United States Department of Agriculture

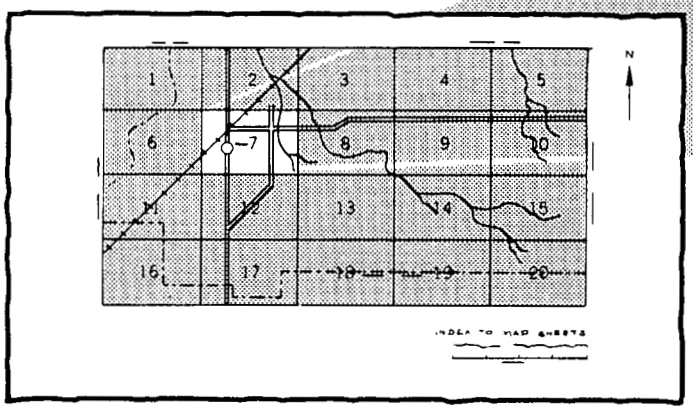
Soil Conservation Service

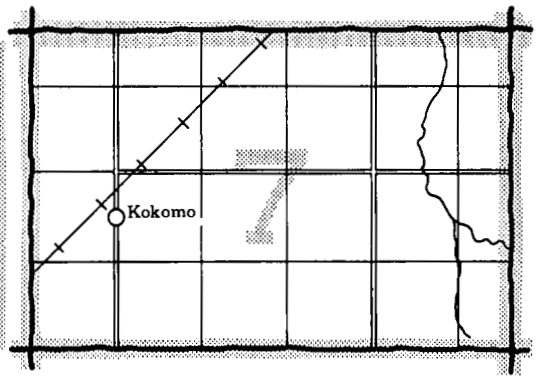
In Cooperation with the South Carolina Agricultural Experiment Station and the South Carolina Land Resources Conservation Commission

Soil Survey of Colleton County South Carolina

HOW TO USE

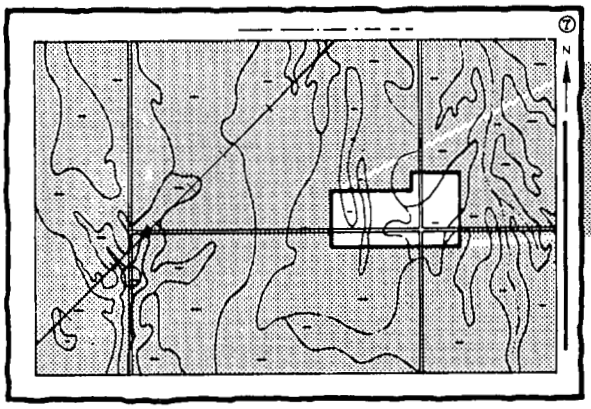
1. Locate your area of interest on the "Index to Map Sheets" (the last page of this publication).

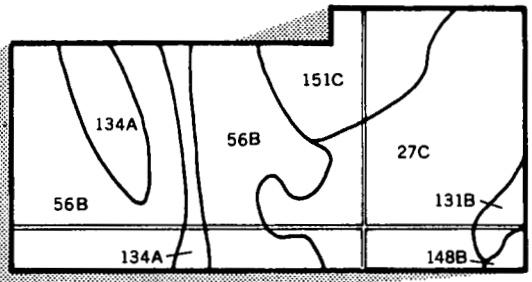




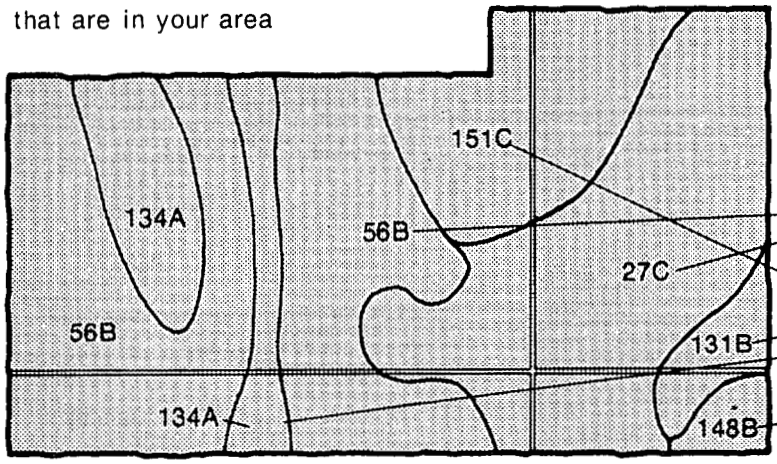
2. Note the number of the map sheet and turn to that sheet.

