Plain and Atlantic Coast Flatwoods
Slope length: Typically 100 to 400 feet, ranging from 50 to 800 feet
Shape of areas: Irregular
Size of areas: Typically 50 to 150 acres, ranging from 10 to 200 acres

Typical Profile

Surface layer:
0 to 7 inches—grayish loamy sand

Subsurface layer:
7 to 13 inches—brownish loamy sand

Subsoil:
13 to 31 inches—brownish sandy clay loam that has brownish and reddish mottles
31 to 45 inches—brownish sandy clay loam that has red mottles
45 to 60 inches—brownish sandy clay loam that has red and gray mottles

Inclusions

Similar (10 percent of map unit):
- The well drained Norfolk soils in the higher landscape positions

Dissimilar (0 to 10 percent of map unit):
- The well drained Faceville and Orangeburg soils in the higher landscape positions
- The moderately well drained Goldsboro soils in the lower landscape positions
- The well drained Bonneau and Uchee soils on side slopes near drainageways
- The poorly drained Coxville and Rains soils in depressions

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Depth to high water table: 2.5 to 4.0 feet
Available water capacity: Moderate
Slope class: Nearly level
Hazard of water erosion: Slight
Surface runoff: Slow
Organic matter content: Low

Use and Management

Major Uses: Cropland

Agricultural Development

Cropland
Suitable crops: Cotton (fig. 6), soybeans, corn, tobacco, and wheat
Management concerns:
- This soil has no major management problems affecting cropland.

Management measures and considerations:
- Returning crop residue to the soil and growing cover crops help to maintain the organic matter content and improve fertility.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns:
- This soil has no major management problems affecting hayland and pasture.

Management measures and considerations:
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during wet periods help to keep the pasture in good condition.

Woodland
Suitable trees: Loblolly pine
Management concerns: Plant competition
Management measures and considerations:
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Figure 6.—Cotton ready for harvest on Noboco loamy sand, 0 to 2 percent slopes.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: Wetness
Management measures and considerations:
- Specially designing a septic system can reduce the wetness limitation.

Dwellings without basements
Restrictive features: None or slight limitations

Lawns and landscaping
Restrictive features: None or slight limitations

NcB—Noboco loamy sand, 2 to 6 percent slopes

Setting

Major Land Resource Areas: Southern Coastal Plain and Atlantic Coast Flatwoods
Slope length: Typically 75 to 100 feet, ranging from 50 to 150 feet
Shape of areas: Irregular
Size of areas: Typically 50 to 150 acres, ranging from 10 to 200 acres

Typical Profile

Surface layer:
0 to 7 inches—grayish loamy sand

Subsurface layer:
7 to 13 inches—brownish loamy sand

Subsoil:
13 to 31 inches—brownish sandy clay loam that has brownish and reddish mottles
31 to 45 inches—brownish sandy clay loam that has red mottles
45 to 60 inches—brownish sandy clay loam that has red and gray mottles

Inclusions

Similar (10 percent of map unit):
- The well drained Norfolk soils in the higher landscape positions

Dissimilar (0 to 10 percent of map unit):
- The well drained Faceville and Orangeburg soils in the higher landscape positions
- The moderately well drained Goldsboro soils in the lower landscape positions
- The well drained Bonneau and Uchee soils on side slopes near drainageways
- The poorly drained Coxville and Rains soils in depressions

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Depth to high water table: 2.5 to 4.0 feet
Available water capacity: Moderate
Slope class: Gently sloping
Hazard of water erosion: Moderate
Surface runoff: Medium
Organic matter content: Low

Use and Management

Major Uses: Cropland

Agricultural Development

Cropland
Suitable crops: Cotton, soybeans, corn, tobacco, and wheat
Management concerns: Erosion
Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping, terraces, grassed waterways, cover crops, and the inclusion of grasses and legumes in the cropping system help to reduce runoff and control erosion.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Erosion
Management measures and considerations:
- Seedbeds should be prepared on the contour or across the slope if possible.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during wet periods help to keep the pasture in good condition.

Woodland
Suitable trees: Loblolly pine
Management concerns: Plant competition
Management measures and considerations:
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: Wetness
Management measures and considerations:
- Specially designing a septic system can reduce the wetness limitation.

Dwellings without basements
Restrictive features: None or slight limitations

Lawns and landscaping
Restrictive features: None or slight limitations

NoA—Norfolk loamy sand, 0 to 2 percent slopes

Setting

Major Land Resource Area: Southern Coastal Plain
Slope length: Typically 100 to 250 feet, ranging from 50 to 500 feet
Shape of areas: Irregular
Size of areas: Typically 50 to 150 acres, ranging from 10 to 200 acres

Typical Profile

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

Subsurface layer:
7 to 15 inches—light yellowish brown loamy sand

Subsoil:
15 to 63 inches—yellowish brown and brownish yellow sandy clay loam that has reddish and brownish mottles in the lower part
63 to 72 inches—mottled brownish yellow, red, and gray sandy clay loam

Inclusions

Similar (10 percent of map unit):
- The well drained Orangeburg soils in the higher landscape positions
- The well drained Noboco soils in the lower landscape positions

Dissimilar (0 to 15 percent of map unit):
- The well drained Faceville soils in the higher landscape positions
- The moderately well drained Goldsboro soils in the lower landscape positions
- The well drained Bonneau and Uchee soils on side slopes near drainageways
- The poorly drained Coxville and Rains soils in depressions

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Depth to high water table: 4.0 to 6.0 feet
Available water capacity: Moderate
Slope class: Nearly level
Hazard of water erosion: Slight
Surface runoff: Slow
Organic matter content: Low

Use and Management

Major Uses: Cropland

Agricultural Development

Cropland
Suitable crops: Cotton, soybeans, corn, tobacco, and wheat
Management concerns:
- This soil has no major management problems affecting cropland.

Management measures and considerations:
- Returning crop residue to the soil and growing cover crops help to maintain the organic matter content and improve fertility.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: None or slight limitations
Management measures and considerations:
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during wet periods help to keep the pasture in good condition.

Woodland
Suitable trees: Loblolly pine
Management concerns: Plant competition
Management measures and considerations:
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: Wetness
Management measures and considerations:
- Specially designing a septic system can reduce the wetness limitation.

Dwellings without basements
Restrictive features: None or slight limitations

Lawns and landscaping
Restrictive features: None or slight limitations

NoB—Norfolk loamy sand, 2 to 6 percent slopes

Setting

Major Land Resource Area: Southern Coastal Plain
Slope length: Typically 75 to 100 feet, ranging from 50 to 150 feet
Shape of areas: Irregular
Size of areas: Typically 50 to 150 acres, ranging from 10 to 200 acres

Typical Profile

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

Subsurface layer:
7 to 15 inches—light yellowish brown loamy sand

Subsoil:
15 to 63 inches—yellowish brown and brownish yellow sandy clay loam that has reddish and brownish mottles in the lower part
63 to 72 inches—mottled brownish yellow, red, and gray sandy clay loam

Inclusions

Similar (10 percent of map unit):
- The well drained Orangeburg soils in the higher landscape positions
- The well drained Noboco soils in the lower landscape positions

Dissimilar (0 to 10 percent of map unit):
- The well drained Faceville soils in the higher landscape positions
- The moderately well drained Goldsboro soils in the lower landscape positions
- The well drained Bonneau and Uchee soils on side slopes near drainageways
- The poorly drained Coxville and Rains soils in depressions

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Depth to high water table: 4.0 to 6.0 feet
Available water capacity: Moderate
Slope class: Gently sloping
Hazard of water erosion: Moderate
Surface runoff: Medium
Organic matter content: Low

Use and Management

Major Uses: Cropland

Agricultural Development

Cropland
Suitable crops: Cotton, soybeans, corn, tobacco, and wheat
Management concerns: Erosion

Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping, terraces, grassed waterways, cover crops, and the inclusion of grasses and legumes in the cropping system help to reduce runoff and control erosion.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Erosion
Management measures and considerations:
- Seedbeds should be prepared on the contour or across the slope if possible.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during wet periods help to keep the pasture in good condition.

Woodland
Suitable trees: Loblolly pine
Management concerns: Plant competition
Management measures and considerations:
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: Wetness
Management measures and considerations:
- Specially designing a septic system can reduce the wetness limitation.

Dwellings without basements
Restrictive features: None or slight limitations

Lawns and landscaping
Restrictive features: None or slight limitations

OrA—Orangeburg loamy sand, 0 to 2 percent slopes

Setting

Major Land Resource Area: Southern Coastal Plain
Slope length: Typically 100 to 300 feet, ranging from 50 to 500 feet
Shape of areas: Irregular
Size of areas: Typically 25 to 125 acres, ranging from 10 to 175 acres

Typical Profile

Surface layer:
0 to 9 inches—brownish loamy sand

Subsurface layer:
9 to 16 inches—brownish loamy sand

Subsoil:
16 to 72 inches—reddish sandy clay loam

Inclusions

Similar (10 percent of map unit):
- The well drained Norfolk soils in the slightly lower landscape positions

Dissimilar (0 to 10 percent of map unit):
- The well drained Faceville and Lucy soils in the slightly higher landscape positions

- The well drained Noboco soils in the slightly lower landscape positions
- The poorly drained Coxville and Rains soils in depressions

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Depth to high water table: Greater than 6.0 feet
Available water capacity: Moderate
Slope class: Nearly level
Hazard of water erosion: Slight
Surface runoff: Slow
Organic matter content: Low

Use and Management

Major Uses: Cropland

Agricultural Development

Cropland
Suitable crops: Cotton, soybeans, corn, tobacco, and wheat
Management concerns:
- This soil has no major management problems affecting cropland.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns:
- This soil has no major management problems affecting hayland and pasture.

Woodland
Suitable trees: Loblolly pine
Management concerns: Plant competition
Management measures and considerations:
- Competing vegetation can be controlled by proper site preparation, including burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: None or slight limitations

Dwellings without basements
Restrictive features: None or slight limitations

Lawns and landscaping
Restrictive features: None or slight limitations

PaA—Pamlico muck, 0 to 2 percent slopes, frequently flooded

Setting

Major Land Resource Area: Southern Coastal Plain
Landform: Flood plains
Slope length: Typically 100 to 200 feet, ranging from 50 to 350 feet
Shape of areas: Irregular or elongated
Size of areas: Typically 150 to 250 acres, ranging from 10 to 600 acres

Typical Profile

Organic layer:
0 to 20 inches—black muck
20 to 42 inches—dark grayish brown muck

Substratum:
42 to 60 inches—light gray sand

Inclusions

Similar (less than 10 percent of map unit):
- The very poorly drained Dorovan soils in landscape positions similar to those of the Pamlico soil
- Small areas that have clayey or loamy underlying material

Dissimilar (0 to 15 percent of map unit):
- The very poorly drained Ponzer soils in landscape positions similar to those of the Pamlico soil
- The poorly drained Bibb soils in landscape positions that are similar to or slightly higher than those of the Pamlico soil

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Very poorly drained
Permeability: Moderate or moderately rapid in the organic layers; rapid in the mineral layers
High water table: Within a depth of 1.0 foot
Available water capacity: Very high
Slope class: Nearly level
Hazard of water erosion: None or slight
Surface runoff: Ponded
Organic matter content: Very high
Flooding: Frequent

Use and Management

Major Uses: Woodland

Agricultural Development

Cropland
Suitable crops: None
Management concerns: Flooding
Management measures and considerations:
- Protecting areas of this map unit from flooding is generally not economically feasible.

Hayland and pasture
Suitable grasses: None
Management concerns: Flooding
Management measures and considerations:
- Protecting areas of this map unit from flooding is generally not economically feasible.

Woodland
Suitable trees: Water-tolerant species, such as baldcypress
Management concerns: Equipment limitation and seedling mortality
Management measures and considerations:
- Removing excess water, using wider tires on equipment, and harvesting trees during dry periods help to reduce the equipment limitation.

- Seedling mortality rates can be reduced by planting suitable species at the proper times and by planting on raised beds.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: Flooding
Management measures and considerations:
- Because of the difficulty and expense of reducing the flooding limitation, this soil generally is not used for septic tank absorption fields.

Dwellings without basements
Restrictive features: Flooding
Management measures and considerations:
- Because of the difficulty and expense of reducing the flooding limitation, this soil generally is not used for dwellings.

Lawns and landscaping
Restrictive features: Flooding
Management measures and considerations:
- Because of the difficulty and expense of reducing the flooding limitation, this soil generally is not used for lawns and landscaping.

PnA—Pelion loamy sand, 0 to 2 percent slopes

Setting

Major Land Resource Area: Carolina and Georgia Sand Hills
Slope length: Typically 100 to 250 feet, ranging from 50 to 350 feet
Shape of areas: Irregular
Size of areas: Typically 20 to 35 acres, ranging from 5 to 60 acres

Typical Profile

Surface layer:
0 to 7 inches—brownish loamy sand

Subsurface layer:
7 to 14 inches—brownish loamy sand

Subsoil:
14 to 19 inches—yellowish sandy clay loam
19 to 45 inches—yellowish sandy clay loam that has grayish mottles

Substratum:
45 to 66 inches—stratified yellowish, grayish, and reddish sandy and loamy material

Inclusions

Similar (less than 15 percent of map unit):
- The moderately well drained Eunola soils on stream terraces
- Small areas that have more than 35 percent clay in the upper part of the solum

Dissimilar (0 to 10 percent of map unit):
- The well drained Ailey, Cowarts, and Vaucluse soils in the higher landscape positions
- The poorly drained Lumbee soils in the lower landscape positions
- The very poorly drained Pamlico and Johnston soils along drainageways

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Moderately well drained
Permeability: Slow
Depth to high water table: 1.0 to 2.5 feet
Available water capacity: Moderate
Slope class: Nearly level
Hazard of water erosion: Slight
Surface runoff: Slow
Organic matter content: Low

Use and Management

Major Uses: Woodland and cropland

Agricultural Development

Cropland
Suitable crops: Corn, soybeans, and wheat
Management concerns: Wetness
Management measures and considerations:
- Surface drains, open ditches, and tile drainage help to control the water table.
- Returning crop residue to the soil and growing cover crops help to maintain the organic matter content and improve fertility.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Wetness
Management measures and considerations:
- Drainage can be provided by open ditches and surface drains.
- Proper stocking rates, pasture rotation, and restricted use during wet periods help to keep the pasture in good condition.

Woodland
Suitable trees: Loblolly pine
Management concerns: Equipment limitation, windthrow hazard, and plant competition
Management measures and considerations:
- Removing excess water, using wider tires on equipment, and harvesting trees during dry periods help to reduce the equipment limitation.
- Trees are subject to windthrow when winds are strong because of the restricted rooting depth.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: Wetness and moderately slow permeability
Management measures and considerations:
- The wetness and permeability limitations can be reduced by specially designing a septic system and increasing the size of the absorption area.

Dwellings without basements
Restrictive features: Wetness
Management measures and considerations:
- The wetness limitation can be reduced by installing a drainage system.

Lawns and landscaping
Restrictive features: Droughtiness in the surface layer

Management measures and considerations:
- The droughtiness limitation can be reduced by providing supplemental irrigation during dry periods.

PnB—Pelion loamy sand, 2 to 6 percent slopes

Setting

Major Land Resource Area: Carolina and Georgia Sand Hills
Slope length: Typically 100 to 250 feet, ranging from 50 to 350 feet
Shape of areas: Irregular
Size of areas: Typically 50 to 65 acres, ranging from 5 to 100 acres

Typical Profile

Surface layer:
0 to 7 inches—brownish loamy sand

Subsurface layer:
7 to 14 inches—brownish loamy sand

Subsoil:
14 to 19 inches—yellowish sandy clay loam
19 to 45 inches—yellowish sandy clay loam that has grayish mottles

Substratum:
45 to 66 inches—stratified yellowish, grayish, and reddish sandy and loamy material

Inclusions

Similar (less than 15 percent of map unit):
- The moderately well drained Eunola soils on stream terraces
- Small areas that have more than 35 clay percent in the upper part of the solum

Dissimilar (0 to 10 percent of map unit):
- The well drained Ailey, Cowarts, and Vaucluse soils in the higher landscape positions
- The poorly drained Lumbee soils in the lower landscape positions
- The very poorly drained Pamlico and Johnston soils along drainageways

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Moderately well drained
Permeability: Moderately slow or slow
Depth to high water table: 1.0 to 2.5 feet
Available water capacity: Moderate
Slope class: Gently sloping
Hazard of water erosion: Slight
Surface runoff: Slow
Organic matter content: Low

Use and Management

Major Uses: Woodland and cropland

Agricultural Development

Cropland
Suitable crops: Corn, soybeans, and wheat
Management concerns: Erosion

Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping, terraces, grassed waterways, cover crops, and a cropping system that includes grasses and legumes help to reduce runoff and control erosion.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Wetness
Management measures and considerations:
- Drainage can be provided by open ditches and surface drains.
- Proper stocking rates, pasture rotation, and restricted use during wet periods help to keep the pasture in good condition.

Woodland
Suitable trees: Loblolly pine
Management concerns: Equipment limitation, windthrow hazard, and plant competition
Management measures and considerations:
- Removing excess water, using wider tires on equipment, and harvesting trees during dry periods help to reduce the equipment limitation.
- Trees are subject to windthrow when winds are strong because of the restricted rooting depth.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: Wetness and moderately slow permeability
Management measures and considerations:
- The wetness and permeability limitations can be reduced by specially designing a septic system and increasing the size of the absorption area.

Dwellings without basements
Restrictive features: Wetness
Management measures and considerations:
- The wetness limitation can be reduced by installing a drainage system.

Lawns and landscaping
Restrictive features: Droughtiness in the surface layer
Management measures and considerations:
- The droughtiness limitation can be reduced by providing supplemental irrigation during dry periods.

PrA—Persanti loam, 0 to 2 percent slopes

Setting

Major Land Resource Areas: Southern Coastal Plain and Atlantic Coast Flatwoods
Slope length: Typically 100 to 450 feet, ranging from 50 to 500 feet
Shape of areas: Irregular
Size of areas: Typically 10 to 150 acres, ranging from 10 to 300 acres

Typical Profile

Surface layer:
0 to 7 inches—brown loam

Subsoil:
7 to 23 inches—brownish yellow clay
23 to 49 inches—brownish yellow clay that has yellowish red, red, and gray mottles
49 to 60 inches—mottled gray, yellow, yellowish red, and red clay

Inclusions

Similar (0 to 10 percent of map unit):
- The somewhat poorly drained Smithboro soils in the lower landscape positions
- The moderately well drained Hornsville soils near drainageways

Dissimilar (0 to 10 percent of map unit):
- The well drained Noboco soils and the moderately well drained Goldsboro soils in the higher landscape positions
- The poorly drained Coxville and Rains soils in depressions

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Moderately well drained
Permeability: Slow
Depth to high water table: 1.5 to 2.5 feet
Available water capacity: Moderate
Slope class: Nearly level
Hazard of water erosion: Slight
Surface runoff: Medium
Organic matter content: Low

Use and Management

Major Uses: Cropland

Agricultural Development

Cropland
Suitable crops: Cotton, soybeans, corn, tobacco, and wheat
Management concerns: Wetness and moderately slow permeability
Management measures and considerations:
- Because of the moderately slow permeability, shallow surface drains and open ditches are commonly used to lower the water table.
- Returning crop residue to the soil and growing cover crops help to maintain the organic matter content and improve fertility.

Hayland and pasture
Suitable grasses: Bahiagrass
Management concerns: Wetness
Management measures and considerations:
- Drainage can be provided by maintaining open ditches and surface drains.
- Proper stocking rates, pasture rotation, and restricted use during wet periods help to keep the pasture in good condition.

Woodland
Suitable trees: Loblolly pine
Management concerns: Equipment limitation and seedling mortality
Management measures and considerations:
- Removing excess water, using wider tires on equipment, and harvesting trees during dry periods help to reduce the equipment limitation.
- Seedling mortality rates can be reduced by planting suitable species at the proper times and by planting on raised beds.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: Wetness and moderately slow permeability
Management measures and considerations:
- The shallow placement of filter lines, the use of fill material, or other alternate systems help to reduce the wetness limitation.
- Increasing the size of the absorption field helps to overcome the slow permeability limitation.

Dwellings without basements
Restrictive features: Wetness
Management measures and considerations:
- The wetness limitation can be reduced by adding fill material, land shaping so that excess surface water is removed, and installing a drainage system.

Lawns and landscaping
Restrictive features: None or slight limitations

RaA—Rains sandy loam, 0 to 2 percent slopes

Setting

Major Land Resource Areas: Southern Coastal Plain and Atlantic Coast Flatwoods
Landform: Depressions and broad nearly level areas
Slope length: Typically 100 to 500 feet, ranging from 50 to 700 feet
Shape of areas: Oval or irregular
Size of areas: Typically 50 to 150 acres, ranging from 5 to 300 acres

Typical Profile

Surface layer:
0 to 7 inches—grayish sandy loam

Subsurface layer:
7 to 12 inches—light brownish gray sandy loam

Subsoil:
12 to 79 inches—grayish sandy clay loam that has reddish and brownish mottles

Substratum:
79 to 85 inches—grayish sand

Inclusions

Similar (less than 10 percent of map unit):
- The poorly drained Lumbee soils in the lower landscape positions
- Small areas of soils that have a spodic horizon below the surface horizon
- Small areas that have a black surface layer more than 10 inches thick

Dissimilar (0 to 10 percent of map unit):
- The somewhat poorly drained Lynchburg soils in the slightly higher landscape positions
- The poorly drained Coxville soils in landscape positions similar to those of the Rains soil

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Poorly drained

Permeability: Moderate
High water table: Within a depth of 1.0 foot
Available water capacity: Moderate
Slope class: Nearly level
Hazard of water erosion: Slight
Surface runoff: Slow
Organic matter content: Moderate

Use and Management

Major Uses: Cropland and woodland

Agricultural Development

Cropland
Suitable crops: Soybeans, corn, and wheat
Management concerns: Wetness
Management measures and considerations:
- Surface drains, open ditches, and tile drainage help to control the water table.
- Returning crop residue to the soil and growing cover crops help to maintain the organic matter content and improve fertility.

Hayland and pasture
Suitable grasses: Bahiagrass
Management concerns: Wetness
Management measures and considerations:
- Needed surface drainage can be provided by open ditches, surface drains, or a combination of these.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during wet periods help to keep the pasture in good condition.

Woodland
Suitable trees: Loblolly pine
Management concerns: Equipment limitation, seedling mortality, windthrow hazard, and plant competition
Management measures and considerations:
- Removing excess water, using wider tires on equipment, and harvesting trees during dry periods help to reduce the equipment limitation.
- Seedling mortality rates can be reduced by planting suitable species at the proper times and by planting on raised beds.
- Trees are subject to windthrow when winds are strong because of the restricted rooting depth resulting from the high water table.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: Wetness
Management measures and considerations:
- Because of the difficulty and expense of reducing the wetness limitation, this soil generally is not used for septic tank absorption fields.

Dwellings without basements
Restrictive features: Wetness
Management measures and considerations:
- The wetness limitation can be reduced by adding suitable fill material, land shaping so that excess surface water is removed, and installing a drainage system.

Lawns and landscaping
Restrictive features: Wetness
Management measures and considerations:
- The wetness limitation can be reduced by providing artificial drainage systems, land shaping so that runoff is increased, and selecting plants that can tolerate a high water table.

RvA—Riverview silt loam, 0 to 2 percent slopes, frequently flooded

Setting

Major Land Resource Areas: Southern Coastal Plain and Atlantic Coast Flatwoods
Landform: Flood plains
Slope length: Typically 100 to 200 feet, ranging from 50 to 350 feet
Shape of areas: Irregular or elongated
Size of areas: Typically 50 to 150 acres, ranging from 10 to 200 acres

Typical Profile

Surface layer:
0 to 3 inches—brownish silt loam

Subsoil:
3 to 28 inches—brownish loam
28 to 38 inches—brownish silty clay loam

Substratum:
38 to 60 inches—brownish loam

Inclusions

Similar (0 to 10 percent of map unit):
- The somewhat poorly drained Chewacla soils in the lower landscape positions
- The well drained Wickham soils in the higher landscape positions
- Few small areas that are protected from flooding

Dissimilar (0 to 5 percent of map unit):
- The poorly drained Chastain soils in the lower landscape positions
- The somewhat excessively drained Tarboro soils in the slightly higher landscape positions

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Depth to high water table: 3.0 to 5.0 feet
Available water capacity: Slight
Slope class: Nearly level
Hazard of water erosion: Low
Surface runoff: Slow
Organic matter content: Low
Flooding: Frequent

Use and Management

Major Uses: Woodland and cropland

Agricultural Development

Cropland
Suitable crops: Cotton, soybeans, corn, and wheat
Management concerns: Flooding
Management measures and considerations:
- Protecting this map unit from flooding is generally impractical.
- The effect of flooding can be reduced by planting crops that have a short growing season and can be planted after the flooding in spring and harvested before the flooding in fall and winter.
- Returning crop residue to the soil and growing cover crops help to maintain the organic matter content and improve fertility.

Hayland and pasture
Suitable grasses: Bahiagrass
Management concerns: Flooding
Management measures and considerations:
- Protecting this map unit from flooding is generally impractical.
- Proper stocking rates, pasture rotation, and restricted grazing during wet periods help to keep the pasture in good condition.

Woodland
Suitable trees: Loblolly pine
Management concerns: Plant competition
Management measures and considerations:
- Seedlings survive and grow well if competing vegetation is controlled.
- Competing vegetation can be controlled by good site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: Flooding
Management measures and considerations:
- Because of the difficulty and expense of reducing the flooding limitation, this soil generally is not used for septic tank absorption fields.

Dwellings without basements
Restrictive features: Flooding
Management measures and considerations:
- Because of the difficulty and expense of reducing the flooding limitation, this soil generally is not used for dwellings.

Lawns and landscaping
Restrictive features: Flooding
Management measures and considerations:
- Because of the difficulty and expense of reducing the flooding limitation, this soil generally is not used for lawns and landscaping.

SmA—Smithboro silt loam, 0 to 2 percent slopes

Setting

Major Land Resource Area: Atlantic Coast Flatwoods
Slope length: Typically 100 to 300 feet, ranging from 50 to 450 feet
Shape of areas: Irregular
Size of areas: Typically 10 to 60 acres, ranging from 10 to 200 acres

Typical Profile

Surface layer:
0 to 5 inches—dark gray silt loam

Subsoil:
5 to 13 inches—light yellowish brown clay loam that has brownish yellow and gray mottles
13 to 65 inches—gray clay that has red and yellowish red mottles

Inclusions

Similar (0 to 10 percent of map unit):
- The moderately well drained Persanti soils in the higher landscape positions

Dissimilar (0 to 10 percent of map unit):
- The moderately well drained Goldsboro soils in the higher landscape positions
- The poorly drained Coxville soils in depressions and along shallow drainageways
- The poorly drained Chastain and Bibb soils on flood plains

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Somewhat poorly drained
Permeability: Slow
Depth to high water table: 0.5 foot to 1.5 feet
Available water capacity: Moderate
Slope class: Nearly level
Hazard of water erosion: None or slight
Surface runoff: Slow
Organic matter content: Low

Use and Management

Major Uses: Woodland, pasture, and cropland

Agricultural Development

Cropland
Suitable crops: Soybeans, corn, and wheat
Management concerns: Wetness and slow permeability
Management measures and considerations:
- Because of the slow permeability, shallow surface drains and open ditches are commonly used to lower the water table.
- Returning crop residue to the soil and growing cover crops help to maintain the organic matter content and improve fertility.

Hayland and pasture
Suitable grasses: Bahiagrass
Management concerns: Wetness
Management measures and considerations:
- Needed surface drainage can be provided by open ditches or surface drains.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during wet periods help to keep the pasture in good condition.

Woodland
Suitable trees: Loblolly pine
Management concerns: Equipment limitation, windthrow hazard, and plant competition

Management measures and considerations:
- Removing excess water, using wider tires on equipment, and harvesting trees during dry periods help to reduce the equipment limitation.
- Seedlings survive and grow well if competing vegetation is controlled.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.
- Trees are subject to windthrow when winds are strong because of the restricted rooting depth resulting from the high water table.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: Wetness and slow permeability
Management measures and considerations:
- The wetness and permeability limitations can be reduced by specially designing a septic system and increasing the size of the absorption area.

Dwellings without basements
Restrictive features: Wetness
Management measures and considerations:
- The wetness limitation can be reduced by adding fill material, land shaping so that excess surface water is removed, and installing a drainage system.

Lawns and landscaping
Restrictive features: Wetness
Management measures and considerations:
- The wetness limitation can be reduced by providing artificial drainage systems, land shaping so that runoff is increased, and selecting plants that can tolerate a high water table.

TbB—Tarboro sand, 0 to 6 percent slopes, rarely flooded

Setting

Major Land Resource Areas: Southern Coastal Plain and Atlantic Coast Flatwoods
Landform: Flood plains
Slope length: Typically 100 to 250 feet, ranging from 50 to 300 feet
Shape of areas: Irregular or elongated
Size of areas: Typically 10 to 40 acres, ranging from 5 to 80 acres

Typical Profile

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

Substratum:
7 to 18 inches—yellowish brown sand
18 to 48 inches—reddish yellow sand
48 to 80 inches—very pale brown sand

Inclusions

Similar (less than 10 percent of map unit):
- The somewhat excessively Lakeland soils in the higher landscape positions

Dissimilar (0 to 15 percent of map unit):
- The somewhat poorly drained Chewacla soils, the poorly drained Chastain soils, and the well drained Riverview soils in the lower landscape positions

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Somewhat excessively drained
Permeability: Very rapid
Depth to high water table: Greater than 6.0 feet
Available water capacity: Slow
Slope class: Nearly level or gently sloping
Hazard of water erosion: Slight
Surface runoff: Slow
Organic matter content: Low
Flooding: Rare

Use and Management

Major Uses: Woodland

Agricultural Development

Cropland
Suitable crops: None
Management concerns: Droughtiness, low nutrient-holding capacity, soil blowing, and flooding

Hayland and pasture
Suitable grasses: Bermudagrass
Management concerns: Droughtiness, low nutrient-holding capacity, and flooding
Management measures and considerations:
- Frequent applications of fertilizer are needed.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods helps to keep the pasture in good condition.

Woodland
Suitable trees: Loblolly pine
Management concerns: Equipment limitation and seedling mortality
Management measures and considerations:
- The sandy surface layer restricts the use of wheeled equipment, especially when the soil is very dry.
- The use of wide, low-pressure tires helps to overcome the equipment limitation.
- The seedling mortality rate, which is increased by droughtiness, can be reduced by planting seedlings in furrows.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: Flooding
Management measures and considerations:
- Because of the difficulty and expense of reducing the flooding limitation, this soil generally is not used for septic tank absorption fields.

Dwellings without basements
Restrictive features: Flooding
Management measures and considerations:
- Because of the difficulty and expense of reducing the flooding limitation, this soil generally is not used for dwellings.

Lawns and landscaping
Restrictive features: Droughtiness

Management measures and considerations:
- The droughtiness limitation can be reduced by selecting well adapted plants and providing supplemental irrigation during the growing season.

TrB—Troup sand, 0 to 6 percent slopes

Setting

Major Land Resource Areas: Carolina and Georgia Sand Hills and Southern Coastal Plain
Slope length: Typically 100 to 250 feet, ranging from 50 to 350 feet
Shape of areas: Irregular
Size of areas: Typically 25 to 100 acres, ranging from 10 to 200 acres

Typical Profile

Surface layer:
0 to 6 inches—brownish sand

Subsurface layer:
6 to 25 inches—brownish sand
25 to 55 inches—yellowish loamy sand and sand

Subsoil:
55 to 85 inches—reddish sandy loam

Inclusions

Similar (0 to 10 percent of map unit):
- The excessively drained and somewhat excessively drained Alpin and Candor soils in landscape positions similar to or slightly higher than those of the Troup soil

Dissimilar (0 to 15 percent of map unit):
- The well drained Cowarts and Vaucluse soils on side slopes near drainageways
- The well drained Lucy, Bonneau, and Wagram soils in the lower landscape positions
- The very poorly drained Johnson and Pamlico soils along drainageways

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Somewhat excessively drained
Permeability: Moderate
Depth to high water table: More than 6.0 feet
Available water capacity: Low
Slope class: Gently sloping
Hazard of water erosion: Slight
Surface runoff: Slow
Organic matter content: Low

Use and Management

Major Uses: Woodland and pasture

Agricultural Development

Cropland
Suitable crops: Soybeans, corn, and wheat
Management concerns: Droughtiness, low nutrient-holding capacity, and soil blowing

Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping that uses close-growing grains or legumes, the use of cover crops, and crop residue management help to increase the available water capacity and the nutrient-holding capacity and reduce the hazard of soil blowing.
- Fertilizers should be applied at intervals rather than used in single applications.

Hayland and pasture
Suitable grasses: Bermudagrass
Management concerns: Droughtiness and low nutrient-holding capacity
Management measures and considerations:
- Frequent applications of fertilizer are needed.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Suitable trees: Loblolly pine
Management concerns: Equipment limitation, seedling mortality, and plant competition
Management measures and considerations:
- The sandy surface layer restricts the use of wheeled equipment, especially when the soil is very dry.
- The use of wide, low-pressure tires helps to overcome the equipment limitation.
- The seedling mortality rate, which is increased by droughtiness, can be reduced by planting seedlings in furrows.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: None or slight limitations

Dwellings without basements
Restrictive features: None or slight limitations

Lawns and landscaping
Restrictive features: Droughtiness
Management measures and considerations:
- The droughtiness limitation can be reduced by selecting well adapted plants and providing supplemental irrigation during the growing season.

TrC—Troup sand, 6 to 10 percent slopes

Setting

Major Land Resource Areas: Carolina and Georgia Sand Hills and Southern Coastal Plain
Slope length: Typically 100 to 250 feet, ranging from 50 to 350 feet
Shape of areas: Irregular
Size of areas: Typically 25 to 100 acres, ranging from 10 to 200 acres

Typical Profile

Surface layer:
0 to 6 inches—brownish sand

Subsurface layer:
6 to 25 inches—brownish sand
25 to 55 inches—yellowish loamy sand and sand

Subsoil:
55 to 85 inches—reddish sandy loam

Inclusions

Similar (0 to 10 percent of map unit):
- The excessively drained and somewhat excessively drained Alpin and Candor soils in landscape positions similar to or slightly higher than those of the Troup soil

Dissimilar (0 to 15 percent of map unit):
- The well drained Cowarts and Vaucluse soils on side slopes near drainageways
- The well drained Lucy, Bonneau, and Wagram soils in the lower landscape positions
- The very poorly drained Johnson and Pamlico soils along drainageways

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Somewhat excessively drained
Permeability: Moderate
Depth to high water table: More than 6.0 feet
Available water capacity: Low
Slope class: Moderately sloping
Hazard of water erosion: Medium
Surface runoff: Medium
Organic matter content: Low

Use and Management

Major Uses: Woodland and pasture

Agricultural Development

Cropland
Suitable crops: Soybeans, corn, and wheat
Management concerns: Droughtiness, low nutrient-holding capacity, and soil blowing
Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping that uses close-growing grains or legumes, the use of cover crops, and crop residue management help to increase the available water capacity and the nutrient-holding capacity and reduce the hazard of soil blowing.
- Fertilizers should be applied at intervals rather than used in single applications.

Hayland and pasture
Suitable grasses: Bermudagrass
Management concerns: Droughtiness and low nutrient-holding capacity
Management measures and considerations:
- Frequent applications of fertilizer are needed.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Suitable trees: Loblolly pine
Management concerns: Equipment limitation, seedling mortality, and plant competition
Management measures and considerations:
- The sandy surface layer restricts the use of wheeled equipment, especially when the soil is very dry.

- The use of wide, low-pressure tires helps to overcome the equipment limitation.
- The seedling mortality rate, which is increased by droughtiness, can be reduced by planting seedlings in furrows.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: Slope
Management measures and considerations:
- The slope can be overcome by installing absorption lines on the contour.

Dwellings without basements
Restrictive features: Slope
Management measures and considerations:
- The slope can be overcome by cutting and filling or by modifying the design of the building.

Lawns and landscaping
Restrictive features: Droughtiness and slope
Management measures and considerations:
- The droughtiness and slope limitations can be reduced by selecting well adapted plants and providing supplemental irrigation during the growing season.

UcB—Uchee sand, 0 to 6 percent slopes

Setting

Major Land Resource Area: Southern Coastal Plain
Slope length: Typically 100 to 150 feet, ranging from 50 to 200 feet
Shape of areas: Irregular
Size of areas: Typically 15 to 65 acres, ranging from 10 to 150 acres

Typical Profile

Surface layer:
0 to 5 inches—grayish sand

Subsurface layer:
5 to 25 inches—yellowish sand

Subsoil:
25 to 34 inches—reddish sandy clay loam that has yellowish mottles
34 to 41 inches—brownish sandy clay that has yellowish and reddish mottles
41 to 46 inches—reddish sandy clay loam that has yellowish mottles

Substratum:
46 to 60 inches—mottled red, white, and yellow sandy loam

Inclusions

Similar (10 percent of map unit):
- The well drained Ailey soils in the higher landscape positions
- Small areas near drainageways that do not have moderately slow permeability in the subsoil or substratum

Dissimilar (0 to 10 percent of map unit):
- The well drained Emporia, Wagram, Nankin, and Bonneau soils in the higher landscape positions

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately slow
Depth to high water table: 3.5 to 5.0 feet
Available water capacity: Low
Slope class: Gently sloping
Hazard of water erosion: Slight
Surface runoff: Slow
Organic matter content: Low

Use and Management

Major Uses: Woodland and pasture

Agricultural Development

Cropland
Suitable crops: Cotton, soybeans, corn, and wheat
Management concerns: Droughtiness, low nutrient-holding capacity, and soil blowing
Management measures and considerations:
- Conservation tillage, planting winter cover crops, and leaving crop residue on the surface help to conserve moisture and reduce the hazard of soil blowing.
- Fertilizers should be applied at intervals rather than used in single applications.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Droughtiness and low nutrient-holding capacity
Management measures and considerations:
- Using fertilizers in split applications helps to overcome the low nutrient-holding capacity and conserve moisture.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Suitable trees: Loblolly pine
Management concerns: Equipment limitation, seedling mortality, and plant competition
Management measures and considerations:
- The use of tracked or wide-tired vehicles helps to overcome the equipment limitation.
- The moderate seedling mortality rate, which is increased by droughtiness, can be reduced by planting seedlings in furrows.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: Wetness and moderately slow permeability
Management measures and considerations:
- The wetness and permeability limitations can be reduced by specially designing a septic system.

Dwellings without basements
Restrictive features: None or slight limitations

Lawns and landscaping
Restrictive features: Droughtiness

Management measures and considerations:
- The droughtiness limitation can be reduced by selecting well adapted plants and providing supplemental irrigation during the growing season.

UcC—Uchee sand, 6 to 10 percent slopes

Setting

Major Land Resource Area: Southern Coastal Plain
Slope length: Typically 100 to 150 feet, ranging from 50 to 200 feet
Shape of areas: Irregular
Size of areas: Typically 15 to 65 acres, ranging from 10 to 150 acres

Typical Profile

Surface layer:
0 to 5 inches—grayish sand

Subsurface layer:
5 to 25 inches—yellowish sand

Subsoil:
25 to 34 inches—reddish sandy clay loam that has yellowish mottles
34 to 41 inches—brownish sandy clay that has yellowish and reddish mottles
41 to 46 inches—reddish sandy clay loam that has yellowish mottles

Substratum:
46 to 60 inches—mottled red, white, and yellow sandy loam

Inclusions

Similar (about 10 percent of map unit):
- The well drained Ailey soils in the higher landscape positions
- Small areas near drainageways that do not have moderately slow permeability in the subsoil or substratum

Dissimilar (0 to 10 percent of map unit):
- The well drained Emporia, Wagram, Nankin, and Bonneau soils in the higher landscape positions

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately slow
Depth to high water table: 3.5 to 5.0 feet
Available water capacity: Low
Slope class: Moderately sloping
Hazard of water erosion: Moderate
Surface runoff: Medium
Organic matter content: Low

Use and Management

Major Uses: Woodland and pasture

Agricultural Development

Cropland
Suitable crops: Cotton, soybeans, corn, and wheat

Management concerns: Droughtiness, low nutrient-holding capacity, and soil blowing
Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping that uses close-growing grains or legumes, the use of cover crops, and crop residue management help to increase the available water capacity and the nutrient-holding capacity and reduce the hazard of soil blowing.
- Fertilizers should be applied at intervals rather than used in single applications.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Droughtiness and low nutrient-holding capacity
Management measures and considerations:
- Frequent applications of fertilizer are needed.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Suitable trees: Loblolly pine
Management concerns: Equipment limitation, seedling mortality, and plant competition
Management measures and considerations:
- The sandy surface layer restricts the use of wheeled equipment, especially when the soil is very dry.
- The use of wide, low-pressure tires helps to overcome the equipment limitation.
- The seedling mortality rate, which is increased by droughtiness, can be reduced by planting seedlings in furrows.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: Wetness and moderately slow permeability
Management measures and considerations:
- The wetness and permeability limitations can be reduced by specially designing a modified conventional septic system and increasing the size of the absorption area.

Dwellings without basements
Restrictive features: Slope
Management measures and considerations:
- Cutting and filling or modifying the design of the building helps to overcome the slope.

Lawns and landscaping
Restrictive features: Droughtiness and slope
Management measures and considerations:
- The droughtiness and slope limitations can be reduced by selecting well adapted plants, land shaping, and providing supplemental irrigation during the growing season.

UdC—Udorthents, loamy, 0 to 10 percent slopes

Setting

Shape of areas: Irregular
Size of areas: 5 to 15 acres

Typical Profile

Udorthents consist of areas that have been excavated for fill material, pond dams, or highway interchanges and areas that have been altered by grading for housing developments, shopping centers, industrial areas, or other similar uses. The material exposed in areas of this map unit is generally loamy. It is mainly the underlying material of Alpin, Candor, Norfolk, Troup, Bonneau, Wagram, and Uchee soils. A typical pedon is not given.

Soil Properties and Qualities

Because the characteristics of these soils are so variable, onsite investigation is needed to determine the soil properties.

Use and Management

Major Uses: Woodland

Agricultural Development

Cropland
Suitable crops: None
Management concerns: Reclamation
Management measures and considerations:
- Extensive reclamation is needed before these soils can be productive.

Hayland and pasture
Suitable grasses: Bahiagrass
Management concerns: Slope and drainage
Management measures and considerations:
- Land shaping can help to reduce the slope and drainage limitations.

Woodland
Suitable trees: Loblolly pine
Management concerns: Erosion hazard, equipment limitation, and seedling mortality
Management measures and considerations:
- Land shaping is needed to reduce the hazard of erosion and the equipment limitation.
- The seedling mortality rate, which is increased by droughtiness, can be reduced by planting seedlings in furrows.

Homesite and Urban Development

Sanitary facilities, dwellings, and lawns and landscaping
Management concerns: Slope and drainage
Management measures and considerations:
- Onsite investigation is needed to determine the suitability of a site for any proposed use.

Ur—Urban land

Typical profile

Urban land consists of areas that have more than 85 percent of the surface covered by streets, parking lots, building, or other structures.

Soil Properties and Qualities

Because the characteristics of the soil material in this map unit are so variable, onsite investigation is needed to determine the soil properties.

VaB—Vaucluse loamy sand, 2 to 6 percent slopes

Setting

Major Land Resource Area: Carolina and Georgia Sand Hills
Slope length: Typically 100 to 300 feet, ranging from 50 to 500 feet
Shape of areas: Irregular
Size of areas: Typically 30 to 50 acres, ranging from 5 to 250 acres

Typical Profile

Surface layer:
0 to 2 inches—grayish loamy sand

Subsurface layer:
2 to 6 inches—brownish loamy sand

Subsoil:
6 to 16 inches—reddish sandy clay loam
16 to 50 inches—reddish sandy clay loam that has yellowish mottles and that is dense and compact

Substratum:
50 to 60 inches—reddish sandy loam

Inclusions

Similar (less than 20 percent of map unit):
- The well drained Cowarts soils in landscape positions similar to or higher than those of the Vaucluse soil
- Small areas that have a clayey subsoil
- Small areas that have moderate permeability in the substratum

Dissimilar (0 to 10 percent of map unit):
- The somewhat excessively drained Candor soils in the higher landscape positions
- The well drained Ailey soils and Uchee soils in landscape positions similar to those of the Vaucluse soil
- The well drained Emporia and the moderately well drained Pelion soils in the lower landscape positions
- The very poorly drained Pamlico and Johnston soils along drainageways

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Slow
Depth to high water table: More than 6.0 feet
Available water capacity: Low
Slope class: Gently sloping
Hazard of water erosion: Moderate
Surface runoff: Medium
Organic matter content: Low

Use and Management

Major Uses: Woodland and some cropland

Agricultural Development

Cropland
Suitable crops: Corn, soybeans, and wheat
Management concerns: Erosion
Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping, terraces, grassed waterways, cover crops, and the inclusion of grasses and legumes in the cropping system help to reduce runoff and control erosion.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Erosion
Management measures and considerations:
- Seedbeds should be prepared on the contour or across the slope if possible.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Suitable trees: Loblolly pine
Management concerns: Windthrow hazard
Management measures and considerations:
- Trees are subject to windthrow when winds are strong because of the restricted rooting depth.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: Slow permeability
Management measures and considerations:
- The permeability limitation can be reduced by increasing the size of the absorption area.

Dwellings without basements
Restrictive features: None or slight limitations

Lawns and landscaping
Restrictive features: Droughtiness
Management measures and considerations:
- Proper fertilization, seeding, mulching, and land shaping help to establish and maintain plant cover.

VaC—Vaucluse loamy sand, 6 to 10 percent slopes

Setting

Major Land Resource Areas: Carolina and Georgia Sand Hills and Southern Coastal Plain
Slope length: Typically 100 to 250 feet, ranging from 50 to 350 feet
Shape of areas: Irregular or elongated
Size of areas: Typically 30 to 50 acres, ranging from 5 to 350 acres

Typical Profile

Surface layer:
0 to 2 inches—grayish loamy sand

Subsurface layer:
2 to 6 inches—brownish loamy sand

Subsoil:
6 to 16 inches—reddish sandy clay loam
16 to 50 inches—reddish sandy clay loam that has yellowish mottles and that is dense and compact

Substratum:
50 to 60 inches—reddish sandy loam

Inclusions

Similar (less than 20 percent of map unit):
- The well drained Cowarts soils in landscape positions similar to or higher than those of the Vaucluse soil
- Small areas that have a clayey subsoil
- Small areas that have moderate permeability in the substratum

Dissimilar (0 to 10 percent of map unit):
- The somewhat excessively drained Candor soils in the higher landscape positions
- The well drained Ailey and Uchee soils in landscape positions similar to those of the Vaucluse soil
- The well drained Emporia and the moderately well drained Pelion soils in the lower landscape positions
- The very poorly drained Pamlico and Johnston soils along drainageways

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Slow
Depth to high water table: More than 6.0 feet
Available water capacity: Low
Slope class: Moderately sloping
Hazard of water erosion: Severe
Surface runoff: Medium
Organic matter content: Low

Use and Management

Major Uses: Woodland and some cropland

Agricultural Development

Cropland
Suitable crops: Corn, soybeans, and wheat
Management concerns: Erosion
Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping, terraces, grassed waterways, cover crops, and the inclusion of grasses and legumes in the cropping system help to reduce runoff and control erosion.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Erosion
Management measures and considerations:
- Seedbeds should be prepared on the contour or across the slope if possible.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Suitable trees: Loblolly pine
Management concerns: Windthrow hazard
Management measures and considerations:
- Trees are subject to windthrow when winds are strong because of the restricted rooting depth.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: Slow permeability
Management measures and considerations:
- The permeability limitation can be reduced by increasing the size of the absorption area.

Dwellings without basements
Restrictive features: Slope
Management measures and considerations:
- Cutting and filling or modifying the design of the building helps to overcome the slope.

Lawns and landscaping
Restrictive features: Droughtiness and slope
Management measures and considerations:
- Using well adapted plants and providing supplemental irrigation during the growing season help to reduce the droughtiness limitation.
- Proper fertilization, seeding, mulching, and land shaping help to establish and maintain plant cover.

WaB—Wagram sand, 0 to 6 percent slopes

Setting

Major Land Resource Area: Southern Coastal Plain
Slope length: Typically 100 to 300 feet, ranging from 50 to 700 feet
Shape of areas: Irregular
Size of areas: Typically 25 to 100 acres, ranging from 10 to 200 acres

Typical Profile

Surface layer:
0 to 7 inches—grayish brown sand

Subsurface layer:
7 to 30 inches—very pale brown sand

Subsoil:
30 to 54 inches—reddish yellow sandy clay loam
54 to 72 inches—strong brown sandy clay loam that has yellow and yellowish red mottles

Inclusions

Similar (less than 15 percent of map unit):
- The somewhat excessively drained Blanton and Troup soils in the higher landscape positions
- The well drained Lucy soils in landscape positions similar to those of the Wagram soil

- The well drained Bonneau soils in the lower landscape positions
- Small areas that have brittle lower Bt horizons

Dissimilar (less than 10 percent of map unit):
- The well drained Emporia, Nankin, Noboco, and Norfolk soils in the lower landscape positions

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Depth to high water table: More than 6.0 feet
Available water capacity: Low
Slope class: Nearly level or gently sloping
Hazard of water erosion: Slight
Surface runoff: Slow
Organic matter content: Low

Use and Management

Major Uses: Cropland, woodland, and pasture

Agricultural Development

Cropland
Suitable crops: Soybeans, corn, tobacco, and wheat
Management concerns: Droughtiness, low nutrient-holding capacity, and soil blowing
Management measures and considerations:
- Using fertilizers and poultry residue in split applications helps to overcome the low nutrient-holding capacity and conserve moisture.
- Fertilizers should be applied at intervals rather than used in single applications.
- Conservation tillage, planting winter cover crops, and leaving crop residue on the surface help to conserve moisture and reduce the hazard of soil blowing.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Droughtiness and low nutrient-holding capacity
Management measures and considerations:
- Fertilizers should be applied at intervals rather than used in single applications.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Suitable trees: Loblolly pine
Management concerns: Equipment limitation, seedling mortality, and plant competition
Management measures and considerations:
- The use of tracked or wide-tired vehicles helps to overcome the equipment limitation.
- The moderate seedling mortality rate, which is increased by droughtiness, can be reduced by planting seedlings in furrows.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: None or slight limitations

Dwellings without basements
Restrictive features: None or slight limitations

Lawns and landscaping
Restrictive features: Droughtiness
Management measures and considerations:
- The droughtiness limitation can be reduced by selecting well adapted plants and providing supplemental irrigation during the growing season.