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





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

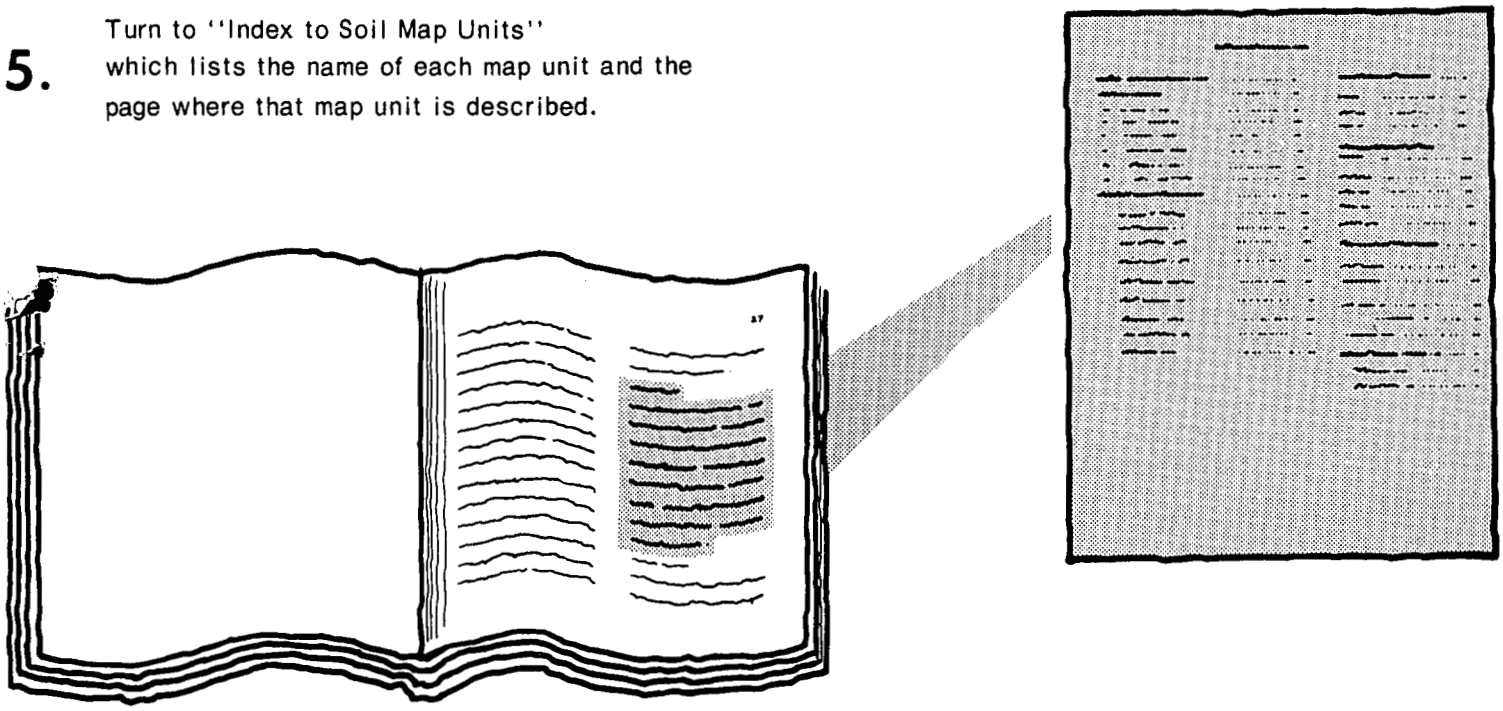


Symbols

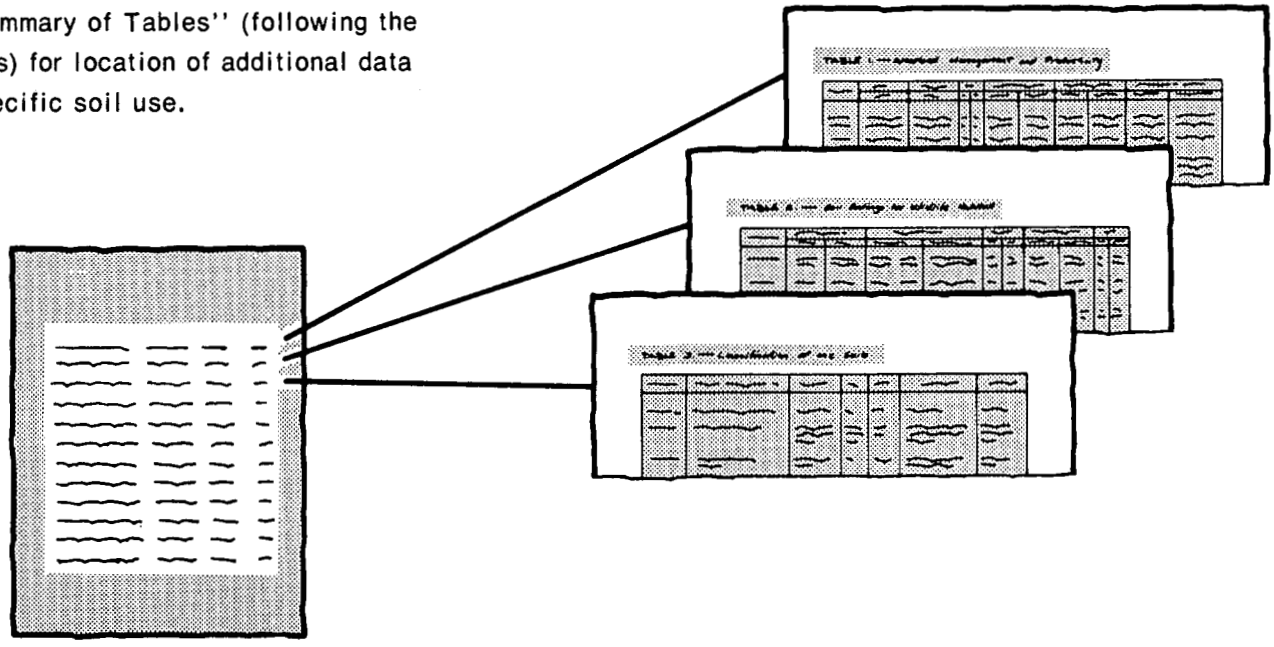
- 27C
- 56B
- 131B
- 134A
- 148B
- 151C

THIS SOIL SURVEY

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



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



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

This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other federal agencies, state agencies including the Agricultural Experiment Stations, and local agencies. The Soil Conservation Service has leadership for the federal part of the National Cooperative Soil Survey. In line with Department of Agriculture policies, benefits of this program are available to all, regardless of race, color, national origin, sex, religion, marital status, or age.

This survey was made cooperatively by the Soil Conservation Service, the South Carolina Agricultural Experiment Station, and the South Carolina Land Resources Conservation Commission. It is part of the technical assistance furnished to the Colleton Soil and Water Conservation District. Major fieldwork for this soil survey was performed in the period 1974-80. Soil names and descriptions were approved in 1980. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1980.

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

Cover: One of many homes on Nemours fine sandy loam, 2 to 6 percent slopes.

contents

soil series

Issued December 1982

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summary of tables

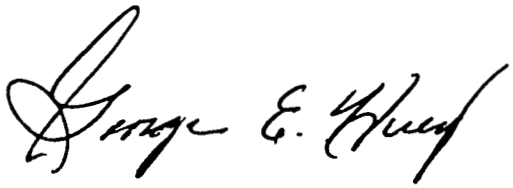
foreword

This soil survey contains information that can be used in land-planning programs in Colleton County. It contains predictions of soil behavior for selected land uses. The survey also highlights limitations and hazards inherent in the soil, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

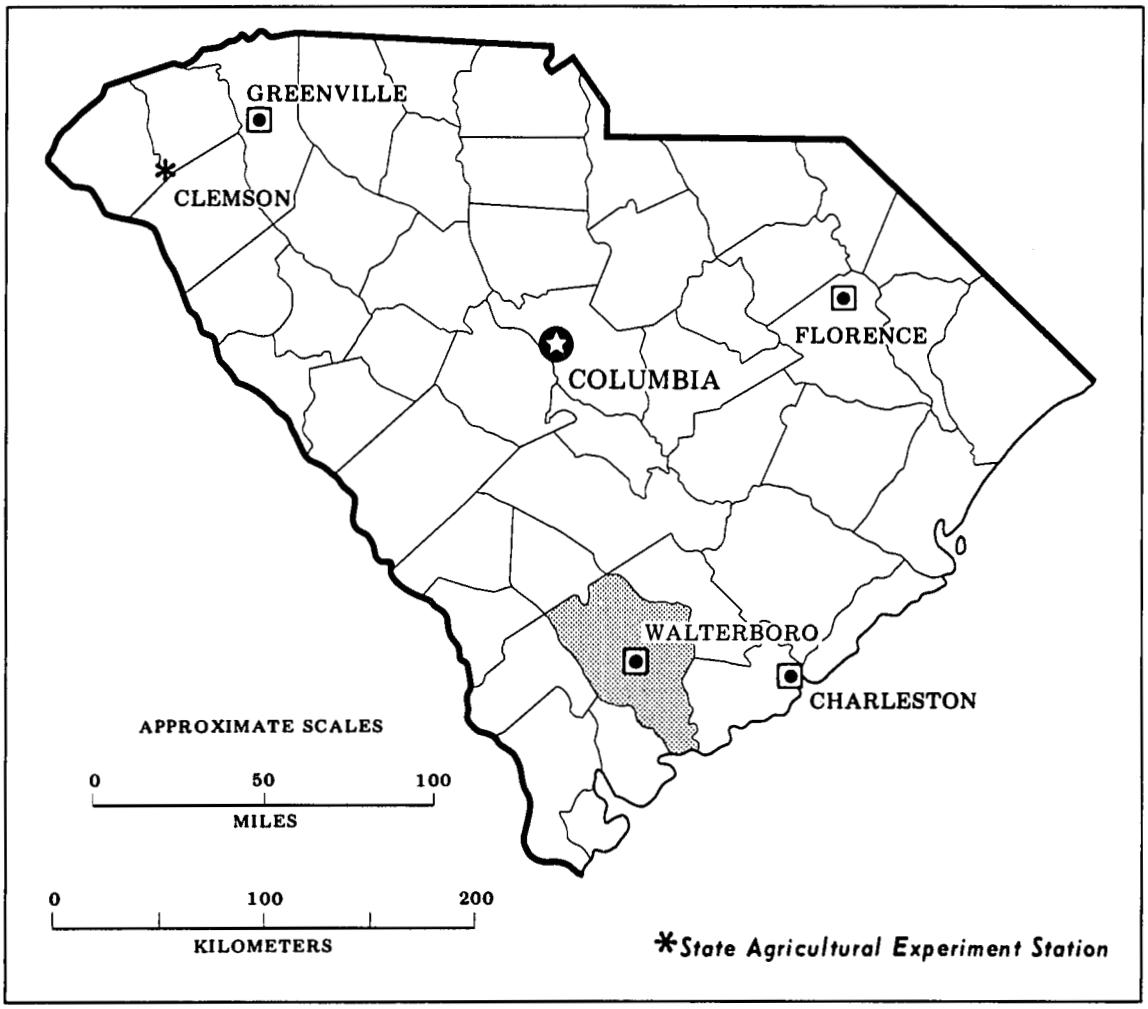
This soil survey is designed for many different users. Farmers, foresters, and agronomists can use it to evaluate the potential of the soil and the management needed for maximum food and fiber production. Planners, community officials, engineers, developers, builders, and home buyers can use the survey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

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

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



George E. Huey
State Conservationist
Soil Conservation Service



Location of Colleton County in South Carolina.

soil survey of
Colleton County, South Carolina

by Warren M. Stuck, Soil Conservation Service

Soils surveyed by Warren M. Stuck, Charlie B. Ware, Jr., and
Wendell M. Steedly, Soil Conservation Service
James F. Tobias, Jack R. Brown, and Ezekiel Powell
South Carolina Land Resource Conservation Commission.