WcA—Wehadkee-Chastain complex, 0 to 2 percent slopes, frequently flooded

Setting

Major Land Resource Areas: Southern Piedmont and Southern Coastal Plain
Landform: Flood plains
Slope length: Typically 100 to 300 feet, ranging from 50 to 500 feet
Shape of areas: Irregular
Size of areas: Typically 50 to 150 acres, ranging from 10 to 500 acres

Composition

Wehadkee soil: 60 percent
Chastain soil: 30 percent
Inclusions: 10 percent

Typical Profile

Wehadkee
Surface layer:
0 to 13 inches—brownish clay loam

Subsoil:
13 to 30 inches—grayish loam

Substratum:
30 to 60 inches—greenish gray fine sandy loam that has brown mottles

Chastain
Surface layer:
0 to 5 inches—grayish loam

Subsoil:
5 to 10 inches—grayish clay loam
10 to 52 inches—grayish clay that has brownish mottles

Substratum:
52 to 72 inches—grayish sand

Inclusions

Similar (less than 10 percent of map unit):
- The poorly drained Bibb soils in the higher landscape positions

Dissimilar (0 to 10 percent of map unit):
- The somewhat poorly drained Chewacla soils and the well drained Riverview soils in the higher landscape positions

Soil Properties and Qualities

Wehadkee
Depth class: Very deep
Drainage class: Poorly drained

Permeability: Moderate
High water table: Within a depth 1.0 foot
Available water capacity: Very high
Slope class: Nearly level
Hazard of water erosion: None or slight
Surface runoff: Very slow
Organic matter content: Moderate
Flooding: Frequent

Chastain
Depth class: Very deep
Drainage class: Poorly drained
Permeability: Slow
High water table: Within a depth of 1.5 feet
Available water capacity: Very high
Slope class: Nearly level
Hazard of water erosion: None or slight
Surface runoff: None or slight
Organic matter content: Low
Flooding: Frequent

Use and Management

Major Uses: Woodland

Agricultural Development

Cropland
Suitable crops: None
Management concerns: Flooding and wetness
Management measures and considerations:
- Protecting areas of this map unit from flooding is generally not economically feasible.

Hayland and pasture
Suitable grasses: Bahiagrass
Management concerns: Flooding and wetness
Management measures and considerations:
- Protecting areas of this map unit from flooding is generally not economically feasible.
- Grazing should be delayed until the soils have been drained sufficiently and are firm enough to withstand trampling by livestock.
- Proper stocking rates, pasture rotation, and restricted grazing during wet periods help to keep the pasture in good condition.

Woodland
Suitable trees: Water-tolerant hardwoods
Management concerns: Equipment limitation, seedling mortality, and plant competition
Management measures and considerations:
- Removing excess water, using wider tires on equipment, bedding, and harvesting trees during dry periods help to reduce the equipment limitation.
- Protecting areas of this map unit from flooding is generally not economically feasible.
- Seedling mortality rates can be reduced by planting suitable species at the proper times and by planting on raised beds.
- Competing vegetation can be controlled by good site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: Flooding and wetness

Management measures and considerations:
- Because of the difficulty and expense of reducing the flooding and wetness limitations, these soils generally are not used for septic tank absorption fields.

Dwellings without basements
Restrictive features: Flooding and wetness
Management measures and considerations:
- Because of the difficulty and expense of reducing the flooding and wetness limitations, these soils generally are not used for dwellings.

Lawns and landscaping
Restrictive features: Flooding and wetness
Management measures and considerations:
- Because of the difficulty and expense of reducing the flooding and wetness limitations, these soils generally are not used for lawns and landscaping.

WkA—Wickham sandy loam, 0 to 2 percent slopes, rarely flooded

Setting

Major Land Resource Areas: Southern Coastal Plain and Atlantic Coast Flatwoods
Landform: Stream terraces
Slope length: Typically 100 to 250 feet, ranging from 50 to 300 feet
Shape of areas: Irregular or elongated
Size of areas: Typically 50 to 80 acres, ranging from 10 to 100 acres

Typical Profile

Surface layer:
0 to 6 inches—brownish sandy loam

Subsoil:
6 to 26 inches—reddish clay loam
26 to 40 inches—red sandy clay loam
40 to 48 inches—red sandy loam

Substratum:
48 to 80 inches—yellowish loamy sand

Inclusions

Similar (less than 10 percent of map unit):
- The well drained Emporia, Cowarts, and Nankin soils in the higher landscape positions
- The well drained Riverview soils in the lower landscape positions
- Small areas that are clayey in the lower part of the subsoil

Dissimilar (less than 10 percent of map unit):
- The somewhat excessively drained Tarboro and the poorly drained Chastain soils in the slightly lower landscape positions

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Depth to high water table: More than 6.0 feet
Available water capacity: Moderate

Slope class: Nearly level
Hazard of water erosion: Moderate
Surface runoff: Medium
Organic matter content: Low
Flooding: Rare

Use and Management

Major Uses: Cropland and woodland

Agricultural Development

Cropland
Suitable crops: Cotton, soybeans, corn, and wheat
Management concerns:
- This soil has no major management problems affecting cropland.

Management measures and considerations:
- Returning crop residue to the soil and growing cover crops help to maintain the organic matter content and improve fertility.

Hayland and pasture
Suitable grasses: Bahiagrass
Management concerns:
- This soil has no major management problems affecting hayland and pasture.

Management measures and considerations:
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during wet periods help to keep the pasture in good condition.

Woodland
Suitable trees: Loblolly pine
Management concerns: Plant competition
Management measures and considerations:
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: Moderately slow permeability
Management measures and considerations:
- Increasing the size of the absorption field helps to reduce the permeability limitation.

Dwellings without basements
Restrictive features: Flooding
Management measures and considerations:
- Because of the difficulty and expense of reducing the flooding limitation, this soil generally is not used for dwellings.

Lawns and landscaping
Restrictive features: None

WkB—Wickham sandy loam, 2 to 6 percent slopes, rarely flooded

Setting

Major Land Resource Areas: Southern Coastal Plain and Atlantic Coast Flatwoods
Landform: Stream terraces adjacent to flood plains

Slope length: Typically 100 to 250 feet, ranging from 50 to 300 feet
Shape of areas: Irregular or elongated
Size of areas: Typically 50 to 80 acres, ranging from 10 to 100 acres

Typical Profile

Surface layer:
0 to 6 inches—brownish sandy loam

Subsoil:
6 to 40 inches—red sandy clay loam
40 to 48 inches—red sandy loam

Substratum:
48 to 80 inches—yellowish loamy sand

Inclusions

Similar (less than 10 percent of map unit):
- The well drained Emporia and Nankin soils in the higher landscape positions
- The well drained Riverview soils in the lower landscape positions
- Small areas that are clayey in the lower part of the subsoil

Dissimilar (less than 10 percent of map unit):
- The somewhat excessively drained Tarboro and the poorly drained Chastain soils in the slightly lower landscape positions

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Depth to high water table: More than 6.0 feet
Available water capacity: Moderate
Slope class: Gently sloping
Hazard of water erosion: Moderate
Surface runoff: Medium
Organic matter content: Low
Flooding: Rare

Use and Management

Major Uses: Cropland and woodland

Agricultural Development

Cropland
Suitable crops: Cotton, soybeans, corn, and wheat
Management concerns: Erosion
Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping, terraces, grassed waterways, cover crops, and the inclusion of grasses and legumes in the cropping system help to reduce runoff and control erosion.

Hayland and pasture
Suitable grasses: Bahiagrass
Management concerns: Erosion
Management measures and considerations:
- Seedbeds should be prepared on the contour or across the slope if possible.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during wet periods help to keep the pasture in good condition.

Woodland
Suitable trees: Loblolly pine
Management concerns: Plant competition
Management measures and considerations:
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: Moderately slow permeability
Management measures and considerations:
- Increasing the size of the absorption field helps to reduce the permeability limitation.

Dwellings without basements
Restrictive features: Flooding
Management measures and considerations:
- Because of the difficulty and expense of reducing the flooding limitation, this soil generally is not used for dwellings.

Lawns and landscaping
Restrictive features: None or slight limitations

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 for predicting soil behavior.

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

Generally, the soils in Darlington County that are well suited to crops are also well suited to urban uses. The data concerning specific soils in the county can be used in planning future land use patterns. The potential for farming should be considered relative to any soil limitations and the potential for nonfarm development.

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

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

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

Crops and Pasture

Gene E. Hardee, conservation agronomist, Natural Resources Conservation Service, helped prepare this section.

General management needed for crops and pasture is suggested in this section. The crops or pasture plants best suited to the soils are identified, the system of land capability classification used by the Natural Resources Conservation Service is explained, the estimated yields of the main crops and hay and pasture plants are listed for each soil, and prime farmland is described.

Planners of management systems for individual fields or farms should consider the detailed information given in the description of each soil under the heading “Detailed Soil Map Units” and in the tables. Specific information can be obtained from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

Federal and State regulations require that any area designated as wetlands cannot be altered without prior approval. Contact the local office of the Natural Resources Conservation Service for identification of hydric soils and potential wetlands.

In 1988, according to the Darlington County Soil and Water Conservation District, about 147,000 acres in Darlington County was used for pasture, hay, or cropland. Of this total, about 100,000 acres was used for field crops, mainly cotton, soybeans, corn, wheat, and rye, and about 500 acres was used for orchards, mainly peaches and pecans. Since 1986, approximately 6,000 acres have been removed from crop production through participation in the Conservation Reserve Program.

The field crops that are suited to the soils and climate of Darlington County include many that are not commonly grown. Soybeans, corn, tobacco, and cotton are the principal row crops. A small acreage of cropland is used for watermelons, peanuts, and grain sorghum. Wheat and rye are the common close-growing crops. However, oats, barley, pearl millet, sudangrass, and several close-growing legumes, such as alfalfa, arrowleaf clover, and crimson clover, can be grown for forage and seed. Bicolor and sericea lespedeza are perennial legumes grown for seed, forage, and wildlife habitat. The principal grasses grown for forage are bahiagrass and bermudagrass.

Specialty crops include vegetables, small fruits, peaches, and pecans. A small acreage is used for cantaloupes, field peas, lima beans, okra, squash, sweet corn, tomatoes, collards, turnips, broccoli, and strawberries. Large areas can be adapted to these and other specialty crops, such as blueberries.

Deep soils that have good natural drainage, have a moderate or high available water capacity, and warm up early in spring are especially well suited to many vegetables. Crops generally can be planted and harvested early on Emporia, Faceville, Lucy, Noboco, Norfolk, Orangeburg, Wagram, and Wickham soils.

The latest information about specialty crops can be obtained at the local office of the Cooperative Extension Service or the Natural Resources Conservation Service.

The suitability of the soils in Darlington County for increased production of food is good. According to the County Resources Inventory and the Darlington County Soil and Water Conservation District, approximately 75,000 acres of potentially good cropland is currently used for timber or pasture. The production of food can be increased by converting this land to cropland and by extending the latest crop production technology to all cropland in the county. This soil survey can greatly facilitate the application of such technology.

Generally, the soils in the county that are well suited to crops and pasture are also suited to urban development. According to the Darlington Soil and Water Conservation District, about 9,500 acres in Darlington County is urban and built-up land. Urban and built-up land has increased at the rate of about 100 acres per year. This survey can be used to help make land use decisions that will influence the future role of farming in the county.

Erosion is a major concern on about 14 percent of the land in Darlington County. It is a hazard on many of the soils that are used for crops. Water erosion commonly is a hazard on soils that have slopes of more than 2 percent or that have very long slopes of 1 or 2 percent. Soil blowing is a concern on clean-tilled, sandy soils. The main problem is damage to young plants rather than actual loss.

Loss of the surface layer through erosion reduces productivity and pollutes streams. Soil productivity is reduced as the surface layer is lost and part of the subsoil is incorporated into the plow layer. Loss of the surface layer is especially damaging on soils that have a clayey subsoil, such as Faceville and Hornsville soils, and on soils that have layer in or below the subsoil that limits the depth of the root zone, such as Cowarts and Vaucluse soils which have a dense, somewhat brittle layer. Erosion also reduces productivity on deep, sandy soils, such as Ailey, Alpin, Blanton, Lucy, Troup, and Wagram soils, largely because of loss of nutrients and fine soil particles. Erosion on farmland results in the sedimentation of streams. Controlling erosion minimizes the

pollution of streams and improves the quality of water for municipal use, for recreation, and for fish and wildlife.

In some sloping fields, the original friable surface layer has been lost through erosion and spots that have clayey or sandy surface layers remain. Seedbed preparation and tillage are difficult on these spots. Such spots are common on the most sloping part of intensively cropped areas of Emporia, Faceville, Hornsville, Noboco, Norfolk, Orangeburg, and Pelion soils.

Water erosion is best controlled by a combination of structural measures which remove excess water from the field and cropping and tillage systems that provide surface cover and reduce runoff. Structural measures such as diversions and terraces reduce the length of slope, and grassed waterways remove excess water from the field.

Contour tillage reduces the amount and velocity of runoff. A cropping sequence that includes sod crops in rotation and tillage that leaves protective residue on the surface reduce runoff and increase infiltration. On livestock farms, which require pasture and hay, including grasses and legumes in the cropping sequence helps to control erosion in sloping areas and provides nitrogen for the following crops.

Terraces and diversions can effectively control erosion on very deep, well drained soils that have uniform slopes, such as Emporia, Faceville, Hornsville, Nankin, Noboco, and Norfolk soils. These measures tend to concentrate water, however, and thus they are generally not suitable on less stable soils that have a sandy surface layer, such as Ailey, Alpin, Blanton, Bonneau, Candor, Foxworth, Lucy, and Wagram soils. On these soils, effective erosion-control systems generally include contour farming, contour stripcropping, and conservation tillage, which reduce the amount and velocity of runoff and do not concentrate the runoff.

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

Damage to young plants by soil blowing is a major management concern on Ailey, Alpin, Autryville, Blanton, Candor, Foxworth, Lucy, Lakeland, Troup, and Wagram soils. The risk of damage is especially high on extensive fields that are not protected by plant cover. Conservation tillage, strips of permanent vegetation, and strips of close-growing crops help to protect sandy soils that are subject to soil blowing.

Wetness is a major concern on about 46 percent of the soils in Darlington County. Adequate drainage of cropland and hayland is feasible on only about 52 percent of these soils. Approximately 50 percent of the soils associated with drainage concerns are in wetlands.

A low available water capacity is a limitation on Ailey, Alpin, Blanton, Bonneau, Candor, Foxworth, Lakeland, Lucy, Tarboro, Uchee, and Troup soils. This limitation can be reduced by crop residue management, proper crop selection, and irrigation. These soils are well suited to deep-rooted pasture grasses, such as bahiagrass and bermudagrass, and drought-tolerant crops, such as grain sorghum. Because of rapid leaching of nutrients from these soils, frequent and light applications of fertilizer and lime are needed for good growth.

The soils in Darlington County are low in natural fertility. Regular applications of lime and fertilizer are needed. Most of the soils are naturally very strongly acid, strongly acid, or moderately acid. Commonly, they require regular applications of ground limestone to maintain or raise the pH sufficiently for good crop growth. The supply of available phosphorus and potash is naturally low in most of these soils. On the deep, sandy soils, split applications of fertilizer are needed because of leaching. On all of the soils, additions of lime and fertilizer should be based on the results of soil tests, on the needs of the crop, and on the expected level of yields. The Cooperative Extension Service can help to determine the amounts of fertilizer and lime to apply.

Soil tilth is an important factor in the germination of seeds and the infiltration of water into the soil. The surface layer of most soils in Darlington County is sand or

loamy sand. Consequently, this layer is granular and porous and has weak structure. These conditions are generally ideal for good germination of seeds and infiltration of water. The surface layer of these soils, however, generally has a very low content of organic matter and retains only a small amount of moisture.

Fall tillage is generally not recommended because most of the cropland is sloping and subject to water erosion or is subject to soil blowing. For some crops, fall tillage is needed to control insects and disease. In such cases, a winter cover crop should be planted after the soil is tilled.

Yields per Acre

The average yields per acre that can be expected of the principal crops under a high level of management are shown in table 5. In any given year, yields may be higher or lower than those indicated in the table because of variations in rainfall and other climatic factors. The land capability classification of each map unit also is shown in the table.

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

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

A high level of management includes maintaining proper soil reaction and fertility levels as indicated by standard soil tests. The application rate of nitrogen for corn on soils that have a yield potential of 125 to 150 bushels per acre should be 140 to 160 pounds per acre. If the yield potential for corn is 100 bushels per acre or less, a rate of 100 to 120 pounds of nitrogen per acre should be used. The application of nitrogen in excess of that required for potential yields generally is not recommended. The excess nitrogen fertilizer that is not utilized by the crop is an unnecessary expense and causes a hazard of water pollution. If corn or cotton is grown after the harvest of soybeans or peanuts, nitrogen rates can be reduced by about 20 to 30 pounds per acre. Because nitrogen can be readily leached from sandy soils, applications may be needed on these soils more than once during the growing season.

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

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

Crops other than those shown in table 5 are grown in the survey area, but estimated yields are not listed because the acreage of such crops is small. The local office of the 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. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are

used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for woodland and for engineering purposes.

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

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

Class I soils have few limitations that restrict their use.

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

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

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

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

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

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

Class VIII soils and miscellaneous areas have limitations that nearly preclude their use for commercial crop production.

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

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

The capability classification of each map unit is given in the yields table.

Prime Farmland

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

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forest land, or other land, but it is not urban or built-up land or water areas. The soil qualities, growing season, and moisture supply are those needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are

applied. In general, prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, an acceptable salt and sodium content, and few or no rocks. It is permeable to water and air. It is not excessively erodible or saturated with water for long periods, and it either is not frequently flooded during the growing season or is protected from flooding. The slope ranges mainly from 0 to 6 percent. More detailed information about the criteria for prime farmland is available at the local office of the Natural Resources Conservation Service.

About 140,098 acres in the survey area, or nearly 39 percent of the total acreage, meets the soil requirements for prime farmland. Scattered areas of this land are throughout the county, but most are in the central part. About 130,000 acres of this prime farmland is used for crops. The crops grown on this land, mainly soybeans, cotton, corn, tobacco, and wheat, account for an estimated 49 percent of the county's total agricultural income each year.

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 at the end of this section. This list does not constitute a recommendation for a particular land use. On some soils included in the list, measures used to overcome a hazard or limitation, such as flooding, wetness, and droughtiness, are needed. Onsite evaluation is needed to determine whether or not the hazard or limitation has been overcome by corrective measures. The extent of each listed map unit is shown in table 4. 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."

The map units that meet the requirements for prime farmland are:

EmB	Emporia loamy sand, 2 to 6 percent slopes
EuA	Eunola loamy sand, 0 to 2 percent slopes
FaA	Faceville loamy sand, 0 to 2 percent slopes
FaB	Faceville loamy sand, 2 to 6 percent slopes
GoA	Goldsboro sandy loam, 0 to 2 percent slopes
HnA	Hornsville sandy loam, 0 to 2 percent slopes
HnB	Hornsville sandy loam, 2 to 6 percent slopes
JnA	Johns loamy sand, 0 to 2 percent slopes, rarely flooded
NcA	Noboco loamy sand, 0 to 2 percent slopes
NcB	Noboco loamy sand, 2 to 6 percent slopes
NoA	Norfolk loamy sand, 0 to 2 percent slopes
NoB	Norfolk loamy sand, 2 to 6 percent slopes
RvA	Riverview silt loam, 0 to 2 percent slopes, frequently flooded (where protected from flooding or not frequently flooded during the growing season)
WkA	Wickham sandy loam, 0 to 2 percent slopes, rarely flooded

Woodland Management and Productivity

Albert Coffey, forester, Natural Resources Conservation Service, helped prepare this section.

Owners of woodland in Darlington County have many objectives. These objectives include producing timber; conserving wildlife, soil, and water; preserving esthetic

values; and providing opportunities for recreational activities, such as commercial hunting. Public demand for clean water and recreational areas creates pressures and opportunities for owners of woodland.

The landowner interested in timber production is faced with the challenge of producing greater yields from smaller areas. Meeting this challenge requires intensive management and silvicultural practices. Many modern silvicultural techniques resemble those long practiced in agriculture. They include establishing, weeding, and thinning a desirable young stand; propagating the more productive species and genetic varieties; providing short rotations and complete fiber utilization; controlling insects, diseases, and weeds; and improving tree growth by applications of fertilizer and the installation of a drainage system. Even though timber crops require decades to grow, the goal of intensive management is similar to the goal of intensive agriculture. This goal is to produce the greatest yield of the most valuable crop as quickly as possible.

Commercial forests cover about 133,000 acres, or about 37 percent of the land area of Darlington County. Commercial forest is land that is producing or is capable of producing crops of industrial wood and that has not been withdrawn from timber production. Loblolly pine is the most important timber species in the county because it grows fast, is adapted to the soil and climate, brings the highest average sale value per acre, and is easy to establish and manage.

For purposes of forest inventory, the predominant forest types identified in Darlington County are as described in the following paragraphs.

Loblolly-shortleaf. This forest type covers 66,000 acres. It is predominantly loblolly pine, shortleaf pine, or other kinds of southern yellow pine (excluding longleaf pine and slash pine) or a combination of these species. Commonly included trees are oak, hickory, and gum.

Oak-pine. This forest type covers 39,000 acres. It is predominantly hardwoods, usually upland oaks. Pine species make up 25 to 50 percent of the stand. Commonly included trees are gum, hickory, and yellow-poplar.

Oak-gum-cypress. This forest type covers 28,000 acres. It is bottom-land forest consisting predominantly of tupelo, blackgum, sweetgum, oaks, southern cypress, or a combination of these species. Commonly included trees are cottonwood, willow, ash, elm, hackberry, and maple.

One of the first steps in planning intensive woodland management is to determine the potential productivity of the soil for several alternative tree species. The most productive and valued trees are then selected for each soil type. Site and yield information enables a forest manager to estimate future wood supplies. These estimates are the basis of realistic decisions concerning expenses and profits associated with intensive woodland management, land acquisition, or industrial investments.

The potential productivity of woodland depends on physiography, soil properties, climate, and the effects of past management. Specific soil properties and site characteristics, including soil depth, texture, structure, and depth to the water table, affect forest productivity primarily by influencing available water capacity, aeration, and root development. The net effects of the interaction of these soil properties and site characteristics determine the potential site productivity.

Other site factors are also important. The gradient and length of slopes affect water movement and availability. The amount of rainfall and length of growing season influence site productivity.

This soil survey can be used by woodland managers planning ways to increase the productivity of forest land. Some soils respond better to applications of fertilizer than others, and some are more susceptible to erosion after roads are built and timber is harvested. Some soils require special reforestation efforts. In the section “Detailed Soil Map Units,” the description of each map unit in the survey area suitable for timber

includes information about productivity, limitations in harvesting timber, and management concerns in producing timber. Table 6 summarizes this forestry information and rates the soils for a number of factors to be considered in management. *Slight, moderate*, and *severe* are used to indicate the degree of the major soil limitations to be considered in management.

Table 6 lists the *ordination symbol* for each soil. The first part of the ordination symbol, a number, indicates the potential productivity of a soil for the indicator species in cubic meters per hectare per year. The larger the number, the greater the potential productivity. Potential productivity is based on the site index and the point where mean annual increment is the greatest.

The second part of the ordination symbol, a letter, indicates the major kind of soil limitation affecting use and management. The letter *R* indicates a soil that has a significant limitation because of the slope. The letter *W* indicates a soil in which excessive water, either seasonal or year-round, causes a significant limitation. The letter *C* indicates a soil that has a limitation because of the kind or amount of clay in the upper part of the profile. The letter *S* indicates a dry, sandy soil. The letter *A* indicates a soil having no significant limitations that affect forest use and management. If a soil has more than one limitation, the priority is as follows: R, W, C, and S.

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

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

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

Ratings of *windthrow hazard* indicate the likelihood that trees will be uprooted by the wind. A restricted rooting depth is the main reason for windthrow. The rooting depth

can be restricted by a high water table or by a combination of such factors as soil wetness, texture, structure, and depth. The risk is *slight* if strong winds break trees but do not uproot them; *moderate* if strong winds blow a few trees over and break many trees; and *severe* if moderate or strong winds commonly blow trees over. Ratings of moderate or severe indicate that care is needed in thinning or that the stand should not be thinned at all. Special equipment may be needed to prevent damage to shallow root systems in partial cutting operations. A plan for the periodic removal of windthrown trees and the maintenance of a road and trail system may be needed.

Ratings of *plant competition* indicate the likelihood of the growth or invasion of undesirable plants. Plant competition is more severe on the more productive soils, on poorly drained soils, and on soils having a restricted root zone that holds moisture. The risk is *slight* if competition from undesirable plants hinders adequate natural or artificial reforestation but does not necessitate intensive site preparation and maintenance. The risk is *moderate* if competition from undesirable plants hinders natural or artificial reforestation to the extent that intensive site preparation and maintenance are needed. The risk is *severe* if competition from undesirable plants prevents adequate natural or artificial reforestation unless the site is intensively prepared and maintained. A moderate or severe rating indicates the need for site preparation to ensure the development of an adequately stocked stand. Managers should plan site preparation measures to ensure timely reforestation.

The *potential productivity* of *common trees* on a soil is expressed as a *site index* and a *volume* number. The predominant common trees are listed in table 6 in the order of their observed occurrence. Generally, only two or three tree species dominate. The first tree listed for each soil is the indicator species for that soil. An indicator species is a tree that is common in the area and that is generally the most productive on a given soil.

For soils that are commonly used for timber production, the yield is predicted in cubic feet per acre per year. It is predicted at the point where mean annual increment culminates. The estimates of the productivity of the soils in this survey are based mainly on loblolly pine and longleaf pine *(4, 7)*.

The *site index* is determined by taking height measurements and determining the age of selected trees within stands of a given species. This index is the average height, in feet, that the trees attain in a specified number of years (50 years in this survey). This index applies to fully stocked, even-aged, unmanaged stands. Productivity of a site can be improved through management practices, such as bedding, ditching, managing water, applying fertilizer, and planting genetically improved species.

The *volume* is the yield likely to be produced by the most important trees, expressed in cubic feet per acre per year.

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

Recreation

The soils of the survey area are rated in table 7 according to the limitations that affect their suitability for recreation. The ratings are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewer lines. The capacity of the soil to absorb septic tank effluent and the ability

of the soil to support vegetation are also important. Soils subject to flooding are limited for recreational uses by the duration and intensity of flooding and the season when flooding occurs. In planning recreational facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

In table 7, the degree of soil limitation is expressed as slight, moderate, or severe. *Slight* means that soil properties are generally favorable and that limitations are minor and easily overcome. *Moderate* means that limitations can be overcome or alleviated by planning, design, or special maintenance. *Severe* means that soil properties are unfavorable and that limitations can be offset only by costly soil reclamation, special design, intensive maintenance, limited use, or a combination of these measures.

The information in table 7 can be supplemented by other information in this survey, for example, interpretations for septic tank absorption fields in table 10 and interpretations for dwellings without basements and for local roads and streets in table 9.

Camp areas require site preparation, such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The best soils have gentle slopes and are not wet or subject to flooding during the period of use. The surface has few or no stones or boulders, absorbs rainfall readily but remains firm, and is not dusty when dry. Strong slopes and stones or boulders can greatly increase the cost of constructing campsites.

Picnic areas are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The best soils for picnic areas are firm when wet, are not dusty when dry, are not subject to flooding during the period of use, and do not have slopes or stones or boulders that increase the cost of shaping sites or of building access roads and parking areas.

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

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

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

Wildlife Habitat

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

In table 8, the soils in the survey area are rated according to their potential for providing habitat for various kinds of wildlife. This information can be used in planning parks, wildlife refuges, nature study areas, and other developments for wildlife; in selecting soils that are suitable for establishing, improving, or maintaining specific elements of wildlife habitat; and in determining the intensity of management needed for each element of the habitat. The ratings in table 8 are intended to be used as a guide

and are not site specific. Onsite investigation is needed for individual management plans.

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

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

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

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

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

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

Coniferous plants furnish browse and seeds. Soil properties and features that affect the growth of coniferous trees, shrubs, and ground cover are depth of the root zone, available water capacity, and wetness. Examples of coniferous plants are pine, spruce, fir, cedar, and juniper.

Wetland plants are annual and perennial wild herbaceous plants that grow on moist or wet sites. Submerged or floating aquatic plants are excluded. Soil properties and features affecting wetland plants are texture of the surface layer, wetness, reaction, salinity, slope, and surface stoniness. Examples of wetland plants are smartweed, wild millet, wildrice, cattail, rushes, sedges, and reeds.

Shallow water areas have an average depth of less than 5 feet. Some are naturally wet areas. Others are created by dams, levees, or other water-control structures. Soil properties and features affecting shallow water areas are depth to bedrock, wetness, surface stoniness, slope, and permeability. Examples of shallow water areas are marshes, waterfowl feeding areas, and ponds.

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

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

Habitat for woodland wildlife consists of areas of deciduous plants or coniferous plants or both and associated grasses, legumes, and wild herbaceous plants. Wildlife attracted to these areas include wild turkey, ruffed grouse, woodcock, thrushes, woodpeckers, squirrels, gray fox, raccoon, white-tailed deer, and black bear.

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

Engineering

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

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

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

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

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about grain-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 or 6 feet of the surface, soil wetness, depth to a high water table, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kind of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

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

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

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

Building Site Development

Table 9 shows the degree and kind of soil limitations that affect shallow excavations, dwellings with and without basements, small commercial buildings, local roads and streets, and lawns and landscaping. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required. Special feasibility studies may be required where the soil limitations are severe.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for basements, graves, utility lines, open ditches, and other purposes. The ratings are based on soil properties, site features, and observed performance of the soils. The ease of digging, filling, and compacting is affected by the depth to bedrock or a very firm, dense layer; stone content; soil texture; and slope. The time of the year that excavations can be made is affected by the depth to a high water table and the susceptibility of the soil to flooding. The resistance of the excavation walls or banks to sloughing or caving is affected by soil texture and depth to the high water table.

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

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or stabilized soil material; and a flexible or rigid surface. Cuts and fills are generally limited to less than 6 feet. The ratings are based on soil properties, site features, and observed performance of the soils. Depth to bedrock, depth to a high water table, flooding, large stones, and slope affect the ease of excavating and grading. Soil strength (as inferred from the engineering classification of the soil), shrink-swell potential, frost action potential, and depth to a high water table affect the traffic-supporting capacity.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. The ratings are based on soil properties, site features, and observed performance of the soils. Soil reaction, depth to a high water table, depth to bedrock, and the available water capacity in the upper 40 inches affect plant growth. Flooding, wetness, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer affect trafficability after vegetation is established. Soil tests are essential to determine liming and fertilizer needs. Help in making soil tests or in deciding what soil additive, if any, should be used can be obtained from the office of the Darlington County Soil and Water Conservation District or the local office of the Cooperative Extension Service.

Sanitary Facilities

Table 10 shows the degree and the kind of soil limitations that affect septic tank absorption fields, sewage lagoons, and sanitary landfills. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required.

Table 10 also shows the suitability of the soils for use as daily cover for landfill. A rating of *good* indicates that soil properties and site features are favorable for the use and that good performance and low maintenance can be expected; *fair* indicates that soil properties and site features are moderately favorable for the use and one or more soil properties or site features make the soil less desirable than the soils rated good; and *poor* indicates that one or more soil properties or site features are unfavorable for the use and overcoming the unfavorable properties requires special design, extra maintenance, or costly alteration.

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 72 inches is evaluated. The ratings are based on soil properties, site features, and observed performance of the soils. Permeability, depth to a high water table, depth to bedrock, and flooding affect absorption of the effluent. Large stones and bedrock interfere with installation.

Unsatisfactory performance of septic tank absorption fields, including excessively slow absorption of effluent, surfacing of effluent, and hillside seepage, can affect public health. Ground water can be polluted if highly permeable sand and gravel or fractured bedrock is less than 4 feet below the base of the absorption field, if slope is excessive, or if the water table is near the surface. There must be unsaturated soil material beneath the absorption field to filter the effluent effectively. Many local ordinances require that this material be of a certain thickness.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Lagoons generally are designed to hold the sewage within a depth of 2 to 5 feet. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water. The animal waste lagoons commonly used in farming operations are not considered in the ratings. They are generally deeper than the lagoons referred to in the table and rely on anaerobic bacteria to decompose waste materials.

Table 10 gives ratings for the natural soil that makes up the lagoon floor. The surface layer and, generally, 1 or 2 feet of soil material below the surface layer are excavated to provide material for the embankments. The ratings are based on soil properties, site features, and observed performance of the soils. Considered in the ratings are slope, permeability, depth to a high water table, depth to bedrock, flooding, large stones, and content of organic matter.

Excessive seepage resulting from rapid permeability in the soil or a water table that is high enough to raise the level of sewage in the lagoon causes a lagoon to function unsatisfactorily. Pollution results if seepage is excessive or if floodwater overtops the lagoon. A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope or bedrock can cause construction problems, and large stones can hinder compaction of the lagoon floor.

Sanitary landfills are areas where solid waste is disposed of by burying it in soil. There are two types of landfill—trench and area. In a trench landfill, the waste is

placed in a trench. It is spread, compacted, and covered daily with a thin layer of soil excavated at the site. In an area landfill, the waste is placed in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil from a source away from the site.

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

The ratings in table 10 are based on soil properties, site features, and observed performance of the soils. Permeability, depth to bedrock, a high water table, slope, and flooding affect both types of landfill. Texture, stones and boulders, highly organic layers, soil reaction, and content of salts and sodium affect trench landfills. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, a limitation rated slight or moderate may not be valid. Onsite investigation is needed.

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

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

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

Construction Materials

Table 11 gives information about the soils as a source of roadfill, sand, gravel, and topsoil. The soils are rated *good, fair,* or *poor* as a source of roadfill and topsoil. They are rated as a *probable* or *improbable* source of sand and gravel. The ratings are based on soil properties and site features that affect the removal of the soil and its use as construction material. Normal compaction, minor processing, and other standard construction practices are assumed. Each soil is evaluated to a depth of 5 or 6 feet.

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

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

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

Soils rated *good* contain significant amounts of sand or gravel or both. They have at least 5 feet of suitable material, a low shrink-swell potential, few cobbles and stones, and slopes of 15 percent or less. Depth to the high water table is more than 3 feet.

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

Sand and *gravel* are natural aggregates suitable for commercial use with a minimum of processing. They are used in many kinds of construction. Specifications for each use vary widely. In table 11, only the probability of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material.

The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the engineering classification of the soil), the thickness of suitable material, and the content of rock fragments. Kinds of rock, acidity, and stratification are given in the soil series descriptions. Gradation of grain sizes is given in the table on engineering index properties.

A soil rated as a probable source has a layer of clean sand or gravel or a layer of sand or gravel that is up to 12 percent silty fines. This material must be at least 3 feet thick and less than 50 percent, by weight, large stones. All other soils are rated as an improbable source. Coarse fragments of soft bedrock, such as shale, siltstone, and weathered granite saprolite, are not considered to be sand and gravel.

Topsoil is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area.

Plant growth is affected by toxic material and by such properties as soil reaction, available water capacity, and fertility. The ease of excavating, loading, and spreading is affected by rock fragments, slope, a high water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, a high water table, rock fragments, bedrock, and toxic material.

Soils rated *good* have friable, loamy material to a depth of at least 40 inches. They are free of stones and cobbles, have little or no gravel, and have slopes of less than 8 percent. They are naturally fertile or respond well to fertilizer and are not so wet that excavation is difficult.

Soils rated *fair* are sandy soils, loamy soils that have a relatively high content of clay, soils that have only 20 to 40 inches of suitable material, soils that have an appreciable amount of gravel or stones, or soils that have slopes of 8 to 15 percent. The soils are not so wet that excavation is difficult.

Soils rated *poor* are very sandy or clayey, have less than 20 inches of suitable material, have a large amount of gravel or stones, have slopes of more than 15 percent, or have a high water table at or near the surface.

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

Water Management

Table 12 gives information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas and for embankments, dikes, and levees. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and are easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special

design, significant increase in construction costs, and possibly increased maintenance are required.

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

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the permeability of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area. Ponds that are less than about 2 acres in size are not shown on the maps because of the scale of mapping.

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

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

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

Drainage is the removal of excess surface and subsurface water from the soil. How easily and effectively the soil is drained depends on the depth to bedrock or to other layers that affect the rate of water movement, permeability, depth to a high water table or depth of standing water if the soil is subject to ponding, slope, susceptibility to flooding, subsidence of organic layers, and the potential for frost action. Excavating and grading and the stability of ditchbanks are affected by depth to bedrock, large stones, slope, and the hazard of cutbanks caving. The productivity of the soil after drainage is adversely affected by extreme acidity or by toxic substances in the root zone, such as salts, sodium, and sulfur. Availability of drainage outlets is not considered in the ratings.

Drainage may be a major management consideration in some areas. Management of drainage in conformance with regulations concerning wetlands may require special permits and extra planning. The local office of the Natural Resources Conservation Service should be contacted for identification of hydric soils and potential wetlands.

Irrigation is the controlled application of water to supplement rainfall and support plant growth. The design and management of an irrigation system are affected by depth to a high water table, the need for drainage, flooding, available water capacity, intake rate, permeability, erosion hazard, and slope. The construction of a system is affected by large stones and depth to bedrock. The performance of a system is affected by the availability of suitable irrigation water, the depth of the root zone, and soil reaction.

Terraces and diversions are embankments or a combination of channels and ridges constructed across a slope to control erosion and conserve moisture by intercepting runoff. Slope, wetness, large stones, and depth to bedrock affect the construction of terraces and diversions. A restricted rooting depth, a severe hazard of soil blowing or water erosion, an excessively coarse texture, and restricted permeability adversely affect maintenance.

Grassed waterways are natural or constructed channels, generally broad and shallow, that conduct surface water to outlets at a nonerosive velocity. Large stones,

wetness, slope, and depth to bedrock affect the construction of grassed waterways. A hazard of soil blowing, a low available water capacity, restricted rooting depth, toxic substances such as salts and sodium, and restricted permeability adversely affect the growth and maintenance of the grass after construction.

Soil Properties

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

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

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

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

Engineering Index Properties

Table 13 gives estimates of the engineering classification and of the range of index properties for the major layers of each soil in the survey area. Most soils have layers of contrasting properties within the upper 5 or 6 feet.

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

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages, by weight, of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is as much as 15 percent, by volume, an appropriate modifier is added, for example, "gravelly." Textural terms are defined in the Glossary.

Classification of the soils is determined according to the Unified soil classification system *(2)* and the system adopted by the American Association of State Highway and Transportation Officials *(1)*.

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to grain-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, SP-SM.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil

that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of grain-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20, or higher, for the poorest.

Rock fragments 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 grain-size distribution, liquid limit, and plasticity index are generally rounded to the nearest 5 percent. Thus, if the ranges of gradation and Atterberg limits extend a marginal amount (1 or 2 percentage points) across classification boundaries, the classification in the marginal zone is omitted in the table.

Physical and Chemical Properties

Table 14 shows estimates of some characteristics and features that affect soil behavior. These estimates are given for the major layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

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

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

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

Permeability refers to the ability of a soil to transmit water or air. The estimates indicate the rate of movement of water through the soil when the soil is saturated. They

are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage in each major soil layer is stated in inches of water per inch of soil. The capacity varies, depending on soil properties that affect the retention of water and the depth of the root zone. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time. It is the difference between the amount of soil water at field moisture capacity and the amount at wilting point.

Soil reaction is a measure of acidity or alkalinity and is expressed as a range in pH values. The range in pH of each major horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Shrink-swell potential is the potential for volume change in a soil with a loss or gain in moisture. Volume change occurs mainly because of the interaction of clay minerals with water and varies with the amount and type of clay minerals in the soil. The size of the load on the soil and the magnitude of the change in soil moisture content influence the amount of swelling of soils in place. Laboratory measurements of swelling of undisturbed clods were made for many soils. For others, swelling was estimated on the basis of the kind and amount of clay minerals in the soil and on measurements of similar soils.

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

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

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) to predict the average annual rate of soil loss by sheet and rill erosion. Losses are expressed in tons per acre per year. These estimates are based primarily on percentage of silt, sand, and organic matter (up to 4 percent) and on soil structure and permeability. Values of K range from 0.02 to 0.64. The higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur over a sustained period without affecting crop productivity. The rate is expressed in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their resistance to soil blowing in cultivated areas. The groups indicate the susceptibility to soil blowing. The soils assigned to group 1 are the most susceptible to soil blowing, and those assigned to group 8 are the least susceptible. The groups are as follows:

1. Coarse sands, sands, fine sands, and very fine sands.
2. Loamy coarse sands, loamy sands, loamy fine sands, loamy very fine sands, and sapric soil material.
3. Coarse sandy loams, sandy loams, fine sandy loams, and very fine sandy loams.

4L. Calcareous loams, silt loams, clay loams, and silty clay loams.

4. Clays, silty clays, noncalcareous clay loams, and silty clay loams that are more than 35 percent clay.
5. Noncalcareous loams and silt loams that are less than 20 percent clay and sandy clay loams, sandy clays, and hemic soil material.
6. Noncalcareous loams and silt loams that are more than 20 percent clay and noncalcareous clay loams that are less than 35 percent clay.
7. Silts, noncalcareous silty clay loams that are less than 35 percent clay, and fibric soil material.
8. Soils that are not subject to soil blowing because of coarse fragments on the surface or because of surface wetness.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In table 14, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

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

Soil and Water Features

Table 15 gives estimates of various soil and water features. The estimates are used in land use planning that involves engineering considerations.

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

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep or very 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 to very deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

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

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a permanent high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to two hydrologic groups in table 15, the first letter is for drained areas and the second is for undrained areas.

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

Table 15 gives the frequency and duration of flooding and the time of year when flooding is most likely to occur.

Frequency, duration, and probable dates of occurrence are estimated. Frequency generally is expressed as none, rare, occasional, or frequent. *None* means that flooding is not probable; *rare* that it is unlikely but possible under unusual weather conditions (the chance of flooding is nearly 0 percent to 5 percent in any year);

occasional that it occurs, on the average, once or less in 2 years (the chance of flooding is 5 to 50 percent in any year); and *frequent* that it occurs, on the average, more than once in 2 years (the chance of flooding is more than 50 percent in any year). *Common* is used when occasional and frequent classes are grouped for certain purposes. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, *long* if 7 days to 1 month, and *very long* if more than 1 month. Probable dates are expressed in months. About two-thirds to three-fourths of all flooding occurs during the stated period.

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

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

High water table (seasonal) is the highest level of a saturated zone in the soil in most years. The estimates are based mainly on the evidence of a saturated zone, namely grayish colors or mottles (redoximorphic features) in the soil. Indicated in table 15 are the depth to the high water table; the kind of water table—that is, *perched* or *apparent*; and the months of the year that the water table commonly is high. A water table that is seasonally high for less than 1 month is not indicated in table 15.

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

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

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

Subsidence is the settlement of organic soils or of saturated mineral soils of very low density. Subsidence generally results from either desiccation and shrinkage or oxidation of organic material, or both, following drainage. Subsidence takes place gradually, usually over a period of several years. Table 15 shows the expected initial subsidence, which usually is a result of drainage, and total subsidence, which results from a combination of factors. Not shown in the table is subsidence caused by an imposed surface load or by the withdrawal of ground water throughout an extensive area as a result of lowering the water table.

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

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

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

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories *(8)*. Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or on laboratory measurements. Table 16 shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

ORDER. Eleven soil orders are recognized. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in *sol*. An example is 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 climate, 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; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Hapludults (*Hapl*, meaning minimal horizon development, plus *udult*, the suborder of the Ultisols that occurs in humid climates).

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

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Generally, the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle-size class, mineral content, temperature regime, depth of the root zone, consistence, moisture equivalent, slope, and permanent cracks. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is fine-loamy, mixed, thermic Typic Hapludults.

SERIES. The series consists of soils that have similar horizons in their profile. The horizons are similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile. There can be some variation in the texture of the surface layer or of the substratum within a series.

Soil Series and Their Morphology

In this section, each soil series recognized in the survey area is described. 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 location of the typical pedon is described. The detailed description of each soil horizon follows standards in the "Soil Survey Manual" *(9)*. Many of the technical terms used in the descriptions are defined in "Soil Taxonomy" *(8)* and in "Keys to Soil Taxonomy" *(10)*. Unless otherwise stated, colors in the descriptions are for moist soil. Following the pedon description is the range of important characteristics of the soils in the series.

The map units of each soil series are described in the section "Detailed Soil Map Units."

Ailey Series

The Ailey series consists of very deep, well drained, slowly permeable soils that formed in loamy marine sediments on uplands of the Carolina and Georgia Sand Hills and the Southern Coastal Plain Major Land Resource Areas. Slopes range from 0 to 25 percent. The soils are loamy, siliceous, thermic Arenic Kanhapludults.

Ailey soils are geographically associated with Alpin, Candor, Cowarts, Pelion, Troup, and Uchee soils. Alpin soils do not have an argillic horizon. Candor soils are Paleudults. Cowarts and Pelion soils are not arenic. Troup soils have a sandy surface layer that is more than 40 inches thick. Uchee soils do not have a Btx horizon.

Typical pedon of Ailey sand, moderately wet, 2 to 6 percent slopes; in Chesterfield County, South Carolina; 1.6 miles north on S.C. Highway 102 from its junction with U.S. Highway 1 in Patrick, 6 miles west on Wire Road, 50 feet north:

A—0 to 3 inches; brown (10YR 5/3) sand; weak fine granular structure; very friable; common fine and medium roots; strongly acid; clear wavy boundary.

E—3 to 28 inches; light yellowish brown (10YR 6/4) sand; single grained; loose; common fine and medium and few coarse roots; 1 percent fragments of ironstone; strongly acid; clear wavy boundary.

BE—28 to 35 inches; brownish yellow (10YR 6/8) sandy loam; weak fine subangular blocky structure; friable; few fine and medium roots; very strongly acid; gradual wavy boundary.

Bt—35 to 43 inches; brownish yellow (10YR 6/8) sandy clay loam; weak medium subangular blocky structure; friable; few fine roots; few coarse pores; few distinct clay films on faces of peds; common medium distinct strong brown (7.5YR 5/8) masses of iron accumulation; very strongly acid; gradual wavy boundary.

Btx—43 to 53 inches; brownish yellow (10YR 6/8) sandy clay loam; weak medium subangular blocky structure; very friable in gray part and firm, brittle, and cemented in yellow and red parts; few faint clay films on faces of peds; common clean sand grains; 2 percent fragments of ironstone; few fine flakes of mica; common medium prominent red (2.5YR 4/8) masses of iron accumulation; common medium distinct light brownish gray (10YR 6/2) iron depletions; strongly acid; gradual wavy boundary.

2C—53 to 62 inches; reddish yellow (7.5YR 6/8) sandy loam; massive; firm; few distinct white (10YR 8/1) balls of kaolin; few fine flakes of mica; strongly acid; clear wavy boundary.

2Cd—62 to 72 inches; 40 percent brownish yellow (10YR 6/8), 30 percent red (2.5YR 4/8), and 30 percent light brownish gray (10YR 6/2) clay loam; massive; very firm; few fine flakes of mica; gray areas are iron depletions; very strongly acid.

The thickness of the solum ranges from 42 to more than 60 inches. Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 10YR, value of 3 to 5, and chroma of 1 to 3. It is sand.

The E horizon has hue of 10YR, value of 5 to 7, and chroma of 3 to 8. It is sand.

The Bt horizon has hue of 5YR to 10YR, value of 4 to 6, and chroma of 4 to 8. It is sandy loam or sandy clay loam.

The Btx horizon has hue of 5YR to 10YR, value of 4 to 6, and chroma of 4 to 8, or it does not have a dominant matrix hue and has masses of iron accumulation in shades of red, yellow, or brown and iron depletions in shades of gray. Brittle and hard bodies make up to 20 to 40 percent of the horizon, by volume. The horizon is sandy clay loam.

The BC horizon has hue of 2.5YR to 10YR, value of 4 to 6, and chroma of 4 to 8, or it does not have a dominant matrix hue and has masses of iron accumulation in shades of red, yellow, or brown and iron depletions in shades of gray. It is sandy loam or sandy clay loam.

The C, 2C, or 2Cd horizon has hue of 2.5YR to 10YR, value of 4 to 7, and chroma of 4 to 8, or it does not have a dominant matrix hue and has masses of iron accumulation in shades of red, yellow, or brown and iron depletions in shades of gray. It is coarse sandy loam, sandy loam, or sandy clay loam.

Alpin Series

The Alpin series consists of very deep, excessively drained, rapidly permeable soils that formed in sandy marine and aeolian sediments on uplands of the Carolina and Georgia Sand Hills and the Southern Coastal Plain Major Land Resource Areas. Slopes range from 0 to 15 percent. The soils are thermic, coated Argic Quartzipsamments.

Alpin soils are geographically associated with Ailey, Cowarts, Candor, Johnston, Pamlico, and Troup soils. Ailey, Cowarts, Candor, and Troup soils have argillic horizons. Johnston and Pamlico soils are very poorly drained.

Typical pedon of Alpin sand, 0 to 6 percent slopes; in Chesterfield County, South Carolina; 10 miles south on S.C. Highway 145 from its junction with S.C. Highway 9 in Chesterfield, 4 miles north on Forest Service Road Route-1, about 200 feet west on Forest Service Road Route-1A, about 200 feet north of the road:

A—0 to 10 inches; brown (10YR 5/3) sand; weak fine granular structure; very friable; many fine and medium roots; very strongly acid; clear wavy boundary.

E1—10 to 27 inches; brownish yellow (10YR 6/6) sand; single grained; loose; common fine and medium and few coarse roots; few clean sand grains; strongly acid; gradual wavy boundary.

E2—27 to 44 inches; strong brown (7.5YR 5/8) sand; single grained; loose; common fine and medium and few coarse roots; few clean sand grains; very strongly acid; gradual wavy boundary.

E3—44 to 49 inches; brownish yellow (10YR 6/6) sand; single grained; loose; few fine and medium roots; very strongly acid; gradual wavy boundary.

E and Bt—49 to 88 inches; very pale brown (10YR 7/3) sand; single grained; loose; few yellowish brown (10YR 5/6) lamellae of loamy sand about 0.4 inch thick and 4 inches apart; sand grains in lamellae are coated; common streaks of white (10YR 8/1) uncoated sand between lamellae; few fine and medium roots; very strongly acid.

The thickness of the sandy horizons is 80 inches or more. Reaction ranges from very strongly acid to slightly acid throughout the profile, except where the surface layer has been limed. Depth to lamellae ranges from 40 to 78 inches. The combined thickness of the lamellae ranges from 3 to 6 inches.

The A horizon has hue of 10YR, value of 4 or 5, and chroma of 1 to 3. It is sand.

The E horizon has hue of 7.5YR or 10YR, value of 5 to 7, and chroma of 3 to 8. It is sand.

The E part of the E and Bt horizon has hue of 10YR, value of 7 or 8, and chroma of 1 to 6. It is sand. The B part of the E and Bt horizon has hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 4 to 8. It is loamy sand or sandy loam.

Autryville Series

The Autryville series consists of very deep, well drained, moderately rapidly permeable soils that formed in loamy marine sediments on uplands of the Southern Coastal Plain Major Land Resource Area. Slopes range from 0 to 4 percent. The soils are loamy, siliceous, subactive, thermic Arenic Paleudults.