United States Department of Agriculture, Soil Conservation Service
in cooperation with the
South Carolina Agricultural Experiment Station and the
South Carolina Land Resource Conservation Commission.

Colleton County is in the southeastern part of South Carolina. It has a population of about 27,600. Walterboro is the largest community in the county. It has a population of 6,257 and is the county seat. The total land area of Colleton County—excluding the recently annexed area on Edisto Beach—is about 1,048 square miles, or 671,000 acres. It is bounded on the north by Bamberg County and on the south by the Atlantic Ocean and Beaufort County. Dorchester and Charleston Counties are on the eastern boundary and are separated from Colleton County by the Edisto River. Hampton County, on the western boundary, is separated from Colleton County by the Salkehatchie and Combahee Rivers.

general nature of the county

The first European settlement in the area that is now Colleton County occurred about 1663. Settlement had been attempted earlier on Port Royal Island by Spanish explorers and on Parris Island by French Huguenots, but neither of these attempts endured.

In 1663 King Charles II of England granted to eight lords proprietor an area encompassing most of the present Carolinas and Georgia (*4*). Colleton County was named after one of the proprietors, Sir John Colleton, and was one of the three original counties (*3*). Craven and Berkeley Counties, bearing the names of two other proprietors, were the other two. Colleton County consisted of three parishes and encompassed a much larger area than it does today. The present-day boundaries of the county are the same as one of these parishes, St. Bartholomew.

Settlers from England and, to a lesser extent, from France and the American continents were enticed to the area with attractive land grants. The first choice for settlement was along the Chee-Ha River. Following an attack by the Yemassee Indians in 1715, however, the settlers elected to settle on the Edisto River, which offered a quicker escape to Charles Town. In this region the Edisto River was better known as the Pon Pon River, and a wide section of land was known by the same name. Pon Pon, an Indian settlement, in time became Jacksonboro. A chapel was built there in 1725; the first free school was established there in 1744; the county seat was there from 1788 to 1882; and the South Carolina General Assembly met there in 1782 while Charleston was under seige. In 1882 the county seat

was moved to the well-established town of Walterboro near the center of the county.

The first settlers in Colleton County found the area almost completely forested and abundantly populated with many species of wildlife. Many settlers became traders in furs and skins. In 1680 rice was introduced into the area, and by 1719 the colonial merchants, traders, and agriculturists had built up great wealth in estates and slaves.

Around 1739 indigo was introduced, and it was a very profitable crop as long as the bounty was kept on it by England. The industry rapidly declined, however, after the Revolutionary War. Around 1785 long-staple Sea Island cotton became a major crop in the area. This superb cotton sold for two dollars a pound in Europe in 1780. By 1799 indigo had completely disappeared and Sea Island cotton had replaced rice as the most important crop. From 1795 to 1819 was a period of high prosperity in the area. The area then endured an economic depression from about 1820 to 1840 largely because of a drop in the price of cotton and the occurrence of the boll weevil in 1813.

Following the Civil War (1861-1865) the area was highly demoralized, and the economy was on a very low plane. The slaves were freed and given small acreages of land, but they had neither the resources nor know-how to earn more than a meager subsistence. A number of crops were grown, including corn, tobacco, rice, and truck crops. Livestock, timber, timber products, and phosphate mining were also of significance in the county. The hurricane of 1893 destroyed most of the dikes and other water-control measures necessary for the production of rice. Rice had already been in a decline and after this it never regained its prior prominence.

Today the agriculture is highly diversified. Corn, soybeans, tobacco, and small grains are the major crops. Raising beef cattle and swine are also significant activities. Forest products are also a major source of income. The area is recognized for its fine hunting and fishing but neither contribute significantly to its economy. Although there has been a fair amount of industrial development during the past two decades, the county remains one of the lesser industrialized counties in the state.

climate

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

Table 1 gives data on temperature and precipitation for the survey area as recorded at Walterboro in the period 1951 to 1973. Table 2 shows probable dates of the first freeze in fall and the last freeze in spring. Table 3 provides data on length of the growing season.

In winter the average temperature is 49 degrees F, and the average daily minimum temperature is 36 degrees. The lowest temperature on record, which occurred at Walterboro on December 13, 1962, is 5 degrees. In summer the average temperature is 79 degrees, and the average daily maximum temperature is 90 degrees. The highest recorded temperature, which occurred at Walterboro on August 17, 1954, is 107 degrees.

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

The total annual precipitation is 52 inches. Of this, 32 inches, or 60 percent, usually falls in April through September, which includes the growing season for most crops. In 2 years out of 10, the rainfall in April through September is less than 26 inches. The heaviest 1-day rainfall during the period of record was 7.3 inches at Walterboro on July 13, 1959. Thunderstorms occur on about 55 days each year, and most occur in summer.

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

The average relative humidity in midafternoon is about 55 percent. Humidity is higher at night, and the average at dawn is about 85 percent. The sun shines 70 percent of the time possible in summer and 60 percent in winter. The prevailing wind is from the south-southwest. Average windspeed is highest, 10 miles per hour, in spring.

how this survey was made

Soil scientists made this survey to learn what soils are in the survey area, where they are, and how they can be used. They observed the steepness, length, and shape of slopes; the size of streams and the general pattern of drainage; the kinds of native plants or crops; and the kinds of rock. They dug many holes to study soil profiles. A profile is the sequence of natural layers, or horizons, in a soil. It extends from the surface down into the parent material, which has been changed very little by leaching or by plant roots.

The soil scientists recorded the characteristics of the profiles they studied and compared those profiles with others in nearby counties and in more distant places. They classified and named the soils according to nationwide uniform procedures. They drew the boundaries of the soils on aerial photographs. These photographs show trees, buildings, fields, roads, and other details that help in drawing boundaries accurately. The soil maps at the back of this publication were prepared from aerial photographs.

The areas shown on a soil map are called map units. Most map units are made up of one kind of soil. Some are made up of two or more kinds. The map units in this survey area are described under "General soil map units" and "Detailed soil map units."

While a soil survey is in progress, samples of some soils are taken for laboratory measurements and for engineering tests. All soils are field tested to determine their characteristics. Interpretations of those characteristics may be modified during the survey. Data are assembled from other sources, such as test results, records, field experience, and state and local specialists. For example, data on crop yields under defined management are assembled from farm records and from field or plot experiments on the same kinds of soil.

But only part of a soil survey is done when the soils have been named, described, interpreted, and delineated on aerial photographs and when the laboratory data and other data have been assembled. The mass of detailed information then needs to be organized so that it can be used by farmers, rangeland and woodland managers, engineers, planners, developers and builders, home buyers, and others.

general soil map units

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

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

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

soil descriptions

dominantly sandy soils

These soils are on nearly level ridges at the higher elevations of the landscape. They are moderately well drained to excessively drained. They are sandy throughout or have a very thick sandy surface layer.

1. Echaw-Blanton-Chipley

Moderately well drained and well drained soils that are sandy throughout or have a thick sandy surface layer; on broad, nearly level to gently sloping ridges

The landscape of this map unit characteristically is low sandy ridges and poorly defined drainageways. Soils in the areas adjacent to drainageways commonly have gentle slopes, a lower water table, and more clay below a depth of 50 inches. Soils in the broad, nearly level areas have a lower water table and stained organic layers at depths between 30 and 50 inches. This unit is about 5 miles wide and crosses the center of the county in a northeasterly direction. About two-thirds of the unit is woodland that is dominantly pine forest. The remainder is in crops, pasture, and hay. Fields are normally small and surrounded by woodland. Most buildings are residences on small acreages.

This unit covers about 9 percent of the county. It is about 20 percent Echaw soils, 15 percent Blanton soils, and 13 percent Chipley soils. The remaining 52 percent is soils of minor extent.

Echaw soils are in broad, nearly level areas at slightly lower elevations in this unit. They have a very dark gray and dark grayish brown, loamy fine sand surface layer about 8 inches thick and a black, stained, organic subsoil.

The Blanton soils are commonly at the higher elevations or are adjacent to drainageways. They have a gray, loamy fine sand surface layer and yellowish brown, sandy clay loam subsoil.

Chipley soils are at intermediate elevations in this unit. They have a dark grayish brown, fine sand surface layer and are underlain by brownish, yellowish, and grayish fine sand.

The minor soils in this unit include the well drained Lakeland soils on the higher ridges, the somewhat poorly drained Albany and Ocilla soils at intermediate elevations, and the poorly drained Plummer soils and the very poorly drained Pickney soils in the depressions and drainageways.

About 30 percent of this unit has been cleared. The cleared areas are used mainly for row crops; some are used for pasture and hay. Most of the soils are suited to corn, soybeans, and small grains. Drainage is required for consistently high yields. Crop residue left on or near the surface helps to conserve moisture, maintain tilth, control erosion, and increase production.

This unit is suited to pasture and hay. Improved bermudagrass and bahiagrass grow well. Proper stocking rates, pasture rotation, and restricted grazing during wet periods help to keep the pasture and soil in good condition. Shallow surface drains can lower the water table.

The soils are suited to slash pine, loblolly pine, and longleaf pine. Where competing vegetation is controlled or removed, seedlings survive and grow well. This can be accomplished by several methods, such as site preparation, burning, cutting, or girdling. Planting and harvesting equipment is moderately limited by the sandy textures.

Most of the soils are suited or poorly suited to most engineering uses. With the exception of the soils at the higher elevations, the soils in this unit are severely limited for septic tank absorption fields. These limitations can frequently be reduced by adding suitable fill material and shaping the area to remove excess surface water.

Wetness and sandy textures slightly or moderately limit the use of these soils for dwellings and local roads and streets. These soils are moderately to severely limited for most recreational uses by their sandy surfaces.

2. Chipley-Eddings-Lakeland

Moderately well drained to excessively drained soils that are sandy throughout or have a thick sandy surface layer; on high ridges

The landscape of this map unit characteristically has little relief. It is on the higher, nearly level ridges in the southern part of the county. Most of this unit is adjacent to tidal streams. The soils commonly are at elevations less than 20 feet above sea level. The dominant vegetation is pine interspersed with hardwoods. There are a few open fields from small to large in size. Most of this unit is in large holdings and is managed to a significant degree for wildlife habitat. Homesteads are few but commonly elaborate.

This unit covers about 2 percent of the county. It is about 28 percent Chipley soils, 20 percent Eddings soils, and 15 percent Lakeland soils. The remaining 37 percent is soils of minor extent.

Chipley soils are at nearly level, intermediate elevations. They have a dark grayish brown, fine sand surface layer underlain by brownish, yellowish, and grayish fine sand.

Eddings soils are at the higher elevations. They have a dark grayish brown, fine sand surface layer and brownish, fine sand subsurface layer underlain with a brownish and yellowish, sandy clay loam subsoil.

Lakeland soils are at elevations similar to those of the Eddings soils and are commonly adjacent to the tidal streams and marshes. They have a dark grayish brown, fine sand surface layer underlain by brownish fine sand.

The minor soils in this unit include the well drained Chisolm soils at the higher elevations and on gentle slopes adjacent to drainageways; the moderately well drained and somewhat poorly drained Murad soils on low, nearly level ridges; and the poorly drained Leon soils in the narrow drainageways.

A small amount of the acreage in this unit has been cleared. Most of the cleared areas are used for row crops and hay; a small acreage is in pasture. The soils at the higher elevations are droughty and poorly suited to most row crops, but the soils on the nearly level areas at intermediate elevations are suited to corn, soybeans, truck crops, and small grains. Some of the soils in this unit require drainage to produce consistently high yields. Open ditches, tile drains, or a combination of these can be used. Because of their low natural fertility and low available water capacity, the soils in this unit require irrigation, high fertilization, and the return of crop residue for good production.

The soils in this unit are suited to pasture and hay. When properly managed, grasses such as bermudagrass and bahiagrass grow well. In the lower areas where the water table is within 2 feet of the surface during wet seasons, bahiagrass is better suited than bermudagrass. Proper stocking rates, pasture rotation, and restricted grazing during wet periods help keep the pasture and soil in good condition. Shallow surface drains can lower the water table.

Soils at the higher elevations in this unit are suited to loblolly pine and slash pine, and the soils at the lower elevations are well suited to these trees. Seedlings generally survive and grow well. On some of the excessively drained soils on high ridges, planting the seedlings in a furrow will help to overcome the droughtiness limitations. Control of competing vegetation increases the survival rate of seedlings. Use of equipment is moderately limited by the sandy textures.

The soils in this unit are poorly suited or well suited to engineering uses. The soils at the higher elevations are slightly limited for septic tank absorption fields, dwellings, and local roads and streets. The soils at the lower elevations are severely limited by the high water table during wet seasons for septic tank absorption fields and are moderately limited for dwellings without basements and local roads and streets. The severe limitation for septic tank absorption fields can be reduced by adding suitable fill material, and the moderate limitation for dwellings and local roads and streets can be reduced by providing drainage. Most of the soils in this unit are moderately limited for recreational uses by their sandy surface layer.

dominantly loamy soils

These soils are on fairly broad upland ridges separated by poorly developed drainageways. These soils are moderately well drained to very poorly drained. These soils have a sandy clay loam or sandy loam subsoil through which water and air move at a moderate to moderately rapid rate.

3. Goldsboro-Lynchburg-Rains

Moderately well drained to poorly drained soils that have a loamy subsoil; on nearly level ridges and in shallow depressions

The landscape of this map unit characteristically has little relief. It is gently undulating and dissected by shallow drainageways. With the exception of those parallel to drainageways, the ridges are irregular in shape. The lower areas are generally narrow and long. The soils in this unit are good for agricultural uses, and about 50 percent of the acreage is open and used for crops, pasture, and hay. Farms generally range from 100 to 200 acres in size. There is an abundance of residences and roads on this unit.

This unit covers about 28 percent of the county. It is about 19 percent Goldsboro soils, 18 percent Lynchburg

soils, and 16 percent Rains soils. The remaining 47 percent is soils of minor extent.

Goldsboro soils generally are at the higher elevations. They have a grayish brown, loamy fine sand surface layer and a clay loam subsoil that is yellowish brown in the upper part and light gray in the lower part.

Lynchburg soils are at intermediate elevations and on low ridges. They have a dark gray, loamy fine sand surface layer and a sandy clay loam subsoil that is mottled yellowish brown in the upper part and mottled gray in the lower part.