Autryville soils are geographically associated with Blanton, Bonneau, Candor, Noboco, and Rains soils. Blanton soils have a surface layer more than 40 inches thick. Bonneau soils are not bisequal. Candor soils have sandy Bt horizons between depths of 20 and 40 inches. Noboco soils do not have surface horizons that are 20 to 40 inches thick. Rains soils have gray horizons directly below the A horizon.

Typical pedon of Autryville sand, 0 to 4 percent slopes; in Darlington County, South Carolina; 0.6 mile northwest on Indian Branch Road from its junction with S.C. Highway 34 in Lydia, 1.65 miles west-northwest on Gallowaytown Road, 0.25 mile northeast into a field, 80 feet southwest of a wooded area:

Ap—0 to 9 inches; dark gray (10YR 4/1) sand; weak fine granular structure; very friable; many fine and medium roots; many fine pores; strongly acid; clear wavy boundary.

E—9 to 23 inches; light yellowish brown (10YR 6/4) sand; single grained; loose; few fine and medium roots; many fine pores; strongly acid; clear wavy boundary.

BE—23 to 28 inches; yellowish brown (10YR 5/6) loamy sand; weak fine subangular blocky structure; very friable; few fine roots; few fine pores; very strongly acid; gradual wavy boundary.

Bt—28 to 36 inches; yellowish brown (10YR 5/8) sandy loam; weak fine subangular blocky structure; friable; few fine roots; common fine pores; very strongly acid; gradual wavy boundary.

E´1—36 to 42 inches; brownish yellow (10YR 6/6) loamy sand; single grained; loose; moderately acid; gradual wavy boundary.

E´2—42 to 68 inches; very pale brown (10YR 7/4) sand; single grained; loose; moderately acid; gradual wavy boundary.

B´t—68 to 72 inches; yellowish brown (10YR 5/6) sandy clay loam; common medium distinct strong brown (7.5YR 5/8) mottles; weak fine subangular block structure; friable; common fine pores; few fine distinct light gray (10YR 7/1) and light brownish gray (10YR 6/2) iron depletions; strongly acid.

The thickness of the solum is more than 60 inches. Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 10YR, value of 4 to 6, and chroma of 1 to 3. It is sand.

The E horizon has hue of 10YR, value of 4 to 7, and chroma of 3 to 8. It is sand, fine sand, or loamy sand.

The Bt horizon has hue of 7.5YR or 10YR, value of 5 to 7, and chroma of 4 to 8. It is sandy loam, fine sandy loam, or sandy clay loam.

The E´ horizon has hue of 10YR, value of 5 to 7, and chroma of 1 to 8. It is sand, loamy sand, or loamy fine sand.

The B´t horizon has hue of 7.5YR or 10YR, value of 5 to 7, and chroma of 1 to 8. In most pedons it has masses of iron accumulation in shades of red or yellow and iron depletions in shades of gray. The horizon is sandy loam, fine sandy loam, or sandy clay loam.

Bibb Series

The Bibb series consists of very deep, poorly drained, moderately permeable soils that formed in loamy fluvial sediments on flood plains of the Southern Coastal Plain Major Land Resource Area. Slopes range from 0 to 2 percent. The soils are coarse-loamy, siliceous, active, acid, thermic Typic Fluvaquents.

Bibb soils are geographically associated with Chastain, Chewacla, Emporia, Hornsville, Johns, Johnston, Lumbee, and Pamlico soils. Chastain soils have a clayey particle-size control section. Chewacla soils do not have dominant chroma of 2 or less directly below the A or Ap horizon. Emporia, Hornsville, and Johns soils are better drained than the Bibb soils. Johnston soils have a coarse-loamy particle-size control section. Lumbee soils have argillic horizons. Pamlico soils have an organic surface layer.

Typical pedon of Bibb sandy loam, 0 to 2 percent slopes, frequently flooded; in Chesterfield County, South Carolina; 0.5 mile southwest of S.C. Highway 29 from its junction with S.C. Secondary Highway 22, about 1 mile west on an unpaved road, 0.2 mile southwest on the unpaved road, 56 feet south:

A—0 to 7 inches; dark grayish brown (10YR 4/2) sandy loam; weak fine granular structure; friable; many fine and medium and few coarse roots; few fine pores; very strongly acid; clear wavy boundary.

Cg1—7 to 35 inches; gray (10YR 5/1) loam; massive; friable; few fine and medium roots; few fine flakes of mica; very strongly acid; gradual wavy boundary.

Cg2—35 to 50 inches; gray (10YR 5/1) sandy loam; massive; friable; few fine roots; few fine flakes of mica; very strongly acid; gradual wavy boundary.

Cg3—50 to 60 inches; light brownish gray (10YR 6/2) sand; massive; very friable; few fine flakes of mica; very strongly acid.

Reaction is extremely acid to strongly acid throughout the profile, except where the surface layer has been limed. The content of flakes of mica is none or few.

The A horizon has hue of 10YR, value of 4 or 5, and chroma of 1 to 3. It is sandy loam or loam.

The Cg horizon has hue of 10YR, value of 4 to 6, and chroma of 1 or 2. It is sandy loam or loam. The lower part of the horizon ranges from sand to loamy sand.

Blanton Series

The Blanton series consists of very deep, somewhat excessively drained to moderately well drained, moderately permeable and moderately slowly permeable soils that formed in loamy marine sediments on uplands of the Carolina and Georgia Sand Hills and the Southern Coastal Plain Major Land Resource Areas. Slopes range from 0 to 10 percent. The soils are loamy, siliceous, subactive, thermic Grossarenic Paleudults.

Blanton soils are geographically associated with Ailey, Autryville, Bonneau, Candor, Coxville, Emporia, Foxworth, Noboco, Rains, Troup, and Uchee soils. Ailey, Autryville, Bonneau, Candor, and Uchee soils have arenic epipedons. Coxville and Rains soils have gray horizons directly below the surface layer. Foxworth soils do not have a Bt horizon. Troup soils have Bt horizons that have hue of 5YR or redder. Noboco and Emporia soils do not have grossarenic epipedons.

Typical pedon of Blanton sand, 0 to 6 percent slopes; in Darlington County, South Carolina; 0.1 mile south on Springville Road from its junction with Cashua Ferry Road, 30 feet east of the road:

Ap—0 to 5 inches; brown (10YR 5/3) loamy sand; weak fine granular structure; friable; many fine and medium roots; strongly acid; clear wavy boundary.

E1—5 to 21 inches; brownish yellow (10YR 6/6) sand; single grained; loose; common medium and coarse and few fine roots; strongly acid; gradual wavy boundary.

E2—21 to 44 inches; pale brown (10YR 6/4) sand; single grained; loose; few fine roots; medium distinct yellowish brown (10YR 5/6) masses of iron accumulation; strongly acid; gradual wavy boundary.

E3—44 to 54 inches; very pale brown (10YR 7/4) sand; single grained; loose; common fine distinct yellow (10YR 7/8) masses of iron accumulation; common medium light gray (10YR 7/1) clay depletions; strongly acid; gradual wavy boundary.

Bt1—54 to 64 inches; yellowish brown (10YR 5/6) sandy loam; weak medium subangular blocky structure; few distinct clay films on faces of peds; common fine pores; few fine distinct gray (10YR 6/1) iron depletions; strongly acid; gradual wavy boundary.

Bt2—64 to 72 inches; yellowish brown (10YR 5/6) sandy clay loam; moderate medium subangular blocky structure; friable; few distinct clay films on faces of peds; common medium prominent red (2.5YR 4/8) masses of iron accumulation; common medium distinct gray (10YR 6/1) iron depletions; strongly acid.

The thickness of the solum is more than 80 inches. Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 10YR, value of 4 or 5, and chroma of 2 to 4. It is sand.

The E horizon has hue of 7.5YR or 10YR, value of 5 to 8, and chroma of 1 to 8. It is sand.

The Bt horizon has hue of 7.5YR or 10YR, value of 5 to 7, and chroma of 3 to 8. In most pedons it has masses of iron accumulation in shades of red, yellow, or brown and iron depletions in shades of gray. It is sandy loam or sandy clay loam.

The Btg horizon has hue of 10YR or 2.5Y, value of 5 to 8, and chroma of 1 or 2. In most pedons it has masses of iron accumulation in shades of red, yellow, or brown. It is sandy loam, sandy clay, or loam.

Bonneau Series

The Bonneau series consists of very deep, well drained, moderately permeable soils that formed in loamy marine sediments on uplands of the Southern Coastal Plain Major Land Resource Area. Slopes range from 0 to 6 percent. The soils are loamy, siliceous, subactive, thermic Arenic Paleudults.

Bonneau soils are geographically associated with Ailey, Autryville, Blanton, Candor, Coxville, Emporia, Lucy, Noboco, Norfolk, Rains, Uchee, and Wagram soils. Ailey and Uchee soils are Hapludults. Autryville soils are bisequal. Blanton soils are grossarenic. Candor soils have sandy Bt horizons. Coxville and Rains soils have gray horizons directly below the surface layer. Lucy soils have Bt horizons that have hue of 5YR or redder. Noboco, Norfolk, and Emporia soils do not have arenic epipedons. Wagram soils have a kandic horizon.

Typical pedon of Bonneau sand, 0 to 6 percent slopes; in Darlington County, South Carolina; 0.1 mile northeast from the entrance of the Pee Dee Research and Education Center, 0.6 mile north on a paved road, 0.05 mile east, 100 feet north:

Ap—0 to 10 inches; grayish brown (10YR 5/2) sand; weak fine granular structure; very friable; few very fine roots; few clean sand grains; slightly acid; abrupt wavy boundary.

E1—10 to 19 inches; light yellowish brown (10YR 6/4) sand; weak fine granular structure; very friable; few very fine roots; moderately acid; gradual wavy boundary.

E2—19 to 38 inches; very pale brown (10YR 7/4) loamy sand; weak fine granular structure; friable; common medium faint light yellowish brown (10YR 6/4) masses of iron accumulation; strongly acid; gradual wavy boundary.

Bt1—38 to 42 inches; yellowish brown (10YR 5/6) sandy clay loam; weak medium subangular blocky structure; very friable; few very fine roots; common very fine pores; few distinct clay films on faces of peds; faces of some peds coated with clean sand grains; moderately acid; gradual wavy boundary.

Bt2—42 to 54 inches; yellowish brown (10YR 5/6) sandy clay loam; moderate medium subangular blocky structure; friable; few fine pores; many coarse clean sand grains; common medium distinct brown (10YR 5/3) and common medium prominent red (2.5YR 4/8) masses of iron accumulation; moderately acid; gradual wavy boundary.

Bt3—54 to 60 inches; brownish yellow (10YR 6/8) sandy clay loam; weak medium subangular blocky structure; friable; few distinct clay films on faces of peds; common clean sand grains; common medium prominent gray (10YR 5/1) iron depletions; common medium prominent red (2.5YR 4/6) masses of iron accumulation; strongly acid.

The thickness of the solum ranges from 60 to more than 80 inches. Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 10YR, value of 3 to 5, and chroma of 1 to 4. It is sand.

The E horizon has hue of 10YR, value of 4 to 6, and chroma of 2 to 6. It is sand.

The upper part of the Bt horizon has hue of 7.5YR or 10YR, value of 5 to 7, and chroma of 3 to 8. It is sandy loam or sandy clay loam. The lower part of the Bt horizon has hue of 7.5YR or 10YR, value of 5 to 7, and chroma of 3 to 8, or it does not have a dominant matrix hue and has masses of iron accumulation in shades of red, yellow, or brown and iron depletions in shades of gray. Iron depletions are within a depth of 60 inches. The Bt horizon is sandy loam, sandy clay loam, or sandy clay.

Candor Series

The Candor series consists of very deep, somewhat excessively drained, moderately permeable and moderately slowly permeable soils that formed in sandy and loamy marine sediments on uplands of the Carolina and Georgia Sand Hills and the Southern Coastal Plain Major Land Resource Areas. Slopes range from 0 to 15 percent. The soils are sandy, siliceous, thermic Arenic Paleudults.

Candor soils are geographically associated with Ailey, Alpin, Autryville, Blanton, Bonneau, Cowarts, Lucy, Troup, Uchee, and Wagram soils. Ailey soils are Hapludults. Alpin soils do not have an argillic horizon. Blanton and Troup soils have sandy surface horizons more than 40 inches thick. Autryville, Bonneau, Lucy, Uchee, and Wagram soils have loamy Bt horizons between depths of 20 and 40 inches. Cowarts soils do not have an arenic epipedon.

Typical pedon of Candor sand, 0 to 6 percent slopes; in Darlington County, South Carolina; east of Hartsville, 1.1 miles west on East Old Camden Road from its junction with S.C. Highway 102, about 0.7 mile north on Persimmons Drive, 0.1 mile north on an unpaved road, 0.1 mile east on a farm road, 30 feet east-northeast of the road:

A—0 to 3 inches; grayish brown (10YR 5/2) sand; weak fine granular structure; very friable; many fine roots; very strongly acid; clear wavy boundary.

E1—3 to 17 inches; light yellowish brown (10YR 6/4) sand; single grained; loose; few fine and medium roots; very strongly acid; abrupt wavy boundary.

E2—17 to 24 inches; very pale brown (10YR 7/3) sand; single grained; loose; few fine and medium roots; very strongly acid; abrupt wavy boundary.

Bt—24 to 42 inches; brownish yellow (10YR 6/8) loamy sand; weak medium subangular blocky structure; very friable; few fine to coarse roots; sand grains coated and bridged with clay; very strongly acid; gradual wavy boundary.

E´—42 to 70 inches; yellow (10YR 7/8) sand; single grained; loose; few decayed roots; common medium distinct white (10YR 8/1) clay depletions; many clean sand grains; very strongly acid; clear wavy boundary.

B´t—70 to 80 inches; yellowish brown (10YR 5/6) sandy loam; common medium distinct yellowish red (5YR 5/8) mottles; weak medium subangular blocky structure; friable; common medium distinct yellowish red (5YR 5/8) masses of iron accumulation; very strongly acid.

The thickness of the solum is more than 80 inches. Reaction ranges from extremely acid to strongly acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 10YR, value of 4 or 5, and chroma of 2 or 3. It is sand.

The E horizon has hue of 10YR, value of 5 to 7, and chroma of 3 to 6. It is sand.

The Bt horizon has hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 4 to 8. It is loamy sand.

The E´ horizon has hue of 7.5YR or 10YR, value of 5 to 8, and chroma of 3 to 8. It is sand.

The B´t horizon has hue of 5YR to 10YR, value of 5 or 6, and chroma of 4 to 8. In some pedons it has masses of iron accumulation in shades of red, yellow, or brown or iron depletions in shades of gray. It is sandy loam, fine sandy loam, or sandy clay loam.

Chastain Series

The Chastain series consists of very deep, poorly drained, slowly permeable soils that formed in clayey fluvial sediments on the flood plains of the Atlantic Coast Flatwoods Major Land Resource Area. Slopes range from 0 to 2 percent. The soils are fine, mixed, semiactive, acid, thermic Fluvaquentic Endoaquepts.

Chastain soils are geographically associated with Chewacla, Coxville, Riverview, Smithboro, Tarboro, and Wickham soils. Chewacla and Riverview soils do not have dominant chroma of 2 or less directly below the A or Ap horizon. Coxville, Smithboro, and Wickham soils have argillic horizons. Tarboro soils are sandy throughout.

Typical pedon of Chastain loam, 0 to 2 percent slopes, frequently flooded; in Dillon County, South Carolina; 3.25 miles northwest of Latta on S.C. Secondary Highway 48, about 2.5 miles northwest on S.C. Secondary Highway 29, about 0.5 mile on an unpaved road, 200 feet north in a wooded area:

A—0 to 5 inches; dark grayish brown (10YR 4/2) loam; weak fine granular structure; very friable; many fine and medium roots; common fine and medium pores; strongly acid; clear smooth boundary.

Bg1—5 to 10 inches; light brownish gray (10YR 6/2) clay loam; weak medium subangular blocky structure; friable; few fine roots; common fine pores; few medium distinct dark grayish brown (10YR 4/2), few coarse distinct brownish yellow (10YR 6/6), and few medium distinct brownish yellow (10YR 6/6) masses of iron accumulation; very strongly acid; gradual wavy boundary.

Bg2—10 to 30 inches; gray 10YR 5/1) clay; moderate medium subangular blocky structure; very firm; few fine roots; thin strata of fine sand; common medium distinct yellowish brown (10YR 5/8) masses of iron accumulation; few fine distinct light gray (10YR 7/1) iron depletions; very strongly acid; gradual smooth boundary.

Bg3—30 to 52 inches; gray (10YR 5/1) clay; moderate medium subangular blocky structure; very firm; thin strata of fine sand; few fine distinct yellowish brown (10YR 5/8) masses of iron accumulation; few fine distinct light gray (10YR 7/1) iron depletions; very strongly acid; gradual wavy boundary.

2Cg—52 to 72 inches; 50 percent light gray (10YR 6/1) and 50 percent gray (10YR 5/1) sand; single grained; few flakes of mica; very strongly acid.

Reaction ranges from extremely acid to moderately acid throughout the profile, except where the surface layer has been limed.

The A horizon has hue of 7.5YR or 10YR, value of 4 to 6, and chroma of 0 to 2. It is loam.

The Bg horizon has hue of 10YR or 2.5Y or is neutral in hue, has value of 4 to 7, and has chroma of 0 to 2. In some pedons it has masses of iron accumulation in shades of red, yellow, or brown. The horizon is silty clay loam, clay loam, silty clay, or clay.

The Cg or 2Cg horizon has hue of 10YR or 2.5Y or is neutral in hue, has value of 4 to 7, and has chroma of 0 to 2. In some pedons it has masses of iron accumulation in shades of red, yellow, or brown. The horizon is sand, loamy sand, or fine sand.

Chewacla Series

The Chewacla series consists of very deep, somewhat poorly drained, moderately permeable soils that formed in loamy fluvial sediments on flood plains along streams that drain the Southern Piedmont, the Southern Coastal Plain, and the Atlantic Coast Flatwoods Major Land Resource Areas. Slopes range from 0 to 2 percent. The soils are fine-loamy, mixed, active, thermic Fluvaquentic Dystrudepts.

Chewacla soils are geographically associated with Chastain, Hornsville, Riverview, Smithboro, and Wickham soils. Chastain soils have dominant chroma of 2 or less directly below the A or Ap horizon. Hornsville, Smithboro, and Wickham soils have argillic horizons. Riverview soils do not have mottles having chroma of 2 within a depth of 24 inches.

Typical pedon of Chewacla clay loam in an area of Chewacla-Chastain complex, 0 to 2 percent slopes, frequently flooded; in Chesterfield County, South Carolina; 6.2 miles south on U.S. Highway 52 from its junction with S.C. Highway 9, about 1.8 miles east of an unpaved road, 1.5 miles south on the unpaved road, 0.1 mile northeast on a logging road, about 20 feet west of the road:

Ap—0 to 7 inches; yellowish brown (10YR 5/4) clay loam; moderate fine granular and moderate medium subangular blocky structure; friable; common fine and few medium roots; common fine pores; few worm casts; very strongly acid; clear wavy boundary.

Bw1—7 to 14 inches; brownish yellow (10YR 6/6) loam; weak medium subangular blocky structure; friable; common fine roots; common fine pores; few flakes of mica; common medium distinct reddish yellow (7.5YR 7/6) masses of iron accumulation; common medium distinct gray (10YR 6/1) iron depletions; very strongly acid; gradual wavy boundary.

Bw2—14 to 22 inches; brownish yellow (10YR 6/6) loam; moderate medium subangular blocky structure; friable; common fine roots; common fine pores; few fine flakes of mica; common medium distinct reddish yellow (7.5YR 7/6) and few fine distinct yellowish red (5YR 5/8) masses of iron accumulation; common medium distinct gray (10YR 6/1) iron depletions; very strongly acid; gradual wavy boundary.

Bw3—22 to 38 inches; 40 percent light gray (10YR 7/1), 33 percent yellowish brown (10YR 5/6), and 27 percent red (10R 4/8) loam; moderate medium subangular

blocky structure; friable; few fine roots; common fine pores; common fine flakes of mica; strongly acid; gradual wavy boundary.

Bw4—38 to 50 inches; light gray (10YR 7/1) sandy loam and sandy clay loam; weak coarse subangular blocky structure; friable; few fine roots; common fine and medium pores; common fine flakes of mica; common coarse distinct strong brown (7.5YR 5/6) masses of iron accumulation; moderately acid; gradual wavy boundary.

Cg—50 to 65 inches; light gray (10YR 7/1) stratified loamy sand, sandy loam, and sandy clay loam; massive; friable; common fine flakes of mica; common clean sand grains; common medium distinct strong brown (7.5YR 5/6) masses of iron accumulation; strongly acid.

The thickness of the solum ranges from 15 to more than 70 inches. Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 5YR to 10YR, value of 3 to 5, and chroma of 1 to 4. It is loam.

The Bw horizon has hue of 5YR or 2.5Y, value of 4 to 7, and chroma of 3 to 8. In most pedons it has masses of iron accumulation in shades of red, yellow, or brown and iron depletions in shades of gray. It is sandy loam, fine sandy loam, silt loam, or silty clay loam.

The C or Cg horizon has hue of 7.5YR to 2.5Y, value of 4 to 7, and chroma of 1 to 8. In most pedons it has masses of iron accumulation in shades of red, yellow, or brown and iron depletions in shades of gray. It is stratified sand, loamy sand, sandy loam, or sandy clay loam.

Cowarts Series

The Cowarts series consists of deep, well drained, slowly permeable soils that formed in loamy marine sediments on uplands of the Carolina and Georgia Sand Hills and the Southern Coastal Plain Major Land Resource Areas. Slopes range from 2 to 25 percent. The soils are fine-loamy, kaolinitic, thermic Typic Kanhapludults.

Cowarts soils are geographically associated with Ailey, Alpin, Candor, Pelion, Troup, Uchee, and Vaucluse soils. Ailey, Candor, and Uchee soils are arenic. Alpin soils do not have an argillic horizon. Troup soils are grossarenic. Pelion soils have mottles in the upper 24 inches of the argillic horizon that are indicative of wetness and have chroma of 2 or less. Vaucluse soils have a solum that is more than 40 inches thick.

Typical pedon of Cowarts loamy sand in an area of Cowarts-Vaucluse complex, 10 to 15 percent slopes; in Darlington County, South Carolina; about 0.6 mile north on Patrick Highway from its junction with Old Camden Road, 0.6 mile northwest on Underbranch Road, 1.4 mile west on an unpaved road, 0.7 mile northwest on the unpaved road, 150 feet north:

A—0 to 6 inches; grayish brown (10YR 5/2) loamy sand; weak fine granular structure; friable; common fine and few medium and large roots; very strongly acid; clear smooth boundary.

Bt1—6 to 10 inches; brownish yellow (10YR 6/6) sandy clay loam; weak fine subangular blocky structure; friable; common fine and medium roots; few faint clay films on faces of peds; few medium distinct yellowish red (5YR 5/8) masses of iron accumulation; few medium distinct yellow (10YR 7/8) masses of iron accumulation; very strongly acid; smooth wavy boundary.

Bt2—10 to 21 inches; brownish yellow (10YR 6/6) sandy clay loam; weak medium subangular blocky structure; friable in part of the mass; few medium and coarse roots; 1-inch seam of pinkish gray (7.5YR 7/2) and white (10YR 8/1) sandy clay loam and sandy clay occurring in a vertical streak along a coarse root channel;

few faint clay films on faces of peds; 1 percent ironstone nodules; brittle, compact, and dense in about 40 percent of the mass; common coarse prominent red (2.5YR 5/8) masses of iron accumulation; few fine prominent light gray (10YR 8/1) balls of kaolin; very strongly acid; gradual wavy boundary.

BC—21 to 29 inches; red (2.5YR 5/8) sandy clay loam; weak coarse subangular blocky structure; very friable; 1-inch seam of pinkish gray (7.5YR 7/2) and white (10YR 8/1) sandy clay loam and sandy clay occurring in a vertical streak along a coarse root channel; few clean sand grains; common medium distinct yellow (10YR 6/8) masses of iron accumulation; few white balls of kaolin; very strongly acid; gradual wavy boundary.

C1—29 to 52 inches; reddish yellow (5YR 5/8) sandy loam; massive; friable; few coarse roots; 1-inch seam of pinkish gray (7.5YR 7/2) and white (10YR 8/1) sandy clay loam and sandy clay occurring in a vertical streak along a coarse root channel; few fine flakes of mica; few white balls of kaolin; few medium distinct yellow (10YR 7/6) masses of iron accumulation; very strongly acid; gradual wavy boundary.

C2—52 to 62 inches; yellowish red (5YR 5/6) sandy loam and sandy clay loam; massive; very friable; few fine to coarse flakes of mica; few fine white (10YR 8/1) balls of kaolin; common medium distinct yellow (10YR 7/6) masses of iron accumulation; very strongly acid.

The thickness of the solum ranges from 20 to 40 inches. Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 10YR, value of 4 or 5, and chroma of 2 to 4. It is loamy sand.

The Bt horizon has hue of 5YR to 10YR, value of 5 or 6, and chroma of 4 to 8. It is sandy loam, fine sandy loam, or sandy clay loam.

The BC horizon has hue of 10R to 10YR, value of 4 to 8, and chroma of 1 to 8. It is sandy loam, sandy clay loam, or sandy clay.

The C or Cd horizon has hue of 10R to 10YR, value of 4 to 8, and chroma of 1 to 8. It is loamy sand, sandy loam, sandy clay loam, or sandy clay, or it is stratified in textures ranging from loamy sand to clay.

Coxville Series

The Coxville series consists of very deep, poorly drained, moderately slowly permeable soils that formed in clayey marine sediments on uplands of the Southern Coastal Plain and the Atlantic Coast Flatwoods Major Land Resource Areas. Slopes range from 0 to 2 percent. The soils are fine, kaolinitic, thermic Typic Paleaquults.

Coxville soils are geographically associated with Faceville, Goldsboro, Lynchburg, Noboco, Norfolk, Persanti, Rains, and Smithboro soils. Faceville, Goldsboro, Lynchburg, Noboco, Norfolk, Persanti, and Smithboro soils do not have chroma of 2 or less directly below the A or Ap horizon. Rains soils are fine-loamy.

Typical pedon of Coxville sandy loam, 0 to 2 percent slopes; in Darlington County, South Carolina; 0.1 mile east on East Seven Pines Road from Oates, 2.1 miles east on Philadelphia Road, 0.1 mile south on a farm road, 15 feet east of the road:

Ap—0 to 9 inches; dark gray (10YR 4/1) sandy loam; weak medium granular structure; friable; few fine roots; slightly acid; gradual wavy boundary.

Btg1—9 to 19 inches; gray (10YR 6/1) sandy clay; moderate medium subangular blocky structure; friable; few fine and very fine roots; common fine pores; few distinct clay films on faces of peds and along root channels; few fine, medium, and

coarse clean sand grains; common medium distinct brownish yellow (10YR 6/6) masses of iron accumulation; very strongly acid; gradual wavy boundary.

Btg2—19 to 36 inches; gray (10YR 5/1) sandy clay; moderate medium subangular blocky structure; firm; few fine roots; common distinct clay films on faces of peds; common medium and coarse clean sand grains; common medium prominent red (2.5YR 4/8) and common medium distinct brownish yellow (10YR 6/8) masses of iron accumulation; very strongly acid; gradual wavy boundary.

Btg3—36 to 62 inches; gray (10YR 5/1) sandy clay; weak medium subangular blocky structure; firm; common distinct clay films on faces of peds and along root channels; common medium and coarse clean sand grains; few fine prominent red (2.5YR 4/8) and few medium distinct reddish yellow (7.5YR 6/8) masses of iron accumulation; very strongly acid.

The thickness of the solum is more than 60 inches. Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 10YR, value of 2 to 5, and chroma of 1 or 2. It is loam.

The Btg horizon has hue of 10YR or 2.5Y or is neutral in hue, has value of 4 or 7, and has chroma of 1 or 2. In some pedons it has masses of iron accumulation in shades of red, yellow, or brown. It is clay loam, sandy clay, or clay.

Dorovan Series

The Dorovan series consists of very deep, very poorly drained, moderately permeable soils that formed in partly decomposed organic matter on flood plains of the Southern Coastal Plain Major Land Resource Area. Slopes range from 0 to 2 percent. The soils are dysic, thermic Typic Haplosaprists.

Dorovan soils are geographically associated with Chastain, Johnston, and Wehadkee soils. These associated soils are mineral soils.

Typical pedon of Dorovan muck, 0 to 2 percent slopes, frequently flooded; in Kershaw County, South Carolina; 3.82 miles southeast of Elgin, 1.3 miles southwest of the junction of S.C. Highways 47 and 12, about 1.4 miles southeast of the junction of S.C. Highways 102 and 12, about 5,300 feet southeast of the junction of S.C. Highway 12 and a county road, 350 feet east of the county road, along a tributary of Spears Creek:

Oe—0 to 2 inches; very dark brown (10YR 2/2) hemic material consisting of roots, moss, leaves, and twigs in all stages of decomposition; about 50 percent fiber unrubbed, 25 percent fiber rubbed; nonsticky; extremely acid; clear wavy boundary.

Oa1—2 to 16 inches; black (10YR 2/1) sapric material; about 15 percent fiber unrubbed, less than 5 percent fiber rubbed; massive; nonsticky; many fine, medium, and coarse roots; common partly decomposed stumps, logs, and roots; extremely acid; gradual wavy boundary.

Oa2—16 to 66 inches; black (10YR 2/1) sapric material; about 10 percent fiber unrubbed, less than 2 percent fiber rubbed; massive; nonsticky; few fine, medium, and coarse roots; few partly decomposed wood fragments; extremely acid; gradual wavy boundary.

2Cg—66 to 80 inches; gray (10YR 4/1) sand; single grained; loose; many uncoated grains of white quartz sand; few fine flakes of mica; very strongly acid.

The organic material is more than 54 inches thick. Reaction ranges from extremely acid to strongly acid throughout the profile, except where the surface layer has been limed.

The Oe horizon has hue of 10YR, value of 2, and chroma of 1 or 2. It is hemic material that is 40 to 70 percent fiber unrubbed.

The Oa horizon has hue of 10YR, value of 2, and chroma of 1, or it is neutral in hue and has value of 2. This horizon is sapric material that is 10 to 25 percent fiber unrubbed.

The C horizon has hue of 10YR, value of 4 to 6, and chroma of 1 or 2. It is sand, loamy sand, sandy loam, loam, or clay.

Emporia Series

The Emporia series consist of very deep, well drained, moderately slowly permeable and slowly permeable soils that formed in loamy marine sediments on uplands of the Southern Coastal Plain Major Land Resource Area. Slopes range from 0 to 10 percent. The soils are fine-loamy, siliceous, subactive, thermic Typic Hapludults.

Emporia soils are geographically associated with Bonneau, Coxville, Faceville, Hornsville, Noboco, Norfolk, Uchee, and Wagram soils. Bonneau, Uchee, and Wagram soils have A and E horizons more than 20 inches thick. Hornsville soils have gray mottles having chroma of 2 or less within the upper 24 inches of the argillic horizon. Coxville soils have dominant chroma of 2 or less directly below the A or Ap horizon. Faceville, Noboco, and Norfolk soils are Paleudults.

Typical pedon of Emporia loamy sand, 2 to 6 percent slopes; in Marlboro County, South Carolina; 4.7 miles south on S.C. Highway 38 from its junction with U.S. Highways 15 and 401, about 2.2 miles east on Coxe Road, 500 feet north of the road:

Ap—0 to 4 inches; dark grayish brown (10YR 4/2) loamy sand; weak fine granular structure; friable; common fine roots; moderately acid; abrupt wavy boundary.

Bt1—4 to 11 inches; light yellowish brown (10YR 6/4) fine sandy loam; weak fine subangular blocky structure; very friable; common fine pores; few coarse sand grains; strongly acid; clear wavy boundary.

Bt2—11 to 21 inches; brownish yellow (10YR 6/6) fine sandy loam; weak medium subangular blocky structure; friable; common fine and medium pores; few distinct clay films on faces of peds; strongly acid; clear wavy boundary.

Bt3—21 to 37 inches; yellowish brown (10YR 5/8) sandy clay loam; moderate medium subangular blocky structure; friable; few fine and medium roots; common fine and medium pores; few coarse clean sand grains; few distinct clay films on faces of peds; few fine flakes of mica; common medium distinct yellowish brown (10YR 5/8) masses of iron accumulation; strongly acid; clear wavy boundary.

Bt4—37 to 45 inches; brownish yellow (10YR 6/6) sandy clay; weak fine subangular blocky structure; firm; few distinct clay films on faces of peds; few fine flakes of mica; common medium prominent red (2.5YR 4/8) and common medium distinct reddish yellow (7.5YR 6/6) masses of iron accumulation; few medium distinct light gray to gray (10YR 6/1) iron depletions; strongly acid; clear wavy boundary.

BC—45 to 60 inches; 38 percent reddish yellow (7.5YR 6/8), 38 percent red (2.5YR 5/8), and 24 percent gray (10YR 6/1) coarse sandy loam; weak medium subangular blocky structure; friable; few fine pores; very few distinct light gray to gray (10YR 6/1) clay films on faces of peds; very weakly cemented; common fine and medium flakes of mica; 2 percent pebbles of quartzite; strongly acid.

The thickness of the solum ranges from 40 to 60 inches. Reaction ranges from very strongly acid to moderately acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 10YR, value of 4 to 6, and chroma of 2 to 4. It typically is loamy sand. In eroded areas it is sandy loam.

The Bt horizon has hue of 5YR to 10YR, value of 4 to 6, and chroma of 3 to 8. In most pedons it has masses of iron accumulation in shades of red, yellow, or brown and iron depletions in shades of gray. Iron depletions commonly occur below a depth of 36 inches. The horizon is fine sandy loam, sandy clay loam, clay loam, or sandy clay.

The BC horizon has hue of 5YR to 2.5Y, value of 4 to 6, and chroma of 3 to 8, or it does not have a dominant matrix hue and has masses of iron accumulation in shades of red, yellow, or brown and iron depletions in shades of gray. It is sandy loam, sandy clay loam, clay loam, sandy clay, or clay.

Eunola Series

The Eunola series consists of very deep, moderately well drained, moderately permeable soils that formed in loamy marine and fluvial sediments on uplands and stream terraces of the Southern Coastal Plain Major Land Resource Area. Slopes range from 0 to 2 percent. The soils are fine-loamy, siliceous, semiactive, thermic Aquic Hapludults.

Eunola soils are geographically associated with Coxville, Emporia, Hornsville, Lumbee, Rains, Smithboro, and Wickham soils. Coxville, Lumbee, and Rains soils have gray horizons directly below the A horizon. Smithboro soils have gray Bt horizons within a depth of 30 inches. Emporia and Wickham soils do not have mottles having chroma of 2 within a depth of 30 inches. Hornsville soils are clayey.

Typical pedon of Eunola loamy sand, 0 to 2 percent slopes; in Darlington County, South Carolina; 5.9 miles east on Pocket Road from its junction with Cashua Ferry Road, 30 feet west from the entrance of the Pee Dee Research and Education Center, 0.2 mile north on an unpaved road, 0.3 mile west, 200 feet south, 75 feet west:

Ap—0 to 7 inches; grayish brown (10YR 5/3) loamy sand; weak fine subangular blocky structure; very friable; common fine and medium roots; strongly acid; abrupt wavy boundary.

E—7 to 17 inches; light yellowish brown (10YR 6/4) loamy sand; weak fine subangular blocky structure; very friable; strongly acid; clear wavy boundary.

Bt1—17 to 30 inches; brownish yellow (10YR 6/6) sandy clay loam; weak medium subangular blocky structure; friable; few fine roots; few fine pores; very strongly acid; gradual wavy boundary.

Bt2—30 to 47 inches; yellowish brown (10YR 6/6) sandy loam and sandy clay loam; weak medium subangular blocky structure; friable; common medium distinct gray (10YR 6/1) iron depletions; few medium distinct brown (7.5YR 5.6) masses of iron accumulation; very strongly acid; gradual wavy boundary.

BCg—47 to 60 inches; gray (10YR 6/1) sandy loam; massive; friable; common medium faint light gray (10YR 7/1) iron depletions; very strongly acid.

The thickness of the solum ranges from 40 to more than 60 inches. Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 10YR, value of 2 to 6, and chroma of 1 to 4. It is loamy sand.

The E horizon has hue of 10YR, value of 5 to 7, and chroma of 3 to 4. It is loamy sand.

The upper part of the Bt horizon has hue of 10YR to 7.5YR, value of 5 to 7, and chroma of 3 to 8. In some pedons it has masses of iron accumulation in shades of red, yellow, or brown. It is sandy loam or sandy clay loam.

The lower part of the Bt or Btg horizon has hue of 10YR, value of 4 to 8, and chroma of 1 to 8. It has few or common iron depletions within the upper 24 inches of

the argillic horizon that are indicative of wetness. This part has masses of iron accumulation in shades of red or yellow in most pedons, or it does not have a dominant matrix hue and has masses of iron accumulation in shades of red, yellow, or brown and iron depletions in shades of gray. It is sandy clay loam, sandy clay, or clay loam.

The Cg horizon, if it occurs, has hue of 10YR, value of 4 to 8, and chroma of 0 to 2. In some pedons it has masses of iron accumulation in shades of red, yellow, or brown. It is sand, loamy sand, or sandy loam, or it is stratified in these textures.

Faceville Series

The Faceville series consist of very deep, well drained, moderately permeable soils that formed in clayey marine sediments on uplands of the Southern Coastal Plain Major Land Resource Area. Slopes range from 0 to 6 percent. The soils are fine, kaolinitic, thermic Typic Kandiudults.

Faceville soils are geographically associated with Bonneau, Coxville, Emporia, Lucy, Noboco, Norfolk, Orangeburg, and Wagram soils. Bonneau, Lucy, and Wagram soils have A and E horizons that are more than 20 inches thick. Coxville soils have dominant chroma of 2 or less directly below the A or Ap horizon. Emporia, Noboco, and Norfolk soils have less than 35 percent clay in the Bt horizons. Orangeburg soils have a fine-loamy control section.

Typical pedon of Faceville loamy sand, 2 to 6 percent slopes; in Darlington County, South Carolina; 9.0 miles north on Society Hill Road from its junction with Cashua Street, 0.17 mile west on a farm lane, 100 feet north, in a field:

Ap—0 to 11 inches; brown (10YR 5/3) loamy sand; weak fine subangular blocky structure; friable; few fine roots; slightly acid; clear wavy boundary,

Bt1—11 to 19 inches; red (2.5YR 4/8) clay loam; weak medium subangular blocky structure; friable; few fine roots; few fine pores; few distinct clay films on faces of peds; few coarse clean sand grains; very strongly acid; gradual wavy boundary.

Bt2—19 to 48 inches; red (2.5YR 5/8) clay loam; weak medium subangular blocky structure; friable; few fine pores; common distinct clay films on faces of peds; very strongly acid; gradual wavy boundary.

Bt3—48 to 70 inches; red (2.5YR 4/8) clay; weak medium subangular blocky structure; friable; common distinct clay films on faces of peds; very strongly acid; gradual wavy boundary.

Bt4—70 to 73 inches; red (2.5YR 4/8) clay loam; moderate medium subangular blocky structure; friable; few ironstone nodules; 2 percent plinthite; very strongly acid.

The thickness of the solum is more than 60 inches. Reaction ranges from very strongly acid to moderately acid throughout the profile, except where the surface layer has been limed. Some pedons have as much as 4 percent plinthite below a depth of 40 inches.

The A or Ap horizon typically has hue of 5YR to 10YR, value of 4 or 5, and chroma of 2 to 8. In eroded areas it has hue of 2.5YR to 10YR, value of 4 or 5, and chroma of 2 to 8. The horizon has 0 to about 5 percent ironstone nodules. It typically is loamy sand or sandy loam. In eroded areas it is sandy clay loam.

The Bt horizon has hue of 2.5YR or 5YR, value of 4 or 5, and chroma of 6 or 8. It is sandy clay, clay loam, or clay.

Foxworth Series

The Foxworth series consists of very deep, somewhat excessively drained, rapidly permeable soils that formed in sandy marine sediments on uplands of the Southern

Coastal Plain Major Land Resource Area. Slopes range from 0 to 4 percent. The soils are thermic, coated Typic Quartzipsamments.

Foxworth soils are geographically associated with Ailey, Alpin, Autryville, Bonneau, Blanton, Candor, Lakeland, Lucy, Noboco, Troup, and Uchee soils. Alpin soils do not have mottles indicative of wetness and have lamellae. Lakeland soils do not have a high water table within a depth of 48 inches. Ailey, Autryville, Blanton, Bonneau, Candor, Lucy, Noboco, Troup, and Uchee soils have argillic horizons.

Typical pedon of Foxworth sand, 0 to 6 percent slopes; in Darlington County, South Carolina; 0.6 mile west on Bay Road from its junction with West Bo Bo Newsome Highway, 0.5 mile southeast on an unpaved road, 0.2 mile southwest on the unpaved road, 120 feet east of the road, 15 feet west:

Ap—0 to 3 inches; dark gray (10YR 4/1) sand; single grained; loose; common fine and medium and few coarse roots; very strongly acid; clear wavy boundary.

C1—3 to 28 inches; strong brown (7.5YR 5/6) sand; single grained; loose; common fine roots; very strongly acid; gradual wavy boundary.

C2—28 to 44 inches; strong brown (7.5YR 5/6) sand; single grained; loose; few fine roots; very strongly acid; gradual wavy boundary.

C3—44 to 52 inches; yellow (10YR 7/6) sand; single grained; loose; few fine roots; very strongly acid; clear wavy boundary.

C4—52 to 70 inches; light gray (10YR 7/1) sand; single grained; loose; common fine distinct yellow (10YR 7/6) masses of iron accumulation; very strongly acid; gradual wavy boundary.

C5—70 to 80 inches; white (10YR 8/1) sand; single grained; loose; common coarse sand grains; very strongly acid.

The sand is more than 80 inches thick. Reaction ranges from very strongly acid to moderately acid throughout the profile, except where the surface layer has been limed. The depth to iron depletions ranges from 48 to 60 inches.

The A or Ap horizon has hue of 7.5YR or 10YR, value of 3 to 5, and chroma of 1 to 3. It is sand.

The upper part of the C horizon has hue of 10YR, value of 5 to 7, and chroma of 3 to 8. The lower part has hue of 10YR, value of 5 to 8, and chroma of 1 to 6. It has few to many iron depletions. The C horizon is sand.

Goldsboro Series

The Goldsboro series consists of very deep, moderately well drained, moderately permeable soils that formed in loamy marine sediments on uplands of the Southern Coastal Plain Major Land Resource Area. Slopes range from 0 to 2 percent. The soils are fine-loamy, siliceous, subactive, thermic Aquic Paleudults.

Goldsboro soils are geographically associated with Coxville, Hornsville, Noboco, Norfolk, Persanti, and Rains soils. Coxville and Rains soils have gray horizons directly below the A horizon. Persanti and Hornsville soils have a clayey particle-size control section. Noboco and Norfolk soils do not have mottles having chroma of 2 within a depth of 30 inches.

Typical pedon of Goldsboro sandy loam, 0 to 2 percent slopes; in Darlington County, South Carolina; 2.2 miles southwest on High Hill Road from its junction with U.S. Highway 52 Bypass, 0.2 mile east on a farm road, 1.5 south of the road:

Ap—0 to 8 inches; brown (10YR 5/3) sandy loam; weak fine subangular blocky structure; friable; few very fine roots; few clean sand grains; slightly acid; clear wavy boundary.

Bt1—8 to 24 inches; brownish yellow (10YR 6/6) sandy clay loam; weak medium subangular blocky structure; friable; common fine pores; few distinct clay films on faces of peds; few clean sand grains; very strongly acid; gradual wavy boundary.

Bt2—24 to 35 inches; brownish yellow (10YR 6/6) sandy clay loam; weak medium subangular blocky structure; friable; common fine pores; few distinct clay films on faces of peds; common medium prominent red (2.5YR 4/8) masses of iron accumulation; common medium distinct gray (10YR 6/1) iron depletions; very strongly acid; gradual wavy boundary.

Btg1—35 to 47 inches; gray (10YR 6/1) sandy clay loam; weak medium subangular blocky structure; friable; common fine pores; few clean sand grains; few clay films on faces of peds; many medium distinct brownish yellow (10YR 6/8) masses of iron accumulation; common medium prominent (2.5YR 4/8) iron depletions; very strongly acid; gradual wavy boundary.

Btg2—47 to 60 inches; gray (10YR 6/1) sandy clay loam; weak medium subangular blocky structure; friable; few medium distinct brownish yellow (10YR 6/8) masses of iron accumulation; very strongly acid.

The thickness of the solum is more than 60 inches. Reaction ranges from extremely acid to strongly acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 10YR, value of 4 or 5, and chroma of 2 or 3. It is sandy loam.

The upper part of the Bt horizon has hue of 10YR, value of 4 to 6, and chroma of 3 to 8. The lower part has hue of 10YR, value of 5 or 6, and chroma of 3 to 8. It has few or common iron depletions indicative of wetness within a depth of 18 to 30 inches. This horizon is sandy clay loam.

The Btg horizon has hue of 10YR, value of 5 or 6, and chroma of 1 or 2. In most pedons it has masses of iron accumulation in shades of red, yellow, or brown. It is sandy clay loam or clay loam.

Hornsville Series

The Hornsville series consists of very deep, moderately well drained, moderately slowly permeable soils that formed in clayey marine sediments on uplands and stream terraces of the Atlantic Coast Flatwoods and the Southern Coastal Plain Major Land Resource Areas. Slopes range from 0 to 6 percent. The soils are fine, kaolinitic, thermic Aquic Hapludults.

The Hornsville soils are geographically associated with Chastain, Emporia, Nankin, Noboco, Norfolk, Smithboro, Uchee, and Wickham soils. Chastain soils are poorly drained and do not have argillic horizons. Emporia and Wickham soils have a fine-loamy particle-size control section. Noboco and Norfolk soils do not have mottles having chroma of 2 within a depth of 48 inches. Smithboro soils have mottles having chroma of 2 directly below the A or Ap horizon. Uchee soils have A and E horizons that are more than 20 inches thick. Nankin soils do not have iron depletions within 24 inches of the top of the argillic horizon.

Typical pedon of Hornsville sandy loam, 0 to 2 percent slopes; in Chesterfield County, South Carolina; 0.4 mile north of the junction of U.S. Highway 52 and S.C. Highway 20, about 0.9 mile east on a farm road, 0.3 mile southeast on the farm road:

Ap—0 to 7 inches; dark yellowish brown (10YR 4/4) sandy loam; weak fine granular structure; very friable; few fine roots; slightly acid; abrupt wavy boundary.

Bt1—7 to 18 inches; brownish yellow (10YR 6/6) clay; moderate medium subangular blocky structure; firm; few fine roots; common distinct clay films on faces of peds; few fine distinct yellowish red (5YR 5/8) masses of iron accumulation; strongly acid; gradual wavy boundary.

Bt2—18 to 36 inches; yellowish brown (10YR 5/6) sandy clay; moderate medium subangular blocky structure; firm; few fine roots; few fine pores; common distinct clay films on faces of peds; many medium prominent yellow (10YR 7/8) and common medium distinct yellowish red (5YR 5/8) masses of iron accumulation; common medium distinct gray (10YR 6/1) iron depletions; strongly acid; gradual wavy boundary.

BC—36 to 45 inches; 33 percent brownish yellow (10YR 6/6), 33 percent light gray (10YR 7/1), 20 percent red (2.5YR 4/8), and 14 percent reddish yellow (7.5YR 6/8) sandy loam and sandy clay loam; weak medium subangular blocky structure; friable; few fine flakes of mica; few distinct clay films on faces of peds; very strongly acid; gradual wavy boundary.

C—45 to 60 inches; 50 percent light gray (N 7/0) and 50 percent reddish yellow (7.5YR 6/8) sandy loam; massive; friable; few fine flakes of mica; very strongly acid.

The thickness of the solum ranges from 40 to more than 60 inches. Reaction ranges from extremely acid to moderately acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 10YR, value of 2 to 4, and chroma of 1 to 4. It is loam.

The Bt horizon has hue of 7.5YR or 10YR, value of 5 to 7, and chroma of 4 to 8. In some pedons it has masses of iron accumulation in shades of red, yellow, or brown. It has iron depletions within its upper 24 inches. The horizon is clay loam, sandy clay, or clay.

The BC horizon has hue of 10YR, value of 5 to 6, and chroma of 1 or 2, or it does not have a dominant matrix hue and has masses of iron accumulation in shades of red, yellow, or brown and iron depletions in shades of gray. It is sandy loam or sandy clay loam, or it is stratified in loamy and clayey textures.

The C horizon does not have a dominant matrix hue and has masses of iron accumulation in shades of red, yellow, or brown and iron depletions in shades of gray. It is sandy loam, fine sandy loam, or sandy clay loam, or it is stratified in loamy and clayey textures.

Johns Series

The Johns series consists of very deep, moderately well drained, moderately permeable soils that formed in loamy marine and fluvial sediments on stream terraces of the Southern Coastal Plain Major Land Resource Area. Slopes range from 0 to 2 percent. The soils are fine-loamy over sandy or sandy-skeletal, siliceous, semiactive, thermic Aquic Hapludults.

Johns soils are geographically associated with Eunola, Foxworth, Johnston, Leon, and Lumbee soils. Eunola soils have a solum that is more than 40 inches thick. Foxworth soils do not have an argillic horizon. Johnston soils are very poorly drained. Leon soils have a spodic horizon. Lumbee soils are wetter than the Johns soils.

Typical pedon of Johns loamy sand, 0 to 2 percent slopes, rarely flooded; in Darlington County, South Carolina; 2.0 miles north on Leavensworth Road from its junction with Floyds Road, 1.0 mile on Everlasting Branch Road, 0.5 mile west on Black Creek Road, 800 feet north of the road:

Ap—0 to 9 inches; very dark grayish brown (10YR 3/2) loamy sand; weak fine subangular blocky structure; very friable; common fine and medium roots; moderately acid; clear smooth boundary.

E—9 to 14 inches; brown (10YR 5/3) loamy sand; weak fine subangular blocky structure; very friable; moderately acid; clear wavy boundary.

Bt1—14 to 21 inches; yellowish brown (10YR 5/4) sandy clay loam; weak medium subangular blocky structure; friable; few fine roots; few fine pores; very strongly acid; gradual wavy boundary.

Bt2—21 to 26 inches; yellowish brown (10YR 6/6) sandy clay loam; weak medium subangular blocky structure; friable; few medium distinct yellowish red (5YR 5/6) and brownish yellow (10YR 6/6) masses of iron accumulation; common medium distinct light brownish gray (10YR 6/2) iron depletions; very strongly acid; gradual wavy boundary.

Bt3—26 to 37 inches; brown (10YR 5/3) sandy loam; weak medium subangular blocky structure; friable; few medium distinct yellowish red (5YR 5/6) and yellowish brown (10YR 5/6) masses of iron accumulation; common medium distinct light brownish gray (10YR 6/1) iron depletions; very strongly acid; gradual wavy boundary.