Rains soils are in broad low areas, slight depressions, and drainageways. They have a very dark gray, sandy loam surface layer and a mottled gray, sandy clay loam subsoil.

The minor soils in this unit include the well drained Norfolk soils at the highest elevations, the somewhat poorly drained Ocilla soils at intermediate elevations, and the very poorly drained Paxville soils in depressions and drainageways at the lowest elevations.

About 55 percent of the acreage has been cleared. Most of the cleared areas are on the better drained soils. The soils in this unit are well suited to corn, soybeans, small grains, and tobacco. Some drainage is required for consistently high yields. Open ditches, tile drains, or a combination of the two can be used. Returning crop residue to the soil improves tilth, increases water infiltration, and improves yields.

This unit is well suited to pasture and hay. Improved bermudagrass is well suited to the soils at the higher elevations, and bahiagrass is well suited to the soils at the lower elevations. Proper stocking rates, pasture rotation, and restricted grazing during wet periods help to keep the pasture and soil in good condition. Soils at lower elevations require drainage to give consistently high yields. Shallow surface drains can lower the water table.

This unit is well suited to the production of loblolly pine, slash pine, yellow-poplar, American sycamore, and sweetgum. Tree seedlings survive and grow well at the higher elevations if competing vegetation is controlled or removed. The soils at the lower elevations have a poor seedling survival rate and a severe equipment limitation when excess surface water is not removed.

Soils in this unit are suited or poorly suited to engineering uses. The soils at the higher elevations in this map unit have slight limitations for dwellings without basements, for roads and streets, and for most recreational uses. The soils at the lower elevations are severely limited for most urban uses. On most of the soils in this unit the water table is within 2.5 to 3.5 feet of the surface during wet seasons. This is a severe limitation for septic tank absorption fields, but it can be reduced by adding suitable fill material.

4. Lynchburg-Rains-Paxville

Somewhat poorly drained to very poorly drained soils that have a loamy subsoil; on low ridges and in depressions

The landscape of this unit characteristically has little relief. It is nearly level with poorly defined drainageways. Runoff is slow, and some ponding occurs during rainy seasons. Most of the soils in this unit are too wet for good crop yields. The vegetation is dominantly pine on the low ridges and hardwoods in the drainageways. A few open fields are cultivated. Homesteads are sparse.

This unit covers about 7 percent of the county. It is about 31 percent Lynchburg soils, 29 percent Rains soils, and 22 percent Paxville soils. The remaining 18 percent is soils of minor extent.

Lynchburg soils are the dominant soils on the low ridges. They have a dark gray, loamy fine sand surface layer and a sandy clay loam subsoil that is mottled yellowish brown in the upper part and mottled gray in the lower part.

Rains soils are in broad low areas, slight depressions, and shallow drainageways. They have a very dark gray, sandy loam surface layer and a mottled gray, sandy clay loam subsoil.

Paxville soils are in the poorly defined drainageways at the lower elevations. They have a black, fine sandy loam surface layer and a dark gray, sandy clay loam subsoil.

The minor soils are the moderately well drained Bonneau and Goldsboro soils on the higher ridges, the somewhat poorly drained Ocilla soils on the low ridges, and the poorly drained Pelham soils in the low flat areas.

Only about 25 percent of this unit has been cleared, excluding those areas that have been clearcut and replanted to trees. Most of the cleared areas are used for crops; a small acreage is in pasture. When adequately drained the soils in this map unit, especially those at the higher elevations, are well suited to corn, soybeans, small grains, and grasses for hay. Open ditches, tile drains, or a combination of these can be used. Many areas do not have suitable outlets for drainage ditches. Returning crop residue to the soil improves tilth, increases water infiltration, and improves yields.

The soils in this unit, when adequately drained, are well suited to pasture. Because most of the soils are somewhat poorly to poorly drained, pasture grasses with a tolerance for wetness, such as bahiagrass, are best suited. Open ditches, shallow surface drains, or a combination of these can be used to drain the soils. Proper stocking rates, pasture rotation, and restricted grazing during wet periods help to keep the pasture and soil in good condition.

The soils in this unit are well suited to trees such as slash pine, loblolly pine, American sycamore, and sweetgum. Removal of excess surface water is needed for good timber management on most soils of this unit.

The high water table severely limits equipment use and seedling survival. Selective cutting, burning, and bedding can remove competing vegetation and help seedling survival and growth.

This unit is poorly suited to most urban uses. The water table, which is near the surface during wet seasons, severely limits septic tank absorption fields and dwellings. The soils are moderately to severely limited for roads and streets. The limitations for dwellings without basements and for local roads and streets can be reduced by lowering the water table with tile drains, open ditches, or a combination of these. The limitation for septic tank absorption fields can be reduced by adding suitable fill material. The high water table severely limits most recreational uses.

5. Coosaw-Williman

Somewhat poorly drained and poorly drained soils that have a moderately thick sandy surface layer and loamy subsoil; on low ridges and in shallow depressions

The landscape of most of this map unit characteristically has little relief. It consists of low ridges and shallow depressions, and it includes some of the sea islands in the southern part of the county. The ridges are long and generally parallel to the major drainageways. This unit is mostly woodland, with occasional open fields. Most of the area is in large plantations that are managed for timber and wildlife habitat. A few large plantation homes are in this unit as well as a fair amount of smaller homes.

This unit covers about 4 percent of the county. It is about 38 percent Coosaw soils and 22 percent Williman soils. The remaining 40 percent is soils of minor extent.

Coosaw soils generally are in the nearly level areas at the higher elevations. They have a dark gray, loamy fine sand surface layer and a sandy clay loam subsoil that is mottled strong brown in the upper part and mottled gray in the lower part.

Williman soils are the dominant soils at the lower elevations excluding the large drainageways. They have a black, loamy fine sand surface layer; a grayish, loamy fine sand subsurface layer; and a gray, sandy clay loam subsoil.

The minor soils in this unit include the well drained Chisolm and Eddings soils at the highest elevations and on narrow slopes adjacent to drainageways, the moderately well drained and somewhat poorly drained Murad soils on the low ridges, and the very poorly drained Hobcaw soils in shallow drainageways.

About 30 percent of the acreage has been cleared. A little more than half of the cleared areas are used for row crops and hay; the rest is in pasture. These soils are suited to corn, soybeans, small grains, and grasses for hay. Most areas require some drainage for consistently high yields. Open ditches, tile drains, or a combination of these can be used. Returning crop residue to the soil improves tilth, increases water infiltration, and improves yields.

The soils in this unit are well suited to pasture. The soils on the higher ridges are suited to deep-rooted grasses such as bermudagrass, and the soils at the lower elevations are suited to bahiagrass. Good pasture management on these soils includes drainage. Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during wet periods help to keep the pasture and soil in good condition. Shallow surface drains can remove excess surface water.

The soils in this unit are suited or well suited to loblolly pine and slash pine. They are poorly suited to longleaf pine. Competing vegetation can be controlled by site preparation, burning, spraying, or girdling. Severe equipment limitations are encountered when planting or harvesting trees with heavy equipment on low, undrained areas.

The soils in this unit are suited or poorly suited to most urban uses. The high water table is a severe limitation for septic tank absorption fields. The soils at the higher elevations generally are moderately limited for dwellings without basements, local roads and streets, and most recreational uses. The soils at the lower elevations are severely limited for these uses. The limitation for septic tank absorption fields can be reduced by adding suitable fill material. The limitation for dwellings without basements, local roads and streets, and most recreational uses can be reduced by lowering the water table with open ditches, tile drains, or a combination of these.