2Cg1—37 to 72 inches; light gray (10YR 7/1) coarse sand; single grained; loose; very strongly acid; gradual wavy boundary.

2Cg2—72 to 80 inches; white (10YR 8/1) coarse sand; single grained; loose; very strongly acid.

The thickness of the solum ranges from 20 to 40 inches. Reaction is very strongly acid or strongly acid, except where the surface layer has been limed.

The A or Ap horizon has hue of 10YR, value of 3 to 5, and chroma of 0 to 3. It is loamy sand.

The E horizon has hue of 10YR, value of 5 to 7, and chroma of 3 to 4. It is loamy sand.

The Bt horizon has hue of 10YR to 7.5YR, value of 5 to 7, and chroma of 4 to 8. In most pedons it has masses of iron accumulation in shades of red or yellow and iron depletions in shades of gray. It is sandy loam or sandy clay loam.

The 2Cg horizon has hue of 10YR, value of 4 to 8, and chroma of 0 to 2. It is loamy sand or sand.

Johnston Series

The Johnston series consists of very deep, very poorly drained, moderately rapidly permeable soils that formed in loamy stratified fluvial sediments on flood plains of the Southern Coastal Plain and the Carolina and Georgia Sand Hills Major Land Resource Areas. Slopes range from 0 to 2 percent. The soils are coarse-loamy, siliceous, active, acid, thermic Cumulic Humaquepts.

Johnston soils are geographically associated with Ailey, Alpin, Bibb, Blanton, Candor, Pamlico, Ponzer, and Uchee soils. Ailey, Blanton, Candor, and Uchee soils are Udults and are on uplands. Alpin soils are Quartzipsamments and are on uplands. Bibb soils do not have an umbric epipedon. Pamlico and Ponzer soils are organic.

Typical pedon of Johnston sandy loam, 0 to 2 percent slopes, frequently flooded; in Chesterfield County, South Carolina; 0.5 mile south on S.C. Highway 20 from its junction with U.S. Highway 1 south of Cheraw, 50 feet east in a wooded area:

A1—0 to 25 inches; black (10YR 2/1) sandy loam; massive; friable; many fine and medium and few coarse roots; strongly acid; clear wavy boundary.

A2—25 to 38 inches; very dark gray (10YR 3/1) sandy loam that has streaks of light gray (10YR 7/1) sand; massive; friable; many fine and medium and few coarse roots; few decayed roots; very strongly acid; gradual wavy boundary.

Cg1—38 to 45 inches; gray (10YR 4/1) loamy sand that has streaks of gray (10YR 5/1) sand; massive; very friable; common fine and medium roots; few decayed roots; few fine flakes of mica; very strongly acid; gradual wavy boundary.

Cg2—45 to 60 inches; light brownish gray (10YR 6/2) sand; single grained; loose; few medium and coarse roots; common decayed roots; few fine flakes of mica; very strongly acid.

Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed.

The A horizon has hue of 10YR or 2.5Y or is neutral in hue, has value of 2 or 3, and has chroma of 0 to 2. It is sandy loam.

The Cg horizon has hue of 10YR or 2.5Y or is neutral in hue, has value of 4 to 6, and has chroma of 0 to 2. It is sand, loamy sand, sandy loam, or loam, or it is stratified with textures ranging from sandy clay loam to sand.

Kenansville Series

The Kenansville series consists of very deep, well drained, moderately rapidly permeable soils that formed in sandy and loamy marine sediments on uplands and stream terraces of the Carolina and Georgia Sand Hills and the Southern Coastal Plain Major Land Resource Areas. Slopes range from 0 to 4 percent. The soils are loamy, siliceous, subactive, thermic Arenic Hapludults.

Kenansville soils are geographically associated with Ailey, Alpin, Candor, Pelion, and Vaucluse soils. Ailey soils are dense and compact in the B and C horizons. Alpin soils are Quartzipsamments. Candor soils have a sandy particle-size control section. Pelion and Vaucluse soils are not in an arenic subgroup.

Typical pedon of Kenansville sand, 0 to 4 percent slopes; in Chesterfield County, South Carolina; 5 miles south on U.S. Highway 1 from Patrick, 1.5 miles south on S.C. Highway 29, about 0.7 mile northeast on S.C. Highway 493, about 0.2 mile north on a field road, 0.2 mile west on a trail, 25 feet north of the trail:

A—0 to 8 inches; brown (10YR 5/3) sand; weak fine granular structure; very friable; many fine roots; few clean sand grains; very strongly acid; gradual wavy boundary.

E1—8 to 20 inches; light yellowish brown (10YR 6/4) sand; weak fine granular structure; very friable; few fine roots; few clean sand grains; very strongly acid; gradual wavy boundary.

E2—20 to 30 inches; very pale brown (10YR 7/3) sand; weak fine granular structure; very friable; few fine roots; few clean sand grains; strongly acid; gradual wavy boundary.

Bt—30 to 41 inches; brownish yellow (10YR 6/8) sandy loam; weak fine subangular blocky structure; very friable; few fine roots; few fine pores; few clean sand grains; very strongly acid; gradual wavy boundary.

BC—41 to 52 inches; yellowish brown (10YR 5/6) loamy sand; common medium faint strong brown (7.5YR 5/6) mottles; weak fine granular structure; very friable; common fine distinct white (10YR 8/1) balls of kaolin; very strongly acid; gradual wavy boundary.

C—52 to 70 inches; brownish yellow (10YR 6/6) sand; few medium distinct strong brown (7.5YR 5/6) mottles; single grained; loose; few clean sand grains; common fine distinct white (10YR 8/1) balls of kaolin; very strongly acid.

The thickness of the solum ranges from 40 to 60 inches. Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed.

The A horizon has hue of 10YR, value of 4 or 5, and chroma of 2 or 3. It is sand.

The E horizon has hue of 10YR, value of 6 or 7, and chroma of 3 to 6. It is sand or loamy sand.

The Bt horizon has hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 4 to 8. It is sandy loam.

The C horizon has hue of 10YR, value of 6 to 8, and chroma of 4 or 6. It is sand.

Lakeland Series

The Lakeland series consists of very deep, excessively drained, rapidly permeable soils that formed in sandy marine, eolian, or fluvial sediments on uplands and stream terraces of the Southern Coastal Plain and the Atlantic Coast Flatwoods Major Land Resource Areas. Slopes range from 0 to 10 percent. The soils are thermic, coated Typic Quartzipsamments.

Lakeland soils are geographically associated with Alpin, Blanton, Candor, Foxworth, and Troup soils. Alpin soils have lamellae that have a combined thickness of 6 inches within a depth of 80 inches. Foxworth soils have a high water table within a depth of 48 inches. Blanton, Candor, and Troup soils have argillic horizons.

Typical pedon of Lakeland sand, 6 to 10 percent slopes; in Darlington County, South Carolina; 3.1 miles east on Georgetown Highway from the Darlington-Florence County line, 0.7 mile east on Whipple Landing Drive, 0.1 mile east, 0.1 mile southeast, 100 feet south, 50 feet west:

A—0 to 4 inches; dark grayish brown (10YR 4/2) sand; single grained; loose; many fine and medium and few coarse roots; very strongly acid; clear wavy boundary.

C1—4 to 23 inches; brownish yellow (10YR 6/6) sand; single grained; loose; common fine and medium and few coarse roots; very strongly acid; clear wavy boundary.

C2—23 to 50 inches; very pale brown (10YR 7/4) sand; single grained; loose; few medium roots; very strongly acid; gradual wavy boundary.

C3—50 to 80 inches; yellow (10YR 7/6) sand; single grained; loose; few fine roots; very strongly acid.

The sand is more than 80 inches thick. Reaction ranges from very strongly acid to moderately acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 10YR, value of 3 to 5, and chroma of 1 to 3. It is sand.

The C horizon has hue of 10YR, value of 4 to 7, and chroma of 3 to 8. It is sand.

Leon Series

The Leon series consists of very deep, poorly drained, moderately rapidly permeable soils that formed in sandy marine sediments on uplands and stream terraces of the Southern Coastal Plain and the Atlantic Coast Flatwoods Major Land Resource Areas. Slopes range from 0 to 2 percent. The soils are sandy, siliceous, thermic Aeric Alaquods.

Leon soils are geographically associated with Blanton, Foxworth, Johns, Johnston, Lumbee, and Rains soils. These associated soils do not have a spodic horizon.

Typical pedon of Leon sand, 0 to 2 percent slopes; in Darlington County, South Carolina; about 2.5 miles north on Society Hill Road from its junction with Cashua Ferry Road, 0.9 mile north on Lide Spring Road, 0.8 mile north, 0.05 mile west, 0.1 mile south:

Ap—0 to 5 inches; black (N 2.5/0) sand; single grained; friable; few very fine and fine roots; many clean sand grains; very strongly acid; abrupt wavy boundary.

E—5 to 13 inches; light gray (N 7/0) sand; single grained; very friable; few very fine roots; very strongly acid; clear wavy boundary.

Bh1—13 to 19 inches; black (10YR 2/1) sand; massive; friable; very strongly acid; diffuse wavy boundary.

Bh2—19 to 27 inches; very dark grayish brown (10YR 3/2) sand; single grained; friable; very strongly acid; gradual wavy boundary.

E´—27 to 38 inches; dark grayish brown (10YR 4/2) sand; single grained; very friable; few pockets of white (10YR 8/1) sand; very strongly acid; clear wavy boundary.

B´h—38 to 51 inches; black (10YR 2/1) sand; massive; few medium and coarse roots; few pockets of white (10YR 8/1) sand; very strongly acid; gradual wavy boundary.

Cg—51 to 65 inches; gray (10YR 5/1) sand; single grained; loose; many coarse faint dark gray (10YR 4/1) organic stains; very strongly acid.

The thickness of Ah horizon ranges from 20 to 50 inches. Reaction ranges from very strongly acid to slightly acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 10YR or is neutral in hue, has value of 2 to 4, and has chroma of 0 or 2. It is sand.

The E horizon has hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 1 to 8, or it is neutral in hue and has value of 5 to 8. It is sand.

The Bh horizon has hue of 5YR to 10YR, value of 2 to 4, and chroma of 1 to 3. It is sand or loamy sand.

The E´ horizon has hue of 7.5YR to 2.5Y, value of 4 to 8, and chroma of 1 to 3.

The B´h horizon is similar in color and texture to the Bh horizon.

The Cg horizon has hue of 10YR to 2.5Y, value of 4 to 8, and chroma of 1 to 6. It is sand or fine sand.

Lucy Series

The Lucy series consists of very deep, well drained, moderately permeable soils that formed in sandy and loamy marine sediments on uplands of the Southern Coastal Plain Major Land Resource Area. Slopes range from 0 to 6 percent. The soils are loamy, kaolinitic, thermic Arenic Kandiudults.

Lucy soils are geographically associated with Bonneau, Candor, Coxville, Emporia, Faceville, Noboco, Norfolk, Orangeburg, and Troup soils. Bonneau soils have Bt horizons that have hue of 10YR or yellower. Candor soils have sandy Bt horizons. Coxville soils have gray horizons directly below the A horizon. Emporia, Faceville, Noboco, Norfolk, and Orangeburg soils do not have sandy epipedons more than 20 inches thick. Troup soils have a sandy epipedon more than 40 inches thick.

Typical pedon of Lucy sand, 0 to 4 percent slopes; in Marlboro County, South Carolina; 0.4 mile northwest on Williamette Road from its junction with S.C. Highway 912, about 2 miles northwest on David Mill Road, 0.5 mile west on a farm road, 100 feet north of the road:

Ap—0 to 8 inches; dark brown (10YR 4/3) coarse sand; single grained; loose; common fine and medium roots; strongly acid; clear wavy boundary.

E—8 to 22 inches; light yellowish brown (10YR 6/4) loamy sand; single grained; very friable; few fine roots; few clean sand grains; very strongly acid; gradual wavy boundary.

Bt1—22 to 31 inches; yellowish brown (10YR 5/8) sandy loam; weak fine subangular blocky structure; friable; few fine roots; 1 percent quartz gravel; strongly acid; gradual wavy boundary.

Bt2—31 to 39 inches; red (2.5YR 4/8) sandy loam; weak fine subangular blocky structure; friable; few distinct clay films on faces of peds; very strongly acid; gradual wavy boundary.

Bt3—39 to 67 inches; red (2.5YR 4/8) sandy clay loam; weak medium subangular blocky structure; friable; few quartz pebbles; few distinct clay films on faces of peds; very strongly acid.

The thickness of the solum is more than 60 inches. Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 10YR, value of 4 or 5, and chroma of 3 or 4. It is sand.

The E horizon has hue of 7.5YR to 10YR, value of 5 to 7, and chroma of 3 to 8. It is sand or loamy sand.

The Bt horizon dominantly has hue of 2.5YR to 10YR, value of 4 to 6, and chroma of 6 or 8. The lower part has hue of 2.5YR or 5YR, value of 4 or 5, and chroma of 6 to 8. The horizon is sandy loam or sandy clay loam.

Lumbee Series

The Lumbee series consists of very deep, poorly drained, moderately permeable soils that formed in loamy marine sediments on uplands of the Southern Coastal Plain and the Atlantic Coast Flatwoods Major Land Resource Areas. Slopes range from 0 to 2 percent. The soils are fine-loamy over sandy or sandy-skeletal, siliceous, subactive, thermic Typic Endoaquults.

Lumbee soils are geographically associated with Coxville, Johns, Leon, and Rains soils. Coxville soils have more than 35 percent clay in the Btg horizon. Johns soils have higher chroma colors in the B horizon than the Lumbee soils and are better drained. Rains soils have a solum that is more than 60 inches thick. Leon soils have spodic horizons within a depth of 30 inches.

Typical pedon of Lumbee sandy loam, 0 to 2 percent slopes; in Darlington County, South Carolina; 0.35 mile west on Kellytown Road from its junction with West Bo Bo Newsome Highway in Hartsville, 0.5 mile south along a power line right-of-way, 0.1 mile west, 300 feet south, 30 feet west:

A—0 to 5 inches; black (10YR 2/1) coarse sandy loam; weak fine granular structure; very friable; many fine to coarse roots; very strongly acid; clear smooth boundary.

Btg1—5 to 13 inches; gray (10YR 5/1) fine sandy loam; weak medium subangular blocky structure; very friable; common fine and few medium roots; common distinct clay films on faces of peds; many fine pores; very strongly acid; gradual wavy boundary.

Btg2—13 to 25 inches; gray (2.5Y 6/2) loam; moderate medium subangular blocky structure; friable; few fine and medium roots; many coarse pores; few medium prominent olive yellow (2.5Y 6/6) and few fine distinct light yellowish brown (10YR 6/4) masses of iron accumulation; very strongly acid; gradual wavy boundary.

BCg—25 to 31 inches; light gray (10YR 7/2) fine sandy loam; weak fine subangular blocky structure; friable; few fine roots; few fine distinct light yellowish brown (10YR 6/4) masses of iron accumulation; very strongly acid; gradual wavy boundary.

2Cg1—31 to 55 inches; light gray (10YR 7/1) loamy coarse sand; single grained; loose; very strongly acid; gradual wavy boundary.

2Cg2—55 to 65 inches; light gray (10YR 7/1) coarse sand; single grained; loose; very strongly acid.

The thickness of the solum ranges from 20 to 40 inches. Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 10YR, value of 2 to 5, and chroma of 1 or 3. It is sandy loam.

The Btg horizon has hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 1 or 2. In some pedons it has masses of iron accumulation in shades of red, yellow, or brown. It is sandy loam, sandy clay loam, or loam.

The BCg horizon has hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 0 to 2. In some pedons it has masses of iron accumulation in shades of red, yellow, or brown. It is loamy coarse sand, loamy sand, sandy loam, or fine sandy loam.

The 2Cg horizon has hue of 10YR or 2.5Y, value of 4 to 8, and chroma of 1 to 6. It is sand, coarse sand, or loamy coarse sand.

Lynchburg Series

The Lynchburg series consists of very deep, somewhat poorly drained, moderately permeable soils that formed in loamy marine sediments on uplands of the Southern Coastal Plain and the Atlantic Coast Flatwoods Major Land Resource Areas. Slopes range from 0 to 2 percent. The soils are fine-loamy, siliceous, semiactive, thermic Aeric Paleaquults.

Lynchburg soils are geographically associated with Coxville, Goldsboro, Noboco, Norfolk, Rains, and Smithboro soils. Coxville and Rains soils have gray horizons directly below the A or Ap horizon. Goldsboro, Noboco, and Norfolk soils do not have a horizon that is dominantly gray within a depth of 30 inches. Smithboro soils have a clayey particle-size control section.

Typical pedon of Lynchburg sandy loam, 0 to 2 percent slopes; in Marlboro County, South Carolina; 3.6 miles west on Airport Road, 234 feet north of the road:

Ap—0 to 11 inches; dark gray (10YR 4/1) sandy loam; weak fine subangular blocky structure; very friable; common fine and medium and few coarse roots; few fine pores; strongly acid; gradual wavy boundary.

E—11 to 17 inches; pale brown (10YR 6/3) sandy loam; weak fine subangular blocky structure; friable; few fine and coarse roots; few fine pores; common medium distinct yellow (10YR 7/8) masses of iron accumulation; few fine faint light brownish gray (10YR 6/2) iron depletions; strongly acid; gradual wavy boundary.

Bt—17 to 26 inches; 50 percent light yellowish brown (2.5Y 6/4) and 50 percent light brownish gray (10YR 6/2) sandy clay loam; weak medium subangular blocky structure; friable; few fine roots; common fine pores; few faint white (10YR 8/1) skeletans between faces of peds; few medium distinct strong brown (7.5YR 5/8) masses of iron accumulation; strongly acid; gradual wavy boundary.

Btg1—26 to 33 inches; gray (10YR 6/1) sandy clay loam; moderate medium subangular blocky structure; friable; few fine roots; few distinct clay films on faces of peds; common medium distinct brownish yellow (10YR 6/8) and yellowish red (5YR 5/8) and few medium prominent red (2.5YR 4/8) masses of iron accumulation; strongly acid; gradual wavy boundary.

Btg2—33 to 53 inches; gray (10YR 6/1) sandy clay loam; weak medium subangular blocky structure; friable; few fine roots; common medium prominent reddish yellow (7.5YR 6/8) masses of iron accumulation; strongly acid; gradual wavy boundary.

Btg3—53 to 63 inches; gray (10YR 6/1) sandy clay loam; weak medium subangular blocky structure; very friable; common medium prominent reddish yellow (5YR 6/8) and common medium distinct brownish yellow (10YR 6/8) masses of iron accumulation; very strongly acid.

The thickness of the solum is more than 60 inches. Reaction ranges from extremely acid to strongly acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 10YR, value of 2 to 4, and chroma of 1 or 2. It is sandy loam.

The E horizon has hue of 10YR or 2.5Y, value of 4 to 7, and chroma of 1 to 4. Masses of iron accumulation in shades of brown or yellow or iron depletions in shades of gray occur in some pedons, or the profile does not have a dominant matrix hue and

has masses of iron accumulation in shades of red, yellow, or brown and iron depletions in shades of gray. The horizon is loamy sand or sandy loam.

The Bt horizon has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 3 to 8, or it does not have a dominant matrix hue and has masses of iron accumulation in shades of red, yellow, or brown and iron depletions in shades of gray. It is sandy loam, sandy clay loam, or clay loam.

The Btg horizon has hue of 10YR to 2.5Y, value of 4 to 7, and chroma of 0 to 2. In most pedons it has masses of iron accumulation in shades of red, yellow, or brown. It is sandy clay loam or clay loam.

Nankin Series

The Nankin series consist of very deep, well drained, moderately slowly permeable soils that formed in loamy and clayey marine sediments on uplands of the Southern Coastal Plain and the Atlantic Coast Flatwoods Major Land Resource Areas. Slopes range from 2 to 10 percent. The soils are fine, kaolinitic, thermic Typic Kanhapludults.

Nankin soils are geographically associated with Coxville, Bibb, Emporia, Eunola, Faceville, Hornsville, Noboco, Persanti, Smithboro, and Uchee soils. Coxville and Bibb soils have dominant chroma of 2 or less directly below the A horizon. Emporia soils are fine-loamy. Eunola and Hornsville soils have iron depletions within 24 inches of the top of the argillic horizon. Faceville and Noboco soils do not have iron depletions within a depth of 48 inches. Smithboro and Persanti soils have iron depletions within a depth of 30 inches. Uchee soils have A and E horizons more than 20 inches thick.

Typical pedon of Nankin loamy fine sand, 2 to 6 percent slopes; in Marlboro County, South Carolina; 4.6 miles south on S.C. Highway 38 from its junction with U.S. Highway 15 & 401, about 0.9 mile east on Coxe Road, 0.1 mile southeast on Odom Lane, 150 feet northwest of the road:

Ap—0 to 6 inches; light yellowish brown (10YR 6/4) loamy fine sand; weak fine subangular blocky structure; friable; few fine roots; moderately acid; clear wavy boundary.

Bt1—6 to 10 inches; reddish yellow (7.5YR 6/8) sandy clay; moderate medium subangular blocky structure; friable; few fine roots; few large pores; few distinct clay films on faces of peds; strongly acid; gradual wavy boundary.

Bt2—10 to 27 inches; yellowish red (5YR 5/8) clay; moderate medium subangular blocky structure; friable; few fine roots; few fine pores; many distinct clay films on faces of peds; common medium distinct red (2.5YR 4/8) masses of iron accumulation; few fine pebbles; strongly acid; gradual wavy boundary.

Bt3—27 to 36 inches; yellowish red (5YR 5/6) clay; moderate medium subangular blocky structure; few fine roots; few fine pores; many distinct clay films on faces of peds; common medium distinct brownish yellow (10YR 6/8) and common medium distinct red (2.5YR 4/8) masses of iron accumulation; strongly acid; gradual wavy boundary.

Bt4—36 to 47 inches; 35 percent brownish yellow (10YR 6/8), 35 percent reddish yellow (7.5YR 6/8), and 30 percent red (2.5YR 4/6) sandy clay; moderate medium subangular blocky structure; friable; few fine roots; few fine and medium pores; common distinct clay films on faces of peds; few fine flakes of mica; very strongly acid; gradual wavy boundary.

BC—47 to 57 inches; brownish yellow (10YR 6/8) and yellowish red (5YR 5/8) sandy clay; weak medium subangular blocky structure; friable; few distinct clay films on the yellowish red peds; common fine flakes of mica; common medium distinct yellowish red (5YR 5/8) masses of iron accumulation; many medium distinct light gray (10YR 7/1) iron depletions; very strongly acid; gradual wavy boundary.

C—57 to 65 inches; 30 percent reddish yellow (7.5YR 6/8), 30 percent red (2.5YR 4/8), 25 percent light gray (10YR 7/1), and 15 percent yellow (10YR 7/8) sandy clay loam; massive; friable; common fine flakes of mica; very strongly acid.

The thickness of the solum ranges from 40 to more than 60 inches. Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 7.5YR, value of 3 to 6, and chroma of 1 to 5. It typically is loamy fine sand. In eroded areas it is sandy clay loam.

The Bt horizon has hue of 2.5YR to 10YR, value of 4 to 6, and chroma of 6 to 8. In most pedons it has masses of iron accumulation in shades of red, yellow, or brown. Iron depletions occur below the upper 24 inches of the argillic horizon. The horizon is clay loam, sandy clay, or clay.

The BC horizon has hue of 2.5YR to 10YR, value of 4 to 6, and chroma of 6 to 8, or it does not have a dominant matrix hue and has masses of iron accumulation in shades of red, yellow, or brown and iron depletions in shades of gray. It is sandy loam or sandy clay loam.

The C horizon has hue of 2.5YR to 10YR, value of 4 to 7, and chroma of 1 to 8, or it does not have a dominant matrix hue and has masses of iron accumulation in shades of red, yellow, or brown and iron depletions in shades of gray. It is sandy loam or sandy clay loam.

Noboco Series

The Noboco series consists of very deep, well drained, moderately permeable soils that formed in loamy marine sediments on uplands of the Southern Coastal Plain and the Atlantic Coast Flatwoods Major Land Resource Areas. Slopes range from 0 to 6 percent. The soils are fine-loamy, siliceous, subactive, thermic Typic Paleudults.

Noboco soils are geographically associated with Bonneau, Coxville, Emporia, Faceville, Goldsboro, Norfolk, Rains, Uchee, and Wagram soils. Bonneau, Uchee, and Wagram soils have A and E horizons more than 20 inches thick. Faceville soils have hue of 5YR or redder in the Bt horizon. Goldsboro soils have gray mottles having chroma of 2 or less within a depth of 30 inches. Coxville and Rains soils have dominant chroma of 2 or less directly below the A or Ap horizon. Norfolk soils have gray mottles having chroma of 2 or less below a depth of 48 inches. Emporia soils are Hapludults.

Typical profile of Noboco loamy sand, 0 to 2 percent slopes; in Darlington County, South Carolina; 0.6 mile north from the entrance of the Pee Dee Research and Education Center on Pocket Road, 0.4 mile west on an unpaved road, 0.3 mile northwest on a farm road, 100 feet north:

Ap—0 to 7 inches; dark grayish brown (10YR 4/2) loamy sand; weak fine subangular blocky structure; very friable; few very fine and fine roots; few clean sand grains; few pockets of material from E horizon; neutral; abrupt wavy boundary.

E—7 to 13 inches; very pale brown (10YR 7/4) loamy sand; weak fine subangular blocky structure; very friable; few very fine roots; neutral; gradual wavy boundary.

Bt1—13 to 31 inches; yellowish brown (10YR 5/8) sandy clay loam; moderate medium subangular blocky structure; friable; few very fine roots; common fine pores; distinct clay films on faces of peds and along old root channels; few clean sand grains; strongly acid; gradual wavy boundary.

Bt2—31 to 45 inches; yellowish brown (10YR 5/6) sandy clay loam; moderate medium faint yellowish brown (10YR 5/4) and moderate medium distinct yellowish red (5YR 5/8) mottles; moderate medium subangular blocky structure; friable; 2 percent plinthite nodules; few very fine pores; few distinct clay films on faces of peds; few clean sand grains; strongly acid; gradual wavy boundary.

Bt3—45 to 60 inches; strong brown (7.5YR 5/8) sandy clay loam; weak medium subangular blocky structure; friable; common medium prominent red (2.5YR 4/6) masses of iron accumulation; common medium distinct gray (10YR 6/1) iron depletions; common clean sand grains; very strongly acid.

The thickness of the solum is more than 60 inches. Reaction ranges from extremely acid to strongly acid throughout the profile, except where the surface layer has been limed. Some pedons have as much as 4 percent plinthite. Iron depletions occur within a depth of 30 to 48 inches.

The A or Ap horizon has hue of 10YR, value of 5 or 6, and chroma of 2 to 4. It is loamy sand.

The E horizon has hue of 10YR, value of 6 or 7, and chroma of 3 or 4. It is loamy sand.

The upper part of the Bt horizon has hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 6 or 8. In some pedons it has masses of iron accumulation in shades of red, yellow, or brown. It is sandy loam or sandy clay loam.

The lower part of the Bt horizon has the same colors as the upper part, or it does not have a dominant matrix hue and has masses of iron accumulation in shades of red, yellow, or brown and iron depletions in shades of gray. This part is sandy loam or sandy clay loam. In some pedons the Bt horizon includes thin layers of sandy clay below a depth of 40 inches.

Norfolk Series

The Norfolk series consist of very deep, well drained, moderately permeable soils that formed in loamy marine sediments on uplands of the Southern Coastal Plain Major Land Resource Area. Slopes range from 0 to 6 percent. The soils are fine-loamy, kaolinitic, thermic Typic Kandiudults.

Norfolk soils are geographically associated with Bonneau, Coxville, Emporia, Faceville, Goldsboro, Noboco, Persanti, Rains, Uchee, and Wagram soils. Bonneau, Uchee, and Wagram soils have A and E horizons more than 20 inches thick. Coxville and Rains soils have dominant chroma of 2 or less directly below the A or Ap horizon. Within a depth of 60 inches, Emporia soils decrease in clay content by more than 20 percent as depth increases. Faceville soils have hue of 5YR or redder in the Bt horizon. Goldsboro and Persanti soils have iron depletions within a depth of 30 inches. Noboco soils have gray iron depletions within a depth of 48 inches.

Typical pedon of Norfolk loamy sand, 0 to 2 percent slopes; in Marlboro County, South Carolina; 1.8 miles southwest on U.S. Highway 15 & 401 from its junction with Tatum Road in Tatum, 0.2 mile south and 100 feet southwest of the road:

Ap—0 to 7 inches; grayish brown (10YR 5/2) loamy sand; weak fine granular structure; very friable; slightly acid; clear wavy boundary.

E—7 to 15 inches; light yellowish brown (10YR 6/4) loamy sand; weak fine subangular blocky structure; friable; few fine roots; few fine pores; strongly acid; clear wavy boundary.

Bt1—15 to 42 inches; yellowish brown (10YR 5/6) sandy clay loam; weak fine subangular blocky structure; friable; few fine roots; few fine pores; strongly acid; gradual wavy boundary.

Bt2—42 to 47 inches; brownish yellow (10YR 6/8) sandy clay loam; weak medium subangular blocky structure; friable; many fine and medium roots; few fine and medium pores; few distinct clay films on faces of peds; common fine and medium distinct yellowish red (5YR 5/8) and common medium prominent red (2.5YR 4/8) masses of iron accumulation; strongly acid; gradual wavy boundary.

Bt3—47 to 63 inches; brownish yellow (10YR 6/8) sandy clay loam; weak medium subangular blocky structure; friable; many fine and medium roots; many fine pores; few distinct clay films on faces of peds; about 2 percent plinthite nodules; common medium prominent red (2.5YR 4/8) and few fine distinct pale brown (10YR 6/3) masses of iron accumulation; strongly acid; gradual wavy boundary.

Bt4—63 to 72 inches; 35 percent brownish yellow (10YR 6/8), 30 percent red (2.5YR 4/8), and 35 percent gray (10YR 6/1) sandy clay loam; weak medium subangular blocky structure; friable; few fine pores; few distinct clay film on faces of peds; very strongly acid.

The thickness of the solum is more than 60 inches. Reaction ranges from extremely acid to strongly acid throughout the profile, except where the surface layer has been limed. Some pedons contain as much as 4 percent plinthite in the lower part of the argillic horizon.

The A horizon has hue of 10YR, value of 5 or 6, and chroma of 2 to 4. It is loamy sand.

The E horizon has hue of 10YR, value of 6 or 7, and chroma of 3 or 4. It is loamy sand.

The upper part of the Bt horizon has hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 6 or 8. In some pedons it has masses of iron accumulation in shades of red, yellow, or brown. It is sandy loam or sandy clay loam.

The lower part of the Bt horizon has hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 3 to 8. In most pedons it has masses of iron accumulation in shades of red or yellow and iron depletions in shades of gray. Iron depletions occur below a depth of 48 inches. This part of the Bt horizon is sandy clay loam or clay loam.

Orangeburg Series

The Orangeburg series consist of very deep, well drained, moderately permeable soils that formed in loamy marine sediments on uplands of the Southern Coastal Plain Major Land Resource Area. Slopes range from 0 to 2 percent. The soils are fine-loamy, kaolinitic, thermic Typic Kandiudults.

Orangeburg soils are geographically associated with Emporia, Faceville, Lucy, Norfolk, Noboco, Rains, and Troup soils. Within a depth of 60 inches, Emporia soils decrease in clay content by more than 20 percent as depth increases. Faceville soils have more than 35 percent clay in the Bt horizons. Lucy soils have sandy epipedons more than 20 inches thick. Norfolk and Noboco soils have Bt horizons that dominantly have hue of 7.5YR or yellower. Rains soils are gray directly below the A or Ap horizon. Troup soils have a sandy epipedon more than 40 inches thick.

Typical pedon of Orangeburg loamy sand, 0 to 2 percent slopes; in Darlington County, South Carolina; 0.6 mile east on Kellytown Road from its junction with Bo Bo Newsome Highway in Hartsville, 0.55 mile northeast on West Carolina Avenue, 75 feet south of the road:

Ap—0 to 9 inches; brown (10YR 5/3) loamy sand; weak fine granular structure; very friable; common fine and medium roots; moderately acid; clear smooth boundary.

E—9 to 16 inches; brownish yellow (10YR 6/6) loamy sand; weak fine subangular blocky structure; very friable; common fine and medium roots; strongly acid; clear wavy boundary.

BA—16 to 21 inches; strong brown (7.5YR 5/6) sandy loam; weak medium subangular blocky structure; friable; few fine roots; few fine pores; few distinct clay films on faces of peds; strongly acid; gradual wavy boundary.

Bt1—21 to 38 inches; yellowish red (5YR 5/8) sandy clay loam; weak medium subangular blocky structure; few fine roots; few fine pores; common distinct clay films on faces of peds; strongly acid; gradual wavy boundary.

Bt2—38 to 46 inches; red (2.5YR 5/6) sandy clay loam; weak medium subangular blocky structure; few fine roots; few fine pores; common distinct clay films on faces of peds; strongly acid; gradual wavy boundary.

Bt3—46 to 58 inches; red (2.5YR 4/8) sandy clay loam; weak medium subangular blocky structure; few fine roots; few fine pores; common distinct clay films on faces of peds; strongly acid; gradual wavy boundary.

Bt4—58 to 65 inches; red (2.5YR 4/8) sandy clay loam; weak medium subangular blocky structure; few fine roots; few fine pores; common distinct clay films on faces of peds; few medium distinct brownish yellow (10YR 6/8) masses of iron accumulation; very strongly acid; gradual wavy boundary.

Bt5—65 to 72 inches; yellowish red (5YR 5/8) sandy clay loam; weak medium subangular blocky structure; few fine roots; few fine pores; common distinct clay films on faces of peds; few medium distinct red (2.5YR 4/8) masses of iron accumulation; very strongly acid.

The thickness of the solum is more than 72 inches. Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed.

The A horizon has hue of 7.5YR or 10YR, value of 3 to 5, and chroma of 2 to 6. It is loamy sand.

The E horizon has hue of 10YR, value of 5 or 6, and chroma of 3 to 6. It is loamy sand.

The BA horizon has hue of 7.5YR or 5YR, value of 4 to 6, and chroma of 4 to 8. It is sandy loam.

The Bt horizon has hue of 2.5YR to 5YR, value of 4 to 6, and chroma of 6 to 8. It is sandy clay loam in the upper part and sandy clay loam or sandy clay in the lower part.

Pamlico Series

The Pamlico series consists of very deep, very poorly drained, moderately permeable soils that formed in decomposed organic matter overlying dominantly sandy fluvial sediments on flood plains of the Southern Coastal Plain Major Land Resource Area. Slopes range from 0 to 2 percent. The soils are sandy or sandy-skeletal, siliceous, dysic, thermic Terric Haplosaprists.

Pamlico soils are geographically associated with Ailey, Bibb, Blanton, Candor, Ponzer, and Uchee soils. Ailey, Blanton, Candor, and Uchee soils are on uplands. Bibb soils do not have an organic epipedon. Ponzer soils do not have sandy mineral horizons within the control section.

Typical pedon of Pamlico muck, 0 to 2 percent slopes, frequently flooded; in Marlboro County, South Carolina; 0.2 mile west on Fore Road from its junction with S.C. Highway 38 near Brownsville, 1.4 miles south on Berry Road, 0.2 mile west of the road, in woods:

Oa1—0 to 20 inches; black (10YR 2/1) muck; 10 percent fiber, rubbed and unrubbed; friable; common fine, medium, and coarse roots; very strongly acid; gradual wavy boundary.

Oa2—20 to 42 inches; dark grayish brown (10YR 3/2) muck; common fine and medium and few coarse roots; very strongly acid; gradual wavy boundary.

2Cg—42 to 60 inches; light gray (10YR 6/1) sand; single grained; loose; very strongly acid.

The organic material is 16 to 51 inches thick over dominantly sandy sediments. Reaction is extremely acid or very strongly acid in the organic layers but ranges to strongly acid in the mineral layers.

The Oa horizon has hue of 7.5YR or 10YR, value of 2 or 3, and chroma of 0 to 2. It has 10 to 33 percent fiber rubbed and less than 10 percent fiber unrubbed.

The Cg or 2Cg horizon has hue of 10YR or is neutral in hue, has value of 2 to 6, and has chroma of 0 to 2. It is sand. In some pedons Cg or 2Cg horizons occurring below a depth of 51 inches are variable in texture, ranging from sand to sandy clay loam.

Pelion Series

The Pelion series consists of very deep, moderately well drained, slowly permeable soils that formed in loamy marine sediments on uplands of the Carolina and Georgia Sand Hills Major Land Resource Area. Slopes range from 0 to 6 percent. The soils are fine-loamy, kaolinitic, thermic Aquic Kanhapludults.

Pelion soils are geographically associated with Ailey, Alpin, Bibb, Candor, Johnston, and Vaucluse soils. Ailey and Candor soils are in an arenic subgroup. Alpin soils are Quartzipsamments. Bibb and Johnston soils do not have an argillic horizon and are on flood plains. Vaucluse soils do not have gray mottles indicative of wetness.

Typical pedon of Pelion loamy sand, 2 to 6 percent slopes; in Chesterfield County, South Carolina; 5.2 miles southwest on S.C. Secondary Highway 22 from its junction with S.C. Highway 9, about 0.3 mile northwest on S.C. Highway 20, about 2.1 miles west on S.C. Secondary Highway 144, about 0.3 mile west on a logging road, 0.1 mile north on the logging road, about 40 feet west of the road, in woods:

A—0 to 7 inches; brown (10YR 5/3) loamy sand; weak fine granular structure; very friable; many fine and medium roots; extremely acid; clear wavy boundary.

E—7 to 14 inches; very pale brown (10YR 7/3) loamy sand; weak fine granular structure; very friable; many fine and medium roots; extremely acid; abrupt wavy boundary.

Bt—14 to 19 inches; yellow (10YR 7/6) sandy clay loam; weak coarse subangular blocky structure; friable; common fine roots; few fine pores; sand grains coated and bridged with clay; extremely acid; gradual wavy boundary.

Btx1—19 to 25 inches; yellow (10YR 7/6) sandy clay loam; weak coarse subangular blocky structure; firm; common fine roots; few fine pores; few faint clay films on faces of peds; few medium distinct light gray (10YR 6/1) iron depletions; sand grains coated and bridged with clay; compact and brittle in about 25 percent of the mass; extremely acid; gradual wavy boundary.

Btx2—25 to 32 inches; brownish yellow (10YR 6/8) sandy clay loam; weak coarse subangular blocky structure; firm; few fine roots along faces of peds; few fine pores; few faint clay films on faces of peds; common fine flakes of mica; common medium distinct reddish yellow (7.5YR 6/8) masses of iron accumulation; common medium distinct light gray (10YR 6/1) iron depletions; dense, compact, and brittle in about 30 percent of the mass; few clean coarse sand grains; extremely acid; gradual wavy boundary.

BC—32 to 45 inches; brownish yellow (10YR 6/8) sandy clay loam; weak coarse subangular blocky structure; firm; few fine roots along faces of peds; few fine pores; common fine flakes of mica; many medium distinct light gray (10YR 7/2) iron depletions; dense, compact, and brittle in about 20 percent of the mass; few balls of kaolin clay; few clean coarse sand grains; extremely acid; gradual wavy boundary.

C—45 to 66 inches; stratified yellow (10YR 7/8), light gray (10YR 7/2), reddish yellow (7.5YR 6/8), and red (2.5YR 4/8) sandy clay loam, clay loam, sandy loam, and sand; massive; firm, very friable in the sandy layers; common fine flakes of mica; extremely acid.

The thickness of the solum is more than 40 inches. Reaction ranges from extremely acid to strongly acid throughout the profile, except where the surface layer has been limed. Some subhorizons of the Bt horizon have 10 to 60 percent brittleness. In most pedons the B and C horizons have few or common flakes of mica.

The A horizon has hue of 10YR, value of 3 to 5, and chroma of 1 to 3. It is loamy sand.

The E horizon has hue of 10YR, value of 4 to 7, and chroma of 2 to 4. It is loamy sand or sandy loam.

The Bt horizon has hue of 7.5YR to 2.5Y, value of 5 to 8, and chroma of 6 or 8. In most pedons it has masses of iron accumulation in shades of red or yellow and iron depletions in shades of gray. It is sandy loam or sandy clay loam.

The Btx horizon has hue of 7.5YR to 2.5Y, value of 5 to 8, and chroma of 6 or 8, or it does not have a dominant matrix hue and has masses of iron accumulation in shades of red, yellow, or brown and iron depletions in shades of gray. It is sandy clay loam, sandy clay, or clay.

The C horizon has hue of 7.5YR to 2.5Y, value of 4 to 8, and chroma of 1 to 8. It has masses of iron accumulation in shades of red or yellow and iron depletions in shades of gray in most pedons, or it does not have a dominant matrix hue and has masses of iron accumulation in shades of red, yellow, or brown and iron depletions in shades of gray. The horizon is stratified with sandy, loamy, and clayey textures.

Persanti Series

The Persanti series consists of very deep, moderately well drained, slowly permeable soils that formed in clayey marine sediments on uplands of the Southern Coastal Plain and the Atlantic Coast Flatwoods Major Land Resource Areas. Slopes range from 0 to 2 percent. The soils are fine, kaolinitic, thermic Aquic Paleudults.

Persanti soils are geographically associated with Bibb, Coxville, Goldsboro, Hornsville, Nankin, Noboco, and Smithboro soils. Coxville soils have gray horizons directly below the A or Ap horizon. Goldsboro soils are fine-loamy. Hornsville and Nankin soils are Hapludults. Noboco soils do not have iron depletions within a depth of 30 inches. Smithboro soils have gray Bt horizons within a depth of 30 inches. Bibb soils are on flood plains and have dominant chroma of 2 or less below the A or Ap horizon.

Typical pedon of Persanti loam, 0 to 2 percent slopes; in Marlboro County, South Carolina; 4.9 miles south on S.C. Highway 38 from its junction with U.S. Highway 15 & 401, about 0.5 mile west on Coxe Road, 175 feet north of the road:

A—0 to 7 inches; brown (10YR 5/3) loam; weak medium subangular blocky structure; friable; few fine roots; strongly acid; clear wavy boundary.

Bt1—7 to 23 inches; brownish yellow (10YR 6/6) clay; strong medium subangular blocky structure; firm; few fine roots; common fine pores; few distinct clay films on faces of peds; few rounded ironstone nodules; common medium distinct reddish yellow (7.5YR 6/6) masses of iron accumulation; very strongly acid; gradual wavy boundary.

Bt2—23 to 49 inches; brownish yellow (10YR 6/6) clay; strong medium subangular blocky structure; firm; few fine pores; few distinct clay films on faces of peds; common medium distinct yellowish red (5YR 5/8) and common medium prominent red (2.5YR 4/8) masses of iron accumulation; common medium distinct gray (10YR 6/1) iron depletions; very strongly acid; gradual wavy boundary.

Bt3—49 to 60 inches; 25 percent gray (10YR 6/1), 25 percent yellow (10YR 7/8), 25 percent yellowish red (5YR 5/8), and 25 percent red (2.5YR 4/8) clay; strong medium subangular blocky structure; firm; few fine pores; very strongly acid.

The thickness of the solum is 60 to more than 80 inches. Reaction ranges from extremely acid to strongly acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 10YR, value of 4 to 6, and chroma of 1 to 3. It is loam.

The upper part of the Bt horizon has hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 4 to 8. In most pedons it has masses of iron accumulation in shades of red, yellow, or brown. Iron depletions are within a depth of 15 to 30 inches.

The lower part of the Bt or Btg horizon has hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 1 to 8, or it does not have a dominant matrix hue and has masses of iron accumulation in shades of red, yellow, or brown and iron depletions in shades of gray. The horizon is clay or silty clay.

Ponzer Series

The Ponzer series consists of very deep, very poorly drained, slowly permeable soils that formed in decomposed organic matter over dominantly loamy fluvial sediments on flood plains of the Southern Coastal Plain Major Land Resource Area. Slopes range from 0 to 2 percent. The soils are loamy, mixed, dysic, thermic Terric Haplosaprists.

Ponzer soils are geographically associated with Ailey, Bibb, Johnston, Pamlico, and Wehadkee soils. Bibb, Johnston, and Wehadkee soils do not have an organic epipedon. Pamlico soils have sandy mineral horizons within the control section. Ailey soils are on uplands.

Typical pedon of Ponzer muck in an area of Dorovan and Ponzer soils, 0 to 2 percent slopes, frequently flooded; in Darlington County, South Carolina; 6.0 miles west of the junction of U.S. Highway 151 on West Old Camden Road, 1.0 mile south on Rainbow View Road, 1.0 mile southwest on an unpaved road, 0.13 mile west on the unpaved road, 50 feet north of the road:

Oa1—0 to 13 inches; black (10YR 2/1) broken face and rubbed muck; about 5 percent dark brown (7.5YR 3.2) fiber unrubbed, less than 1 percent fiber rubbed; massive; very friable; many coarse, fine, and very fine roots; extremely acid; gradual wavy boundary.

Oa2—13 to 27 inches; black (10YR 2/1) broken face and rubbed muck; about 5 percent fiber unrubbed, less than 1 percent fiber rubbed; massive; very friable; few fine and very fine roots; extremely acid; gradual wavy boundary.

Oa3—27 to 42 inches; black (10YR 2/1) broken face and rubbed muck; about 30 percent fiber unrubbed, 10 percent fiber rubbed; massive; common coarse, medium, and fine roots; extremely acid; clear wavy boundary.

2Cg1—42 to 55 inches; light gray (2.5Y 7/1) silty clay loam; about 25 percent fiber unrubbed, less than 10 percent fiber rubbed; massive; friable, moderately plastic, moderately sticky; extremely acid; gradual wavy boundary.

2Cg2—55 to 65 inches; light gray (2.5Y 7/1) clay; about 10 percent fiber unrubbed, less than 1 percent fiber rubbed; massive; friable, moderately plastic, moderately sticky; extremely acid.

The organic material commonly is 16 to 30 inches thick but ranges to 51 inches thick. It is extremely acid. The underlying material ranges from extremely acid to slightly alkaline throughout.

The Oa1 horizon has hue of 10YR, value of 2 or 3, and chroma of 0 or 2. The lower tiers have hue of 7.5YR to 2.5Y, value of 2 or 3, and chroma of 0 to 2.

The underlying mineral layers are variable in color and texture, but the mineral layer is loamy in the control section.

Rains Series

The Rains series consists of very deep, poorly drained, moderately permeable soils that formed in loamy marine sediments on uplands of the Southern Coastal Plain and the Atlantic Coast Flatwoods Major Land Resource Areas. Slopes range from 0 to 2 percent. The soils are fine-loamy, siliceous, semiactive, thermic Typic Paleaquults.

Rains soils are geographically associated with Coxville, Goldsboro, Lynchburg, Noboco, and Norfolk soils. Coxville soils have more than 35 percent clay in the Btg horizon. Goldsboro, Lynchburg, Noboco, and Norfolk soils do not have chroma of 2 or less directly below the A or Ap horizon.

Typical pedon of Rains sandy loam, 0 to 2 percent slopes; in Florence County, South Carolina; 2 miles southeast of Timmonsville, 1.1 miles south on S.C. Highway 45 from its junction with U.S. Highway 76, about 150 feet west of S.C. Highway 45:

A—0 to 7 inches; very dark gray (10YR 3/1) sandy loam; weak fine granular structure; very friable; many fine and medium roots; very strongly acid; clear smooth boundary.

E—7 to 12 inches; light brownish gray (10YR 6/2 sandy loam; weak fine granular structure; very friable; many fine and few medium roots; many fine pores; few fingers of material from A horizon in the upper part of horizon; very strongly acid; gradual wavy boundary.

Btg1—12 to 20 inches; gray (10YR 6/1) sandy loam; weak coarse subangular blocky structure; friable; few fine and medium roots; many coarse pores; few medium distinct yellowish brown (10YR 5/6) masses of iron accumulation; sand grains coated and bridged with clay; very strongly acid; gradual wavy boundary.

Btg2—20 to 40 inches; gray (10YR 6/1) sandy clay loam; few small pockets of gray sandy loam; weak medium subangular blocky structure; friable; few fine and medium roots; many fine pores; few faint clay films on faces of peds; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation; very strongly acid; gradual wavy boundary.

Btg3—40 to 52 inches; gray (10YR 6/1) sandy clay loam; weak medium subangular blocky structure; firm; few fine pores; few faint clay films on faces of peds; few fine and medium prominent red (2.5YR 4/6) and few fine and medium distinct yellowish brown (10YR 5/6) masses of iron accumulation; very strongly acid; gradual wavy boundary.

Btg4—52 to 62 inches; gray (10YR 6/1) sandy clay loam; weak medium subangular blocky structure; friable; few faint clay films on faces of peds; few medium distinct brownish yellow (10YR 6/6) masses of iron accumulation; very strongly acid; gradual wavy boundary.

BCg—62 to 79 inches; gray (10YR 6/1) sandy clay loam; friable; few fine distinct brownish yellow (10YR 6/6) masses of iron accumulation; very strongly acid; gradual wavy boundary.

2Cg—79 to 85 inches; light gray (10YR 7/1) sand; single grained; loose; very strongly acid.

The thickness of the solum is more than 60 inches. Reaction ranges from extremely acid to strongly acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 10YR, value of 2 to 5, and chroma of 1 or 2. It is sandy loam.

The Btg horizon has hue of 10YR, value of 4 to 7, and chroma of 1 or 2. In most pedons it has masses of iron accumulation in shades of brown, yellow, or red. It is dominantly sandy loam, sandy clay loam, or clay loam. In some pedons the lower part of the horizon ranges to sandy clay.

The BCg horizon has hue of 10YR to 2.5Y or is neutral in hue, has value of 5 to 7, and has chroma of 0 to 2. It has masses of iron accumulation in shades of red, yellow, or brown in most pedons, or it does not have a dominant matrix hue and has masses of iron accumulation in shades of red, yellow, or brown and iron depletions in shades of gray. It is sandy loam, fine sandy loam, sandy clay loam, or sandy clay.

The Cg or 2Cg horizon has hue of 10YR or is neutral in hue, has value of 5 to 7, and has chroma of 0 to 2. It has masses of iron accumulation in shades of red, yellow, or brown in some pedons, or it does not have a dominant matrix hue and has masses of iron accumulation in shades of red, yellow, or brown and iron depletions in shades of gray. The horizon is variable in texture, ranging from sand to sandy clay, or it is stratified.

Riverview Series

The Riverview series consist of very deep, well drained, moderately permeable soils that formed in loamy fluvial sediments on flood plains of the Southern Coastal Plain and Atlantic Coast Flatwoods Major Land Resource Areas. Slopes range from 0 to 2 percent. The soils are fine-loamy, mixed, active, thermic Fluventic Dystrudepts.

Riverview soils are geographically associated with Chastain, Tarboro, and Wickham soils. Chastain soils have gray mottles that have chroma of 2 or less within the upper 24 inches of the B horizon. Tarboro soils are sandy throughout. Wickham soils have Bt horizons and are on stream terraces.