6. Ogeechee-Yemassee-Yauhannah

Poorly drained to moderately well drained soils that have a loamy subsoil; on nearly level ridges and in shallow depressions

The landscape of this map unit characteristically has little relief. It is nearly level and consists of low, broad ridges and shallow drainageways. The ridges have gentle slopes, are only a few inches higher than the depressions, and generally are parallel to the drainageways. Areas of the soils in this unit are irregular in size and shape. The vegetation is dominantly pine with few to common hardwoods. Small open fields on the ridges, which occur throughout the unit, are used for row crops or hay. Residences or farmsteads are in some of the open areas.

This unit covers about 8 percent of the county. It is about 28 percent Ogeechee soils, 17 percent Yemassee soils, and 13 percent Yauhannah soils. The remaining 42 percent is soils of minor extent.

Ogeechee soils are at the lower elevations and on poorly defined drainageways. They have a very dark gray, loamy fine sand surface layer and a gray, sandy clay loam subsoil.

Yemassee soils are the dominant soils on the low ridges, and they are at intermediate elevations on the higher ridges. They have a very dark gray, loamy fine sand surface layer and a mottled gray, sandy clay loam subsoil.

Yauhannah soils are at the higher elevations in this unit. They have a dark grayish brown, fine sandy loam surface layer and a brownish or yellowish, sandy clay loam subsoil.

The minor soils in this unit include the well drained Chisolm soils at the higher elevations, the somewhat poorly drained Coosaw soils on the intermediate ridges, the poorly drained Williman soils in the low areas and depressions, and the very poorly drained Hobcaw soils in the drainageways.

About 30 percent of the acreage has been cleared. Most of the cleared areas are in row crops and grasses for hay. The remainder is in pasture. The soils in this unit are well suited to corn, soybeans, small grains, and grasses for hay, but most require drainage for consistently high yields. Open ditches, tile drains, or a combination of these can be used. Returning crop residue to the soil improves tilth, increases water infiltration, and improves yields.

The soils in this unit are well suited to pasture. The soils on the higher ridges are suited to deep-rooted grasses such as bermudagrass, and the soils at the lower elevations are suited more to bahiagrass. Good pasture management includes drainage on most of the soils in this unit. Proper stocking rates, pasture rotation, and restricted use during wet periods help keep the pasture and soil in good condition. Shallow surface drains can remove excess surface water.

The soils in this unit are well suited to trees. Among the trees to plant are loblolly pine, slash pine, sweetgum, yellow-poplar, and American sycamore. Competing vegetation can be controlled by site preparation, burning, spraying, or girdling. Equipment is moderately limited on the ridges and severely limited in the low areas by the high water table. Woodland management on these soils generally requires removal of excess surface water.

The soils in this unit are poorly suited to most urban uses because of the high water table. They are severely limited for septic tank absorption fields. The soils on the ridges are moderately limited for dwellings, roads and streets, and most recreational uses. The soils at the lower elevations are severely limited for these uses. The limitations for septic tank absorption fields can be reduced by adding suitable fill material. The limitations for dwellings, roads and streets, and most recreation uses can be reduced by drainage.

7. Torhunta-Osier-Pickney

Very poorly drained and poorly drained soils, subject to flooding or ponding, that have a loamy surface layer and subsoil or are sandy throughout; on broad, nearly level areas

The landscape of this map unit characteristically has slight relief. It is in broad, nearly level drainageways in the northern part of the county. Mapped areas of this unit range from a few miles to more than 10 miles in length and are 200 feet to 5,000 feet wide. Most areas are flooded or ponded on occasions, and some areas are flooded or ponded for more than 6 months during most years. Nearly all of this unit is forested, primarily in hardwoods. There are no residences or farm buildings in this unit.

This unit covers about 6 percent of the county. It is about 16 percent Torhunta soils, 16 percent Osier soils, and 15 percent Pickney soils. The remaining 53 percent is soils of minor extent.

Torhunta soils are in the broad drainageways and are flooded for brief periods with slow-moving water. They have a very dark gray, fine sandy loam surface layer and a grayish brown, fine sandy loam subsoil.

Osier soils are mostly near the streams in this unit and frequently occupy former streambeds. They also occupy the narrower drainageways in sandy areas and drainageways where water movement is fairly rapid. They have a very dark gray, loamy sand surface layer underlain by light grayish brown and white sand.

Pickney soils are in sandier areas that are saturated with slow-moving water most of the time. They have a black, loamy sand surface layer underlain by light gray fine sand.

The minor soils in this unit include the very poorly drained Paxville soils in the upper ends of the drainageways and the poorly drained Coxville, Pelham, and Plummer soils on the outer edges of the drainageways.

Nearly all of the acreage is in woodland. Because of the difficulty of clearing these soils and the lack of adequate drainage outlets, it is unlikely that the land use on these soils will change for many years. Where drained and protected from flooding these soils are suited to corn, soybeans, small grains, and grasses for hay.

The soils in this unit are poorly suited or suited to pasture. Grasses that can tolerate a relatively high water table, such as bahiagrass, are suited. Drainage is needed for adequate yields of pasture. Shallow surface drains can remove excess surface water where there are suitable outlets.

This unit is suited to trees, and most areas remain in native hardwoods. Although pines grow well, they are difficult to establish because of the high water table and frequent flooding. Some of the more common species of hardwoods on these soils are red maple, water tupelo,

baldcypress, sweetgum, and American sycamore. All of these trees grow well. Because of the extreme difficulty of replanting, management of natural stands is of extreme importance. The high water table, flooding, and ponding are severe limitations to equipment and seedling survival.

The soils in this unit are poorly suited to urban uses. They are severely limited for dwellings, septic tank absorption fields, roads, and most recreational uses. The high water table, flooding, and ponding are hazards that are difficult to overcome.

dominantly loamy soils that have a clayey subsoil

These soils are on ridges and in depressions and drainageways. They are somewhat poorly drained to very poorly drained. These soils have a dominantly clayey subsoil through which water and air move slowly.

8. Bladen-Argent-Wahee

Poorly and somewhat poorly drained soils; on low, nearly level areas and low ridges

The landscape of this map unit characteristically has little relief. It is nearly level and low with an occasional ridge. Some of the ridges are parallel to, and adjacent to, drainageways; others are irregular in shape, size, and location. This unit is mostly woodland that consists of both pines and hardwood, either of which may be locally dominant. A few small open areas, which occur mostly on the ridges, are used for crops and pasture. Homesteads are generally limited to along the main highways.

This unit covers about 16 percent of the county. It is about 22 percent Bladen soils, 20 percent Argent soils, and 12 percent Wahee soils. The remaining 46 percent is soils of minor extent.

Bladen soils occupy the intermediate elevations in this unit, and they are the dominant soils in the broad, low, nearly level areas. They have a black, fine sandy loam surface layer and a grayish, clay subsoil.

Argent soils are mostly at the lower elevations, frequently only a few inches lower than the adjacent Bladen soils. They have a very dark gray, loam surface layer and a subsoil that is grayish clay.

The Wahee soils are on low ridges and commonly occupy the higher elevations in this unit. They have a dark gray, fine sandy loam surface layer and a subsoil that is mottled gray clay.

The minor soils in this unit include the moderately well drained Nemours soils on the higher ridges, the somewhat poorly drained Yemassee soils on the low ridges, and the very poorly drained Cape Fear and Santee soils in the drainageways.

About 30 percent of the acreage has been cleared. A little more than half of the cleared areas is used for crops; most of the remainder is in pasture. Most of the cleared area is on the low ridges. Soils on the low ridges are suited to corn, soybeans, small grains, and grasses for hay. When used for crops these soils require drainage. Because of the slow permeability, open ditches are used to drain this soil. Returning crop residue to the soil helps to improve tilth, reduce crusting, increase water infiltration, and improve yields.

The soils in this unit are well suited to pasture. Grasses that can tolerate a relatively high water table, such as bahiagrass, are commonly used. Good pasture management on these soils includes some drainage. Open ditches and shallow surface drains are used. Proper stocking rates, pasture rotation, and restricted use during wet periods help to keep the pasture and soil in good condition.

The soils in this unit are well suited to trees, and a few areas remain in native hardwoods and pines. Loblolly pine, slash pine, sweetgum, American sycamore, and water oak are among the trees recommended to plant. Removal of excess surface water is needed in some areas for good timber management. Competing vegetation can be controlled by site preparation, burning, spraying, cutting, and girdling. The high water table is a severe limitation for equipment except on the ridges, where the limitation is moderate.

The soils in this unit are poorly suited to most urban uses. They are severely limited for septic tank absorption fields, dwellings, roads and streets, and most recreational uses. The slow permeability and high water table create problems that are difficult to overcome. The limitations for septic tank absorption fields can be reduced by adding suitable fill. The limitations for dwellings, roads and streets, and most recreational uses can be reduced with drainage.

9. Santee-Argent-Cape Fear

Very poorly drained and poorly drained soils; on low, nearly level areas

The landscape of this map unit characteristically has little relief. It is in the nearly level, shallow drainageways in the southern half of the county. Mapped areas of this unit range from a few miles to more than 10 miles in length and are 200 feet to a mile in width. Most areas are flooded or ponded on occasion, and some are flooded for more than 6 months during most years. Nearly all of this unit is forested, primarily in hardwoods. Areas are commonly adjacent to shallow streams, and most are flooded during wet seasons. There are few farm buildings, residences, or open fields.

This unit covers about 7 percent of the county. It is about 34 percent Santee soils, 23 percent Argent soils, and 18 percent Cape Fear soils. The remaining 25 percent is soils of minor extent.

Santee soils are mostly on the more seaward drainageways of this unit. They have a very dark gray, loam surface layer and a gray, clay subsoil.

Argent soils are mostly on the more seaward portion of this unit in old abandoned ricefields and outer edges of the drainageways. They have a very dark gray, loam surface layer and a grayish, clay subsoil.

Cape Fear soils are mostly on the more inland drainageways of this unit. They have a black, loam surface layer and a dark gray, clay subsoil.

The minor soils in this unit include the very poorly drained Hobcaw soils on the outer edges of narrow and shallow drainageways and the poorly drained Bladen soils in low flat areas.

Nearly all of the acreage is woodland. A few small areas are old abandoned ricefields now covered with marsh grasses and brush. Because of the high clay content and the slow permeability of these soils, along with the lack of adequate drainage outlets, it is unlikely that the land use on these soils will change for many years. Where drained and protected from flooding and ponding, these soils are well suited to corn, soybeans, small grains, and grasses for hay.

Where drained and protected from flooding and ponding, the soils in this unit can be used for pasture. Grasses that tolerate a relatively high water table, such as bahiagrass, are suited. The lack of suitable drainage outlets discourages the development of these soils for pasture.

These soils are well suited to trees, and a few small areas remain in native hardwoods. Although pines grow well on these soils, they are difficult to establish because of the high water table and frequent flooding. Some of the more common species of hardwoods on these soils are red maple, water tupelo, bald cypress, sweetgum, and American sycamore. All of these trees grow well. Because of the extreme difficulty of replanting, management of natural stands is of utmost importance. The high water table and frequent flooding are difficult to overcome and are limitations to equipment and seedling survival.

The soils in this unit are poorly suited to urban uses. They have severe limitations for dwellings, septic tank absorption fields, roads, and most recreational uses. The high water table and frequent flooding and ponding are hazards that are difficult and expensive to overcome.

dominantly mucky and clayey soils that are flooded

These soils are flooded daily or occasionally with salt water, or they are flooded for long periods with fresh water. Some of these soils are organic soils and some are mineral soils. The mineral soils normally have a high clay content.

10. Pungo-Levy

Very poorly drained soils, mucky throughout or loamy and underlain with clayey layers, that are rarely or frequently flooded with fresh water

The landscape of this map unit characteristically has little relief. It is nearly level. The soils are rarely or frequently flooded with fresh water, and generally covered with marsh grasses and water-tolerant shrubs. These soils are commonly adjacent to freshwater streams. They are also commonly adjacent to areas that are flooded with salt water. Very few roads are in this unit, and the soils are not suited to buildings.

This unit covers about 5 percent of the county. It is about 39 percent Pungo soils and 17 percent Levy soils. The remaining 44 percent is soils of minor extent.

Pungo soils generally are upstream and rarely flooded, but they are adjacent to areas that are flooded with salt water. They have a surface layer of black muck underlain with dark reddish brown muck.

Levy soils generally are at the upper end of broad, poorly defined drainageways that are flooded most of the time. They will not support livestock. The surface layer is dark gray mucky silty clay loam underlain with dark gray silty clay.

The minor soils in this unit include the very poorly drained Bohicket, Capers, and Handsboro soils that are frequently adjacent to this unit on the downstream side and the very poorly drained Cape Fear and Santee soils on the outer edges and upstream side of this unit.

Nearly all of this unit is in marsh grasses and water-tolerant shrubs. There are some hardwoods on the upstream edges. A few areas have been diked and are managed for wildlife habitat. Many of these areas were used for rice prior to 1893. These soils are poorly suited to row crops, pasture, trees, and urban uses because of the high water table and flooding. They are severely limited for recreational uses.

11. Bohicket-Capers-Handsboro

Very poorly drained soils, clayey throughout or mucky and underlain with clayey layers, that are frequently flooded with salt water

The landscape of this map unit characteristically has little relief. It consists of broad, nearly level areas adjacent to tidal streams and extending inland from the coast for several miles. Most of these soils are flooded with 1 inch to more than 3 feet of salt water twice daily. Some areas are at slightly higher elevations and are flooded only occasionally with salt water. Areas flooded daily under more than two feet of water are generally highly dissected with short, narrow tidal streams. The vegetation is dominantly native marsh grasses. Most areas have no public roads.

This unit covers about 8 percent of the county. It is about 23 percent Bohicket soils, 19 percent Capers

soils, and 9 percent Handsboro soils. The remaining 49 percent is soils of minor extent.

Bohicket soils are commonly at slightly lower elevations than the Capers and Handsboro soils. They are frequently adjacent to tidal streams and are flooded with salt water to a depth of 6 to 36 inches twice daily. They will not support livestock. The surface layer is dark grayish brown clay underlain with very dark grayish brown, black, and dark greenish gray clay.

Capers soils are commonly at slightly higher elevations than Bohicket soils, are not as highly dissected with small tidal streams, and will support livestock. Some areas of these soils are flooded twice daily by salt water; other areas are flooded only by extremely high tides. These soils have a dark gray, clay surface layer underlain with dark gray clay.

Handsboro soils are more prevalent between the areas that are flooded by salt water and the areas that are flooded by fresh water. These soils have a brown, organic surface layer underlain with dark greenish gray clay. They are commonly flooded twice daily.

The minor soils in this unit include the somewhat poorly drained Wahee soils and the poorly drained Bladen soils on small islands, the very poorly drained Santee soils at the upper ends of tidal areas, small sandy areas on the bank of streams, and some areas of Haplaquents.

Nearly all of the soils in this unit are in native marsh grasses. Some of the more inland areas were used for rice prior to 1893. A few areas are used for native grazing. A few small areas have been diked and are managed for wildlife habitat. These soils are not suited to crops, pasture, trees, and urban uses. Flooding, excessive salt and sulphur, and the inability of the soils to support the weight of livestock are some of the problems that are difficult to overcome. These soils have severe limitations for recreational uses.

Broad land use considerations

The soils in Colleton County vary widely in their suitability for major land uses. Approximately 15 percent of the land in the county is used for cultivated crops, mainly soybeans, corn, and small grains. This cropland is scattered throughout the county, but is concentrated to some extent in general soil map units 3, 4, 5, and 6, which are suited or well suited to crops. Soils in map units 1 and 2 are dominantly sandy and require more land use treatments for good yields. Soils in map units 7 and 10 are in very low areas and are frequently flooded. They are poorly suited to crops. Soils in map units 8 and 9 are dominantly clayey. Most of these soils are somewhat poorly to very poorly drained. They require intensive land use treatments for satisfactory yields. Soils in map unit 11 are flooded with salt water and are unsuited to crops.