Typical pedon of Riverview silt loam, 0 to 2 percent slopes, frequently flooded; in Chesterfield County, South Carolina; about 4 miles south on U.S. Highway 52 from its junction with U.S. Highway 1 near Cheraw, 2 miles east from Cash Church, 2.5 miles southeast on a dirt road, 75 feet north:

Ap—0 to 3 inches; dark yellowish brown (10YR 4/4) silt loam; weak fine granular structure; friable; many fine, medium, and coarse roots; very strongly acid; clear wavy boundary.

Bw1—3 to 16 inches; brown (7.5YR 5/4) loam; moderate medium subangular blocky structure; friable; few fine and coarse roots; common fine and medium pores; very strongly acid; gradual wavy boundary.

Bw2—16 to 28 inches; strong brown (7.5YR 5/6) loam; moderate medium subangular blocky structure; friable; few medium and coarse roots; few fine and medium pores; few fine flakes of mica; strongly acid; gradual wavy boundary.

Bw3—28 to 38 inches; strong brown (7.5YR 5/8) silty clay loam; moderate medium subangular blocky structure; friable; few coarse roots; few fine and medium pores; common fine flakes of mica; common medium distinct yellowish red (5YR 5/6) masses of iron accumulation; very strongly acid; gradual wavy boundary.

C—38 to 60 inches; strong brown (7.5YR 5/6) loam; massive; friable; common fine flakes of mica; common distinct reddish brown (5YR 4/3) masses of iron accumulation; strongly acid.

The thickness of the solum ranges from 24 to 60 inches. Reaction ranges from very strongly acid to moderately acid throughout the profile, except where the surface layer has been limed.

The A horizon has hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 3 or 4. It is silt loam.

The Bw horizon has hue of 5YR to 10YR, value of 4 or 5, and chroma of 3 to 8. In some pedons it has masses of iron accumulation in shades of red, yellow, or brown. Iron depletions occur below a depth of 24 inches. The horizon is silt loam, loam, sandy clay loam, or silty clay loam.

The C horizon has hue of 7.5YR or 10YR and value and chroma of 4 to 8. It is sand, loamy sand, or sandy loam and has strata of silt loam or silty clay loam.

Smithboro Series

The Smithboro series consists of very deep, somewhat poorly drained, slowly permeable soils that formed in clayey marine sediments on uplands of the Atlantic Coast Flatwoods and the Southern Coastal Plain Major Land Resource Areas. Slopes range from 0 to 2 percent. The soils are fine, kaolinitic, thermic Aeric Paleaquults.

Smithboro soils are geographically associated with Coxville, Hornsville, Noboco, Norfolk, and Persanti soils. Coxville soils have gray horizons directly below the A or Ap horizon. Hornsville and Persanti soils have dominant chroma of more than 2 between the base of the A horizon and a depth of 30 inches. Noboco and Norfolk soils do not have mottles having chroma of 2 within a depth of 30 inches.

Typical pedon of Smithboro silt loam, 0 to 2 percent slopes; in Marlboro County, South Carolina; 2.6 miles northeast from the intersection of S.C. Highways 38 and 34 near Brownsville, 0.5 mile northwest on an unpaved road, 0.1 mile northwest in a wooded area:

A—0 to 5 inches; dark gray (10YR 4/1) silt loam; weak fine granular structure; friable; common fine, medium, and coarse roots; strongly acid; abrupt wavy boundary.

Bt—5 to 13 inches; light yellowish brown (2.5Y 6/4) clay loam; weak medium subangular blocky structure; friable; common fine and medium and common coarse roots; common medium distinct brownish yellow (10YR 6/6) masses of iron accumulation; few fine faint gray (10YR 6/1) iron depletions; very strongly acid; gradual wavy boundary.

Btg1—13 to 32 inches; gray (10YR 6/1) clay; firm; few fine and medium pores; few distinct clay films on faces of peds; common medium distinct yellowish brown (10YR 5/6) and common medium prominent red (2.5YR 4/8) masses of iron accumulation; very strongly acid; gradual wavy boundary.

Btg2—32 to 54 inches; gray (10YR 5/1) clay; moderate medium subangular blocky structure; common fine and medium roots; few medium pores; common distinct clay films on faces of peds; common medium prominent red (10YR 4/8), yellowish red (5YR 5/8), and reddish yellow (7.5YR 6/8) masses of iron accumulation; very strongly acid; gradual wavy boundary.

Btg3—54 to 65 inches; gray (10YR 5/1) clay; moderate medium subangular blocky structure; firm; few fine roots; few fine pores; common distinct clay films on faces of peds; common medium prominent yellowish red (5YR 5/8) and common medium prominent reddish yellow (5YR 5/8) masses of iron accumulation; very strongly acid.

The thickness of the solum is more than 60 inches. Reaction ranges from extremely acid to strongly acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 10YR, value of 4 or 5, and chroma of 1 or 2. It is silt loam.

The Bt horizon has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 3 to 6. In most pedons it has masses of iron accumulation in shades of red or yellow and iron depletions in shades of gray. It is clay loam, silty clay, or clay.

The Btg horizon has hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 1 or 2. In some pedons it has masses of iron accumulation in shades of red, yellow, or brown. It is clay loam, silty clay, or clay.

Tarboro Series

The Tarboro series consists of very deep, somewhat excessively drained, very rapidly permeable soils that formed in sandy fluvial sediments on flood plains of the Southern Coastal Plain and the Atlantic Coast Flatwoods Major Land Resource Areas. Slopes range from 0 to 6 percent. The soils are mixed, thermic Typic Udipsamments.

Tarboro soils are geographically associated with Chastain, Chewacla, Riverview, and Wickham soils. These associated soils have fine-loamy or clayey particle-size control sections.

Typical pedon of Tarboro sand, 0 to 4 percent slopes; in Marlboro County, South Carolina; 6.6 miles southwest on U.S. Highway 15 & 401 from its junction with S.C. Highway 912, about 1.1 miles southeast on a farm road, 0.4 mile north on a logging road, 50 feet west of the road:

A—0 to 7 inches; dark grayish brown (10YR 4/2) sand; weak fine granular structure; very friable; common medium and few coarse roots; few fine flakes of mica; moderately acid; clear wavy boundary.

C1—7 to 18 inches; yellowish brown (10YR 5/6) sand; single grained; loose; few medium roots; few fine flakes of mica; strongly acid; clear wavy boundary.

C2—18 to 48 inches; reddish yellow (7.5YR 6/8) sand; single grained; loose; few fine flakes of mica; slightly acid; gradual wavy boundary.

C3—48 to 60 inches; very pale brown (10YR 7/4) sand; single grained; loose; common flakes of mica; slightly acid; gradual wavy boundary.

C4—60 to 80 inches; very pale brown (10YR 7/3) sand; single grained; loose; common fine flakes of mica; moderately acid.

The sandy material is more than 80 inches thick. Reaction ranges from very strongly acid to slightly acid throughout the profile, except where the surface layer has been limed. In some pedons the lower part of the C horizon contains as much as 15 percent gravel.

The A or Ap horizon has hue of 7.5YR or 10YR, value of 3 to 5, and chroma of 2 to 6. It is sand.

The C horizon has hue of 7.5YR or 10YR, value of 4 to 7, and chroma of 3 to 8. It is coarse sand, sand, or loamy sand.

Troup Series

The Troup series consists of very deep, somewhat excessively drained, moderately permeable soils that formed in sandy and loamy marine sediments on uplands of the Southern Coastal Plain and the Carolina and Georgia Sand Hills Major Land Resource Areas. Slopes range from 0 to 10 percent. The soils are loamy, kaolinitic, thermic Grossarenic Kandiudults.

Troup soils are geographically associated with Ailey, Alpin, Bibb, Candor, Cowarts, Johnston, Pelion, and Vaucluse soils. Ailey, Candor, Cowarts, Pelion, and Vaucluse soils have an argillic horizon within a depth of 40 inches. Alpin soils are Quartzipsamments. Bibb and Johnston soils do not have an argillic horizon and are on flood plains.

Typical pedon of Troup sand, 0 to 6 percent slopes; in Chesterfield County, South Carolina; 3.7 miles west on S.C. Secondary Highway 22 from its junction with U.S. Highway 52 in Cheraw, 1.2 miles southwest on S.C. Highway 573, about 0.1 mile south on an unpaved road, 0.1 mile west on the unpaved road, 25 feet south on the road:

Ap—0 to 6 inches; grayish brown (10YR 5/2) sand; single grained; loose; common fine roots; few worm casts; slightly acid; clear wavy boundary.

E1—6 to 25 inches; light yellowish brown (10YR 6/4) sand; single grained; loose; common fine roots; very strongly acid; gradual wavy boundary.
E2—25 to 46 inches; brownish yellow (10YR 6/6) loamy sand; single grained; loose; common fine roots; few uncoated sand grains; few worm casts; very strongly acid; gradual wavy boundary.
E3—46 to 55 inches; yellow (10YR 7/6) sand; single grained; loose; few uncoated sand grains; very strongly acid; clear wavy boundary.
Bt—55 to 85 inches; red (5YR 5/8) sandy loam; weak medium subangular blocky structure; very friable; few fine pores; few faint clay films on faces of peds; few fine flakes of mica; very strongly acid.

The thickness of the solum is more than 80 inches. Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed.

The A horizon has hue of 10YR, value of 3 to 6, and chroma of 2 to 4. It is sand or loamy sand.

The E horizon has hue of 7.5YR or 10YR, value of 4 to 8, and chroma of 3 to 8. It is sand or loamy sand.

The Bt horizon has hue of 10R to 5YR, value of 4 to 6, and chroma of 4 to 8. It is sandy loam or sandy clay loam.

Uchee Series

The Uchee series consists of very deep, well drained, moderately slowly permeable soils that formed in loamy marine sediments on uplands of the Southern Coastal Plain Major Land Resource Area. Slopes range from 0 to 10 percent. The soils are loamy, kaolinitic, thermic Arenic Kanhapludults.

Uchee soils are geographically associated with Ailey, Bonneau, Blanton, Candor, Emporia, Eunola, Johnston, Lucy, Noboco, Norfolk, Troup, and Wagram soils. Ailey soils have a dense, compact subsoil. Blanton and Troup soils are grossarenic. Bonneau, Lucy, and Wagram soils are Paleudults. Lucy soils have Bt horizons that have hue of 2.5YR or redder. Emporia, Eunola, Noboco, and Norfolk soils do not have arenic epipedons. Candor soils have sandy Bt horizons between depths of 20 and 40 inches. Johnston soils are on flood plains.

Typical pedon of Uchee sand, 0 to 6 percent slopes; in Darlington County, South Carolina; 5.9 miles east on Pocket Road from its junction with Cashua Ferry Road, 1.1 miles north on a paved road, 0.1 mile southwest, 100 feet east:

Ap—0 to 5 inches; grayish brown (10YR 4/2) sand; weak fine granular structure; very friable; many medium, fine, and very fine roots; common clean sand grains; strongly acid; clear wavy boundary.
E—5 to 25 inches; brownish yellow (10YR 6/6) sand; weak fine subangular blocky structure; very friable; many fine roots; strongly acid; gradual wavy boundary.
Bt1—25 to 34 inches; reddish yellow (7.5YR 6/8) sandy clay loam; weak medium subangular blocky structure; friable; few distinct clay films on faces of peds and along old root channels; common medium faint brownish yellow (7.5YR 6/6) masses of iron accumulation; few clean sand grains; very strongly acid; gradual wavy boundary.
Bt2—34 to 41 inches; strong brown (7.5YR 5/6) sandy clay; moderate medium subangular blocky structure; firm in place; dense; few very fine roots; few distinct clay films on faces of peds; common medium distinct brownish yellow (10YR 6/8) and common medium prominent red (2.5YR 4/8) masses of iron accumulation; common clean sand grains; extremely acid; gradual wavy boundary.
BC—41 to 46 inches; sandy loam and sandy clay loam having variegated color pattern that is 60 percent red (2.5YR 4/8) and 40 percent brownish yellow (10YR 6/8); massive; dense; very strongly acid; clear wavy boundary.

C—46 to 60 inches; sandy loam and loamy sand having variegated color pattern that is 34 percent red (2.5YR 4/8), 33 percent white (10YR 8/1), and 33 percent brownish yellow (10YR 6/8); massive; very friable; common small white (10YR 8/1) balls of kaolin; very strongly acid.

The thickness of the solum ranges from 42 to more than 60 inches. Reaction ranges from extremely acid to strongly acid throughout the profile, except where the surface layer has been limed.

The A horizon has hue of 10YR, value of 4 or 5, and chroma of 2 to 4. It is sand.

The E horizon has hue of 10YR, value of 5 or 6, and chroma of 4 to 6. It is sand.

The upper part of the Bt horizon has hue of 5YR or 10YR, value of 5 to 7, and chroma of 4 to 8. In some pedons it has masses of iron accumulation in shades of red, yellow, or brown. It is sandy loam or sandy clay loam.

The lower part of the Bt horizon has hue of 7.5YR or 10YR, value of 5 to 7, and chroma of 4 to 8, or it does not have a dominant matrix hue and has masses of iron accumulation in shades of red, yellow, or brown and iron depletions in shades of gray. It is sandy clay loam, sandy clay, or clay.

Vaucluse Series

The Vaucluse series consists of deep, well drained, slowly permeable soils that formed in loamy marine sediments on uplands of the Carolina and Georgia Sand Hills and the Southern Coastal Plain Major Land Resource Areas. Slopes range from 2 to 10 percent. The soils are fine-loamy, kaolinitic, thermic Typic Kanhapludults.

Vaucluse soils are geographically associated with Ailey, Alpin, Candor, Pelion, Troup, and Uchee soils. Ailey, Candor, and Uchee soils are arenic. Alpin soils do not have an argillic horizon. Pelion soils have mottles in the upper 24 inches of the argillic horizon that are indicative of wetness and have chroma of 2 or less. Troup soils are grossarenic.

Typical pedon of Vaucluse loamy sand, 2 to 6 percent slopes; in Chesterfield County, South Carolina; about 8 miles south of Chesterfield on S.C. Highway 102 from its junction with S.C Secondary Highway 22 to a right turn on a trail in woods, 0.1 mile south, 100 feet west:

A—0 to 2 inches; dark gray (10YR 4/1) loamy sand; single grained; loose; many fine and few medium and large roots; few decayed roots; common fine pores; 1 percent ironstone gravel; extremely acid; clear wavy boundary.

E—2 to 6 inches; brownish yellow (10YR 6/6) loamy sand; single grained; loose; common fine and few medium and large roots; few decayed roots; common fine pores; 2 percent quartz gravel and ironstone nodules; very strongly acid; gradual wavy boundary.

Bt—6 to 16 inches; reddish yellow (5YR 6/8) sandy clay loam; weak medium subangular blocky structure; friable; few fine and medium roots; few faint clay films on faces of peds; few brittle peds; few medium distinct brownish yellow (10YR 6/8) masses of iron accumulation; few medium prominent light gray balls of kaolin; very strongly acid; gradual smooth boundary.

Btx—16 to 25 inches; red (2.5YR 4/8) sandy clay loam; weak medium subangular blocky structure; friable in part of the mass; few fine roots; few fine pores; few faint clay films on faces of peds; common medium prominent brownish yellow (10YR 6/8) masses of iron accumulation; few medium prominent light gray balls of kaolin; brittle, compact, and dense in about 40 percent of the mass; 1 percent ironstone gravel; very strongly acid; gradual wavy boundary.

BC—25 to 50 inches; red (2.5YR 5/8) sandy clay loam; weak coarse subangular blocky structure; very friable; few fine roots; few medium faint reddish yellow (5YR

6/8) masses of iron accumulation; few white balls of kaolin; few clean sand grains; very strongly acid; gradual wavy boundary.

C—50 to 60 inches; reddish yellow (5YR 6/8) sandy loam; massive; friable; few fine roots; few fine flakes of mica; few white balls of kaolin; few medium distinct yellow (10YR 7/6) masses of iron accumulation; very strongly acid.

The thickness of the solum ranges from 40 to 60 inches. Depth to a horizon with brittleness ranges from 15 to 35 inches. Reaction ranges from extremely acid to strongly acid throughout the profile, except where the surface layer has been limed. The content of ironstone or gravel ranges from 0 to 35 percent in the A and E horizons and from 0 to 5 percent in the Bt and Btx horizons.

The A horizon has hue of 10YR, value of 4 to 6, and chroma of 1 to 4. It is loamy sand.

The E horizon has hue of 10YR, value of 6 or 7, and chroma of 4 to 6. It is sand or loamy sand.

The Bt horizon has hue of 2.5YR to 10YR, value of 4 to 7, and chroma of 4 to 8. In some pedons it has few white balls of kaolin. It is sandy clay loam.

The Btx horizon has hue of 2.5YR or 5YR, value of 4 or 5, and chroma of 4 to 8. In some pedons it has few to many white balls of kaolin. It is sandy loam or sandy clay loam that is dense, brittle, and slightly cemented in 10 to 50 percent of the mass.

The BC horizon has hue of 2.5YR or 5YR, value of 5 or 6, and chroma of 1 to 8. In some pedons it has few to many white balls of kaolin. It is sandy loam or sandy clay loam.

The C horizon has hue of 2.5YR to 10YR, value of 4 to 6, and chroma of 1 to 8. It has masses of iron accumulation in shades of red, yellow, or brown in most pedons, or it does not have a dominant matrix hue and has masses of iron accumulation in shades of red, yellow, or brown. In some pedons the horizon has few to many white balls of kaolin. It is sandy loam or is stratified sandy loam and sandy clay loam.

Wagram Series

The Wagram series consists of very deep, well drained, moderately permeable soils that formed in sandy and loamy marine sediments on uplands of the Southern Coastal Plain Major Land Resource Area. Slopes range from 0 to 6 percent. The soils are loamy, kaolinitic, thermic Arenic Kandiudults.

Wagram soils are geographically associated with Ailey, Blanton, Bonneau, Candor, Lucy, Noboco, Norfolk, and Uchee soils. Within a depth of 60 inches in Ailey and Uchee soils, the subsoil decreases in clay content by more than 20 percent as depth increases. Blanton soils are grossarenic. Bonneau soils have iron depletions at depths between 42 and 60 inches. Candor soils are bisequal. Lucy soils have matrix hue of 5YR or redder in the Bt horizon. Noboco and Norfolk soils do not have arenic epipedons.

Typical pedon of Wagram sand, 0 to 6 percent slopes; in Marlboro County, South Carolina; about 6.8 miles north on S.C. Highway 38 from its junction with S.C. Highway 9, about 1.5 miles west on Sawmill Road, 0.45 mile north on Grant's Mill Road, 69 feet northeast of the road:

Ap—0 to 7 inches; grayish brown (10YR 5/2) sand; weak fine subangular blocky structure; very friable; few very fine and fine pores; few decayed coarse roots; few clean sand grains; slightly acid; abrupt wavy boundary.

E—7 to 30 inches; very pale brown (10YR 7/3) sand; single grained; very friable; few clean sand grains; few pockets of material from A horizon; slightly acid; gradual wavy boundary.

Bt1—30 to 54 inches; reddish yellow (7.5YR 6/8) sandy clay loam; weak medium subangular blocky structure; friable; few very fine pores; sand grains coated and bridged with clay; few clean sand grains; strongly acid; gradual wavy boundary.

Bt2—54 to 72 inches; strong brown (7.5YR 5/8) sandy clay loam; weak medium subangular blocky structure; friable; few distinct clay films on faces of peds; common clean sand grains; few medium distinct yellow (10YR 7/8) and yellowish red (5YR 5/8) masses of iron accumulation; strongly acid.

The thickness of the solum is more than 60 inches. Reaction ranges from very strongly acid to moderately acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 10YR, value of 5, and chroma of 2 to 4. It is sand.

The E horizon has hue of 10YR, value of 6 or 7, and chroma of 3 or 4. It is sand.

The Bt horizon has hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 6 or 8. In some pedons it has masses of iron accumulation in shades of red, yellow, or brown. Iron depletions occur below a depth of 60 inches.

Wehadkee Series

The Wehadkee series consists of very deep, poorly drained, moderately permeable soils that formed in loamy fluvial sediments along flood plains that drain the Southern Piedmont and the Southern Coastal Plain Major Land Resource Areas. Slopes range from 0 to 2 percent. The soils are fine-loamy, mixed, active, nonacid, thermic Fluvaquentic Endoaquepts.

Wehadkee soils are geographically associated with Bibb, Chastain, Chewacla, Emporia, Hornsville, Johns, Johnston, Lumbee, Pamlico, and Ponzer soils. Chastain soils have a clayey particle-size control section. Chewacla soils do not have dominant chroma of 2 or less directly below the A or Ap horizon. Emporia, Hornsville, and Johns soils are better drained than the Wehadkee soils. Johnston soils are very poorly drained and have a coarse-loamy particle-size control section. Lumbee soils have argillic horizons. Pamlico and Ponzer soils have an organic surface layer. Bibb soils have a coarse-loamy control section.

Typical pedon of Wehadkee loam in an area of Wehadkee-Chastain complex, 0 to 2 percent slopes, frequently flooded; in Darlington County, South Carolina; about 14.1 miles west on West Old Camden Road from its junction with Bo Bo Newsome Highway in Hartsville, 0.07 mile south on Rainbow View Road, 0.5 mile west on an unpaved road, 75 feet southwest:

A1—0 to 9 inches; dark grayish brown (10YR 4/2) loam; weak medium granular structure; friable; many fine and medium and few coarse roots; strongly acid; clear wavy boundary.

A2—9 to 13 inches; very dark gray (10YR 3/1) loam; weak medium granular structure; friable; many fine and medium and few coarse roots; many oxidized root channels; very strongly acid; clear wavy boundary.

Bg—13 to 30 inches; light brownish gray (2.5Y 6/2) loam; weak medium subangular blocky structure; friable; few fine and medium roots; common oxidized root channels; few fine flakes of mica; very strongly acid; gradual wavy boundary.

Cg1—30 to 46 inches; gray (5Y 6/1) sandy loam; weak fine subangular blocky structure; friable; few fine flakes of mica; few fine roots; few medium distinct reddish yellow (7.5YR 6/8) masses of iron accumulation; slightly acid; gradual wavy boundary.

Cg2—46 to 60 inches; greenish gray (5GY 6/1) sandy loam; massive; very friable; few fine flakes of mica; common light olive brown (2.5Y 5/6) masses of iron accumulation; slightly acid.

Reaction ranges from very strongly acid to slightly acid throughout the profile, except where the surface layer has been limed. The content of flakes of mica ranges from few to many.

The A horizon has hue of 10YR, value of 4 to 6, and chroma of 0 to 4. It is sandy loam or loam.

The Bg horizon has hue of 10YR to 5Y or is neutral in hue, has value of 4 to 6, and has chroma of 0 to 4. In some pedons it has masses of iron accumulation in shades of red, yellow, or brown. It is fine sandy loam or loam.

The Cg horizon has hue of 10YR to 2.5Y or is neutral in hue, has value of 4 to 7, and has chroma of 0 to 3. It is sandy loam, loam, or silt loam, or it is stratified in layers of sandy clay loam, clay loam, silty clay loam, loamy sand, or sand.

Wickham Series

The Wickham series consists of very deep, well drained, moderately permeable soils that formed in loamy fluvial and marine sediments on stream terraces in the Southern Coastal Plain and the Atlantic Coast Flatwoods Major Land Resource Areas. Slopes range from 0 to 6 percent. The soils are fine-loamy, mixed, semiactive, thermic Typic Hapludults.

Wickham soils are geographically associated with Chastain, Chewacla, Hornsville, Lakeland, and Riverview soils. Chastain, Chewacla, and Riverview soils do not have an argillic horizon and are on flood plains. Hornsville soils have mottles that have chroma of 2 or less within the upper 24 inches of the argillic horizon. Lakeland soils are Quartzipsamments.

Typical pedon of Wickham sandy loam, 0 to 2 percent slopes; in Chesterfield County, South Carolina; 4.3 miles south on U.S. Highway 52 from its junction with S.C. Highway 9 in Cheraw, 0.7 mile east of S.C. Secondary Highway 701 to an unpaved road, 0.4 mile east on the unpaved road, 1.9 miles southeast of the road, 0.2 mile northeast of a field road, 250 east in the field:

Ap—0 to 6 inches; brown (7.5YR 4/4) sandy loam; weak fine granular structure; very friable; many fine roots; few fine pores; few uncoated sand grains; slightly acid; abrupt wavy boundary.

Bt1—6 to 26 inches; yellowish red (5YR 4/6) clay loam; moderate medium subangular blocky structure; friable; common fine roots; many fine pores and few medium or coarse pores; common distinct clay films on faces of peds and along pore walls and root channels; few fine black minerals; few fine flakes of mica; moderately acid; gradual wavy boundary.

Bt2—26 to 40 inches; yellowish red (5YR 4/6) sandy clay loam; weak medium subangular blocky structure; friable; few fine roots; many fine pores; few faint clay films on faces of peds and along pore walls and root channels; few uncoated sand grains; few fine black minerals; few fine flakes of mica; moderately acid; gradual wavy boundary.

BC—40 to 48 inches; yellowish red (5YR 5/8) sandy loam; weak coarse subangular blocky structure; friable; few fine roots; common fine pores; few faint clay films on faces of peds and along walls of pores and root channels; few uncoated sand grains; 2 percent fine gravel; few fine black minerals; few flakes of mica; moderately acid; gradual wavy boundary.

C—48 to 80 inches; 50 percent strong brown (7.5YR 5/8) and 50 percent pale brown (10YR 6/3) loamy sand; single grained; loose; few fine black minerals; few fine flakes of mica; 2 percent fine gravel; moderately acid.

The thickness of the solum ranges from 40 to more than 60 inches. Reaction ranges from very strongly acid to moderately acid throughout the profile, except where

the surface layer has been limed. The content of gravel ranges from 0 to 10 percent in the A horizon, from 0 to 5 percent in the Bt horizon, and from 0 to 15 percent in the C horizon.

The A horizon has hue of 7.5YR or 10YR, value of 4 to 6, and chroma of 2 to 6. It is sandy loam.

The Bt horizon has hue of 2.5YR to 7.5YR, value of 4 or 5, and chroma of 4 to 8. It is sandy clay loam or clay loam.

The C horizon has hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 3 to 8. It is sand or loamy sand or is stratified in these textures.

Formation of the Soils

This section describes the factors of soil formation and relates them to the soils in the survey area. It also discusses the processes of horizon differentiation and the geology of the survey area.

Factors of Soil Formation

Soils are formed by processes of the environment acting upon geologic agents, such as metamorphic, igneous, and sedimentary rocks and fluvial stream sediments. The characteristics of a soil are determined by the combined influence of parent material, climate, plant and animal life, relief, and time. These five factors are responsible for the profile development and chemical properties that differentiate soils *(3)*.

Parent Material

Parent material is the unconsolidated mass in which a soil forms. In Darlington County, parent material is a major factor in determining what kind of soil forms and can be correlated to some degree to geologic formations. The general soil map can be used as an approximate guide to the geology of the county.

Parent material is largely responsible for the chemical and mineralogical composition of soils and for the major differences among the soils of the county. Major differences in parent material, such as differences in texture, can be observed in the field. Less distinct differences, such as differences in mineralogical composition, can be determined only by careful laboratory analysis.

Climate

Climate, particularly precipitation and temperature, affects the physical, chemical, and biological relationships in the soil. It influences the rate at which rocks weather and organic matter decomposes. The amount of leaching in a soil is related to the amount of rainfall and the movement of water through the soil. The effects of climate also control the kinds of plants and animals living in and on the soil. Temperature influences the kind and growth of organisms and the speed of chemical and physical reactions in the soil.

Plant and Animal Life

Plants and animals influence the formation and differentiation of soil horizons. The type and number of organisms in and on the soil are determined in part by climate and in part by the nature of the soil material, relief, and the age of the soil. Bacteria, fungi, and other micro-organisms aid in the weathering of rocks and in the decomposition of organic matter. The plants and animals that live on a soil are the primary source of organic material.

Plants largely determine the kinds and amounts of organic matter that are added to a soil under normal conditions and the way in which the organic matter is added. They

also are important for the changes of base status and for the leaching process of a soil.

Animals convert complex compounds into simpler forms, add organic matter to the soil, and modify certain chemical and physical properties of soil. In Darlington County, most of the organic material accumulates on the surface. It is acted upon by micro-organisms, fungi, earthworms, and other forms of life and by direct chemical reaction. It is mixed with the uppermost mineral part of the soil by the activities of earthworms and other small invertebrates.

Organic material decomposes rapidly in the county because of the moderate temperatures, the abundant moisture supply, and the character of the organic material. It decays so rapidly that little of it accumulates in the soil.

Relief

Relief causes differences in free drainage, surface runoff, soil temperature, and the extent of geologic erosion. Relief in Darlington County is largely determined by the geology of the area and the extent that the landscape is dissected by streams.

Relief affects the percolation of water through the profile. Water movement through the profile is important in soil development because it aids chemical reactions and is necessary for leaching.

Slopes in the county range from 0 to 25 percent. The upland soils that have slopes of less than 8 percent generally have deeper, better defined profiles than the steeper soils. Examples are the well developed Noboco, Norfolk, and Orangeburg soils. Relief affects the depth of soils. On some soils that have slopes of 15 percent, geologic erosion removes soil material almost as fast as it forms. As a result, most of the strongly sloping to steep soils have a thin solum. Examples are Cowarts and Vaucluse soils.

Relief also affects drainage. For example, a high water table usually occurs in nearly level and gently sloping areas. Goldsboro and Lynchburg soils on uplands are moderately well drained or somewhat poorly drained because they are gently sloping and water moves through them slowly.

Soils at the lower elevations are less sloping and receive runoff from the adjacent higher areas. This runoff tends to accumulate in the nearly level to slightly concave areas. The somewhat poorly drained Chewacla soils and the poorly drained Chastain soils on flood plains are in these areas.

Time

The length of time that soil material has been exposed to the soil-forming processes accounts for some differences between soils. The formation of a well defined profile, however, also depends on other factors. Less time is required for a profile to develop in coarse textured material than in similar but finer textured material, even if the environment is the same for both materials. Less time is required for a profile to develop in an area, such as Darlington County, that is warm and humid and has a dense plant cover than in a cold, dry area that has a sparse plant cover.

Soils vary considerably in age. The length of time that a soil has been forming is generally reflected in the profile. Old soils generally have better defined horizons than young soils. In Darlington County, the effects of time as a soil-forming factor are more apparent in the older soils that are in the broader parts of the uplands. Examples are Norfolk and Orangeburg soils. These soils have well defined horizons. In contrast, young soils, such as Johnston and Chastain soils, formed in recent alluvium on flood plains and have not been in place long enough to develop as completely as Norfolk and Orangeburg soils.

Processes of Horizon Differentiation

Most of the soils in Darlington County exhibit four major horizons: the A, E, B, and C horizons. These horizons can be subdivided to indicate variations within a horizon. An example is a Bt horizon, which is a subsoil layer that contains translocated clay from the horizon above the Bt horizon.

The A horizon is the surface layer. It has the largest accumulation of organic matter of all horizons. If the soil has been cleared and plowed, this layer is called the Ap horizon. Johnston soils are an example of soils that have a distinctive dark A or Ap horizon.

The E horizon is the zone of maximum leaching, or eluviation, of clay and iron. It forms directly below the surface layer and generally is the lightest colored horizon in the soil. Ailey and Blanton soils have a well expressed E horizon.

The B horizon underlies the A or E horizon. It commonly is called the subsoil. It is the horizon of maximum accumulation, or illuviation, of clay, iron, aluminum, and other compounds. Noboco and Emporia soils have well expressed B horizons. Some soils, such as Cowarts soils, have a thin Bt horizon that is dense and brittle in parts. This horizon has a very low content of organic matter. It tends to be compact and is very hard when dry and slightly brittle when moist. It generally is mottled and is moderately slowly permeable or slowly permeable.

The C horizon is generally below the B horizon. It includes sediments or saprolite and, when moist, can be dug with a spade. In Johnston soils, which do not have a B horizon, the C horizon is directly below the A horizon.

One or more soil-forming processes are involved in the formation of soil horizons. These processes are the accumulation of organic matter; the leaching of soluble material; the chemical weathering, mainly by hydrolysis, of primary minerals into silicate clay minerals; the translocation of silicate clay and some silt-sized particles from one horizon to another; and the reduction and transfer of iron. Some of these processes take place continually in all soils, but the number of active processes and the degree of their activity differ from one soil to another.

These processes have been active in the formation of most of the soils in Darlington County. The interaction of the first four processes is indicated by the strongly expressed horizons in Norfolk and Noboco soils. All five processes have probably been active in the formation of the moderately well drained Goldsboro soils.

Some organic matter has accumulated in all of the soils in the survey area. Most of the soils contain moderate amounts of organic matter in the surface layer. The content of organic matter ranges from low, as in Faceville soils, to high, as in Pamlico soils.

Most of the soils in the survey area are acid in the upper layers, unless the surface layer has been limed.

The translocation of clay minerals is an important process in the development of many soils in the survey area. As clay minerals are removed from the A horizon, they accumulate as clay films on the faces of peds, in pores, and in root channels in the B horizon.

As silicate clay forms from primary minerals, some iron is commonly released as hydrated oxides. These oxides are generally red. Even if they occur in small amounts, they give the soil material a brownish color. They are largely responsible for the strong brown, yellowish brown, or reddish brown colors that are dominant in the subsoil of many soils in the survey area.

The reduction and transfer of iron have occurred in all of the soils that are not characterized by good natural drainage. This process, known as gleying, is evidenced by a gray matrix color and by iron or clay depletions. Examples of gleyed soils in Darlington County are Coxville and Wehadkee soils. Some of the iron may be reoxidized and segregated and thus form yellow, brown, red, or other brightly colored masses of iron accumulation in an essentially gray matrix in the subsoil. Nodules or

concretions of iron or manganese also commonly form as a result of this process. Soil features associated with chemically reduced iron are referred to as redoximorphic features *(11)*.

Geology and Soils

Kim C. Kroeger, geologist, Natural Resources Conservation Service, helped prepare this section.

The soils in Darlington County formed in sediments of the Carolina Coastal Plain. These sediments were deposited during cycles of sea level changes, which were caused by tectonics and glaciation. Although glaciers did not cover the survey area, glaciation affected sea level worldwide. The sea level dropped during periods of glaciation due to the volume of water held as ice in the glaciers. As a result, the land surface was subject to erosion, streams down cut, and scarps formed, and various terraces became distinguishable. During interglacial periods, the climate was warmer and the sea level several hundred feet higher. Sediments were deposited each time the sea covered the land. The deposited sediments formed into new geologic units. The coastal plain sediments were built up in cycles or sequences as new sediments were deposited over the older sediments. The soils in Darlington County formed in five geologic units. These units area the Holocene deposits, the Wando Formation, the Socastee Formation, the Duplin Formation, and the Black Creek Group.

Generally, the Coastal Plain has two types of river systems. Rivers either originate in the area of the Coastal Plain or in the area of the Piedmont and the Blue Ridge. Darlington County includes both of these river systems. The Holocene deposits are sediments which were deposited in stream channels or adjacent to rivers and streams in the area of the flood plain. They consist of sands, gravel, and clays and were deposited within the past 7,000 years. The deposits occur in wide areas on the flood plains along the Pee Dee River and Black Creek, which drain the Piedmont. They are adjacent to the rivers and streams but are different from the higher terraces occurring on these river bottoms. Chastain, Chewacla, Riverview, Wehadkee, and Johnston soils are the major soils that formed in these flood plain deposits.

The Wando Formation consists of sandy terraces in the area of the Pee Dee River bottom and the Lynches River. The terraces have a relatively flat surface and are typically at an elevation similar to that of the river flood plain. The terrace surface or land surface of this formation is distinguished from older, higher level terraces by a lack of Carolina bays. The land surface has ridge-and-swale or scroll type topography. Sand dunes occur in some areas. The elevation of the Wando Terrace ranges from about 3.0 to 33.5 meters in the Pee Dee River valley. The Wando Formation is about 90,000 years old, or late Pleistocene in age. Chastain, Chewacla, and Riverview soils are the major soils that formed in the Wando Formation in the Pee Dee River valley. Chastain and Wehadkee soils are the major soils that formed in the Wando Formation where it is exposed in the Lynches River and Sparrow and Lake Swamp. These poorly drained soils have a clayey or loamy subsoil.

The Socastee Formation occurs in the eastern part of the county, between the Pee Dee River and the towns of Society Hill and Mont Clare. This formation is within the Atlantic Coast Flatwoods Major Land Resource Area of South Carolina. It is characterized by ridge-and-swale type topography. Carolina bays are abundant on the land surface. Some of the bays are as much as 3 kilometers in size. The formation consists of sands that have interbedded clays. Some of the clayey layers are peaty. The formation is about 200,000 years old, or upper Pleistocene in age. Coxville, Smithboro, and Persanti soils are the major soils that formed in the terrace deposits of this formation. These soils have a clayey subsoil.

The Duplin Formation is the most extensive formation in the county. The land surface is broad and slopes seaward. The elevation ranges from about 290 feet at the base of the Orangeburg Scarp to about 130 feet in the southeastern part of the county.

Carolina bays are common on the land surface. The formation is generally sandy but includes interbedded clays. It is early Pliocene in age and was deposited about 2.8 to 3.6 million years ago. Noboco, Coxville, Norfolk, Goldsboro, and Rains soils are the major soils that formed in the Duplin Formation. These soils have a loamy or clayey subsoil.

The Black Creek Group was originally called the Black Creek Marl due to the black clays and sands which are exposed along Black Creek near Darlington, South Carolina. The Black Creek Group was subdivided into three new units. These units are the Tar Heel Formation (the oldest unit), the Bladen Formation, and the Donoho Formation (the youngest unit). The Tar Heel and Bladen Formations are exposed in Darlington County. The Donoho Formation is exposed further east, in Florence County.

The Tar Heel Formation is located in the northern part of the county and is exposed along the bluff of the Pee Dee River. This unit consists of red to white, thick crossbedded sands. The sands are interbedded with white to black clays. They are deeply weathered. Water seeping downward through the unit removed the clayey portion near the ground surface and transported the clay minerals to deeper parts of the unit. Prevailing winds formed dunes on the sheltered sides of hills. The Tar Heel Formation includes the Sand Hills region of the county. The unit was deposited during the upper Cretaceous period, but the movement of clays and the formation the sand dunes may have continued through the Pleistocene epoch. Alpin, Candor, Ailey, Johnston, Vaucluse, and Cowarts soils are the major soils that formed in the Tar Heel Formation. They are on nearly level to steep slopes and have a sandy or loamy subsoil.

The Bladen Formation is exposed in Black Creek and along the bluff of the Pee Dee River. It consists of material ranging from massive black clays to thin interbedded layers of sand and clay. Woody fragments are common in some clay layers. The sands contain mica flakes. This Formation is upper Cretaceous in age.

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Glossary

ABC soil. A soil having an A, a B, and a C horizon.

AC soil. A soil having only an A and a C horizon. Commonly, such soil formed in recent alluvium or on steep, rocky slopes.

Aeration, soil. The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

Aggregate, soil. Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

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.

Aquifer. A water-bearing bed or stratum of permeable rock, sand, or gravel capable of fielding considerable quantities of water to wells or springs.

Area reclaim (in tables). An area difficult to reclaim after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

Argillic horizon. A subsoil horizon characterized by an accumulation of illuvial clay.

Association, soil. A group of soils or miscellaneous areas geographically associated in a characteristic repeating pattern and defined and delineated as a single map unit.

Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:

Very low	0 to 3
Low	3 to 6
Moderate	6 to 9
High	9 to 12
Very high	more than 12

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.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Benchmark soil. A soil of large extent that holds a key position in the soil classification system or is of special significance to farming, engineering, forestry, or other uses.

Bisequum. Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.

Borrow pit. An open excavation from which the soil and underlying material have been removed, generally for use in road construction. Borrow pits support few or no plants without major reclamation. Areas identified on the detailed soil maps by a special symbol typically are less than 2 acres in size.

Bottom land. The normal flood plain of a stream, subject to flooding.

Breast height. An average height of 4.5 feet above the ground surface; the point on a tree where diameter measurements are ordinarily taken.

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.

Carolina bay. A shallow, oval depression that does not have a natural drainage outlet. These bays are oriented in a northwest-southwest direction and range from 5 acres to more than 500 acres in size. Most contain standing water unless they are drained.

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.

Clayey. A general textural term that includes sandy clay, silty clay, and clay. According to family level criteria in the soil taxonomic system, a specific textural name referring to fine earth (particles less than 2 millimeters in size) containing 35 percent or more clay, by weight, within the control section. The content of rock fragments is less than 35 percent, by volume.

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.

Clay spot. An area where the surface layer is clayey (sandy clay, silty clay, or clay) occurring in a map unit in which the dominant soil or soils have a loamy, silty, or sandy surface layer. Excluded are areas where the textural classes are adjoining, such as an area of sandy clay occurring in a map unit in which the dominant soil or soils have a surface layer of clay loam. Areas identified on the detailed soil

maps by a special symbol typically are less than 2 acres in size. (See Texture, soil.)

Coarse fragments. If round, mineral or rock particles 2 millimeters to 25 centimeters (10 inches) in diameter; if flat, mineral or rock particles (flagstone) 15 to 38 centimeters (6 to 15 inches) long.

Coarse textured soil. Sand or loamy sand.

Coastal Plain. The physiographic region that consists of ocean-deposited sediments of sand, silt, and clay. These sediments are in level to rolling areas and vary in thickness.

Cobble (or cobblestone). A rounded or partly rounded fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter.

Colluvium. Soil material or rock fragments, or both, moved by creep, slide, or local wash and deposited at the base of steep slopes.

Complex slope. Irregular or variable slope. Planning or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.

Complex, soil. A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.

Concretions. Cemented bodies with crude internal symmetry organized around a point, a line, or a plane. They typically take the form of concentric layers visible to the naked eye. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up concretions. If formed in place, concretions of iron oxide or manganese oxide are generally considered a type of redoximorphic concentration.

Conservation cropping system. Growing crops in combination with needed cultural and management practices. In a good conservation cropping system, the soil-improving crops and practices more than offset the effects of the soil-depleting crops and practices. Cropping systems are needed on all tilled soils. Soil-improving practices in a conservation cropping system include the use of rotations that contain grasses and legumes and the return of crop residue to the soil. Other practices include the use of green manure crops of grasses and legumes, proper tillage, adequate fertilization, and weed and pest control.

Conservation tillage. A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

Consistence, soil. Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the “Soil Survey Manual.”

Contour stripcropping. Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

Control section. The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

Corrosion. Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.

Cover crop. A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

Cropping system. Growing crops according to a planned system of rotation and management practices.

Crop residue management. Returning crop residue to the soil, which helps to maintain soil structure, organic matter content, and fertility and helps to control erosion.

Cutbanks cave (in tables). The walls of excavations tend to cave in or slough.

Dbh (diameter at breast height). The diameter of a tree at 4.5 feet above the ground level on the uphill side.

Deferred grazing. Postponing grazing or resting grazing land for a prescribed period.

Delineation. The process of drawing or plotting features on a map with lines and symbols.

Depression (depressional area). A portion of land surrounded on all sides by higher land. These areas generally do not have outlets for drainage.

Depth class. Refers to the depth to a root-restricting layer. Unless otherwise stated, this layer is understood to be consolidated bedrock. The depth classes in this survey are:

Very shallow	less than 10 inches
Shallow	10 to 20 inches
Moderately deep	20 to 40 inches
Deep	40 to 60 inches
Very deep	more than 60 inches

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.

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.

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.

Engineering index test data. Laboratory test and mechanical analysis of selected soils in the county.

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.

Eroded (soil phase). Because of erosion, the soil has lost an average of 25 to 75 percent of the original A horizon or the uppermost 2 to 6 inches if the original A horizon was less than 8 inches thick.

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.

Erosion classes. Classes based on estimates of past erosion. The classes are as follows:

Class 1.—Soils that have lost some of the original A horizon but on the average less than 25 percent of the original A horizon or of the uppermost 8 inches (if the original A horizon was less than 8 inches thick). Throughout most areas, the thickness of the surface layer is within the normal range of variability of the uneroded soil. Class 1 erosion typically is not designated in the name of the map unit or in the map symbol.

Class 2.—Soils that have lost an average of 25 to 75 percent of the original A horizon or of the uppermost 8 inches (if the original A horizon was less than 8 inches thick). Throughout most cultivated areas of class 2 erosion, the surface layer consists of a mixture of the original A horizon and material from below. Some areas may have intricate patterns ranging from uneroded spots to spots where all of the original A horizon has been removed.

Class 3.—Soils that have lost an average of 75 percent or more of the original A horizon or of the uppermost 8 inches (if the original A horizon was less than 8 inches thick). In most cultivated areas of class 3 erosion, material that was below the original A horizon is exposed. The plow layer consists entirely or largely of this material.

Class 4.—Soils that have lost all of the original A horizon or of the uppermost 8 inches (if the original A horizon was less than 8 inches thick) plus some or all of the deeper horizons throughout most of the area. The original soil can be identified only in spots. Some areas may be smooth, but most have an intricate pattern of gullies.

Erosion hazard. A term describing the potential for future erosion, inherent in the soil itself, in inadequately protected areas. The following definitions are based on estimated annual soil loss in metric tons per hectare (values determined by the Universal Soil Loss Equation assuming bare soil conditions and using rainfall and climate factors for South Carolina):

0 tons per hectare	none
Less than 2.5 tons per hectare	slight
2.5 to 10 tons per hectare	moderate
10 to 25 tons per hectare	severe
More than 25 tons per hectare	very severe

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. Exposed material is hard or soft bedrock. Areas identified on the detailed soil maps by a special symbol typically are long, narrow bands that are less than 2 acres in size. Synonym: scarp.

Evapotranspiration. The combined loss of water from a given area through surface evaporation and through transpiration by plants during a specified period.

Excess fines (in tables). Excess silt and clay in the soil. The soil does not provide a source of gravel or sand for construction purposes.

Fast intake (in tables). The rapid movement of water into the soil.

Fertility, soil. The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

Fibric soil material (peat). The least decomposed of all organic soil material. Peat contains a large amount of well preserved fiber that is readily identifiable according to botanical origin. Peat has the lowest bulk density and the highest water content at saturation of all organic soil material.

Field border. A strip of perennial vegetation (trees, shrubs, or herbaceous plants) established on the edge of a field to control erosion, provide travel lanes for farm

machinery, control competition from adjacent woodland, or provide food and cover for wildlife.

Field moisture capacity. The moisture content of a soil, expressed as a percentage of the ovendry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity, normal moisture capacity,* or *capillary capacity*.

Fine textured soil. Sandy clay, silty clay, or clay.

Firebreak. An 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.

Flat. A general term for a level or nearly level surface or small area of land marked by little or no relief.

Flooding. The temporary covering of the soil surface by flowing water from any source, such as overflowing streams, runoff from adjacent or surrounding slopes, and inflow from high tides. The frequency of flooding generally is expressed as none, rare, occasional, or frequent. *None* means that flooding is not probable. *Rare* means that flooding is unlikely but possible under unusual weather conditions (the chance of flooding is nearly 0 percent to 5 percent in any year). *Occasional* means that flooding occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year). *Frequent* means that flooding occurs often under normal weather conditions (the chance of flooding is more than 50 percent in any year). The duration of flooding is expressed as *very brief* (less than 2 days), *brief* (2 to 7 days), *long* (7 days to 1 month), and *very long* (more than 1 month).

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.

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 which differentiate it 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.

Geomorphic surface. A part of the surface of the land that represents an episode of landscape development and consists of one or more landforms. It is a mappable part of the land surface that is defined in terms of morphology (relief, slope, aspect, etc.); origin (erosional, constructional, etc.); age (absolute or relative); and stability of component landforms.

Graded stripcropping. Growing crops in strips that grade toward a protected waterway.

Grassed waterway. A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.

Gravel. Rounded or angular fragments of rock as much as 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.

Gravelly soil material. Material that is 15 to 35 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter.

Gravelly spot. An area of soils where the content of rock fragments generally less than 3 inches in diameter is more than 15 percent, by volume, in the surface layer, occurring in a map unit in which the surface layer of the dominant soil or soils has less than 15 percent gravel. Areas identified on the detailed soil maps by a special symbol typically are less than 2 acres in size.

Gravel pit. An open excavation in which the soil and underlying material are used as a source of sand and gravel. The excavated material is not crushed for use. Areas identified on the detailed soil maps by a special symbol typically are less than 2 acres in size.

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 very small channel with steep sides cut by running water and through which water ordinarily runs only after rainfall, icemelt, or snowmelt. 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. Areas identified on the detailed soil maps by a special symbol typically are less than 2 acres in size.

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.

Hemic soil material (mucky peat). Organic soil material intermediate in degree of decomposition between the less decomposed fibric material and the more decomposed sapric material.

High-residue crops. Such crops as small grain and corn that are 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.

High shrink-swell spot. An area of soils where the subsoil has a high shrink-swell potential, occurring in a map unit in which the dominant soil or soils have a low shrink-swell potential; or an area of soils where the subsoil has a very high shrink-swell potential, occurring in a map unit in which the dominant soil or soils have a moderate shrink-swell potential. Areas identified on the detailed soil maps by a special symbol typically are less than 0.5 acre in size. (See Shrink-swell.)

High water table (seasonal). The highest level of a saturated zone in the soil (the apparent or perched water table) over a continuous period of more than 2 weeks in most years, but not a permanent water table.

Hill. A natural elevation of the land surface, rising as much as 1,000 feet above the 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 horizon to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

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.

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 high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

Illuviation. The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Impervious soil. A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

Infiltration. The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

Infiltration 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.

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.

Interstream divide (or interstream area). The nearly level land between drainageways in relatively undissected parts of the Coastal Plain. It is in areas on uplands, low marine terraces, and stream terraces. Soils in these areas are generally poorly drained or very poorly drained.

Iron depletions. Low-chroma zones that have a low content of iron and manganese oxide because of chemical reduction and removal but also have 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 in the survey area are:

Controlled flooding.—Water is released at intervals from closely spaced field ditches and distributed uniformly over the field.

Drip (or trickle).—Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.

Furrow.—Water is applied in small ditches made by cultivation implements. Furrows are used for tree and row crops.

Sprinkler.—Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

Subirrigation.—Water is applied in open ditches or tile lines until the water table is raised enough to wet the soil.

Wild flooding.—Water, released at high points, is allowed to flow onto an area without controlled distribution.

Kaolinite. An aluminosilicate clay mineral with a 1:1 layer structure; that is, a silicon tetrahedral sheet alternating with an aluminum octahedral sheet. Little or no expansion occurs when water mixes with the clay.

Lamellae. Very thin, mostly horizontal layers of accumulated clay, iron, or other material common in some sands or loamy sands; associated with soil formation rather than geologic deposition.

Landfill. An area of accumulated wastes produced by human activities. These areas can be above or below the natural ground level. Areas identified on the detailed soil maps by a special symbol typically are less than 2 acres in size.

Leaching. The removal of soluble material from soil or other material by percolating water.

Levees. Small dikes, generally less than 50 feet wide and several hundred feet in length, used to prevent intrusions of brackish water or to retain fresh water. Areas identified on the detailed soil maps by a special symbol typically are 5 to 20 acres in size.

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.

Loamy. A general textural term that includes coarse sandy loam, sandy loam, fine sandy loam, very fine sandy loam, loam, silt loam, silt, clay loam, sandy clay loam, and silty clay loam. According to family level criteria in the soil taxonomic system, a specific textural name referring to fine earth (particles less than 2 millimeters in size) of loamy very fine sand or finer textured material that contains less than 35 percent clay, by weight, within the control section. The content of rock fragments is less than 35 percent, by volume.

Low-residue crops. Such crops as corn that are 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.

Micas. A group of silicate minerals characterized by sheet or scale cleavage. Biotite is the ferromagnesian black mica. Muscovite is the potassic white mica.

Mine or quarry (map symbol). An open excavation from which the soil and underlying material have been removed, exposing bedrock; or the surface opening to underground mines. Areas identified on the detailed soil maps by a special symbol typically are less than 2 acres in size.

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.

Miscellaneous water. An area where water is artificially impounded for industrial, sanitary, or mining uses or for a fish hatchery or an area where water is impounded by animal activity, such as a beaver pond. Areas identified on the detailed soil maps by a special symbol typically are less than 2 acres in size.

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).

Muck. Dark, finely divided, well decomposed organic soil material. (See Sapric soil material.)

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.

Nose slope. The downward-sloping convex end of a main ridge or spur ridge.

No-till planting. A method of planting crops in which there is virtually no seedbed preparation. A thin slice of the soil is opened, and the seed is planted at the desired depth.

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

Overstory. The portion of the trees in a forest stand forming the upper crown cover.
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.
Peat. Unconsolidated material, largely undecomposed organic matter, that has accumulated under excess moisture. (See Fibric soil material.)
Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.
Pedon. The smallest volume that can be called "a soil." A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.
Percolation. The downward movement of water through the soil.
Percs slowly (in tables). The slow movement of water through the soil adversely affects the specified use.
Perennial stream. A stream, or reach of a stream, that flows continuously throughout the year.
Perennial water. An area that generally provides water for human or livestock consumption; commonly a lake, pond, river, or stream. Areas identified on the detailed soil maps by a special symbol typically are less than 2 acres in size.
Permeability. The quality of the soil that enables water or air to move downward through the profile. The rate at which a saturated soil transmits water is accepted as a measure of this quality. In soil physics, the rate is referred to as "saturated hydraulic conductivity," which is defined in the "Soil Survey Manual." In line with conventional usage in the engineering profession and with traditional usage in published soil surveys, this rate of flow continues to be expressed as "permeability." Terms describing permeability, measured in inches per hour, are as follows:

Extremely slow	0.0 to 0.01 inch
Very slow	0.01 to 0.06 inch
Slow	0.06 to 0.2 inch
Moderately slow	0.2 to 0.6 inch
Moderate	0.6 inch to 2.0 inches
Moderately rapid	2.0 to 6.0 inches
Rapid	6.0 to 20 inches
Very rapid	more than 20 inches

Phase, soil. A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.
pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)
Piedmont. The physiographic region characterized by rolling landscapes formed from the weathering of residual rock material.
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 and 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 also exposed 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.

Pocosin. Waterlogged land in large, flat interstream areas that are elevated above the distant flood plains. The soils are typically high in content of organic matter and support wetness-tolerant plants.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poor filter (in tables). Because of rapid or very rapid permeability, the soil may not adequately filter effluent from a waste disposal system.

Poorly graded. Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

Potential rooting depth (effective rooting depth). Depth to which roots could penetrate if the content of moisture in the soil were adequate. The soil has no properties restricting the penetration of roots to this depth.

Potential, soil. Relative terms are assigned to classes to indicate the potential of a soil for a particular use as compared with that of other soils in the area. The rating classes do not identify the most profitable soil use or imply a recommendation for a particular use. The following class terms and definitions are used nationwide:

Very high.—Production or performance is at or above local standards because soil conditions are exceptionally favorable, installation or management costs are low, and soil limitations are insufficient.

High.—Production or performance is at or above the level of locally established standards, the costs of measures for overcoming soil limitations are judged locally to be favorable in relation to the expected performance or yields, and soil limitations that continue after corrective measures are installed do not detract appreciably from environmental quality or economic returns.

Medium.—Production or performance is somewhat below locally established standards, the costs of measures for overcoming soil limitations are high, or soil limitations that continue after corrective measures are installed detract from environmental quality or economic returns.

Low.—Production or performance is significantly below local standards, measures that are required to overcome soil limitations are very costly, or soil limitations that continue after corrective measures are installed detract appreciably from environmental quality or economic returns.

Very low.—Production or performance is much below locally established standards, severe soil limitations exist for which economically feasible measures are unavailable, or soil limitations that continue after corrective measures are installed seriously detract from environmental quality or economic returns.

Prescribed burning. Deliberately burning an area for specific management purposes, under the appropriate weather conditions and soil moisture conditions 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. They indicate 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. They indicate 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. Descriptive terms for concentrations and depletions 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).

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.

Reforestation. The process in which tree seedlings are planted or become naturally established in an area that was once forested.

Relief. The elevations or inequalities of a land surface, considered collectively.

Road cut. A sloping surface produced by mechanical means during road construction. It is commonly on the uphill side of the road.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

Rooting depth (in tables). Shallow root zone. The soil is shallow over a layer that greatly restricts roots.

Root zone. The part of the soil that can be penetrated by plant roots.

Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Runoff class (surface). Refers to the rate at which water flows away from the soil over the surface without infiltrating. Six classes of rate of runoff are recognized:

Ponded.—Little of the precipitation and water that runs onto the soil escapes as runoff, and free water stands on the surface for significant periods. The amount of water that is removed from ponded areas by movement through the soil, by plants, or by evaporation is usually greater than the total rainfall. Ponding normally occurs on level and nearly level soils in depressions. The water depth may fluctuate greatly.

Very slow.—Surface water flows away slowly, and free water stands on the surface for long periods or immediately enters the soil. Most of the water passes through

the soil, is used by plants, or evaporates. The soils are commonly level or nearly level or are very porous.

Slow.—Surface water flows away so slowly that free water stands on the surface for moderate periods or enters the soil rapidly. Most of the water passes through the soil, is used by plants, or evaporates. The soils are nearly level or very gently sloping, or they are steeper but absorb precipitation very rapidly.

Medium.—Surface water flows away so rapidly that free water stands on the surface for only short periods. Part of the precipitation enters the soil and is used by plants, is lost by evaporation, or moves into underground channels. The soils are nearly level or gently sloping and absorb precipitation at a moderate rate, or they are steeper but absorb water rapidly.

Rapid.—Surface water flows away so rapidly that the period of concentration is brief and free water does not stand on the surface. Only a small part of the water enters the soil. The soils are mainly moderately steep or steep and have moderate or slow rates of absorption.

Very rapid.—Surface water flows away so rapidly that the period of concentration is very brief and free water does not stand on the surface. Only a small part of the water enters the soil. The soils are mainly steep or very steep and absorb precipitation slowly.

Sand. As a soil separate, individual rock or mineral fragments ranging 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.

Sandy. A general textural term that includes coarse sand, sand, fine sand, very fine sand, loamy coarse sand, loamy sand, loamy fine sand, and loamy very fine sand. According to family level criteria in the soil taxonomic system, a specific textural name referring to fine earth (particles less than 2 millimeters in size) of sand or loamy sand that contains less than 50 percent very fine sand, by weight, within the control section. The content of rock fragments is less than 35 percent, by volume.

Sandy spot. An area where the surface layer is sandy (loamy sand or sand) occurring in a map unit in which the dominant soil or soils have a loamy, silty, or clayey surface layer. Excluded are areas where the textural classes are adjoining, such as an area of loamy sand occurring in a map unit in which the dominant soil or soils have a surface layer of sandy loam. Areas identified on the detailed soil maps by a special symbol typically are less than 2 acres in size.

Sapric soil material (muck). The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.

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.

Scarp (marine). An area having a short, steep slope of considerable linear extent along the transition line dividing marine terraces.

Sedimentary rock. Rock made up of particles deposited from suspension in water. The chief kinds of sedimentary rock are conglomerate, formed from gravel; sandstone, formed from sand; shale, formed from clay; and limestone, formed from soft masses of calcium carbonate. There are many intermediate types. Some wind-deposited sand is consolidated into sandstone.

Seepage (in tables). The movement of water through the soil. Seepage adversely affects the specified use.

Sequum. A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)

Series, soil. A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Sesquioxides. A general term for oxides and hydroxides of iron and aluminum.

Severely eroded spot. An area of soil that has lost an average of 75 percent or more of the original surface layer because of accelerated erosion, occurring in a map unit in which the dominant soil or soils have lost less than 25 percent of the original surface layer. Areas identified on the detailed soil maps by a special symbol typically are less than 2 acres in size.

Sheet erosion. The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

Short, steep slope. An area of soils that are at least two slope classes steeper than the named soils in the surrounding map unit. Areas identified on the detailed soil maps by a special symbol typically are long, narrow bands that are less than 2 acres in size. (See Slope.)

Shrink-swell (in tables). The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Silica. A combination of silicon and oxygen. The mineral form is called quartz.

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, 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.

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.

Skeletans. Coatings of light-colored, low-luster silica flour or silica dust adhering to the natural surfaces in soil materials.

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:

Nearly level	0 to 2 percent
Gently sloping	2 to 6 percent
Moderately sloping	6 to 10 percent
Strongly sloping	10 to 15 percent
Moderately steep	15 to 25 percent
Steep	25 to 50 percent
Very steep	50 percent and higher

Slope (in tables). Slope is great enough that special practices are required to ensure satisfactory performance of the soil for a specific use.

Small stones (in tables). Rock fragments less than 3 inches (7.6 centimeters) in diameter. Small stones adversely affect the specified use of the soil.

Soil. A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate

and living matter acting on earthy parent material, as conditioned by relief over periods of time.

Soil compaction. An alteration of soil structure that ultimately can affect the biological and chemical properties of the soil. Compaction decreases the extent of voids and increases bulk density.

Soil map unit. A kind of soil or miscellaneous area or a combination of two or more soils or one or more soils and one or more miscellaneous areas that can be shown at the scale of mapping for the defined purposes and objectives of the soil survey. Soil map units generally are designed to reflect significant differences in use and management among the soils of a survey area.

Soil sample site (map symbol). The location of a typifying pedon in the survey area.

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

Soil strength. The load-supporting capacity of a soil at specific moisture and density conditions.

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.

Stones. Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.

Stripcropping. Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to soil blowing 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 soil blowing 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. Technically, the E horizon. Generally refers to a leached horizon lighter in color and lower in content of organic matter than the overlying surface layer.

Suitability ratings. Ratings for the degree of suitability of soils for pasture, crops, woodland, and engineering uses. The ratings and the general criteria used for their selection are as follows:

Well suited.—The intended use may be initiated and maintained by using only the standard materials and methods typically required for that use. Good results can be expected.

Suited or moderately suited.—The limitations affecting the intended use make special planning, design, or maintenance necessary.

Poorly suited.—The intended use is difficult or costly to initiate and maintain because of certain soil properties, such as steep slopes, a severe hazard of erosion, a high water table, low fertility, and a hazard of flooding. Major soil reclamation, special design, or intensive management practices are needed.

Very poorly suited, not suited, or unsuited.—The intended use is very difficult or costly to initiate and maintain, and thus it generally should not be undertaken.

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.

Swamp. A saturated, very poorly drained area that is intermittently or permanently covered by water. Swamps are dominantly covered by trees or shrubs. Areas identified on the detailed soil maps by a special symbol typically are less than 2 acres in size.

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." The textural classes are defined as follows:

Sands (coarse sand, sand, fine sand, and very fine sand).—Soil material in which the content of sand is 85 percent or more and the percentage of silt plus $1^1/_2$ times the percentage of clay does not exceed 15.

Loamy sands (loamy coarse sand, loamy sand, loamy fine sand, and loamy very fine sand).—Soil material in which, at the upper limit, the content of sand is 85 to 90 percent and the percentage of silt plus $1^1/_2$ times the percentage of clay is not less than 15; at the lower limit, the content of sand is 70 to 85 percent and the percentage of silt plus twice the percentage of clay does not exceed 30.

Sandy loams (coarse sandy loam, sandy loam, fine sandy loam, and very fine sandy loam).—Soil material in which the content of clay is 20 percent or less, the percentage of silt plus twice the percentage of clay exceeds 30, and the content of sand is 52 percent or more or soil material in which the content of clay is less than 7 percent, the content of silt is less than 50 percent, and the content of sand is 43 to 52 percent.

Loam.—Soil material that contains 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand.

Silt loam.—Soil material that contains 50 percent or more silt and 12 to 27 percent clay or 50 to 80 percent silt and less than 12 percent clay.

Silt.—Soil material that contains 80 percent or more silt and less than 12 percent clay.

Sandy clay loam.—Soil material that contains 20 to 35 percent clay, less than 28 percent silt, and 45 percent or more sand.

Clay loam.—Soil material that contains 27 to 40 percent clay and 20 to 45 percent sand.

Silty clay loam.—Soil material that contains 27 to 40 percent clay and less than 20 percent sand.

Sandy clay.—Soil material that contains 35 percent or more clay and 45 percent or more sand.

Silty clay.—Soil material that contains 40 percent or more clay and 40 percent or more silt.

Clay.—Soil material that contains 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Thin layer (in tables). Otherwise suitable soil material that is too thin for the specified use.

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Topography. The relative positions and elevations of the natural or manmade features of an area that describe the configuration of its surface.

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.

Underlying material. Technically the C horizon; the part of the soil below the biologically altered A and B horizons.

Understory. The trees and other woody species growing under a more or less continuous cover of branches and foliage formed collectively by the upper portions of adjacent trees and other woody 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 to divert water off and away from the road surface. Water bars can be easily driven over if they are constructed properly.

Water table (apparent). A thick zone of free water in the soil. The apparent water table is indicated by the level at which water stands in an uncased borehole after adequate time is allowed for adjustment in the surrounding soil.

Water table (perched). A saturated zone of water in the soil standing above an unsaturated zone.

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.

Wetness. A general term applied to soils that hold water at or near the surface long enough to be a common management problem.

Wet spot. An area of somewhat poorly drained to very poorly drained soils that are at least two drainage classes wetter than the named soils in the surrounding map unit. Areas identified on the detailed soil maps by a special symbol typically are less than 2 acres in size. (See Drainage class.)

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 1961-90 at Darlington, South Carolina)

Month	Temperature						Precipitation				
				2 years in 10 will have--				2 years in 10 will have--			
	Average daily maximum	Average daily minimum	Average	Maximum temperature higher than--	Minimum temperature lower than--	Average number of growing degree days*	Average	Less than--	More than--	Average number of days with 0.10 inch or more	Average snowfall
	°F	°F	°F	°F	°F	Units	In	In	In		In
January-----	55.3	32.6	44.0	77	9	52	4.08	2.33	5.64	7	0.3
February----	59.8	34.9	47.4	80	15	79	3.86	2.07	5.44	6	.9
March-------	68.6	42.5	55.6	87	23	218	4.37	2.83	5.77	7	.2
April-------	76.9	49.4	63.1	93	31	396	2.92	1.21	4.37	5	.0
May---------	83.6	57.9	70.8	96	39	643	3.76	2.16	5.19	8	.0
June--------	88.9	65.5	77.2	100	51	815	4.69	2.51	6.61	7	.0
July--------	91.4	69.2	80.3	101	58	938	5.38	3.26	7.28	8	.0
August------	89.8	68.3	79.1	100	55	898	5.21	2.95	7.22	7	.0
September---	85.3	62.6	74.0	97	44	712	3.56	1.14	5.53	5	.0
October-----	76.8	50.5	63.7	91	29	421	2.91	.99	4.50	4	.0
November----	68.0	41.7	54.8	84	21	193	2.56	1.29	3.67	5	.0
December----	59.0	35.6	47.3	78	14	86	3.41	1.50	5.04	6	.0
Yearly:											
Average---	75.3	50.9	63.1	---	---	---	---	---	---	---	---
Extreme---	108	-4	---	103	8	---	---	---	---	---	---
Total-----	---	---	---	---	---	5,452	46.72	40.56	50.12	75	1.4

* A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (50 degrees F).

Table 2.—Freeze Dates in Spring and Fall

(Recorded in the period 1961-90 at Darlington, South Carolina)

Probability	Temperature		
	24 °F or lower	28 °F or lower	32 °F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	Mar. 14	Apr. 4	Apr. 15
2 years in 10 later than--	Mar. 7	Mar. 28	Apr. 9
5 years in 10 later than--	Feb. 24	Mar. 15	Mar. 29
First freezing temperature in fall:			
1 year in 10 earlier than--	Nov. 10	Oct. 29	Oct. 14
2 years in 10 earlier than--	Nov. 17	Nov. 3	Oct. 20
5 years in 10 earlier than--	Dec. 1	Nov. 13	Nov. 1

Table 3.—Growing Season

(Recorded in the period 1961-90 at Darlington, South Carolina)

Probability	Daily minimum temperature during growing season		
	Higher than 24 °F	Higher than 28 °F	Higher than 32 °F
	Days	Days	Days
9 years in 10	252	222	193
8 years in 10	262	230	202
5 years in 10	281	246	219
2 years in 10	301	262	237
1 year in 10	311	271	246

Table 4.—Acreage and Proportionate Extent of the Soils

Map symbol	Soil name	Acres	Percent
AaB	Ailey sand, moderately wet, 2 to 6 percent slopes	5,035	1.4
AeC	Ailey sand, 6 to 10 percent slopes	3,035	0.8
AeD	Ailey sand, 10 to 15 percent slopes	1,006	0.3
ApB	Alpin sand, 0 to 6 percent slopes	7,229	2.0
ApC	Alpin sand, 6 to 10 percent slopes	960	0.3
ApD	Alpin sand, 10 to 15 percent slopes	188	*
AuB	Autryville sand, 0 to 4 percent slopes	5,148	1.4
BfA	Bibb sandy loam, 0 to 2 percent slopes, frequently flooded	2,012	0.6
BnB	Blanton sand, 0 to 6 percent slopes	7,345	2.0
BoB	Bonneau sand, 0 to 6 percent slopes	15,050	4.2
CaB	Candor sand, 0 to 6 percent slopes	7,284	2.0
CaC	Candor sand, 6 to 10 percent slopes	184	*
CaD	Candor sand, 10 to 15 percent slopes	2,340	0.6
CeA	Chastain-Chewacla complex, 0 to 2 percent slopes, frequently flooded	10,988	3.0
CkA	Chewacla clay loam, 0 to 2 percent slopes, frequently flooded	5,006	1.4
CmA	Chewacla-Chastain complex, 0 to 2 percent slopes, frequently flooded	362	0.1
CoC	Cowarts-Vaucluse complex, 6 to 10 percent slopes	1,625	0.4
CoD	Cowarts-Vaucluse complex, 10 to 15 percent slopes	3,896	1.1
CoE	Cowarts-Vaucluse complex, 15 to 25 percent slopes	1,221	0.3
CxA	Coxville sandy loam, 0 to 2 percent slopes	31,574	8.7
DpA	Dorovan and Ponzer soils, 0 to 2 percent slopes, frequently flooded	1,232	0.3
EmB	Emporia loamy sand, 2 to 6 percent slopes	5,739	1.6
EmC	Emporia loamy sand, 6 to 10 percent slopes	595	0.2
EuA	Eunola loamy sand, 0 to 2 percent slopes	986	0.3
FaA	Faceville loamy sand, 0 to 2 percent slopes	667	0.2
FaB	Faceville loamy sand, 2 to 6 percent slopes	1,329	0.4
FcB2	Faceville sandy clay loam, 2 to 6 percent slopes, eroded	215	*
FxB	Foxworth sand, 0 to 6 percent slopes	2,910	0.8
GoA	Goldsboro sandy loam, 0 to 2 percent slopes	37,270	10.3
HnA	Hornsville sandy loam, 0 to 2 percent slopes	882	0.2
HnB	Hornsville sandy loam, 2 to 6 percent slopes	1,178	0.3
JnA	Johns loamy sand, 0 to 2 percent slopes, rarely flooded	1,057	0.3
JoA	Johnston sandy loam, 0 to 2 percent slopes, frequently flooded	20,327	5.6
KeB	Kenansville sand, 0 to 4 percent slopes	724	0.2
LaB	Lakeland sand, 0 to 6 percent slopes	326	0.1
LaC	Lakeland sand, 6 to 10 percent slopes	153	*
LeA	Leon sand, 0 to 2 percent slopes	186	*
LmA	Lumbee sandy loam, 0 to 2 percent slopes	2,243	0.6
LuB	Lucy sand, 0 to 4 percent slopes	1,276	0.4
LyA	Lynchburg sandy loam, 0 to 2 percent slopes	1,260	0.3
NbB2	Nankin sandy clay loam, 2 to 6 percent slopes, eroded	252	*
NbC2	Nankin sandy clay loam, 6 to 10 percent slopes, eroded	52	*
NcA	Noboco loamy sand, 0 to 2 percent slopes	41,836	11.5
NcB	Noboco loamy sand, 2 to 6 percent slopes	7,333	2.0
NoA	Norfolk loamy sand, 0 to 2 percent slopes	32,304	8.9
NoB	Norfolk loamy sand, 2 to 6 percent slopes	3,747	1.0
OrA	Orangeburg loamy sand, 0 to 2 percent slopes	1,536	0.4
PaA	Pamlico muck, 0 to 2 percent slopes, frequently flooded	782	0.2
PnA	Pelion loamy sand, 0 to 2 percent slopes	425	0.1
PnB	Pelion loamy sand, 2 to 6 percent slopes	345	*
PrA	Persanti loam, 0 to 2 percent slopes	2,626	0.7
RaA	Rains sandy loam, 0 to 2 percent slopes	31,224	8.6
RvA	Riverview silt loam, 0 to 2 percent slopes, frequently flooded	7,465	2.1
SmA	Smithboro silt loam, 0 to 2 percent slopes	1,575	0.4
TbB	Tarboro sand, 0 to 6 percent slopes, rarely flooded	858	0.2
TrB	Troup sand, 0 to 6 percent slopes	6,017	1.7
TrC	Troup sand, 6 to 10 percent slopes	749	0.2
UcB	Uchee sand, 0 to 6 percent slopes	4,336	1.2
UcC	Uchee sand, 6 to 10 percent slopes	3,075	0.8
UdC	Udorthents, loamy, 0 to 10 percent slopes	1,535	0.4
Ur	Urban land	408	0.1

See footnote at end of table.

Table 4.—Acreage and Proportionate Extent of the Soils—Continued

Map symbol	Soil name	Acres	Percent
VaB	Vaucluse loamy sand, 2 to 6 percent slopes	5,639	1.6
VaC	Vaucluse loamy sand, 6 to 10 percent slopes	1,870	0.5
WaB	Wagram sand, 0 to 6 percent slopes	5,178	1.4
WcA	Wehadkee-Chastain complex, 0 to 2 percent slopes, frequently flooded	2,988	0.8
WkA	Wickham sandy loam, 0 to 2 percent slopes, rarely flooded	1,556	0.3
WkB	Wickham sandy loam, 2 to 6 percent slopes, rarely flooded	176	*
	Water	4,368	1.2
	Total	362,300	100.0

* Less than 0.1 percent.

Table 5.—Land Capability and Yields per Acre of Crops and Pasture

(Yields are those that can be expected under a high level of management. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil)

Soil name and map symbol	Land capability	Soybeans	Cotton lint	Tobacco	Wheat	Corn	Improved bermuda-grass hay	Bahiagrass
		Bu	Lbs	Lbs	Bu	Bu	Tons	AUM*
AaB---------- Ailey	IIIs	20	400	---	---	50	---	6.0
AeC, AeD-------- Ailey	VIs	---	---	---	---	---	---	5.0
ApB---------- Alpin	IVs	---	---	---	---	---	---	7.0
ApC---------- Alpin	VIs	---	---	---	---	---	---	7.0
ApD---------- Alpin	VIIs	---	---	---	---	---	---	6.5
AuB---------- Autryville	IIs	25	600	---	---	75	---	8.0
BfA---------- Bibb	Vw	---	---	---	---	---	---	---
BnB---------- Blanton	IVs	20	---	---	---	50	7.5	6.5
BoB---------- Bonneau	IIs	30	700	---	---	85	---	8.0
CaB---------- Candor	IVs	15	---	---	---	40	---	---
CaC, CaD-------- Candor	IVs	15	---	---	---	40	---	---
CeA---------- Chastain-Chewacla	VIIw	---	---	---	---	---	---	---
CkA---------- Chewacla	IVw	30	---	---	30	80	---	---
CmA---------- Chewacla-Chastain	VIIw	---	---	---	---	---	---	---
CoC---------- Cowarts-Vaucluse	IVe	---	---	---	---	---	---	---
CoD---------- Cowarts-Vaucluse	IVe	---	---	---	---	---	---	---
CoE---------- Cowarts-Vaucluse	VIe	---	---	---	---	---	---	---

See footnotes at end of table.

Table 5.—Land Capability and Yields per Acre of Crops and Pasture—Continued

Soil name and map symbol	Land capability	Soybeans	Cotton lint	Tobacco	Wheat	Corn	Improved bermuda-grass hay	Bahiagrass
		Bu	Lbs	Lbs	Bu	Bu	Tons	AUM*
CxA---------- Coxville	IIIw	40	---	---	50	110	---	---
DpA---------- Dorovan and Ponzer	VIIw	---	---	---	---	---	---	---
EmB---------- Emporia	IIe	30	600	2,900	50	100	---	---
EmC---------- Emporia	IIIe	25	550	---	45	90	---	---
EuA---------- Eunola	IIw	35	---	---	---	100	---	---
FaA---------- Faceville	I	45	875	---	---	115	---	7.0
FaB---------- Faceville	IIe	45	875	---	---	115	---	7.0
FcB2---------- Faceville	IIIe	35	750	---	---	90	---	6.0
FxB---------- Foxworth	IIIs	---	---	---	---	---	---	7.5
GoA---------- Goldsboro	IIw	42	700	3,000	60	125	---	---
HnA---------- Hornsville	IIw	40	---	---	---	100	---	9.0
HnB---------- Hornsville	IIe	35	---	---	---	90	---	8.5
JnA---------- Johns	IIw	45	650	2,700	50	120	---	---
JoA---------- Johnston	VIIw	---	---	---	---	---	---	---
KeB---------- Kenansville	IIIs	---	525	---	---	70	---	---
LaB---------- Lakeland	IVs	20	---	---	---	55	---	7.0
LaC---------- Lakeland	VIs	---	---	---	---	---	---	6.5
LeA---------- Leon	IVw	---	---	---	---	50	---	7.5
LmA---------- Lumbee	IIIw	45	---	---	---	110	---	---
LuB---------- Lucy	IIs	33	650	---	---	80	---	8.5

See footnotes at end of table.

Table 5.—Land Capability and Yields per Acre of Crops and Pasture—Continued

Soil name and map symbol	Land capability	Soybeans	Cotton lint	Tobacco	Wheat	Corn	Improved bermuda-grass hay	Bahiagrass
		Bu	Lbs	Lbs	Bu	Bu	Tons	AUM*
LyA---------- Lynchburg	IIw	45	675	2,800	---	115	---	10.0
NbB2---------- Nankin	IVe	20	---	2,000	---	60	---	6.0
NbC2---------- Nankin	VIe	---	---	---	---	---	---	5.5
NcA---------- Noboco	I	45	700	3,000	60	115	---	---
NcB---------- Noboco	IIe	40	700	2,900	55	110	---	---
NoA---------- Norfolk	I	40	700	3,000	60	110	---	---
NoB---------- Norfolk	IIe	35	650	2,900	55	100	---	---
OrA---------- Orangeburg	I	45	900	2,400	55	120	10.5	8.5
PaA---------- Pamlico	VIIw	---	---	---	---	---	---	---
PnA---------- Pelion	IIw	30	550	---	---	70	---	8.0
PnB---------- Pelion	IIe	25	500	---	---	60	---	7.0
PrA---------- Persanti	IIw	40	700	2,400	---	100	---	8.0
RaA---------- Rains	IIIw	40	450	2,300	---	110	---	10.0
RvA---------- Riverview	IVw	30	---	---	---	80	---	7.0
SmA---------- Smithboro	IIIw	40	---	---	---	90	---	9.0
TbB---------- Tarboro	IIIs	20	---	---	---	50	---	---
TrB---------- Troup	IIIs	25	500	---	---	60	---	7.2
TrC---------- Troup	VIs	---	---	---	---	---	---	5.0
UcB---------- Uchee	IIs	30	550	---	---	70	---	8.5
UcC---------- Uchee	IIIs	25	500	---	---	65	---	8.5

See footnotes at end of table.

Table 5.—Land Capability and Yields per Acre of Crops and Pasture—Continued

Soil name and map symbol	Land capability	Soybeans	Cotton lint	Tobacco	Wheat	Corn	Improved bermuda-grass hay	Bahiagrass
		Bu	Lbs	Lbs	Bu	Bu	Tons	AUM*
UdC**---------- Udorthents	VIe	---	---	---	---	---	---	---
Ur**. Urban land								
VaB---------- Vaucluse	IIIs	25	500	---	---	65	---	7.0
VaC---------- Vaucluse	IIIe	20	400	---	---	60	---	6.0
WaB---------- Wagram	IIs	25	550	2,400	40	75	---	---
WcA---------- Wehadkee-Chastain	VIIw	---	---	---	---	---	---	---
WkA---------- Wickham	I	42	800	2,800	---	125	---	---
WkB---------- Wickham	IIe	38	750	2,600	---	115	---	---

* Animal unit month: The amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for 30 days.

** See description of the map unit for composition and behavior characteristics of the map unit.

Table 6.—Woodland Management and Productivity

(Only the soils suitable for production of commercial trees are listed. Absence of an entry indicates that information was not available)

Soil name and map symbol	Ordination symbol	Management concerns: Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Potential productivity: Common trees	Site index	Volume* (Cu ft/ac/yr)	Trees to plant
AaB, AeC, AeD------ Ailey	4S	Slight	Moderate	Moderate	Moderate	Slight	Longleaf pine-------	60	56	Longleaf pine, loblolly pine.
							Loblolly pine-------	87	125	
ApB, ApC, ApD------ Alpin	5S	Slight	Moderate	Moderate	Slight	Slight	Longleaf pine-------	64	65	Loblolly pine.
							Loblolly pine-------	75	101	
							Turkey oak----------	---	---	
							Post oak----------	---	---	
							Blackjack oak-------	---	---	
							Bluejack oak--------	---	---	
AuB---------- Autryville	7S	Slight	Moderate	Moderate	Slight	Moderate	Loblolly pine-------	74	100	Loblolly pine, longleaf pine.
							Longleaf pine-------	60	66	
							Southern red oak----	---	---	
							Hickory----------	---	---	
							Sweetgum----------	---	---	
							Red maple----------	---	---	
							Post oak----------	---	---	
BfA---------- Bibb	8W	Slight	Severe	Severe	Moderate	Severe	Sweetgum----------	90	106	Sweetgum, yellow-poplar, eastern cottonwood, water oak.
							Water oak----------	90	86	
							Loblolly pine-------	100	103	
							Blackgum----------	---	---	
							Yellow-poplar-------	---	---	
							Atlantic white-cedar	---	---	
BnB---------- Blanton	11S	Slight	Moderate	Moderate	Slight	Slight	Loblolly pine-------	85	120	Loblolly pine, longleaf pine.
							Longleaf pine-------	70	79	
							Bluejack oak--------	---	---	
							Turkey oak----------	---	---	
							Southern red oak----	---	---	
							Live oak----------	---	---	
BoB---------- Bonneau	9S	Slight	Moderate	Moderate	Slight	Slight	Loblolly pine-------	89	129	Loblolly pine, longleaf pine.
							Longleaf pine-------	---	---	
							White oak----------	---	---	
							Hickory----------	---	---	

See footnotes at end of table.

Table 6.—Woodland Management and Productivity—Continued

Soil name and map symbol	Ordination symbol	Management concerns: Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Potential productivity: Common trees	Site index	Volume* (Cu ft/ac/yr)	Trees to plant
CaB, CaC, CaD------ Candor	4S	Slight	Moderate	Moderate	Slight	Slight	Longleaf pine-------	58	52	Longleaf pine, loblolly pine.
							Loblolly pine-------	---	---	
							Turkey oak----------	---	---	
							Blackjack oak-------	---	---	
							Post oak----------	---	---	
CeA**:										
Chastain----------	8W	Slight	Severe	Severe	Severe	Severe	Sweetgum----------	98	132	Sweetgum, baldcypress.
							Baldcypress---------	---	---	
							Water tupelo--------	---	---	
							Water oak----------	---	---	
Chewacla----------	8W	Slight	Moderate	Slight	Moderate	Severe	Sweetgum----------	93	116	Yellow-poplar, loblolly pine, sweetgum, American sycamore.
							Yellow-poplar-------	96	100	
							Loblolly pine-------	95	142	
							Water oak----------	80	62	
							Eastern cottonwood--	---	---	
							Green ash----------	---	---	
							Southern red oak----	---	---	
							Blackgum----------	---	---	
							Red maple----------	---	---	
							Willow oak----------	---	---	
							American beech------	---	---	
							American sycamore---	---	---	
CkA---------- Chewacla	8W	Slight	Moderate	Slight	Moderate	Severe	Sweetgum----------	93	116	Yellow-poplar, loblolly pine, sweetgum, American sycamore.
							Yellow-poplar-------	96	100	
							Loblolly pine-------	95	142	
							Water oak----------	80	62	
							Eastern cottonwood--	---	---	
							Green ash----------	---	---	
							Southern red oak----	---	---	
							Blackgum----------	---	---	
							Red maple----------	---	---	
							Willow oak----------	---	---	
							American beech------	---	---	
							American sycamore---	---	---	

See footnotes at end of table.

Table 6.—Woodland Management and Productivity—Continued

Soil name and map symbol	Ordination symbol	Management concerns: Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Potential productivity: Common trees	Site index	Volume* (Cu ft/ac/yr)	Trees to plant
CmA**:										
Chewacla	8W	Slight	Moderate	Slight	Moderate	Severe	Sweetgum	97	116	Yellow-poplar, loblolly pine, sweetgum, American sycamore.
							Yellow-poplar	96	100	
							Loblolly pine	95	142	
							Water oak	80	62	
							Eastern cottonwood	---	---	
							Green ash	---	---	
							Southern red oak	---	---	
							Blackgum	---	---	
							Red maple	---	---	
							Willow oak	---	---	
							American beech	---	---	
							American sycamore	---	---	
Chastain	8W	Slight	Severe	Severe	Severe	Severe	Sweetgum	98	132	Sweetgum, baldcypress.
							Baldcypress	---	---	
							Water tupelo	---	---	
							Water oak	---	---	
CoC**, CoD**:										
Cowarts	9A	Slight	Slight	Slight	Slight	Moderate	Longleaf pine	55	45	Loblolly pine, longleaf pine.
							Loblolly pine	---	---	
Vaucluse	3A	Slight	Slight	Moderate	Moderate	Slight	Longleaf pine	55	45	Loblolly pine.
							Loblolly pine	71	95	
							Shortleaf pine	---	---	
CoE**:										
Cowarts	9R	Slight	Moderate	Slight	Slight	Moderate	Longleaf pine	55	45	Loblolly pine, longleaf pine.
							Loblolly pine	---	---	
Vaucluse	7A	Moderate	Moderate	Moderate	Moderate	Slight	Longleaf pine	55	45	Loblolly pine.
							Loblolly pine	---	---	
							Shortleaf pine	---	---	
CxA Coxville	9W	Slight	Moderate	Moderate	Severe	Severe	Loblolly pine	91	133	Loblolly pine, sweetgum.
							Sweetgum	84	90	
							Yellow-poplar	86	82	
							Water oak	80	5	
							Willow oak	88	6	

See footnotes at end of table.

Table 6.—Woodland Management and Productivity—Continued

Soil name and map symbol	Ordination symbol	Management concerns: Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Potential productivity: Common trees	Site index	Volume* (Cu ft/ac/yr)	Trees to plant
DpA**:										
Dorovan	7W	Slight	Severe	Severe	Severe	Severe	Swamp tupelo	---	---	Baldcypress, Atlantic white-cedar.
							Blackgum	---	---	
							Sweetbay	---	---	
							Baldcypress	---	---	
							Green ash	---	---	
							Red maple	---	---	
							Water tupelo	---	---	
Ponzer	7W	Slight	Severe	Severe	Severe	Severe	Swamp tupelo	---	---	Baldcypress, Atlantic white-cedar.
							Pond pine	---	---	
							Sweetgum	---	---	
							Water tupelo	---	---	
							Baldcypress	---	---	
							Sweetbay	---	---	
							Redbay	---	---	
							Loblollybay gordonia	---	---	
							Red maple	---	---	
EmB, EmC Emporia	9S	Slight	Slight	Moderate	Slight	Moderate	Loblolly pine	91	133	Loblolly pine.
EuA Eunola	9W	Slight	Moderate	Slight	Slight	Moderate	Loblolly pine	90	131	Loblolly pine, sweetgum.
							Sweetgum	95	8	
FaA, FaB, FcB2 Faceville	8A	Slight	Slight	Slight	Slight	Moderate	Loblolly pine	82	114	Loblolly pine.
FxB Foxworth	8S	Slight	Moderate	Moderate	Slight	Moderate	Loblolly pine	80	110	Loblolly pine, longleaf pine.
							Longleaf pine	---	---	
							Turkey oak	---	---	
							Live oak	---	---	
							Post oak	---	---	
							Bluejack oak	---	---	
							Laurel oak	---	---	

See footnotes at end of table.

Table 6.—Woodland Management and Productivity—Continued

Soil name and map symbol	Ordination symbol	Management concerns: Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Potential productivity: Common trees	Site index	Volume* (Cu ft/ac/yr)	Trees to plant
GoA---------- Goldsboro	9A	Slight	Slight	Slight	Slight	Moderate	Loblolly pine-------	90	131	Loblolly pine.
							Longleaf pine-------	70	79	
							Sweetgum----------	---	---	
							Southern red oak----	---	---	
							White oak----------	---	---	
							Water oak----------	---	---	
							Yellow-poplar-------	---	---	
							Red maple----------	---	---	
HnA, HnB---------- Hornsville	9W	Slight	Moderate	Moderate	Slight	Moderate	Loblolly pine-------	90	9	Loblolly pine, sweetgum, yellow-poplar.
							Sweetgum----------	90	7	
JnA---------- Johns	10A	Slight	Slight	Slight	Slight	Moderate	Loblolly pine-------	96	145	Loblolly pine.
							Longleaf pine-------	61	57	
							Sweetgum----------	---	---	
							Water oak----------	---	---	
							Willow oak----------	---	---	
							American sycamore---	---	---	
JoA---------- Johnston	8W	Slight	Severe	Severe	Severe	Severe	Loblolly pine-------	---	---	Green ash, sweetgum, baldcypress.
							Sweetgum----------	94	8	
							Yellow-poplar-------	94	97	
							Water oak----------	103	---	
							Water tupelo--------	---	---	
							Swamp tupelo--------	---	---	
							Baldcypress---------	---	---	
KeB---------- Kenansville	7S	Slight	Moderate	Moderate	Slight	Moderate	Loblolly pine-------	77	105	Loblolly pine.
							Longleaf pine-------	65	67	
LaB, LaC---------- Lakeland	10S	Slight	Moderate	Moderate	Slight	Slight	Loblolly pine-------	80	101	Loblolly pine.
							Longleaf pine-------	65	65	
LeA---------- Leon	7W	Slight	Moderate	Moderate	Slight	Moderate	Loblolly pine-------	71	95	Loblolly pine, longleaf pine.
							Longleaf pine-------	59	54	

See footnotes at end of table.

Table 6.—Woodland Management and Productivity—Continued

Soil name and map symbol	Ordination symbol	Management concerns: Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Potential productivity: Common trees	Site index	Volume* (Cu ft/ac/yr)	Trees to plant
LmA Lumbee	10W	Slight	Moderate	Moderate	Moderate	Severe	Loblolly pine	---	---	Loblolly pine, sweetgum.
							Pond pine	---	---	
							Sweetgum	---	---	
							White oak	---	---	
							Water oak	---	---	
							Willow oak	---	---	
							Water tupelo	---	---	
							Red maple	---	---	
LuB Lucy	8S	Slight	Moderate	Moderate	Slight	Moderate	Loblolly pine	78	107	Longleaf pine, loblolly pine.
							Longleaf pine	---	---	
LyA Lynchburg	9W	Slight	Moderate	Slight	Slight	Severe	Loblolly pine	86	123	Loblolly pine, sweetgum.
							Longleaf pine	72	83	
							Sweetgum	---	---	
							Southern red oak	---	---	
							White oak	---	---	
							Blackgum	---	---	
NbB2, NbC2 Nankin	8A	Slight	Slight	Slight	Slight	Moderate	Loblolly pine	80	110	Loblolly pine.
							Longleaf pine	---	---	
NcA, NcB Noboco	9A	Slight	Slight	Slight	Slight	Moderate	Loblolly pine	90	131	Loblolly pine.
							Longleaf pine	---	---	
							Southern red oak	---	---	
							Sweetgum	---	---	
NoA, NoB Norfolk	8A	Slight	Slight	Slight	Slight	Moderate	Loblolly pine	81	112	Loblolly pine, longleaf pine.
							Longleaf pine	---	---	
							Southern red oak	---	---	
							White oak	---	---	
							Yellow-poplar	---	---	
							Blackgum	---	---	
							Hickory	---	---	
OrA Orangeburg	8A	Slight	Moderate	Moderate	Moderate	Slight	Loblolly pine	80	110	Loblolly pine, longleaf pine.
							Longleaf pine	---	---	
PaA Pamlico	2W	Slight	Severe	Severe	Severe	Severe	Pond pine	55	2	Baldcypress, water tupelo.
							Baldcypress	---	---	
							Water tupelo	---	---	

See footnotes at end of table.

Table 6.—Woodland Management and Productivity—Continued

Soil name and map symbol	Ordination symbol	Management concerns: Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Potential productivity: Common trees	Site index	Volume* (Cu ft/ac/yr)	Trees to plant
PnA, PnB---------- Pelion	8W	Slight	Moderate	Slight	Moderate	Moderate	Loblolly pine-------	84	118	Loblolly pine.
PrA---------- Persanti	9W	Slight	Moderate	Slight	Slight	Moderate	Loblolly pine-------	86	123	Loblolly pine, sweetgum, water oak.
							Water oak----------	---	---	
							Sweetgum----------	---	---	
RaA---------- Rains	11W	Slight	Moderate	Moderate	Severe	Severe	Loblolly pine-------	103	161	Loblolly pine, sweetgum, longleaf pine.
							Sweetgum----------	---	---	
							Longleaf pine-------	---	---	
RvA---------- Riverview	11A	Slight	Slight	Slight	Slight	Severe	Loblolly pine-------	100	154	Loblolly pine, yellow-poplar, sweetgum, eastern cottonwood, American sycamore.
							Yellow-poplar-------	110	124	
							Sweetgum----------	100	138	
SmA---------- Smithboro	12W	Slight	Moderate	Slight	Moderate	Severe	Loblolly pine-------	106	168	Loblolly pine, sweetgum.
							Sweetgum----------	109	170	
TbB---------- Tarboro	7S	Slight	Moderate	Moderate	Slight	Slight	Loblolly pine-------	72	96	Loblolly pine, longleaf pine.
							Longleaf pine-------	---	---	
							Southern red oak----	---	---	
							White oak----------	---	---	
							Sweetgum----------	---	---	
							Red maple----------	---	---	
							Water oak----------	---	---	
							Hickory----------	---	---	
TrB, TrC---------- Troup	8S	Slight	Moderate	Moderate	Slight	Moderate	Loblolly pine-------	79	108	Loblolly pine, longleaf pine.
							Longleaf pine-------	66	70	
UcB, UcC---------- Uchee	8S	Slight	Moderate	Moderate	Slight	Moderate	Loblolly pine-------	80	110	Loblolly pine, longleaf pine.
							Longleaf pine-------	67	72	
							Shortleaf pine------	---	---	
UdC**---------- Udorthents	5C	Moderate	Moderate	Moderate	Slight	Slight	Loblolly pine-------	---	---	Loblolly pine, Virginia pine.
VaB, VaC---------- Vaucluse	3A	Slight	Slight	Moderate	Moderate	Slight	Longleaf pine-------	55	45	Loblolly pine, longleaf pine.
							Loblolly pine-------	71	95	
							Shortleaf pine------	---	---	

See footnotes at end of table.

Table 6.—Woodland Management and Productivity—Continued

Soil name and map symbol	Ordination symbol	Management concerns: Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Potential productivity: Common trees	Site index	Volume* (Cu ft/ac/yr)	Trees to plant
WaB---------- Wagram	8S	Slight	Moderate	Moderate	Slight	Moderate	Loblolly pine-------	80	110	Loblolly pine, longleaf pine.
							Longleaf pine-------	59	54	
WcA**:										
Wehadkee----------	8W	Slight	Severe	Moderate	Moderate	Severe	Sweetgum----------	94	119	Yellow-poplar, sweetgum.
							Yellow-poplar-------	---	---	
							Willow oak----------	---	---	
							Water oak----------	91	6	
							Green ash----------	---	---	
							White ash----------	---	---	
							American sycamore---	---	---	
							River birch---------	---	---	
Chastain----------	8W	Slight	Severe	Severe	Severe	Severe	Sweetgum----------	98	132	Sweetgum, baldcypress.
							Baldcypress---------	---	---	
							Water tupelo--------	---	---	
							Water oak----------	---	---	
WkA, WkB---------- Wickham	10A	Slight	Slight	Slight	Slight	Moderate	Loblolly pine-------	95	142	Loblolly pine.
							Yellow-poplar-------	88	86	
							White oak----------	---	---	
							Southern red oak----	82	4	
							Sweetgum----------	---	---	
							Red maple----------	---	---	
							Water oak----------	---	---	
							Hickory----------	---	---	

* Volume is the yield in cubic feet per acre per year calculated at the age of culmination of mean annual increment for fully stocked natural stands.

** See description of the map unit for composition and behavior characteristics of the map unit.

Table 7.—Recreational Development

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not rated)

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
AaB Ailey	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: droughty.
AeC, AeD Ailey	Severe: too sandy.	Severe: too sandy.	Severe: slope, too sandy.	Severe: too sandy.	Moderate: slope, droughty.
ApB Alpin	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: droughty.
ApC, ApD Alpin	Severe: too sandy.	Severe: too sandy.	Severe: slope, too sandy.	Severe: too sandy.	Severe: droughty.
AuB Autryville	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: droughty, too sandy.
BfA Bibb	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.	Severe: wetness, flooding.
BnB Blanton	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: droughty.
BoB Bonneau	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: droughty, too sandy.
CaB Candor	Severe: too sandy, too acid.	Severe: too sandy, too acid.	Severe: too sandy, too acid.	Severe: too sandy.	Severe: too acid, droughty.
CaC, CaD Candor	Severe: too sandy, too acid.	Severe: too sandy, too acid.	Severe: slope, too sandy, too acid.	Severe: too sandy.	Severe: too acid, droughty.
CeA*:					
Chastain	Severe: flooding, wetness.	Severe: wetness, too acid.	Severe: wetness, flooding.	Severe: wetness.	Severe: too acid, wetness, flooding.
Chewacla	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.	Severe: wetness, flooding.
CkA Chewacla	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.	Severe: wetness, flooding.
CmA*:					
Chewacla	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.	Severe: wetness, flooding.

See footnote at end of table.

Table 7.—Recreational Development—Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
CmA*:					
Chastain	Severe: flooding, wetness.	Severe: wetness, too acid.	Severe: wetness, flooding.	Severe: wetness.	Severe: too acid, wetness, flooding.
CoC*, CoD*:					
Cowarts	Moderate: slope, percs slowly.	Moderate: slope, percs slowly.	Severe: slope.	Slight	Moderate: droughty, slope.
Vaucluse	Moderate: slope, percs slowly.	Moderate: slope, percs slowly.	Severe: slope.	Slight	Moderate: droughty, slope.
CoE*:					
Cowarts	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
Vaucluse	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
CxA Coxville	Severe: wetness, too acid.	Severe: wetness, too acid.	Severe: wetness, too acid.	Severe: wetness.	Severe: too acid, wetness.
DpA*:					
Dorovan	Severe: flooding, ponding, excess humus.	Severe: ponding, excess humus.	Severe: excess humus, ponding, flooding.	Severe: ponding, excess humus.	Severe: ponding, flooding, excess humus.
Ponzer	Severe: flooding, wetness, excess humus.	Severe: wetness, excess humus, too acid.	Severe: excess humus, wetness, flooding.	Severe: wetness, excess humus.	Severe: flooding, wetness, excess humus.
EmB Emporia	Moderate: percs slowly.	Moderate: percs slowly.	Moderate: slope, small stones, percs slowly.	Slight	Moderate: droughty.
EmC Emporia	Moderate: slope, percs slowly.	Moderate: slope, percs slowly.	Severe: slope.	Slight	Moderate: droughty, slope.
EuA Eunola	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.
FaA Faceville	Slight	Slight	Slight	Slight	Slight.
FaB, FcB2 Faceville	Slight	Slight	Moderate: slope.	Slight	Slight.
FxB Foxworth	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: droughty, too sandy.
GoA Goldsboro	Severe: too acid.	Severe: too acid.	Severe: too acid.	Slight	Slight.

See footnote at end of table.

Table 7.—Recreational Development—Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
HnA Hornsville	Moderate: percs slowly.	Moderate: percs slowly.	Moderate: percs slowly.	Slight	Slight.
HnB Hornsville	Moderate: percs slowly.	Moderate: percs slowly.	Moderate: slope, percs slowly.	Slight	Slight.
JnA Johns	Severe: flooding.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness, droughty.
JoA Johnston	Severe: flooding, ponding.	Severe: ponding.	Severe: ponding, flooding.	Severe: ponding.	Severe: ponding, flooding.
KeB Kenansville	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: droughty.
LaB Lakeland	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: droughty, too sandy.
LaC Lakeland	Severe: too sandy.	Severe: too sandy.	Severe: slope, too sandy.	Severe: too sandy.	Moderate: droughty, slope, too sandy.
LeA Leon	Severe: wetness, too sandy, too acid.	Severe: wetness, too sandy, too acid.	Severe: too sandy, wetness, too acid.	Severe: wetness, too sandy.	Severe: too acid, wetness.
LmA Lumbee	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
LuB Lucy	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: droughty, too sandy.
LyA Lynchburg	Severe: wetness, too acid.	Severe: wetness, too acid.	Severe: wetness, too acid.	Severe: wetness.	Severe: too acid, wetness.
NbB2 Nankin	Moderate: percs slowly.	Moderate: percs slowly.	Moderate: slope, percs slowly.	Slight	Slight.
NbC2 Nankin	Moderate: slope, percs slowly.	Moderate: slope, percs slowly.	Severe: slope.	Slight	Moderate: slope.
NcA Noboco	Slight	Slight	Slight	Slight	Slight.
NcB Noboco	Slight	Slight	Moderate: slope.	Slight	Slight.
NoA, NoB Norfolk	Severe: too acid.	Severe: too acid.	Severe: too acid.	Slight	Moderate: droughty.

See footnote at end of table.

Table 7.—Recreational Development—Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
OrA Orangeburg	Moderate: too sandy.	Moderate: too sandy.	Moderate: too sandy.	Moderate: too sandy.	Moderate: droughty.
PaA Pamlico	Severe: flooding, ponding, excess humus.	Severe: ponding, excess humus, too acid.	Severe: excess humus, ponding, flooding.	Severe: ponding, excess humus.	Severe: too acid, ponding, flooding.
PnA, PnB Pelion	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: droughty.
PrA Persanti	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Moderate: wetness.	Moderate: wetness.
RaA Rains	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
RvA Riverview	Severe: flooding.	Moderate: flooding.	Severe: flooding.	Moderate: flooding.	Severe: flooding.
SmA Smithboro	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
TbB Tarboro	Severe: flooding, too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: droughty, too sandy.
TrB Troup	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: droughty.
TrC Troup	Severe: too sandy.	Severe: too sandy.	Severe: slope, too sandy.	Severe: too sandy.	Moderate: droughty, slope.
UcB Uchee	Severe: too sandy.	Severe: too sandy.	Moderate: slope, small stones.	Severe: too sandy.	Moderate: droughty.
UcC Uchee	Severe: too sandy.	Severe: too sandy.		Severe: too sandy.	Moderate: droughty, slope.
UdC* Udorthents	Variable	Variable	Variable	Variable	Variable.
VaB Vaucluse	Moderate: percs slowly.	Moderate: percs slowly.	Moderate: slope.	Slight	Moderate: droughty.
VaC Vaucluse	Moderate: slope, percs slowly.	Moderate: slope, percs slowly.	Severe: slope.	Slight	Moderate: droughty, slope.
WaB Wagram	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: droughty, too sandy.
WcA*:					
Wehadkee	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.	Severe: wetness, flooding.

See footnote at end of table.

Table 7.—Recreational Development—Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
WcA*:					
Chastain	Severe: flooding, wetness.	Severe: wetness, too acid.	Severe: wetness, flooding.	Severe: wetness.	Severe: too acid, wetness, flooding.
WkA Wickham	Severe: flooding.	Slight	Slight	Slight	Slight.
WkB Wickham	Severe: flooding.	Slight	Moderate: slope.	Slight	Slight.

* See description of the map unit for composition and behavior characteristics of the map unit.

Table 8.—Wildlife Habitat

(See text for definitions of "good," "fair," "poor," and "very poor." Absence of an entry indicates that the soil was not rated)

Soil name and map symbol	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
AaB---------- Ailey	Poor	Fair	Fair	Poor	Poor	Poor	Very poor.	Fair	Poor	Very poor.
AeC, AeD---------- Ailey	Poor	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Fair	Poor	Very poor.
ApB, ApC, ApD------ Alpin	Poor	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
AuB---------- Autryville	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
BfA---------- Bibb	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
BnB---------- Blanton	Poor	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
BoB---------- Bonneau	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
CaB, CaC, CaD------ Candor	Poor	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
CeA*:										
Chastain----------	Very poor.	Poor	Poor	Fair	Poor	Good	Good	Poor	Fair	Good.
Chewacla----------	Poor	Fair	Fair	Good	Good	Fair	Fair	Fair	Good	Fair.
CkA---------- Chewacla	Poor	Fair	Fair	Good	Good	Fair	Fair	Fair	Good	Fair.
CmA*:										
Chewacla----------	Poor	Fair	Fair	Good	Good	Fair	Fair	Fair	Good	Fair.
Chastain----------	Very poor.	Poor	Poor	Fair	Poor	Good	Good	Poor	Fair	Good.
CoC*:										
Cowarts----------	Poor	Fair	Good	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
Vaucluse----------	Fair	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
CoD*:										
Cowarts----------	Poor	Fair	Good	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
Vaucluse----------	Poor	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
CoE*:										
Cowarts----------	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.

See footnote at end of table.

Table 8.—Wildlife Habitat—Continued

Soil name and map symbol	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
CoE*:										
Vaucluse	Poor	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
CxA Coxville	Good	Good	Good	Good	Good	Poor	Fair	Good	Good	Poor.
DpA*:										
Dorovan	Very poor.	Very poor.	Very poor.	Very poor.	Very poor.	Good	Good	Very poor.	Very poor.	Good.
Ponzer	Poor	Fair	Fair	Good	Good	Fair	Fair	Fair	Good	Fair.
EmB Emporia	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
EmC Emporia	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
EuA Eunola	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
FaA Faceville	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
FaB, FcB2 Faceville	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
FxB Foxworth	Fair	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
GoA Goldsboro	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
HnA, HnB Hornsville	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
JnA Johns	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
JoA Johnston	Very poor.	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good.
KeB Kenansville	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
LaB, LaC Lakeland	Poor	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
LeA Leon	Poor	Fair	Fair	Poor	Fair	Poor	Fair	Fair	Fair	Poor.
LmA Lumbee	Fair	Good	Good	Good	Good	Poor	Fair	Good	Good	Poor.
LuB Lucy	Poor	Fair	Good	Good	Good	Poor	Very poor.	Fair	Good	Very poor.
LyA Lynchburg	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.

See footnote at end of table.

Table 8.—Wildlife Habitat—Continued

Soil name and map symbol	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
NbB2 Nankin	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
NbC2 Nankin	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
NcA Noboco	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
NcB Noboco	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
NoA, NoB Norfolk	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
OrA Orangeburg	Poor	Fair	Fair	Poor	Poor	Poor	Very poor.	Fair	Poor	Very poor.
PaA Pamlico	Very poor.	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good.
PnA Pelion	Fair	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
PnB Pelion	Fair	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
PrA Persanti	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
RaA Rains	Fair	Fair	Fair	Good	Good	Good	Good	Fair	Good	Good.
RvA Riverview	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
SmA Smithboro	Fair	Fair	Fair	Good	Good	Fair	Fair	Fair	Good	Fair.
TbB Tarboro	Poor	Fair	Fair	Poor	Poor	Very poor.	Very poor.	Fair	Poor	Very poor.
TrB, TrC Troup	Poor	Fair	Fair	Poor	Poor	Very poor.	Very poor.	Fair	Poor	Very poor.
UcB Uchee	Poor	Fair	Good	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
UcC Uchee	Poor	Fair	Good	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
UdC* Udorthents	Poor	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
VaB, VaC Vaucluse	Fair	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
WaB Wagram	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.

See footnote at end of table.

Table 8.—Wildlife Habitat—Continued

Soil name and map symbol	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
WcA*:										
Wehadkee	Very poor.	Poor	Poor	Fair	Fair	Good	Fair	Poor	Fair	Fair.
Chastain	Very poor.	Poor	Poor	Fair	Poor	Good	Good	Poor	Fair	Good.
WkA Wickham	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
WkB Wickham	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.

* See description of the map unit for composition and behavior characteristics of the map unit.

Table 9.—Building Site Development

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
AaB---------- Ailey	Severe: cutbanks cave.	Slight---------	Moderate: wetness.	Moderate: slope.	Slight---------	Moderate: droughty.
AeC, AeD---------- Ailey	Severe: cutbanks cave.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: slope, droughty.
ApB---------- Alpin	Severe: cutbanks cave.	Slight---------	Slight---------	Slight---------	Slight---------	Severe: droughty.
ApC, ApD---------- Alpin	Severe: cutbanks cave.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Severe: droughty.
AuB---------- Autryville	Severe: cutbanks cave.	Slight---------	Moderate: wetness.	Slight---------	Slight---------	Moderate: droughty, too sandy.
BfA---------- Bibb	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.	Severe: wetness, flooding.
BnB---------- Blanton	Severe: cutbanks cave.	Slight---------	Moderate: wetness.	Slight---------	Slight---------	Severe: droughty.
BoB---------- Bonneau	Severe: cutbanks cave.	Slight---------	Moderate: wetness.	Slight---------	Slight---------	Moderate: droughty, too sandy.
CaB---------- Candor	Severe: cutbanks cave.	Slight---------	Slight---------	Slight---------	Slight---------	Severe: too acid, droughty.
CaC, CaD---------- Candor	Severe: cutbanks cave.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Severe: too acid, droughty.
CeA*:						
Chastain---------	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, wetness, flooding.	Severe: too acid, wetness, flooding.
Chewacla---------	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, wetness, flooding.	Severe: wetness, flooding.
CkA---------- Chewacla	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, wetness, flooding.	Severe: wetness, flooding.

See footnote at end of table.

Table 9.—Building Site Development—Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
CmA*:						
Chewacla	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, wetness, flooding.	Severe: wetness, flooding.
Chastain	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, wetness, flooding.	Severe: too acid, wetness, flooding.
CoC*, CoD*:						
Cowarts	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: droughty, slope.
Vaucluse	Severe: cutbanks cave.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: droughty, slope.
CoE*:						
Cowarts	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Vaucluse	Severe: cutbanks cave, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
CxA Coxville	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: too acid, wetness.
DpA*:						
Dorovan	Severe: excess humus, ponding.	Severe: subsides, flooding, ponding.	Severe: subsides, flooding, ponding.	Severe: subsides, flooding, ponding.	Severe: subsides, ponding, flooding.	Severe: ponding, flooding, excess humus.
Ponzer	Severe: excess humus, wetness.	Severe: subsides, flooding, wetness.	Severe: subsides, flooding, wetness.	Severe: subsides, flooding, wetness.	Severe: subsides, wetness, flooding.	Severe: flooding, wetness, excess humus.
EmB Emporia	Moderate: too clayey, wetness.	Slight	Moderate: wetness, shrink-swell.	Moderate: slope.	Moderate: low strength.	Moderate: droughty.
EmC Emporia	Moderate: too clayey, wetness, slope.	Moderate: slope.	Moderate: wetness, slope, shrink-swell.	Severe: slope.	Moderate: low strength, slope.	Moderate: droughty, slope.
EuA Eunola	Severe: cutbanks cave, wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.
FaA Faceville	Moderate: too clayey.	Slight	Slight	Slight	Slight	Slight.
FaB, FcB2 Faceville	Moderate: too clayey.	Slight	Slight	Moderate: slope.	Slight	Slight.

See footnote at end of table.

Table 9.—Building Site Development—Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
FxB Foxworth	Severe: cutbanks cave.	Slight	Moderate: wetness.	Slight	Slight	Moderate: droughty, too sandy.
GoA Goldsboro	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.	Slight.
HnA Hornsville	Moderate: too clayey, wetness.	Slight	Moderate: wetness.	Slight	Moderate: low strength.	Slight.
HnB Hornsville	Moderate: too clayey, wetness.	Slight	Moderate: wetness.	Moderate: slope.	Moderate: low strength.	Slight.
JnA Johns	Severe: cutbanks cave, wetness.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding.	Moderate: wetness, flooding.	Moderate: wetness, droughty.
JoA Johnston	Severe: cutbanks cave, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: ponding, flooding.	Severe: ponding, flooding.
KeB Kenansville	Severe: cutbanks cave.	Slight	Slight	Slight	Slight	Severe: droughty.
LaB Lakeland	Severe: cutbanks cave.	Slight	Slight	Slight	Slight	Moderate: droughty, too sandy.
LaC Lakeland	Severe: cutbanks cave.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: droughty, slope, too sandy.
LeA Leon	Severe: cutbanks cave, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: too acid, wetness.
LmA Lumbee	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness.
LuB Lucy	Moderate: cutbanks cave.	Slight	Slight	Slight	Slight	Moderate: droughty, too sandy.
LyA Lynchburg	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: too acid, wetness.
NbB2 Nankin	Moderate: too clayey.	Slight	Slight	Moderate: slope.	Slight	Slight.
NbC2 Nankin	Moderate: too clayey, slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: slope.
NcA Noboco	Moderate: wetness.	Slight	Moderate: wetness.	Slight	Slight	Slight.

See footnote at end of table.

Table 9.—Building Site Development—Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
NcB---------- Noboco	Moderate: wetness.	Slight---------	Moderate: wetness.	Moderate: slope.	Slight---------	Slight.
NoA---------- Norfolk	Moderate: wetness.	Slight---------	Moderate: wetness.	Slight---------	Slight---------	Moderate: droughty.
NoB---------- Norfolk	Moderate: wetness.	Slight---------	Moderate: wetness.	Moderate: slope.	Slight---------	Moderate: droughty.
OrA---------- Orangeburg	Severe: cutbanks cave.	Slight---------	Moderate: wetness.	Slight---------	Slight---------	Moderate: droughty.
PaA---------- Pamlico	Severe: cutbanks cave, excess humus, ponding.	Severe: flooding, ponding, low strength.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: low strength, flooding, ponding.	Severe: too acid, ponding, flooding.
PnA, PnB---------- Pelion	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: droughty.
PrA---------- Persanti	Severe: wetness.	Moderate: wetness, shrink-swell.	Severe: wetness.	Moderate: wetness, shrink-swell.	Moderate: shrink-swell, low strength, wetness.	Moderate: wetness.
RaA---------- Rains	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
RvA---------- Riverview	Severe: cutbanks cave.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.
SmA---------- Smithboro	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
TbB---------- Tarboro	Severe: cutbanks cave.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Moderate: flooding.	Moderate: droughty, too sandy.
TrB---------- Troup	Severe: cutbanks cave.	Slight---------	Slight---------	Slight---------	Slight---------	Moderate: droughty.
TrC---------- Troup	Severe: cutbanks cave.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: droughty, slope.
UcB---------- Uchee	Severe: cutbanks cave.	Slight---------	Moderate: wetness.	Slight---------	Slight---------	Moderate: droughty.
UcC---------- Uchee	Severe: cutbanks cave.	Moderate: slope.	Moderate: wetness, slope.	Severe: slope.	Moderate: slope.	Moderate: droughty, slope.
UdC*---------- Udorthents	Variable-------	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Moderate: shrink-swell.	Variable.
VaB---------- Vaucluse	Severe: cutbanks cave.	Slight---------	Slight---------	Moderate: slope.	Slight---------	Moderate: droughty.

See footnote at end of table.

Table 9.—Building Site Development—Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
VaC---------- Vaucluse	Severe: cutbanks cave.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: droughty, slope.
WaB---------- Wagram	Severe: cutbanks cave.	Slight---------	Slight---------	Slight---------	Slight---------	Moderate: droughty, too sandy.
WcA*:						
Wehadkee---------	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, wetness, flooding.	Severe: wetness, flooding.
Chastain---------	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, wetness, flooding.	Severe: too acid, wetness, flooding.
WkA, WkB---------- Wickham	Slight---------	Severe: flooding.	Severe: flooding.	Severe: flooding.	Moderate: flooding.	Slight.

* See description of the map unit for composition and behavior characteristics of the map unit.

Table 10.—Sanitary Facilities

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "good," and other terms. Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
AaB Ailey	Severe: percs slowly.	Severe: seepage.	Slight	Slight	Good.
AeC, AeD Ailey	Severe: percs slowly.	Severe: seepage, slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
ApB Alpin	Slight	Severe: seepage.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
ApC, ApD Alpin	Moderate: slope.	Severe: seepage, slope.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
AuB Autryville	Moderate: wetness.	Severe: seepage.	Severe: wetness, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
BfA Bibb	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: small stones, wetness.
BnB Blanton	Moderate: wetness.	Severe: seepage.	Severe: too sandy.	Severe: seepage.	Poor: too sandy.
BoB Bonneau	Severe: wetness.	Severe: seepage.	Severe: wetness.	Severe: seepage.	Good.
CaB Candor	Severe: poor filter.	Severe: seepage.	Severe: too sandy, too acid.	Severe: seepage.	Poor: seepage, too sandy, too acid.
CaC, CaD Candor	Severe: poor filter.	Severe: seepage, slope.	Severe: too sandy, too acid.	Severe: seepage.	Poor: seepage, too sandy, too acid.
CeA*:					
Chastain	Severe: flooding, wetness, percs slowly.	Severe: seepage, flooding.	Severe: flooding, seepage, wetness.	Severe: flooding, wetness.	Poor: too clayey, hard to pack, wetness.
Chewacla	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: hard to pack, wetness.
CkA Chewacla	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: hard to pack, wetness.

See footnote at end of table.

Table 10.—Sanitary Facilities—Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
CmA*:					
Chewacla	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: hard to pack, wetness.
Chastain	Severe: flooding, wetness, percs slowly.	Severe: seepage, flooding.	Severe: flooding, seepage, wetness.	Severe: flooding, wetness.	Poor: too clayey, hard to pack, wetness.
CoC*, CoD*:					
Cowarts	Severe: percs slowly.	Severe: slope.	Moderate: slope, too clayey.	Moderate: slope.	Fair: too clayey, slope.
Vaucluse	Severe: percs slowly.	Severe: seepage, slope.	Severe: seepage.	Moderate: slope.	Fair: too clayey, slope.
CoE*:					
Cowarts	Severe: percs slowly, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
Vaucluse	Severe: percs slowly, slope.	Severe: seepage, slope.	Severe: seepage, slope.	Severe: slope.	Poor: slope.
CxA Coxville	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness, too acid.	Severe: wetness.	Poor: wetness, too acid.
DpA*:					
Dorovan	Severe: subsides, flooding, ponding.	Severe: flooding, excess humus, ponding.	Severe: flooding, seepage, ponding.	Severe: flooding, ponding.	Poor: ponding, excess humus.
Ponzer	Severe: flooding, wetness, percs slowly.	Severe: flooding, excess humus, wetness.	Severe: flooding, wetness, too acid.	Severe: flooding, wetness.	Poor: wetness.
EmB Emporia	Severe: wetness, percs slowly.	Severe: seepage, wetness.	Moderate: wetness, too clayey.	Slight	Fair: too clayey, wetness.
EmC Emporia	Severe: wetness, percs slowly.	Severe: seepage, slope, wetness.	Moderate: wetness, slope, too clayey.	Moderate: slope.	Fair: slope, too clayey, wetness.
EuA Eunola	Severe: wetness.	Severe: seepage, wetness.	Severe: seepage, wetness.	Severe: wetness.	Fair: too clayey, wetness, thin layer.
FaA Faceville	Slight	Moderate: seepage.	Moderate: too clayey.	Good	Fair: too clayey.

See footnote at end of table.

Table 10.—Sanitary Facilities—Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
FaB, FcB2 Faceville	Slight	Moderate: seepage, slope.	Moderate: too clayey.	Good	Fair: too clayey.
FxB Foxworth	Moderate: wetness.	Severe: seepage.	Severe: seepage, wetness.	Severe: seepage.	Poor: seepage, too sandy.
GoA Goldsboro	Severe: wetness.	Severe: wetness.	Severe: wetness, too acid.	Severe: wetness.	Fair: wetness.
HnA, HnB Hornsville	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Fair: too clayey, hard to pack, wetness.
JnA Johns	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: seepage, wetness, too sandy.	Severe: seepage, wetness.	Poor: seepage, too sandy.
JoA Johnston	Severe: flooding, ponding, poor filter.	Severe: seepage, flooding, ponding.	Severe: flooding, seepage, ponding.	Severe: flooding, seepage, ponding.	Poor: ponding.
KeB Kenansville	Severe: poor filter.	Severe: seepage.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
LaB Lakeland	Slight	Severe: seepage.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
LaC Lakeland	Moderate: slope.	Severe: seepage, slope.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
LeA Leon	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: wetness, too sandy, too acid.	Severe: seepage, wetness.	Poor: seepage, too sandy, wetness.
LmA Lumbee	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: seepage, wetness.	Severe: seepage, wetness.	Poor: seepage, too sandy, wetness.
LuB Lucy	Slight	Severe: seepage.	Slight	Severe: seepage.	Fair: too clayey.
LyA Lynchburg	Severe: wetness.	Severe: seepage, wetness.	Severe: wetness, too clayey, too acid.	Severe: seepage, wetness.	Poor: too clayey, wetness, too acid.

See footnote at end of table.

Table 10.—Sanitary Facilities—Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
NbB2 Nankin	Severe: percs slowly.	Moderate: seepage, slope.	Moderate: too clayey.	Slight	Fair: too clayey.
NbC2 Nankin	Severe: percs slowly.	Severe: slope.	Moderate: slope, too clayey.	Moderate: slope.	Fair: too clayey, slope.
NcA, NcB Noboco	Severe: wetness.	Severe: seepage, wetness.	Severe: wetness.	Severe: wetness.	Fair: too clayey, wetness.
NoA, NoB Norfolk	Moderate: wetness, percs slowly.	Moderate: seepage, wetness.	Severe: wetness, too acid.	Moderate: wetness.	Poor: too acid.
OrA Orangeburg	Slight	Severe: seepage.	Slight	Slight	Good.
PaA Pamlico	Severe: flooding, ponding, poor filter.	Severe: seepage, flooding, excess humus.	Severe: flooding, seepage, ponding.	Severe: flooding, seepage, ponding.	Poor: seepage, excess humus, ponding.
PnA, PnB Pelion	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
PrA Persanti	Severe: wetness, percs slowly.	Slight	Severe: wetness.	Severe: wetness.	Fair: too clayey, hard to pack, wetness.
RaA Rains	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
RvA Riverview	Severe: flooding, wetness.	Severe: seepage, flooding, wetness.	Severe: flooding, seepage, wetness.	Severe: flooding, seepage, wetness.	Fair: thin layer.
SmA Smithboro	Severe: wetness, percs slowly.	Slight	Severe: wetness.	Severe: wetness.	Poor: wetness.
TbB Tarboro	Severe: poor filter.	Severe: seepage.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
TrB Troup	Slight	Severe: seepage.	Severe: too sandy.	Severe: seepage.	Poor: seepage, too sandy.
TrC Troup	Moderate: slope.	Severe: seepage, slope.	Severe: too sandy.	Severe: seepage.	Poor: seepage, too sandy.

See footnote at end of table.

Table 10.—Sanitary Facilities—Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
UcB---------- Uchee	Severe: wetness, percs slowly.	Severe: seepage.	Severe: seepage, too sandy.	Severe: seepage.	Poor: too sandy.
UcC---------- Uchee	Severe: wetness, percs slowly.	Severe: seepage, slope.	Severe: seepage, too sandy.	Severe: seepage.	Poor: too sandy.
UdC*---------- Udorthents	Variable---------	Variable---------	Variable---------	Slight----------	Variable.
VaB---------- Vaucluse	Severe: percs slowly.	Severe: seepage.	Severe: seepage.	Slight----------	Fair: too clayey.
VaC---------- Vaucluse	Severe: percs slowly.	Severe: seepage, slope.	Severe: seepage.	Moderate: slope.	Fair: too clayey, slope.
WaB---------- Wagram	Moderate: percs slowly.	Severe: seepage.	Slight----------	Severe: seepage.	Good.
WcA*:					
Wehadkee----------	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness, thin layer.
Chastain----------	Severe: flooding, wetness, percs slowly.	Severe: seepage, flooding.	Severe: flooding, seepage, wetness.	Severe: flooding, wetness.	Poor: too clayey, hard to pack, wetness.
WkA---------- Wickham	Moderate: flooding, percs slowly.	Moderate: seepage.	Moderate: flooding, too clayey.	Moderate: flooding.	Fair: too clayey.
WkB---------- Wickham	Moderate: flooding, percs slowly.	Moderate: seepage, slope.	Moderate: flooding, too clayey.	Moderate: flooding.	Fair: too clayey.

* See description of the map unit for composition and behavior characteristics of the map unit.

Table 11.—Construction Materials

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "good," "fair," and other terms. Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
AaB, AeC, AeD Ailey	Good	Improbable: excess fines.	Improbable: excess fines.	Poor: too sandy.
ApB, ApC, ApD Alpin	Good	Probable	Improbable: too sandy.	Poor: too sandy.
AuB Autryville	Good	Improbable: thin layer.	Improbable: too sandy.	Poor: too sandy.
BfA Bibb	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, wetness.
BnB Blanton	Good	Probable	Improbable: too sandy.	Poor: too sandy.
BoB Bonneau	Good	Improbable: excess fines.	Improbable: excess fines.	Poor: too sandy.
CaB, CaC, CaD Candor	Good	Improbable: thin layer.	Improbable: too sandy.	Poor: too sandy, too acid.
CeA*:				
Chastain	Poor: wetness.	Probable	Improbable: excess fines.	Poor: too clayey, wetness, too acid.
Chewacla	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
CkA Chewacla	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
CmA*:				
Chewacla	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
Chastain	Poor: wetness.	Probable	Improbable: excess fines.	Poor: too clayey, wetness, too acid.
CoC*, CoD*:				
Cowarts	Good	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.

See footnote at end of table.

Table 11.—Construction Materials—Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
CoC*, CoD*:				
Vaucluse	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: area reclaim, too sandy, small stones.
CoE*:				
Cowarts	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, slope.
Vaucluse	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Fair: area reclaim, too sandy, small stones.
CxA Coxville	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness, too acid.
DpA*:				
Dorovan	Poor: wetness.	Probable	Improbable: too sandy.	Poor: excess humus, wetness.
Ponzer	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: excess humus, wetness, too acid.
EmB Emporia	Fair: shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Fair: too sandy, small stones.
EmC Emporia	Fair: shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Fair: too sandy, slope.
EuA Eunola	Fair: wetness.	Probable	Improbable: too sandy.	Fair: too clayey, small stones, thin layer.
FaA, FaB, FcB2 Faceville	Good	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
FxB Foxworth	Good	Probable	Improbable: too sandy.	Poor: too sandy.
GoA Goldsboro	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too acid.
HnA, HnB Hornsville	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
JnA Johns	Fair: wetness.	Probable	Improbable: too sandy.	Fair: too sandy, thin layer.

See footnote at end of table.

Table 11.—Construction Materials—Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
JoA Johnston	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
KeB Kenansville	Good	Probable	Improbable: too sandy.	Poor: too sandy.
LaB, LaC Lakeland	Good	Probable	Improbable: too sandy.	Poor: too sandy.
LeA Leon	Poor: wetness.	Probable	Improbable: too sandy.	Poor: too sandy, wetness, too acid.
LmA Lumbee	Poor: wetness.	Probable	Improbable: too sandy.	Poor: wetness.
LuB Lucy	Good	Improbable: excess fines.	Improbable: excess fines.	Poor: too sandy.
LyA Lynchburg	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness, too acid.
NbB2, NbC2 Nankin	Good	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
NcA, NcB Noboco	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
NoA, NoB Norfolk	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones.
OrA Orangeburg	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: too sandy.
PaA Pamlico	Poor: low strength, wetness.	Probable	Improbable: too sandy.	Poor: excess humus, wetness, too acid.
PnA, PnB Pelion	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones, thin layer.
PrA Persanti	Fair: shrink-swell, low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
RaA Rains	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
RvA Riverview	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, thin layer.

See footnote at end of table.

Table 11.—Construction Materials—Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
SmA Smithboro	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.
TbB Tarboro	Good	Probable	Improbable: too sandy.	Poor: too sandy.
TrB, TrC Troup	Good	Probable	Improbable: too sandy.	Poor: too sandy.
UcB, UcC Uchee	Good	Improbable: thin layer.	Improbable: excess fines.	Poor: too sandy.
UdC* Udorthents	Fair: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Variable.
VaB, VaC Vaucluse	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: area reclaim, too sandy, small stones.
WaB Wagram	Good	Improbable: excess fines.	Improbable: excess fines.	Poor: too sandy.
WcA*:				
Wehadkee	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
Chastain	Poor: wetness.	Probable	Improbable: excess fines.	Poor: too clayey, wetness, too acid.
WkA, WkB Wickham	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones.

* See description of the map unit for composition and behavior characteristics of the map unit.

Table 12.—Water Management

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not evaluated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Soil name and map symbol	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
AaB Ailey	Moderate: seepage, slope.	Slight	Deep to water	Droughty, percs slowly, slope.	Too sandy, percs slowly.	Droughty, rooting depth.
AeC, AeD Ailey	Severe: slope.	Slight	Deep to water	Droughty, percs slowly, slope.	Slope, too sandy, percs slowly.	Slope, droughty, rooting depth.
ApB Alpin	Severe: seepage.	Severe: seepage.	Deep to water	Slope, droughty, fast intake.	Too sandy, soil blowing.	Droughty.
ApC, ApD Alpin	Severe: seepage, slope.	Severe: seepage.	Deep to water	Slope, droughty, fast intake.	Slope, too sandy, soil blowing.	Slope, droughty.
AuB Autryville	Severe: seepage.	Severe: seepage, piping.	Deep to water	Droughty, fast intake, soil blowing.	Too sandy, soil blowing.	Droughty.
BfA Bibb	Moderate: seepage.	Severe: piping, wetness.	Flooding	Wetness	Erodes easily, wetness.	Wetness, erodes easily.
BnB Blanton	Severe: seepage.	Severe: seepage, piping.	Deep to water	Slope, droughty, fast intake.	Too sandy, soil blowing.	Droughty.
BoB Bonneau	Severe: seepage.	Severe: thin layer.	Deep to water	Slope, droughty, fast intake.	Soil blowing	Droughty.
CaB Candor	Severe: seepage.	Severe: seepage, piping.	Deep to water	Slope, droughty, fast intake.	Too sandy, soil blowing.	Droughty.
CaC, CaD Candor	Severe: seepage, slope.	Severe: seepage, piping.	Deep to water	Slope, droughty, fast intake.	Slope, too sandy, soil blowing.	Slope, droughty.
CeA*:						
Chastain	Severe: seepage.	Severe: hard to pack, wetness.	Percs slowly, flooding, too acid.	Wetness, percs slowly.	Erodes easily, wetness, percs slowly.	Wetness, erodes easily, percs slowly.
Chewacla	Moderate: seepage.	Severe: piping, hard to pack, wetness.	Flooding	Wetness, flooding.	Wetness	Wetness.
CkA Chewacla	Moderate: seepage.	Severe: piping, hard to pack, wetness.	Flooding	Wetness, flooding.	Wetness	Wetness.

See footnote at end of table.

Table 12.—Water Management—Continued

Soil name and map symbol	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
CmA*:						
Chewacla	Moderate: seepage.	Severe: piping, hard to pack, wetness.	Flooding	Wetness, flooding.	Wetness	Wetness.
Chastain	Severe: seepage.	Severe: hard to pack, wetness.	Percs slowly, flooding, too acid.	Wetness, percs slowly.	Erodes easily, wetness, percs slowly.	Wetness, erodes easily, percs slowly.
CoC*, CoD*, CoE*:						
Cowarts	Severe: slope.	Severe: piping.	Deep to water	Slope, droughty, fast intake.	Slope, soil blowing, percs slowly.	Slope, droughty, rooting depth.
Vaucluse	Severe: seepage, slope.	Severe: piping.	Deep to water	Slope, droughty, fast intake.	Slope, soil blowing.	Slope, droughty, rooting depth.
CxA Coxville	Slight	Severe: wetness.	Too acid	Wetness, soil blowing, too acid.	Wetness, soil blowing.	Wetness.
DpA*:						
Dorovan	Moderate: seepage.	Severe: excess humus, ponding.	Ponding, flooding, subsides.	Ponding, soil blowing, flooding.	Ponding, soil blowing.	Wetness.
Ponzer	Moderate: seepage.	Severe: piping, wetness.	Percs slowly, flooding, subsides.	Wetness, soil blowing, percs slowly.	Wetness, soil blowing.	Wetness, percs slowly.
EmB Emporia	Moderate: seepage, slope.	Moderate: thin layer, piping.	Deep to water	Fast intake, soil blowing, slope.	Soil blowing, percs slowly.	Droughty, percs slowly.
EmC Emporia	Severe: slope.	Moderate: thin layer, piping.	Deep to water	Fast intake, soil blowing, slope.	Slope, soil blowing, percs slowly.	Slope, droughty, percs slowly.
EuA Eunola	Severe: seepage.	Severe: piping, wetness.	Favorable	Wetness, fast intake.	Wetness, soil blowing.	Favorable.
FaA Faceville	Moderate: seepage.	Slight	Deep to water	Fast intake	Erodes easily	Erodes easily.
FaB Faceville	Moderate: seepage, slope.	Slight	Deep to water	Slope, fast intake.	Erodes easily	Erodes easily.
FcB2 Faceville	Moderate: seepage, slope.	Slight	Deep to water	Slope	Erodes easily	Erodes easily.
FxB Foxworth	Severe: seepage.	Severe: seepage.	Deep to water	Slope, droughty, fast intake.	Too sandy, soil blowing.	Droughty.

See footnote at end of table.

Table 12.—Water Management—Continued

Soil name and map symbol	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
GoA Goldsboro	Moderate: seepage.	Moderate: piping, wetness.	Too acid	Wetness, soil blowing.	Wetness, soil blowing.	Favorable.
HnA Hornsville	Moderate: seepage.	Severe: hard to pack.	Favorable	Wetness	Wetness, soil blowing.	Favorable.
HnB Hornsville	Moderate: seepage, slope.	Severe: hard to pack.	Slope	Slope, wetness.	Wetness, soil blowing.	Favorable.
JnA Johns	Severe: seepage.	Severe: seepage, piping, wetness.	Cutbanks cave	Wetness, droughty, fast intake.	Wetness, too sandy, soil blowing.	Droughty, rooting depth.
JoA Johnston	Severe: seepage.	Severe: piping, ponding.	Ponding, flooding.	Ponding, droughty, flooding.	Ponding	Wetness, droughty.
KeB Kenansville	Severe: seepage.	Severe: seepage, piping.	Deep to water	Droughty, fast intake.	Too sandy, soil blowing.	Droughty.
LaB Lakeland	Severe: seepage.	Severe: seepage.	Deep to water	Slope, droughty, fast intake.	Too sandy, soil blowing.	Droughty.
LaC Lakeland	Severe: seepage, slope.	Severe: seepage.	Deep to water	Slope, droughty, fast intake.	Slope, too sandy, soil blowing.	Slope, droughty.
LeA Leon	Severe: seepage.	Severe: seepage, piping, wetness.	Cutbanks cave, too acid.	Wetness, droughty.	Wetness, too sandy, soil blowing.	Wetness, droughty.
LmA Lumbee	Severe: seepage.	Severe: seepage, piping, wetness.	Cutbanks cave	Wetness, soil blowing.	Wetness, too sandy, soil blowing.	Wetness.
LuB Lucy	Severe: seepage.	Severe: piping.	Deep to water	Droughty, fast intake.	Too sandy, soil blowing.	Droughty.
LyA Lynchburg	Severe: seepage.	Severe: piping, wetness.	Too acid	Wetness, droughty, soil blowing.	Wetness, soil blowing.	Wetness, droughty.
NbB2 Nankin	Moderate: seepage, slope.	Moderate: piping.	Deep to water	Slope	Favorable	Favorable.
NbC2 Nankin	Severe: slope.	Moderate: piping.	Deep to water	Slope	Slope	Slope.
NcA Noboco	Moderate: seepage.	Severe: piping.	Favorable	Wetness, fast intake.	Wetness	Rooting depth.

See footnote at end of table.

Table 12.—Water Management—Continued

Soil name and map symbol	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
NcB Noboco	Moderate: seepage, slope.	Severe: piping.	Slope	Slope, wetness, fast intake.	Wetness	Rooting depth.
NoA Norfolk	Moderate: seepage.	Severe: piping.	Deep to water	Fast intake, soil blowing.	Soil blowing	Favorable.
NoB Norfolk	Moderate: seepage, slope.	Severe: piping.	Deep to water	Slope, fast intake.	Soil blowing	Favorable.
OrA Orangeburg	Moderate: seepage.	Slight	Deep to water	Droughty, percs slowly.	Too sandy, percs slowly.	Droughty, rooting depth.
PaA Pamlico	Severe: seepage.	Severe: seepage, piping, ponding.	Ponding, flooding, subsides.	Ponding, flooding.	Ponding, too sandy, soil blowing.	Wetness.
PnA Pelion	Moderate: seepage.	Severe: seepage, piping.	Percs slowly	Droughty, fast intake.	Soil blowing	Droughty.
PnB Pelion	Moderate: seepage, slope.	Severe: seepage, piping.	Percs slowly, slope.	Droughty, fast intake.	Soil blowing	Droughty.
PrA Persanti	Slight	Severe: hard to pack, wetness.	Percs slowly	Wetness, soil blowing.	Wetness, soil blowing, percs slowly.	Percs slowly.
RaA Rains	Moderate: seepage.	Severe: piping, wetness.	Favorable	Wetness	Wetness, soil blowing.	Wetness.
RvA Riverview	Severe: seepage.	Severe: piping.	Deep to water	Flooding	Favorable	Favorable.
SmA Smithboro	Slight	Severe: hard to pack, wetness.	Percs slowly	Wetness, percs slowly.	Erodes easily, wetness, percs slowly.	Wetness, erodes easily, percs slowly.
TbB Tarboro	Severe: seepage.	Severe: seepage, piping.	Deep to water	Slope, droughty, fast intake.	Too sandy, soil blowing.	Droughty, rooting depth.
TrB Troup	Severe: seepage.	Severe: seepage, piping.	Deep to water	Droughty, fast intake, slope.	Too sandy, soil blowing.	Droughty.
TrC Troup	Severe: seepage, slope.	Severe: seepage, piping.	Deep to water	Droughty, fast intake, slope.	Slope, too sandy, soil blowing.	Slope, droughty.
UcB Uchee	Severe: seepage.	Severe: seepage, piping.	Deep to water	Slope, droughty, fast intake.	Too sandy	Droughty.
UcC Uchee	Severe: seepage, slope.	Severe: seepage, piping.	Deep to water	Slope, droughty, fast intake.	Slope, too sandy.	Slope, droughty.

See footnote at end of table.

Table 12.—Water Management—Continued

Soil name and map symbol	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
UdC*: Udorthents	Variable	Slight	Deep to water	Variable	Variable	Variable.
VaB: Vaucluse	Severe: seepage.	Severe: piping.	Deep to water	Slope, droughty, fast intake.	Soil blowing, percs slowly.	Droughty, rooting depth.
VaC: Vaucluse	Severe: seepage, slope.	Severe: piping.	Deep to water	Slope, droughty, fast intake.	Slope, soil blowing.	Slope, droughty, rooting depth.
WaB: Wagram	Severe: seepage.	Slight	Deep to water	Slope, droughty, fast intake.	Soil blowing	Droughty, rooting depth.
WcA*:						
Wehadkee	Moderate: seepage.	Severe: piping, wetness.	Flooding	Wetness, soil blowing, flooding.	Wetness, soil blowing.	Wetness.
Chastain	Severe: seepage.	Severe: hard to pack, wetness.	Percs slowly, flooding, too acid.	Wetness, percs slowly.	Erodes easily, wetness, percs slowly.	Wetness, erodes easily, percs slowly.
WkA: Wickham	Moderate: seepage.	Severe: piping.	Deep to water	Favorable	Soil blowing	Favorable.
WkB: Wickham	Moderate: seepage, slope.	Severe: piping.	Deep to water	Slope	Soil blowing	Favorable.

* See description of the map unit for composition and behavior characteristics of the map unit.

Table 13.—Engineering Index Properties

(The symbol < means less than; > means more than. Absence of an entry indicates that data were not estimated)

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag-ments 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas-ticity index
	In				Pct					Pct	
AaB---------- Ailey	0-28	Sand----------	SP-SM	A-2, A-3	0	85-100	75-95	50-75	5-12	---	NP
	28-43	Sandy loam, sandy clay loam.	SM, SC, SC-SM	A-2, A-4, A-6	0	90-100	75-100	60-90	30-40	20-40	3-16
	43-53	Sandy loam, sandy clay loam.	SM, SC, SC-SM	A-2, A-4, A-6	0	90-100	75-100	55-90	20-40	20-40	3-15
	53-72	Coarse sandy loam, sandy loam, sandy clay loam.	SM, SC, SC-SM	A-2, A-4, A-6	0	85-100	75-100	50-85	15-40	<40	NP-14
AeC, AeD--------- Ailey	0-24	Sand----------	SP-SM	A-2, A-3	0	85-100	75-95	50-75	5-12	---	NP
	24-38	Sandy loam, sandy clay loam.	SM, SC, SC-SM	A-2, A-4, A-6	0	90-100	75-100	60-90	30-40	20-40	3-16
	38-60	Sandy loam, sandy clay loam.	SM, SC, SC-SM	A-2, A-4, A-6	0	90-100	75-100	55-90	20-50	20-40	3-16
	60-72	Coarse sandy loam, sandy loam, sandy clay loam.	SM, SC, SC-SM	A-2, A-4, A-6	0	85-100	75-100	50-85	15-40	<40	NP-14
ApB, ApC, ApD---- Alpin	0-10	Sand----------	SP-SM, SM	A-3, A-2-4	0	95-100	90-100	60-100	5-20	---	NP
	10-49	Fine sand, sand	SP-SM, SM	A-3, A-2-4	0	95-100	90-100	60-100	5-20	---	NP
	49-88	Fine sand, sand	SP-SM, SM	A-2-4	0	95-100	90-100	60-100	11-20	---	NP
AuB---------- Autryville	0-23	Sand----------	SP-SM, SM	A-2, A-3	0	100	100	50-100	5-20	10-20	NP
	23-36	Sandy loam, sandy clay loam, fine sandy loam.	SM	A-2	0	100	100	50-100	15-30	15-30	NP-3
	36-68	Sand, loamy sand, loamy fine sand.	SP-SM, SM	A-2, A-3	0	100	100	50-100	5-20	10-20	NP
	68-72	Sandy loam, sandy clay loam, fine sandy loam.	SM, SC, SC-SM	A-2, A-4	0	100	100	60-100	20-49	15-40	NP-10
BfA---------- Bibb	0-7	Sandy loam-------	SM, SC-SM, ML, CL-ML	A-2, A-4	0-5	95-100	90-100	60-90	30-60	<25	NP-7
	7-60	Sandy loam, loam, silt loam.	SM, SC-SM, ML, CL-ML	A-2, A-4	0-10	60-100	50-100	40-100	30-90	<30	NP-7
BnB---------- Blanton	0-54	Sand----------	SP-SM, SM	A-3, A-2-4	0	100	90-100	65-100	5-20	---	NP
	54-64	Sandy loam, loamy sand, loamy coarse sand.	SM	A-2-4	0	100	95-100	65-96	13-30	<25	NP-3
	64-72	Sandy clay loam, sandy loam, sandy clay.	SC, SC-SM, SM	A-4, A-2-4, A-2-6, A-6	0	100	95-100	69-100	25-50	12-45	3-22
BoB---------- Bonneau	0-19	Sand----------	SM, SP-SM	A-2, A-3	0	100	100	60-95	8-20	---	NP
	19-54	Sandy loam, sandy clay loam, fine sandy loam.	SC, SC-SM	A-2, A-6, A-4	0	100	100	60-100	30-50	21-40	4-21
	54-60	Sandy loam, sandy clay loam, sandy clay.	CL, SC, SC-SM, CL-ML	A-4, A-6, A-2	0	100	100	60-95	25-60	20-40	4-18

Table 13.—Engineering Index Properties—Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag-ments 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas-ticity index
	In				Pct					Pct	
CaB, CaC, CaD---- Candor	0-24	Sand----------	SM, SP-SM	A-2, A-3, A-2-4	0-2	98-100	96-100	55-90	5-15	10-14	NP
	24-42	Loamy sand-------	SM, SP-SM	A-2, A-2-4	0-2	98-100	96-100	63-90	10-25	10-20	NP
	42-70	Sand----------	SM, SP-SM	A-2, A-3	0-7	90-100	90-100	55-90	5-15	10-14	NP
	70-80	Sandy loam, sandy clay loam.	SC, SC-SM, SM	A-2, A-4, A-6, A-7	0-7	90-100	90-100	55-90	25-49	15-45	NP-25
CeA*:											
Chastain--------	0-5	Loam----------	ML, CL, CL-ML	A-4, A-6, A-7	0	100	100	90-100	70-95	23-45	3-18
	5-52	Silty clay loam, clay loam, clay.	CL, CH, ML, MH	A-6, A-7	0	100	100	95-100	85-98	35-75	12-40
	52-72	Loamy sand, sand, fine sand.	SP, SM, SP-SM	A-2, A-3	0	90-100	85-100	51-90	4-25	---	NP
Chewacla--------	0-7	Clay loam--------	ML, CL, CL-ML	A-4, A-6, A-7	0	98-100	95-100	70-100	55-90	25-49	4-20
	7-50	Sandy clay loam, loam, sandy loam.	SM, SC-SM, ML, CL	A-4, A-7-6, A-6	0	96-100	95-100	60-100	36-70	20-45	2-15
	50-65	Variable---------	---	---	---	---	---	---	---	---	---
CkA---------- Chewacla	0-7	Clay loam--------	ML, CL, CL-ML	A-4, A-6, A-7	0	98-100	95-100	70-100	55-90	25-49	4-20
	7-50	Sandy clay loam, loam, sandy loam.	SM, SC-SM, ML, CL	A-4, A-7-6, A-6	0	96-100	95-100	60-100	36-70	20-45	2-15
	50-65	Variable---------	---	---	---	---	---	---	---	---	---
CmA*:											
Chewacla--------	0-7	Clay loam--------	ML, CL, CL-ML	A-4, A-6, A-7	0	98-100	95-100	70-100	55-90	25-49	4-20
	7-50	Sandy clay loam, loam, sandy loam.	SM, SC-SM, ML, CL	A-4, A-7-6, A-6	0	96-100	95-100	60-100	36-70	20-45	2-15
	50-65	Variable---------	---	---	---	---	---	---	---	---	---
Chastain--------	0-5	Loam----------	ML, CL, CL-ML	A-4, A-6, A-7	0	100	100	90-100	70-95	23-45	3-18
	5-52	Silty clay loam, clay loam, clay.	CL, CH, ML, MH	A-6, A-7	0	100	100	95-100	85-98	35-75	12-40
	52-72	Loamy sand, sand, fine sand.	SP, SM, SP-SM	A-2, A-3	0	90-100	85-100	51-90	4-25	---	NP
CoC*:											
Cowarts---------	0-6	Loamy sand-------	SM	A-2	0	90-100	85-100	50-80	13-30	---	NP
	6-10	Fine sandy loam, sandy loam, sandy clay loam.	SC-SM, SC, SM	A-2, A-4, A-6	0	95-100	90-100	60-95	23-45	20-40	NP-15
	10-29	Sandy clay loam, sandy clay, clay loam.	SM, SC	A-6, A-7, A-2-6	0	95-100	90-100	60-95	25-50	20-54	5-25
	29-62	Sandy loam, sandy clay loam, clay loam.	SC-SM, SC, CL-ML, CL	A-2, A-4, A-6, A-7	0	85-100	80-100	60-95	25-58	25-53	5-20

See footnote at end of table.

Table 13.—Engineering Index Properties—Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag-ments 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas-ticity index
	In				Pct					Pct	
CoC*:											
Vaucluse--------	0-6	Loamy sand-------	SM, SP-SM	A-2, A-3	0-5	90-100	90-100	50-75	8-30	---	NP
	6-16	Sandy clay loam, sandy loam.	SC, SC-SM	A-2, A-4, A-6	0-5	90-100	90-100	51-75	25-50	20-40	5-18
	16-50	Sandy clay loam, sandy loam, sandy clay.	SC, SC-SM, SM	A-2, A-4, A-6	0-5	95-100	92-100	51-80	20-50	<40	NP-20
	50-60	Sandy loam, sandy clay loam, loamy sand.	SM, SC, SC-SM	A-2, A-4, A-6	0-2	95-100	95-100	51-90	15-50	<30	NP-12
CoD*, CoE*:											
Cowarts---------	0-6	Loamy sand-------	SM	A-2	0	90-100	85-100	50-80	13-30	---	NP
	6-10	Fine sandy loam, sandy loam, sandy clay loam.	SC-SM, SC, SM	A-2, A-4, A-6	0	95-100	90-100	60-95	23-45	20-40	NP-15
	10-21	Sandy clay loam, sandy clay, clay loam.	SM, SC	A-6, A-7, A-2-6	0	95-100	90-100	60-95	25-50	20-54	5-25
	21-62	Sandy loam, sandy clay loam, clay loam.	SC-SM, SC, CL-ML, CL	A-2, A-4, A-6, A-7	0	85-100	80-100	60-95	25-58	25-53	5-20
Vaucluse--------	0-6	Loamy sand-------	SM, SP-SM	A-2, A-3	0-5	90-100	90-100	50-75	8-30	---	NP
	6-16	Sandy clay loam, sandy loam.	SC, SC-SM	A-2, A-4, A-6	0-5	90-100	90-100	51-75	25-50	20-40	5-18
	16-50	Sandy clay loam, sandy loam, sandy clay.	SC, SC-SM, SM	A-2, A-4, A-6	0-5	95-100	92-100	51-80	20-50	<40	NP-20
	50-60	Sandy loam, sandy clay loam, loamy sand.	SM, SC, SC-SM	A-2, A-4, A-6	0-2	95-100	95-100	51-90	15-50	<30	NP-12
CxA---------- Coxville	0-9	Sandy loam-------	SM, ML, CL-ML, CL	A-4, A-6, A-7	0	100	100	85-97	46-75	20-46	3-15
	9-62	Clay loam, sandy clay, clay.	CL, CH	A-6, A-7	0	100	100	85-98	50-85	40-65	12-35
DpA*:											
Dorovan---------	0-2	Muck----------	PT	---	0	---	---	---	---	---	---
	2-66	Muck----------	PT	---	0	---	---	---	---	---	---
	66-80	Sand, loamy sand, loam.	SP-SM, SC-SM, SM	A-1, A-3, A-4, A-2-4	0	100	100	5-70	5-49	<20	NP-7
Ponzer----------	0-42	Muck----------	PT	---	0	---	---	---	---	---	---
	42-55	Loam, sandy clay loam, silt loam.	SM, ML, SC, CL	A-2, A-4, A-6	0	100	100	60-95	30-95	25-40	NP-20
	55-65	Variable---------	---	---	---	---	---	---	---	---	---
EmB, EmC--------- Emporia	0-4	Loamy sand-------	SM, SC-SM	A-2, A-1, A-4	0-3	90-100	80-100	40-85	15-40	<18	NP-7
	4-21	Sandy clay loam, sandy loam, clay loam.	SC, CL	A-2, A-4, A-6, A-7	0-2	90-100	80-100	45-95	25-70	20-50	8-30
	21-45	Sandy clay loam, clay loam, sandy clay.	SC, CL, CH	A-2, A-4, A-6, A-7	0-2	90-100	80-100	45-95	30-80	25-55	8-30
	45-60	Stratified sandy loam to clay.	SM, SC, ML, CL	A-1, A-2, A-4, A-6	0-5	70-100	55-100	30-90	20-60	<40	NP-25

See footnote at end of table.

Table 13.—Engineering Index Properties—Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag-ments 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas-ticity index
	In				Pct					Pct	
EuA---------- Eunola	0-17	Loamy sand-------	SM, SP-SM	A-2, A-4, A-2-4	0	100	98-100	50-80	10-38	---	NP
	17-30	Sandy clay loam, clay loam, fine sandy loam.	SM, SC, SC-SM, CL	A-4, A-2, A-6	0	100	90-100	75-95	30-60	<36	NP-15
	30-47	Sandy clay loam, sandy clay, clay loam.	SM, SC, ML, CL	A-4, A-6, A-7	0	100	98-100	80-95	36-60	22-50	3-26
	47-60	Sandy loam, sandy clay loam.	SM, SC, SC-SM	A-2, A-4	0	100	98-100	60-70	30-40	<30	NP-10
FaA, FaB--------- Faceville	0-11	Loamy sand-------	SM	A-2	0	90-100	85-100	72-97	13-25	---	NP
	11-72	Sandy clay, clay, clay loam.	CL, SC, CH, ML	A-6, A-7	0	98-100	95-100	75-99	45-72	25-52	11-25
FcB2---------- Faceville	0-6	Sandy clay loam	SM, CL-ML, ML, SC-SM	A-4	0	90-100	90-100	63-97	40-58	<25	NP-7
	6-60	Sandy clay, clay, clay loam.	CL, SC, CH, ML	A-6, A-7	0	98-100	95-100	75-99	45-72	25-52	11-25
FxB---------- Foxworth	0-3	Sand----------	SP-SM	A-3, A-2-4	0	100	100	60-100	5-12	---	NP
	3-65	Sand, fine sand	SP-SM	A-3, A-2-4	0	100	100	60-100	5-12	---	NP
	65-70	Sand, fine sand	SP, SP-SM	A-3, A-2-4	0	100	100	50-100	1-12	---	NP
GoA---------- Goldsboro	0-8	Sandy loam-------	SM, SC-SM, SC	A-2, A-4, A-6	0	95-100	95-100	50-100	15-45	15-25	NP-14
	8-60	Sandy clay loam, sandy loam.	SC-SM, SC, CL-ML, CL	A-2, A-4, A-6	0	98-100	95-100	60-100	25-55	20-37	4-18
HnA, HnB--------- Hornsville	0-7	Sandy loam-------	SM	A-2-4, A-4	0	100	100	60-95	30-50	<30	NP-7
	7-36	Sandy clay, clay loam, clay.	SC, CL, CH, MH	A-6, A-7	0	100	100	70-98	45-70	38-56	15-25
	36-60	Sandy clay loam, sandy loam, fine sandy loam.	SM, SC-SM, SC	A-2-4, A-2-6, A-4, A-6	0	100	100	60-100	18-50	<30	NP-12
JnA---------- Johns	0-14	Loamy sand-------	SM	A-2, A-4	0	100	95-100	60-90	15-45	15-20	NP
	14-37	Sandy clay loam, sandy loam, clay loam.	SC, SC-SM, CL, CL-ML	A-2, A-4, A-6, A-7	0	100	95-100	60-98	30-65	20-45	5-25
	37-80	Sand, loamy sand, coarse sand.	SM, SP-SM, SP	A-2, A-3	0	95-100	95-100	51-90	4-25	10-20	NP
JoA---------- Johnston	0-38	Sandy loam-------	ML, SM	A-2, A-4	0	100	100	60-100	18-65	20-35	NP-10
	38-60	Stratified loamy sand to sand.	SM, SP-SM	A-2, A-3	0	100	100	50-100	5-30	15-20	NP
KeB---------- Kenansville	0-30	Sand----------	SM, SP-SM	A-1, A-2	0	100	95-100	45-95	10-25	0-14	NP
	30-41	Sandy loam, fine sandy loam, sandy clay loam.	SM, SC, SC-SM	A-2, A-4	0	100	95-100	50-99	25-45	0-30	NP-10
	41-70	Sand, loamy sand, loamy fine sand.	SP-SM, SM	A-1, A-2, A-3	0	100	95-100	40-99	5-30	0-14	NP

See footnote at end of table.

Table 13.—Engineering Index Properties—Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag-ments 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas-ticity index
	In				Pct					Pct	
LaB, LaC--------- Lakeland	0-4	Sand----------	SP-SM	A-3, A-2-4	0	90-100	90-100	60-100	5-12	---	NP
	4-80	Sand, fine sand	SP, SP-SM	A-3, A-2-4	0	90-100	90-100	50-100	1-12	---	NP
LeA---------- Leon	0-5	Sand----------	SP, SP-SM	A-3, A-2-4	0	100	100	80-100	2-12	0-14	NP
	5-13	Sand, fine sand	SP, SP-SM	A-3, A-2-4	0	100	100	80-100	2-12	0-14	NP
	13-27	Sand, fine sand, loamy sand.	SM, SP-SM, SP	A-3, A-2-4	0	100	100	80-100	3-20	0-14	NP
	27-65	Sand, fine sand	SP, SP-SM	A-3, A-2-4	0	100	100	80-100	2-12	0-14	NP
LmA---------- Lumbee	0-13	Sandy loam-------	SM, SC-SM	A-2, A-4	0	100	85-100	65-98	15-45	10-25	NP-7
	13-30	Sandy clay loam, sandy loam, clay loam.	SC, CL	A-4, A-6, A-7	0	100	90-100	65-98	36-60	19-45	7-25
	30-65	Loamy sand, sand, fine sand.	SP, SM, SP-SM	A-2, A-3	0	90-100	85-100	50-90	4-25	10-20	NP
LuB---------- Lucy	0-22	Sand----------	SM, SP-SM	A-2	0	95-100	90-100	50-75	10-30	---	NP
	22-67	Sandy loam, fine sandy loam, sandy clay loam.	SM, SC, SC-SM	A-2, A-4, A-6	0	97-100	95-100	55-95	15-50	10-30	NP-15
LyA---------- Lynchburg	0-17	Sandy loam-------	SM	A-2-a	0	95-100	90-100	45-85	15-45	0-15	NP
	17-53	Sandy clay loam, sandy clay, clay.	SC-SM, SC, CL-ML, CL	A-2, A-4, A-6	0	95-100	90-100	55-100	35-80	20-35	5-15
	53-63	----------	SC-SM, SC, CL, CL-ML	A-2, A-4, A-6	0	95-100	90-100	75-100	35-95	25-50	7-25
NbB2---------- Nankin	0-6	Sandy clay loam	SM, SC-SM, ML, CL-ML	A-4	0	90-100	90-100	70-95	36-55	<25	NP-7
	6-57	Sandy clay, clay, sandy clay loam.	SC, CL, ML, CL-ML	A-4, A-6, A-7	0	98-100	95-100	75-95	40-70	25-45	7-20
	57-62	Sandy clay loam, sandy loam.	SC, SC-SM, CL, CL-ML	A-2, A-4, A-6	0	98-100	95-100	70-85	25-55	20-40	4-16
NbC2---------- Nankin	0-6	Sandy clay loam	SM, SC-SM, ML, CL-ML	A-4	0	90-100	90-100	70-95	36-55	<25	NP-7
	6-57	Sandy clay, clay, sandy clay loam.	SC, CL, ML, CL-ML	A-4, A-6, A-7	0	98-100	95-100	75-95	40-70	25-45	7-20
	57-65	Sandy clay loam, sandy loam.	SC, SC-SM, CL, CL-ML	A-2, A-4, A-6	0	98-100	95-100	70-85	25-55	20-40	4-16
NcA, NcB--------- Noboco	0-13	Loamy sand-------	SM	A-2	0	95-100	92-100	50-95	13-30	<20	NP
	13-45	Sandy loam, sandy clay loam, clay loam.	SC-SM, SC, CL, CL-ML	A-2, A-4, A-6	0	95-100	95-100	70-96	30-63	20-38	4-15
	45-60	Sandy clay loam, clay loam, sandy clay.	SC-SM, SC, CL, CL-ML	A-4, A-6, A-7-6	0	98-100	98-100	70-98	36-72	20-52	4-23

See footnote at end of table.

Table 13.—Engineering Index Properties—Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag-ments 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas-ticity index
	In				Pct					Pct	
NoA, NoB--------- Norfolk	0-15	Loamy sand-------	SM	A-2	0	95-100	92-100	50-95	13-30	15-20	NP
	15-47	Sandy loam, sandy clay loam, clay loam.	SC, SC-SM, CL, CL-ML	A-2, A-4, A-6	0	95-100	91-100	70-96	30-63	20-38	4-15
	47-72	Sandy clay loam, clay loam, sandy clay.	SC, SC-SM, CL, CL-ML	A-4, A-6, A-7-6	0	100	98-100	65-98	36-72	25-52	4-23
OrA---------- Orangeburg	0-16	Loamy sand-------	SM, SP-SM	A-2, A-3	0	85-100	75-100	50-80	5-20	---	NP
	16-21	Sandy loam, sandy clay loam.	SM, SC, SC-SM	A-2, A-4, A-6	0	90-100	75-100	60-90	30-40	20-40	3-16
	21-65	Sandy loam, sandy clay loam.	SM, SC, SC-SM	A-2, A-4, A-6	0	90-100	75-100	55-90	20-40	20-40	3-15
	65-72	Coarse sandy loam, sandy loam, sandy clay loam.	SM, SC, SC-SM	A-2, A-4, A-6	0	85-100	75-100	50-85	15-40	<40	NP-14
PaA---------- Pamlico	0-42	Muck----------	PT	---	0	---	---	---	---	---	---
	42-60	Loamy sand, sand, loamy fine sand.	SM, SP-SM	A-2, A-3	0	100	100	70-95	5-20	10-20	NP
PnA, PnB--------- Pelion	0-14	Loamy sand-------	SP, SM, SP-SM	A-2, A-3	0	98-100	95-100	45-85	5-30	10-25	NP
	14-19	Sandy clay loam, clay loam.	SC-SM, SC, CL-ML, CL	A-2, A-4, A-6	0	95-100	92-100	50-90	25-55	20-40	5-18
	19-32	Sandy clay loam, sandy clay, clay.	SC-SM, SC, CL-ML, CL	A-2, A-4, A-6, A-7	0	98-100	92-100	50-90	25-60	20-47	5-26
	32-66	Sandy clay loam, sandy loam.	SM, SC, SC-SM	A-2, A-4, A-6	0	98-100	92-100	50-90	18-60	<42	NP-22
PrA---------- Persanti	0-7	Loam----------	SM, ML	A-4	0	100	95-100	80-98	40-70	<35	NP-7
	7-49	Clay, silty clay	CL, CH	A-6, A-7	0	100	98-100	90-100	65-96	35-80	12-46
	49-60	Clay, clay loam, silty clay loam.	CL, ML, CH, MH	A-4, A-6, A-7	0	100	98-100	90-100	60-90	30-55	8-25
RaA---------- Rains	0-12	Sandy loam-------	SM, ML	A-2, A-4	0	100	95-100	50-85	25-56	<35	NP-10
	12-40	Fine sandy loam, sandy clay loam, sandy loam.	SC, SC-SM, CL, CL-ML	A-2, A-4, A-6	0	100	95-100	55-98	30-70	18-40	4-20
	40-62	Sandy clay loam, clay loam, sandy clay.	SC, SC-SM, CL, CL-ML	A-4, A-6, A-7	0	100	98-100	60-98	36-72	18-45	4-28
	62-85	Sandy loam, sandy clay loam, sandy clay.	SM, SC, ML, CL	A-2, A-4, A-6	0	100	95-100	60-95	30-60	15-40	3-18
RvA---------- Riverview	0-3	Silt loam--------	CL, CL-ML, ML	A-4, A-6	0	100	100	90-100	60-80	15-30	3-14
	3-38	Sandy clay loam, silty clay loam, loam.	CL, ML, CL-ML	A-4, A-6	0	100	100	90-100	60-95	20-40	3-20
	38-60	Loamy fine sand, sandy loam, sand.	SM, SC-SM	A-2, A-4	0	100	100	50-95	15-45	<20	NP-7
SmA---------- Smithboro	0-5	Silt loam--------	ML, CL, CL-ML	A-4	0	100	100	95-100	70-90	<35	NP-10
	5-65	Clay, clay loam, silty clay.	CL, ML, CH, MH	A-6, A-7, A-4	0	100	100	94-100	70-95	24-60	9-32

See footnote at end of table.

Table 13.—Engineering Index Properties—Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag- ments 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct					Pct	
TbB---------- Tarboro	0-7	Sand----------	SM, SP-SM, SW-SM	A-2, A-3, A-1	0	95-100	95-100	40-99	8-35	10-20	NP
	7-80	Sand, coarse sand, loamy sand.	SP, SP-SM, SW-SM, SM	A-2, A-3, A-1	0	95-100	90-100	45-100	3-15	10-14	NP
TrB, TrC--------- Troup	0-55	Sand----------	SM, SP-SM	A-2	0	95-100	90-100	50-75	10-30	---	NP
	55-85	Sandy clay loam, sandy loam, fine sandy loam.	SC, SC-SM, CL-ML, CL	A-4, A-2, A-6	0	95-100	90-100	60-90	24-55	19-40	4-20
UcB, UcC--------- Uchee	0-25	Sand----------	SM	A-2, A-1-b	0	90-100	80-100	40-70	15-30	---	NP
	25-34	Sandy loam, sandy clay loam.	SC, SC-SM	A-2, A-4, A-6	0	90-100	80-100	50-80	25-50	20-40	6-20
	34-41	Sandy clay loam, sandy clay, clay.	CH, CL, SC	A-7	0	90-100	80-100	65-90	40-70	41-70	18-38
	41-46	Sandy loam, sandy clay loam, sandy clay.	CH, CL, SC	A-6, A-7, A-2-6	0	85-100	80-100	50-80	30-65	35-65	15-35
	46-60	Sandy loam, loamy sand.	SP-SM, SM, SC-SM	A-2, A-1-b	0	95-100	90-100	40-70	10-35	<25	NP-7
UdC*---------- Udorthents	0-60	Sandy loam-------	CL, CL-ML, SC, SC-SM	A-2, A-4, A-6, A-7	0-3	95-100	90-100	70-98	30-90	20-45	4-25
VaB, VaC--------- Vaucluse	0-6	Loamy sand-------	SM, SP-SM	A-2, A-3	0-5	90-100	90-100	50-75	8-30	---	NP
	6-16	Sandy clay loam, sandy loam.	SC, SC-SM	A-2, A-4, A-6	0-5	90-100	90-100	51-75	25-50	20-40	5-18
	16-50	Sandy clay loam, sandy loam, sandy clay.	SC, SC-SM, SM	A-2, A-4, A-6	0-5	95-100	92-100	51-80	20-50	<40	NP-20
	50-60	Sandy loam, sandy clay loam, loamy sand.	SM, SC, SC-SM	A-2, A-4, A-6	0-2	95-100	95-100	51-90	15-50	<30	NP-12
WaB---------- Wagram	0-30	Sand----------	SP-SM, SM	A-1, A-2, A-3	0	95-100	90-100	45-80	5-15	10-14	NP
	30-72	Sandy clay loam, sandy loam.	SC	A-2, A-4, A-6, A-7	0	100	98-100	60-95	31-49	21-41	8-25
WcA*:											
Wehadkee--------	0-13	Loam----------	SM, SC, SC-SM	A-2, A-4	0	100	95-100	60-90	30-50	20-30	NP-10
	13-30	Silty clay loam, loam, sandy clay loam.	CL, CL-ML, ML, SC	A-6, A-7, A-4	0	100	99-100	85-100	45-98	25-58	6-25
	30-60	Variable---------	---	---	---	---	---	---	---	---	---
Chastain--------	0-5	Loam----------	ML, CL, CL-ML	A-4, A-6, A-7	0	100	100	90-100	70-95	23-45	3-18
	5-52	Silty clay loam, clay loam, clay.	CL, CH, ML, MH	A-6, A-7	0	100	100	95-100	85-98	35-75	12-40
	52-72	Loamy sand, sand, fine sand.	SP, SM, SP-SM	A-2, A-3	0	90-100	85-100	51-90	4-25	---	NP

See footnote at end of table.

Table 13.—Engineering Index Properties—Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Frag- ments 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct					Pct	
WkA, WkB--------- Wickham	0-6	Sandy loam-------	SM, SC-SM, ML, CL-ML	A-4	0	95-100	90-100	70-100	45-80	15-25	NP-7
	6-48	Sandy clay loam, clay loam, loam.	CL-ML, CL, SC, SM	A-2, A-4, A-6, A-7-6	0	95-100	90-100	75-100	30-70	20-41	3-15
	48-80	Variable---------	---	---	---	---	---	---	---	---	---

* See description of the map unit for composition and behavior characteristics of the map unit.

Table 14.—Physical and Chemical Properties of the Soils

(The symbol < means less than; > means more than. Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Organic matter" apply only to the surface layer. Absence of an entry indicates that data were not available or were not estimated)

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors K	Erosion factors T	Wind erodibility group	Organic matter
	In	Pct	g/cc	In/hr	In/in	pH					Pct
AaB---------- Ailey	0-28	3-8	1.40-1.55	6.0-20	0.03-0.05	4.5-6.5	Low----------	0.10	4	1	<1
	28-43	15-35	1.55-1.70	0.6-2.0	0.09-0.12	4.5-5.5	Low----------	0.24			
	43-53	18-32	1.70-1.80	0.06-0.2	0.06-0.10	4.5-5.5	Low----------	0.24			
	53-72	15-30	1.80-1.95	0.06-0.2	0.04-0.08	4.5-5.5	Low----------	0.15			
AeC, AeD--------- Ailey	0-24	3-8	1.40-1.55	6.0-20	0.03-0.05	4.5-6.5	Low----------	0.10	4	1	<1
	24-38	15-35	1.55-1.70	0.6-2.0	0.09-0.12	4.5-5.5	Low----------	0.24			
	38-60	18-35	1.70-1.80	0.06-0.2	0.06-0.10	4.5-5.5	Low----------	0.24			
	60-72	15-30	1.80-1.95	0.06-0.2	0.04-0.08	4.5-5.5	Low----------	0.15			
ApB, ApC, ApD---- Alpin	0-10	1-12	1.35-1.55	2.0-6.0	0.05-0.10	4.5-6.5	Low----------	0.10	5	1	0-1
	10-49	1-7	1.40-1.55	6.0-20	0.03-0.09	4.5-6.5	Low----------	0.10			
	49-88	5-8	1.45-1.65	2.0-6.0	0.06-0.09	4.5-6.5	Low----------	0.10			
AuB---------- Autryville	0-23	2-10	1.60-1.70	>6.0	0.04-0.09	4.5-6.5	Low----------	0.10	5	2	.5-1
	23-36	10-25	1.40-1.60	2.0-6.0	0.08-0.13	4.5-5.5	Low----------	0.10			
	36-68	2-8	1.60-1.70	>6.0	0.03-0.08	4.5-5.5	Low----------	0.10			
	68-72	10-35	1.40-1.60	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.17			
BfA---------- Bibb	0-7	2-18	1.50-1.70	0.6-2.0	0.12-0.18	3.6-5.5	Low----------	0.20	5	3	1-3
	7-60	2-18	1.45-1.75	0.6-2.0	0.10-0.20	3.6-5.5	Low----------	0.37			
BnB---------- Blanton	0-54	1-7	1.30-1.60	6.0-20	0.03-0.07	4.5-6.0	Low----------	0.10	5	1	.5-1
	54-64	10-18	1.50-1.65	2.0-6.0	0.10-0.15	4.5-5.5	Low----------	0.15			
	64-72	12-40	1.60-1.70	0.2-2.0	0.10-0.15	4.5-5.5	Low----------	0.20			
BoB---------- Bonneau	0-19	2-8	1.30-1.70	6.0-20	0.04-0.08	4.5-6.0	Low----------	0.10	5	1	.5-1
	19-54	13-35	1.40-1.60	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.20			
	54-60	15-40	1.40-1.60	0.6-2.0	0.10-0.16	4.5-5.5	Low----------	0.20			
CaB, CaC, CaD---- Candor	0-24	1-4	1.60-1.70	6.0-20	0.02-0.06	3.5-6.0	Low----------	0.10	5	1	.5-1
	24-42	6-12	1.55-1.70	6.0-20	0.06-0.10	3.5-5.5	Low----------	0.10			
	42-70	1-4	1.60-1.70	6.0-20	0.02-0.05	3.5-5.5	Low----------	0.10			
	70-80	10-35	1.35-1.60	0.6-2.0	0.12-0.16	3.5-5.5	Low----------	0.20			
CeA*:											
Chastain--------	0-5	15-27	1.20-1.40	0.2-0.6	0.12-0.18	3.5-6.0	Moderate-----	0.32	4	5	1-2
	5-52	35-60	1.30-1.50	0.06-0.2	0.12-0.16	3.5-6.0	Moderate-----	0.37			
	52-72	2-10	1.50-1.70	6.0-20	0.03-0.06	3.5-6.0	Low----------	0.10			
Chewacla--------	0-7	27-35	1.30-1.60	0.6-2.0	0.15-0.24	4.5-6.5	Low----------	0.28	5	5	1-2
	7-50	18-35	1.30-1.60	0.6-2.0	0.12-0.20	4.5-6.5	Low----------	0.28			
	50-65	---	---	---	---	---	----------	----			
CkA---------- Chewacla	0-7	27-35	1.30-1.60	0.6-2.0	0.15-0.24	4.5-6.5	Low----------	0.28	5	5	1-2
	7-50	18-35	1.30-1.60	0.6-2.0	0.12-0.20	4.5-6.5	Low----------	0.28			
	50-65	---	---	---	---	---	----------	----			
CmA*:											
Chewacla--------	0-7	27-35	1.30-1.60	0.6-2.0	0.15-0.24	4.5-6.5	Low----------	0.28	5	5	1-2
	7-50	18-35	1.30-1.60	0.6-2.0	0.12-0.20	4.5-6.5	Low----------	0.28			
	50-65	---	---	---	---	---	----------	----			
Chastain--------	0-5	15-27	1.20-1.40	0.2-0.6	0.12-0.18	3.5-6.0	Moderate-----	0.32	4	5	1-2
	5-52	35-60	1.30-1.50	0.06-0.2	0.12-0.16	3.5-6.0	Moderate-----	0.37			
	52-72	2-10	1.50-1.70	6.0-20	0.03-0.06	3.5-6.0	Low----------	0.10			

See footnote at end of table.

Table 14.—Physical and Chemical Properties of the Soils—Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors K	Erosion factors T	Wind erodi-bility group	Organic matter
	In	Pct	g/cc	In/hr	In/in	pH					Pct
CoC*:											
Cowarts---------	0-6	3-10	1.30-1.70	2.0-6.0	0.06-0.10	4.5-5.5	Low----------	0.15	4	2	.5-1
	6-10	10-30	1.30-1.50	0.6-2.0	0.10-0.16	4.5-5.5	Low----------	0.28			
	10-29	25-40	1.30-1.50	0.2-2.0	0.10-0.16	4.5-5.5	Low----------	0.28			
	29-62	18-35	1.65-1.80	0.06-0.6	0.10-0.14	4.5-5.5	Low----------	0.24			
Vaucluse--------	0-6	2-10	1.30-1.60	6.0-20	0.04-0.08	4.5-6.0	Low----------	0.15	3	2	<1
	6-16	18-35	1.35-1.75	0.6-2.0	0.10-0.15	3.6-5.5	Low----------	0.24			
	16-50	18-45	1.75-1.95	0.06-0.6	0.04-0.08	3.6-5.5	Low----------	0.24			
	50-60	5-30	1.55-1.90	2.0-6.0	0.04-0.08	3.6-5.5	Low----------	0.17			
CoD*, CoE*:											
Cowarts---------	0-6	3-10	1.30-1.70	2.0-6.0	0.06-0.10	4.5-5.5	Low----------	0.15	4	2	.5-1
	6-10	10-30	1.30-1.50	0.6-2.0	0.10-0.16	4.5-5.5	Low----------	0.28			
	10-21	25-40	1.30-1.50	0.2-2.0	0.10-0.16	4.5-5.5	Low----------	0.28			
	21-62	18-35	1.65-1.80	0.06-0.6	0.10-0.14	4.5-5.5	Low----------	0.24			
Vaucluse--------	0-6	2-10	1.30-1.60	6.0-20	0.04-0.08	4.5-6.0	Low----------	0.15	3	2	<1
	6-16	18-35	1.35-1.75	0.6-2.0	0.10-0.15	3.6-5.5	Low----------	0.24			
	16-50	18-45	1.75-1.95	0.06-0.6	0.04-0.08	3.6-5.5	Low----------	0.24			
	50-60	5-30	1.55-1.90	2.0-6.0	0.04-0.08	3.6-5.5	Low----------	0.17			
CxA---------- Coxville	0-9	5-27	1.45-1.65	0.6-2.0	0.12-0.17	3.5-5.5	Low----------	0.24	5	3	1-2
	9-62	35-60	1.25-1.45	0.2-0.6	0.14-0.18	3.5-5.5	Moderate-----	0.32			
DpA*:											
Dorovan---------	0-2	---	0.25-0.40	0.6-2.0	0.20-0.25	3.6-4.4	----------	----	3	2	20-80
	2-66	---	0.35-0.55	0.6-2.0	0.20-0.25	3.6-4.4	----------	----			
	66-80	5-20	1.40-1.65	6.0-20	0.05-0.08	4.5-5.5	Low----------	----			
Ponzer----------	0-42	---	0.40-0.65	0.06-2.0	0.35-0.45	<4.5	Low----------	----	2	2	20-80
	42-55	5-25	1.30-1.60	0.2-2.0	0.10-0.24	3.5-7.8	Low----------	0.24			
	55-65	---	---	---	---	---	----------	----			
EmB, EmC--------- Emporia	0-4	5-10	1.30-1.40	6.0-20	0.05-0.10	4.5-6.0	Low----------	0.15	5	2	.5-1
	4-21	18-35	1.35-1.45	0.2-2.0	0.10-0.18	4.5-6.0	Low----------	0.28			
	21-45	21-40	1.45-1.60	0.06-0.6	0.10-0.16	4.5-6.0	Moderate-----	0.20			
	45-60	5-40	1.45-1.60	0.06-2.0	0.08-0.18	4.5-6.0	Moderate-----	0.20			
EuA---------- Eunola	0-17	3-11	1.45-1.70	2.0-6.0	0.06-0.11	4.5-5.5	Low----------	0.15	5	2	.5-1
	17-30	18-35	1.35-1.65	0.6-2.0	0.12-0.17	4.5-5.5	Low----------	0.28			
	30-47	18-45	1.30-1.60	0.6-2.0	0.12-0.16	4.5-5.5	Low----------	0.32			
	47-60	8-25	1.35-1.65	2.0-6.0	0.10-0.16	4.5-5.5	Low----------	0.24			
FaA, FaB--------- Faceville	0-11	2-10	1.45-1.65	6.0-20	0.06-0.09	4.5-5.5	Low----------	0.17	5	2	.5-1
	11-72	35-55	1.25-1.60	0.6-2.0	0.12-0.18	4.5-6.0	Low----------	0.37			
FcB2---------- Faceville	0-6	20-28	1.40-1.60	0.6-2.0	0.10-0.13	4.5-5.5	Low----------	0.32	5	5	.5-1
	6-60	35-55	1.25-1.60	0.6-2.0	0.12-0.18	4.5-6.0	Low----------	0.37			
FxB---------- Foxworth	0-3	1-8	1.25-1.45	>6.0	0.05-0.10	4.5-6.0	Low----------	0.10	5	1	.5-1
	3-65	1-8	1.40-1.55	>6.0	0.05-0.10	4.5-6.0	Low----------	0.10			
	65-70	1-6	1.45-1.65	>6.0	0.02-0.08	4.5-6.0	Low----------	0.10			
GoA---------- Goldsboro	0-8	5-15	1.40-1.60	2.0-6.0	0.10-0.15	3.5-6.0	Low----------	0.20	5	3	.5-1
	8-60	18-30	1.30-1.50	0.6-2.0	0.11-0.17	3.5-5.5	Low----------	0.24			
HnA, HnB--------- Hornsville	0-7	6-15	1.45-1.65	6.0-20	0.08-0.12	3.6-6.0	Low----------	0.20	3	3	.5-1
	7-36	35-60	1.55-1.70	0.2-0.6	0.12-0.16	3.6-6.0	Low----------	0.28			
	36-60	12-35	1.55-1.70	0.6-2.0	0.10-0.14	3.6-6.0	Low----------	0.24			

See footnote at end of table.

Table 14.—Physical and Chemical Properties of the Soils—Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors K	Erosion factors T	Wind erodi-bility group	Organic matter
	In	Pct	g/cc	In/hr	In/in	pH					Pct
JnA---------- Johns	0-14	4-12	1.60-1.75	2.0-6.0	0.06-0.11	4.5-5.5	Low----------	0.15	5	2	.5-1
	14-37	18-35	1.40-1.60	0.6-2.0	0.12-0.15	4.5-5.5	Low----------	0.24			
	37-80	2-10	1.60-1.70	6.0-20	0.03-0.06	4.5-5.5	Low----------	0.10			
JoA---------- Johnston	0-38	5-18	1.30-1.55	2.0-6.0	0.10-0.20	4.5-5.5	Low----------	0.20	5	5	3-8
	38-60	2-12	1.55-1.65	6.0-20	0.02-0.07	4.5-5.5	Low----------	0.17			
KeB---------- Kenansville	0-30	3-10	1.50-1.70	6.0-20	0.03-0.07	4.5-6.0	Low----------	0.15	4	1	.5-2
	30-41	5-18	1.30-1.50	0.6-6.0	0.10-0.16	4.5-6.0	Low----------	0.15			
	41-70	1-10	1.50-1.70	6.0-20	0.0-0.05	4.5-6.0	Low----------	0.10			
LaB, LaC--------- Lakeland	0-4	2-8	1.35-1.65	6.0-20	0.05-0.09	4.5-6.0	Low----------	0.10	5	1	.5-1
	4-80	1-6	1.50-1.60	6.0-20	0.02-0.08	4.5-6.0	Low----------	0.10			
LeA---------- Leon	0-5	1-5	1.30-1.45	6.0-20	0.05-0.15	3.5-6.5	Low----------	0.10	5	1	.5-4
	5-13	0-3	1.40-1.60	6.0-20	0.02-0.05	3.5-6.5	Low----------	0.10			
	13-27	2-8	1.25-1.65	0.6-6.0	0.15-0.30	3.5-6.5	Low----------	0.15			
	27-65	1-4	1.50-1.65	2.0-20	0.05-0.10	3.5-6.5	Low----------	0.10			
LmA---------- Lumbee	0-13	4-18	1.55-1.70	2.0-6.0	0.08-0.12	4.5-5.5	Low----------	0.24	5	3	.5-4
	13-30	18-35	1.30-1.45	0.6-2.0	0.12-0.16	4.5-5.5	Low----------	0.32			
	30-65	1-10	1.60-1.70	6.0-20	0.03-0.06	4.5-5.5	Low----------	0.10			
LuB---------- Lucy	0-22	1-10	1.30-1.70	6.0-20	0.05-0.10	5.1-6.0	Low----------	0.10	5	1	.5-1
	22-67	10-30	1.40-1.60	2.0-6.0	0.10-0.12	4.5-5.5	Low----------	0.24			
LyA---------- Lynchburg	0-17	0-10	1.30-1.45	6.0-20	0.08-0.12	3.5-5.5	Low----------	0.10	5	1	.1-3
	17-53	18-35	1.30-1.60	2.0-6.0	0.09-0.13	3.5-5.5	Low----------	0.20			
	53-63	20-50	1.30-1.50	0.6-2.0	0.12-0.16	3.6-5.5	Low----------	0.24			
NbB2---------- Nankin	0-6	20-30	1.45-1.60	0.6-2.0	0.10-0.13	4.5-5.5	Low----------	0.32	3	5	.5-1
	6-57	35-50	1.30-1.70	0.2-0.6	0.11-0.16	4.5-5.5	Low----------	0.24			
	57-62	15-35	1.60-1.70	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.24			
NbC2---------- Nankin	0-6	20-30	1.45-1.60	0.6-2.0	0.10-0.13	4.5-5.5	Low----------	0.32	3	5	.5-1
	6-57	35-50	1.30-1.70	0.2-0.6	0.11-0.16	4.5-5.5	Low----------	0.24			
	57-65	15-35	1.60-1.70	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.24			
NcA, NcB--------- Noboco	0-13	2-8	1.55-1.80	6.0-20	0.08-0.11	3.6-6.0	Low----------	0.10	5	2	.5-1
	13-45	18-35	1.45-1.75	0.6-2.0	0.11-0.14	3.6-5.5	Low----------	0.24			
	45-60	20-43	1.45-1.70	0.6-2.0	0.06-0.14	3.6-5.5	Low----------	0.24			
NoA, NoB--------- Norfolk	0-15	2-8	1.55-1.70	6.0-20	0.06-0.11	3.5-6.0	Low----------	0.17	5	2	.5-1
	15-47	18-35	1.30-1.65	0.6-2.0	0.10-0.18	3.5-5.5	Low----------	0.24			
	47-72	20-43	1.20-1.65	0.6-2.0	0.12-0.18	3.5-5.5	Low----------	0.24			
OrA---------- Orangeburg	0-16	5-10	1.35-1.45	6.0-20	0.03-0.05	4.5-6.5	Low----------	0.15	4	2	<1
	16-21	15-35	1.55-1.70	0.6-2.0	0.09-0.12	4.5-5.5	Low----------	0.24			
	21-65	18-32	1.70-1.80	---	0.06-0.10	4.5-5.5	Low----------	0.24			
	65-72	15-30	1.80-1.95	---	0.04-0.08	4.5-5.5	Low----------	0.15			
PaA---------- Pamlico	0-42	---	0.20-0.65	0.6-6.0	0.24-0.40	3.5-5.5	Low----------	----	2	2	20-80
	42-60	5-10	1.60-1.75	6.0-20	0.10-0.20	3.5-5.5	Low----------	0.10			
PnA, PnB--------- Pelion	0-14	2-10	1.35-1.75	>6.0	0.03-0.06	3.6-6.5	Low----------	0.15	3	2	.5-1
	14-19	18-35	1.40-1.60	0.6-2.0	0.12-0.16	3.6-5.5	Low----------	0.17			
	19-32	18-50	1.40-1.75	0.06-0.6	0.06-0.10	3.6-5.5	Low----------	0.20			
	32-66	10-40	1.40-1.60	0.6-2.0	0.06-0.10	3.6-5.5	Low----------	0.15			

See footnote at end of table.

Table 14.—Physical and Chemical Properties of the Soils—Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors K	Erosion factors T	Wind erodi-bility group	Organic matter
	In	Pct	g/cc	In/hr	In/in	pH					Pct
PrA---------- Persanti	0-7	10-20	1.30-1.60	0.2-2.0	0.11-0.15	4.5-6.5	Low----------	0.28	5	3	.5-1
	7-49	40-70	1.20-1.50	0.06-0.2	0.12-0.15	3.6-5.5	Moderate-----	0.20			
	49-60	30-60	1.20-1.50	0.06-0.2	0.12-0.15	3.6-5.5	Moderate-----	0.20			
RaA---------- Rains	0-12	5-20	1.30-1.60	2.0-6.0	0.10-0.14	3.6-6.5	Low----------	0.20	5	3	1-4
	12-40	18-35	1.30-1.60	0.6-2.0	0.11-0.15	3.6-5.5	Low----------	0.24			
	40-62	18-40	1.30-1.50	0.6-2.0	0.10-0.15	3.6-5.5	Low----------	0.28			
	62-85	15-45	1.30-1.60	0.6-2.0	0.10-0.15	3.6-5.5	Low----------	0.28			
RvA---------- Riverview	0-3	10-27	1.30-1.60	0.6-2.0	0.16-0.24	4.5-6.5	Low----------	0.32	5	5	.5-1
	3-38	18-35	1.20-1.40	0.6-2.0	0.15-0.22	4.5-6.0	Low----------	0.24			
	38-60	4-18	1.20-1.50	2.0-6.0	0.07-0.11	4.5-6.0	Low----------	0.17			
SmA---------- Smithboro	0-5	10-20	1.20-1.40	0.6-2.0	0.14-0.22	4.5-6.0	Low----------	0.37	5	5	.5-1
	5-65	35-60	1.30-1.60	0.06-0.2	0.14-0.18	3.6-5.5	Moderate-----	0.32			
TbB---------- Tarboro	0-7	3-12	1.60-1.75	6.0-20	0.05-0.09	4.5-6.5	Low----------	0.10	5	2	.5-1
	7-80	2-7	1.60-1.75	>20	0.02-0.06	4.5-6.5	Low----------	0.10			
TrB, TrC--------- Troup	0-55	1-10	1.30-1.70	6.0-20	0.05-0.10	4.5-6.0	Low----------	0.10	5	1	<1
	55-85	15-35	1.40-1.60	0.6-2.0	0.10-0.13	4.5-5.5	Low----------	0.20			
UcB, UcC--------- Uchee	0-25	3-10	1.30-1.70	6.0-20	0.05-0.10	4.5-5.5	Low----------	0.10	5	2	.2-1
	25-34	8-30	1.40-1.60	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.24			
	34-41	25-50	1.40-1.60	0.2-0.6	0.10-0.16	4.5-5.5	Moderate-----	0.28			
	41-46	15-40	1.40-1.60	0.2-2.0	0.10-0.16	4.5-5.5	Moderate-----	0.28			
	46-60	5-15	1.40-1.60	0.6-6.0	0.06-0.12	4.5-5.5	Low----------	0.24			
UdC*---------- Udorthents	0-60	10-50	1.30-1.65	0.06-2.0	0.10-0.17	4.5-7.8	Moderate-----	0.28	5	5	0-1
VaB, VaC--------- Vaucluse	0-6	2-10	1.30-1.60	6.0-20	0.04-0.08	4.5-6.0	Low----------	0.15	3	2	<1
	6-16	18-35	1.35-1.75	0.6-2.0	0.10-0.15	3.6-5.5	Low----------	0.24			
	16-50	18-45	1.75-1.95	0.06-0.6	0.04-0.08	3.6-5.5	Low----------	0.24			
	50-60	5-30	1.55-1.90	2.0-6.0	0.04-0.08	3.6-5.5	Low----------	0.17			
WaB---------- Wagram	0-30	1-7	1.60-1.75	6.0-20	0.03-0.07	4.5-6.0	Low----------	0.10	5	1	.5-1
	30-72	10-35	1.35-1.60	0.6-2.0	0.12-0.16	4.5-6.0	Low----------	0.20			
WcA*:											
Wehadkee--------	0-13	5-20	1.35-1.60	2.0-6.0	0.10-0.15	4.5-6.5	Low----------	0.24	5	3	2-4
	13-30	18-35	1.30-1.50	0.6-2.0	0.16-0.20	4.5-6.5	Low----------	0.32			
	30-60	---	---	---	---	---	----------	----			
Chastain--------	0-5	15-35	1.20-1.40	0.2-0.6	0.12-0.18	3.5-6.0	Moderate-----	0.32	4	5	1-2
	5-52	35-60	1.30-1.50	0.06-0.2	0.12-0.16	3.5-6.0	Moderate-----	0.37			
	52-72	2-10	1.50-1.70	6.0-20	0.03-0.06	3.5-6.0	Low----------	0.10			
WkA, WkB--------- Wickham	0-6	8-15	1.45-1.65	2.0-6.0	0.11-0.16	4.5-6.0	Low----------	0.24	5	3	.5-1
	6-48	18-35	1.30-1.50	0.6-2.0	0.12-0.17	4.5-6.0	Low----------	0.24			
	48-80	---	---	---	---	---	----------	----			

* See description of the map unit for composition and behavior characteristics of the map unit.

Table 15.—Soil and Water Features

("Flooding" and "water table" and terms such as "rare," "brief," "apparent," and "perched" are explained in the text. The symbol < means less than; > means more than. Absence of an entry indicates that the feature is not a concern or that data were not estimated)

Soil name and map symbol	Hydro-logic group	Flooding			High water table			Depth to bedrock	Subsidence		Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months		Ini-tial	Total	Uncoated steel	Concrete
					Ft			In	In	In		
AaB---------- Ailey	B	None--------	---	---	4.0-6.0	Perched	Jan-Apr	>60	---	---	Moderate	Moderate.
AeC, AeD---------- Ailey	B	None--------	---	---	>6.0	---	---	>60	---	---	Moderate	Moderate.
ApB, ApC, ApD----- Alpin	A	None--------	---	---	>6.0	---	---	>60	---	---	Low------	High.
AuB---------- Autryville	A	None--------	---	---	4.0-6.0	Apparent	Jan-Apr	>60	0-0	---	Low------	High.
BfA---------- Bibb	D	Frequent----	Brief to long.	Dec-May	0.5-1.0	Apparent	Dec-Apr	>60	---	---	High-----	Moderate.
BnB---------- Blanton	A	None--------	---	---	4.0-6.0	Perched	Mar-Aug	>60	---	---	High-----	High.
BoB---------- Bonneau	A	None--------	---	---	3.5-5.0	Apparent	Dec-Mar	>60	---	---	Low------	High.
CaB, CaC, CaD----- Candor	A	None--------	---	---	>6.0	---	---	>60	0-0	---	Low------	High.
CeA*:												
Chastain---------	D	Frequent----	Very long	Nov-Jun	0-1.0	Apparent	Nov-May	>60	---	---	High-----	High.
Chewacla---------	C	Frequent----	Brief to long.	Nov-Apr	0.5-2.0	Apparent	Nov-Apr	>60	0-0	---	High-----	Moderate.
CkA---------- Chewacla	C	Frequent----	Brief to long.	Nov-Apr	0.5-2.0	Apparent	Nov-Apr	>60	0-0	---	High-----	Moderate.
CmA*:												
Chewacla---------	C	Frequent----	Brief to long.	Nov-Apr	0.5-2.0	Apparent	Nov-Apr	>60	0-0	---	High-----	Moderate.
Chastain---------	D	Frequent----	Very long	Nov-Jun	0-1.0	Apparent	Nov-May	>60	---	---	High-----	High.

See footnote at end of table.

Table 15.—Soil and Water Features—Continued

Soil name and map symbol	Hydro-logic group	Flooding: Frequency	Flooding: Duration	Flooding: Months	High water table: Depth	High water table: Kind	High water table: Months	Depth to bedrock	Subsidence: Ini-tial	Subsidence: Total	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
					Ft			In	In	In		
CoC*, CoD*, CoE*:												
Cowarts	C	None	---	---	>6.0	---	---	>60	---	--	Moderate	Moderate.
Vaucluse	C	None	---	---	>6.0	---	---	>60	---	--	Low	High.
CxA Coxville	D	None	---	---	0-1.0	Apparent	Nov-Apr	>60	0-0	--	High	High.
DpA*:												
Dorovan	D	Frequent	Very long	Jan-Dec	+1-0.5	Apparent	Jan-Dec	>60	6-12	51-80	High	High.
Ponzer	D	Frequent	Brief to long.	Dec-May	0-1.0	Apparent	Nov-May	>60	2-6	12-24	High	High.
EmB, EmC Emporia	C	None	---	---	3.0-4.5	Perched	Nov-Apr	>60	---	---	Moderate	High.
EuA Eunola	C	None	---	---	1.5-2.5	Apparent	Nov-Mar	>60	---	---	Low	High.
FaA, FaB, FcB2 Faceville	B	None	---	---	>6.0	---	---	>60	---	---	Low	Moderate.
FxB Foxworth	A	None	---	---	4.0-6.0	Apparent	Nov-May	>60	---	---	Low	Moderate.
GoA Goldsboro	B	None	---	---	2.0-3.0	Apparent	Dec-Apr	>60	0-0	---	Moderate	High.
HnA, HnB Hornsville	C	None	---	---	2.5-3.5	Apparent	Dec-Apr	>60	---	---	High	High.
JnA Johns	C	Rare	---	---	1.5-3.0	Apparent	Dec-Apr	>60	0-0	---	Moderate	High.
JoA Johnston	D	Frequent	Brief to long.	Nov-Jul	+1-1.5	Apparent	Nov-Jun	>60	0-0	---	High	High.
KeB Kenansville	A	None	---	---	>6.0	---	---	>60	0-0	---	Low	High.
LaB, LaC Lakeland	A	None	---	---	>6.0	---	---	>60	---	---	Low	Moderate.
LeA Leon	B/D	None	---	---	0.5-1.5	Apparent	Nov-May	>60	0-0	---	High	High.

See footnote at end of table.

Table 15.—Soil and Water Features—Continued

Soil name and map symbol	Hydro-logic group	Flooding			High water table			Depth to bedrock	Subsidence		Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months		Ini-tial	Total	Uncoated steel	Concrete
					Ft			In	In	In		
LmA---------- Lumbee	B/D	None--------	---	---	0-1.0	Apparent	Nov-Apr	>60	0-0	---	High-----	High.
LuB---------- Lucy	A	None--------	---	---	>6.0	---	---	>60	---	---	Low------	High.
LyA---------- Lynchburg	C	None--------	---	---	0.5-1.5	Apparent	Nov-Apr	>60	0-0	---	High-----	High.
NbB2, NbC2-------- Nankin	C	None--------	---	---	>6.0	---	---	>60	---	---	High-----	High.
NcA, NcB---------- Noboco	B	None--------	---	---	2.5-4.0	Apparent	Dec-Mar	>60	---	---	Moderate	High.
NoA, NoB---------- Norfolk	B	None--------	---	---	4.0-6.0	Apparent	Jan-Mar	>60	0-0	---	Moderate	High.
OrA---------- Orangeburg	B	None--------	---	---	>6.0	---	---	>60	---	---	Moderate	Moderate.
PaA---------- Pamlico	D	Frequent----	Brief to long.	Jan-Dec	+1-0	Apparent	Jan-Dec	>60	4-12	10-29	High-----	High.
PnA, PnB---------- Pelion	B/D	None--------	---	---	1.0-2.5	Perched	Nov-Apr	>60	---	---	High-----	High.
PrA---------- Persanti	C	None--------	---	---	1.5-3.0	Apparent	Dec-Apr	>60	---	---	High-----	High.
RaA---------- Rains	B/D	None--------	---	---	0-1.0	Apparent	Nov-Apr	>60	---	---	High-----	High.
RvA---------- Riverview	B	Frequent----	Brief-----	Dec-Mar	3.0-5.0	Apparent	Dec-Mar	>60	---	---	Low------	Moderate.
SmA---------- Smithboro	D	None--------	---	---	0.5-1.5	Apparent	Dec-Mar	>60	---	---	High-----	High.
TbB---------- Tarboro	A	Rare--------	---	---	>6.0	---	---	>60	0-0	---	Low------	Moderate.
TrB, TrC---------- Troup	A	None--------	---	---	>6.0	---	---	>60	---	---	Low------	Moderate.

See footnote at end of table.

Table 15.—Soil and Water Features—Continued

Soil name and map symbol	Hydro-logic group	Flooding			High water table			Depth to bedrock	Subsidence		Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months		Ini-tial	Total	Uncoated steel	Concrete
					Ft			In	In	In		
UcB, UcC---------- Uchee	A	None--------	---	---	3.5-5.0	Perched	Jan-Apr	>60	---	---	Low------	High.
UdC*---------- Udorthents	B	None--------	---	---	>6.0	---	---	>60	---	---	Moderate	High.
VaB, VaC---------- Vaucluse	C	None--------	---	---	>6.0	---	---	>60	---	---	Low------	High.
WaB---------- Wagram	A	None--------	---	---	>6.0	---	---	>60	0-0	---	Low------	High.
WcA*:												
Wehadkee---------	D	Frequent----	Brief to long.	Nov-Jun	0-1.0	Apparent	Nov-May	>60	0-0	---	High-----	Moderate.
Chastain---------	D	Frequent----	Very long	Nov-Jun	0-1.0	Apparent	Nov-May	>60	---	---	High-----	High.
WkA, WkB---------- Wickham	B	Rare--------	---	---	>6.0	---	---	>60	0-0	---	Moderate	High.

* See description of the map unit for composition and behavior characteristics of the map unit.

Table 16.—Classification of the Soils

(Soils are classified according to the 8th edition of the "Keys to Soil Taxonomy," 1998)

Soil name	Family or higher taxonomic class
Ailey	Loamy, siliceous, thermic Arenic Kanhapludults
Alpin	Thermic, coated Argic Quartzipsamments
Autryville	Loamy, siliceous, subactive, thermic Arenic Paleudults
Bibb	Coarse-loamy, siliceous, active, acid, thermic Typic Fluvaquents
Blanton	Loamy, siliceous, subactive, thermic Grossarenic Paleudults
Bonneau	Loamy, siliceous, subactive, thermic Arenic Paleudults
Candor	Sandy, siliceous, thermic Arenic Paleudults
Chastain	Fine, mixed, semiactive, acid, thermic Fluvaquentic Endoaquepts
Chewacla	Fine-loamy, mixed, active, thermic Fluvaquentic Dystrudepts
Cowarts	Fine-loamy, kaolinitic, thermic Typic Kanhapludults
Coxville	Fine, kaolinitic, thermic Typic Paleaquults
Dorovan	Dysic, thermic Typic Haplosaprists
Emporia	Fine-loamy, siliceous, subactive, thermic Typic Hapludults
Eunola	Fine-loamy, siliceous, semiactive, thermic Aquic Hapludults
Faceville	Fine, kaolinitic, thermic Typic Kandiudults
Foxworth	Thermic, coated Typic Quartzipsamments
Goldsboro	Fine-loamy, siliceous, subactive, thermic Aquic Paleudults
Hornsville	Fine, kaolinitic, thermic Aquic Hapludults
Johns	Fine-loamy over sandy or sandy-skeletal, siliceous, semiactive, thermic Aquic Hapludults
Johnston	Coarse-loamy, siliceous, active, acid, thermic Cumulic Humaquepts
Kenansville	Loamy, siliceous, subactive, thermic Arenic Hapludults
Lakeland	Thermic, coated Typic Quartzipsamments
Leon	Sandy, siliceous, thermic Aeric Alaquods
Lucy	Loamy, kaolinitic, thermic Arenic Kandiudults
Lumbee	Fine-loamy over sandy or sandy-skeletal, siliceous, subactive, thermic Typic Endoaquults
Lynchburg	Fine-loamy, siliceous, semiactive, thermic Aeric Paleaquults
Nankin	Fine, kaolinitic, thermic Typic Kanhapludults
Noboco	Fine-loamy, siliceous, subactive, thermic Typic Paleudults
Norfolk	Fine-loamy, kaolinitic, thermic Typic Kandiudults
Orangeburg	Fine-loamy, kaolinitic, thermic Typic Kandiudults
Pamlico	Sandy or sandy-skeletal, siliceous, dysic, thermic Terric Haplosaprists
Pelion	Fine-loamy, kaolinitic, thermic Aquic Kanhapludults
Persanti	Fine, kaolinitic, thermic Aquic Paleudults
Ponzer	Loamy, mixed, dysic, thermic Terric Haplosaprists
Rains	Fine-loamy, siliceous, semiactive, thermic Typic Paleaquults
Riverview	Fine-loamy, mixed, active, thermic Fluventic Dystrudepts
Smithboro	Fine, kaolinitic, thermic Aeric Paleaquults
Tarboro	Mixed, thermic Typic Udipsamments
Troup	Loamy, kaolinitic, thermic Grossarenic Kandiudults
Uchee	Loamy, kaolinitic, thermic Arenic Kanhapludults
Udorthents	Udorthents
Vaucluse	Fine-loamy, kaolinitic, thermic Typic Kanhapludults
Wagram	Loamy, kaolinitic, thermic Arenic Kandiudults
Wehadkee	Fine-loamy, mixed, active, nonacid, thermic Fluvaquentic Endoaquepts
Wickham	Fine-loamy, mixed, semiactive, thermic Typic Hapludults

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