Approximately 5 percent of the land in the county is pasture. All of the map units except 7, 10, and 11 are either suited or well suited to pasture. The high water tables, mild temperatures, and moderately high rainfall enhance the suitability of the soils for pasture grasses. Map units 7 and 10 are frequently flooded with fresh water. Map unit 11 is flooded twice daily by salt water.

About 70 percent of the land in the county is woodland. General soil map units 3, 4, 5, 6, and 8 are well suited to pines. Map units 1 and 2 are too droughty for pines, but satisfactory to good yields are common. Map units 7 and 9 are best suited to hardwoods, primarily because of their wetness. Map unit 10 is flooded for long periods and is poorly suited to woodland. Map unit 11 is flooded with salt water and is unsuited to trees.

Less than 5 percent of the county is urban or built-up land. Although most of the soils in the county have severe limitations for urban development, small areas in all of the map units except possibly 7, 9, 10, and 11 are suited to development. The high water table on most of the soils in the county is the main reason they are not well suited to development. Most soils in map units 7, 9, 10, and 11, in addition to having a high water table, are frequently flooded or ponded.

Potential for wildlife habitat is generally high throughout the county. Soils in map units 1, 2, 3, 4, 5, and 6 are generally suited to habitat for openland wildlife. Soils in map units 8 and 9 are generally suited to habitat for woodland wildlife. The poorly drained and frequently flooded soils in map units 7, 10, and 11 provide suitable habitat for wetland wildlife.

detailed soil map units

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

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

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

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

Soils of one series can differ in texture of the surface layer or of the underlying material. They also can differ in slope, salinity, wetness, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Norfolk loamy fine sand, 0 to 2 percent slopes, is one of two phases in the Norfolk series.

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

A *soil complex* consists of two or more soils in such an intricate pattern or in such small areas that they cannot be shown separately on the soil maps. The pattern and proportion of the soils are somewhat similar in all areas. Fripp-Leon complex, 0 to 6 percent slopes, is an example.

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

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

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

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

soil descriptions

7—Beaches. This map unit consists of sandy shorelines that border the Atlantic Ocean. There is only a small acreage of this unit in Colleton County, mostly on Edisto, Otter, and Pine Islands. It is covered twice daily by tides and is nearly level or gently sloping toward the ocean.

Typically, the surface layer is light gray fine sand. The underlying material is narrow bands of gray to very dark gray fine sand at irregular intervals. This unit is neutral to moderately alkaline and is highly saline. It contains varying amounts of shells and shell fragments and often has many fine black minerals.

Most of this unit is unstable and is being moved inland at the rate of a few inches to more than a foot each year. There are a few areas where this unit is enlarging. Erosion and deposition of material on this unit is related to tidal currents and the direction of storm and hurricane winds. Erosion is a constant problem that is expensive to control.

Bathers use beaches heavily in the summer. This unit is also used for surf fishing, walking, and jogging. It is unsuited to most other uses.

This unit is not assigned a capability subclass or a woodland ordination symbol.

9B—Fripp-Leon complex, 0 to 6 percent slopes. This map unit consists of excessively drained and poorly drained soils that occur in a somewhat repeating pattern. The landscape consists of narrow ridges and troughs parallel to the Atlantic Ocean shoreline. The ridges and troughs vary widely in height and width. The slopes are commonly convex and range from about 2 to 6 percent. The main ridges are about 10 feet in height and about 150 feet apart. Intermediate ridges and troughs often occur between the tallest ridges and lowest troughs. The Fripp soil is on the ridges, and the Leon soil is in the troughs. These soils developed in sandy marine sediment. Mapped areas are mostly long and narrow and are from 5 to more than 100 acres. Individual areas of each soil range from 2 to 20 acres.

The excessively drained Fripp soil makes up about 50 percent of this unit. Typically, the surface layer is light brownish gray fine sand about 5 inches thick. The underlying material, to a depth of 80 inches, is very pale brown and light gray fine sand.

Fripp soil is low in natural fertility and organic matter content. The available water capacity is very low. Reaction is medium acid to mildly alkaline throughout. Permeability is rapid, and the depth to the water table is commonly more than 6 feet. Flooding is rare.

The poorly drained Leon soil makes up about 30 percent of this unit. Typically, the surface layer is black sand about 6 inches thick. The subsurface layer, which extends to a depth of 19 inches, is light brownish gray sand. The subsoil is stratified dark reddish brown, grayish brown, and brown sand.

Leon soil is low in natural fertility, low in organic matter content, and low in available water capacity. Reaction is extremely acid to strongly acid except in the surface layer where limed. Permeability is rapid in the surface and subsurface layers and is moderate to moderately rapid in the subsoil. The water table is within a foot of the surface during wet seasons, and flooding is rare.

Included with this unit in mapping are small areas of Bohicket and Capers soils that are flooded daily or occasionally with salt water. Also included are small areas of somewhat poorly drained sandy soils. These inclusions make up about 20 percent of the unit.

Most areas of this unit are on the more seaward islands and are not accessible by overland travel. They remain undeveloped and are densely covered with natural vegetation consisting of pine, palm trees, live oak, wax myrtle, and saw palmetto. This unit is used occasionally by campers but serves largely as a natural habitat for wildlife. It is poorly suited to cropland, pasture, woodland, and engineering uses.

This unit is poorly suited to row crops or grasses for hay. The narrow undulating to rolling Fripp soil is too droughty for crops and hay. In addition, because of the complex relief, this soil is not suited to mechanized farming. Areas of the poorly drained Leon soil in this complex are too small and narrow to be used successfully for crops.

This unit is poorly suited to pasture. The narrow, undulating to rolling Fripp soil is too droughty for satisfactory growth of grasses. Areas of the poorly drained Leon soil are too small and narrow to be successfully managed for pasture.

This unit is poorly suited to woodland. The excessively drained Fripp soil is poorly suited to trees such as loblolly pine, slash pine, and longleaf pine. The poorly drained Leon soil is suited to trees such as loblolly pine and slash pine but poorly suited to longleaf pine. Management problems of equipment limitations and seedling survival are moderate on the Fripp soil because of the sandy texture and severe on the Leon soil because of the sandy texture and high water table.

This unit is poorly suited to most engineering uses. Even though the Fripp soil has slight limitations for septic tank absorption fields, they are in areas that are commonly too narrow for homesites. The poorly drained Leon soil, because of wetness, has severe limitations for septic tank absorption fields and other urban uses. These limitations can be reduced by adding suitable fill material.

These soils are in capability subclass VIIs. The woodland ordination symbol is 4s for the Fripp soil and 4w for the Leon soil.

10—Albany loamy sand, 0 to 2 percent slopes. This somewhat poorly drained, nearly level soil commonly occurs on broad flats. Mapped areas are irregular in shape and range from 5 to 400 acres in size.

Typically, the surface layer is very dark grayish brown loamy sand about 8 inches thick. The subsurface layer, which extends to a depth of 57 inches, is mottled brownish yellow loamy sand. The subsoil is mottled gray sandy clay loam to a depth of 84 inches.

This soil is low in natural fertility and in organic matter content and has very low available water capacity. It is very strongly acid to medium acid, except in the surface layer where limed. Permeability is rapid in the surface and subsurface layers and moderate in the subsoil. The seasonal high water table is 1.0 to 2.5 feet below the surface.

Included with this soil in mapping are a few small areas of Chipley, Bonneau, and Blanton soils. These inclusions make up about 15 percent of the unit.

About 70 percent of this Albany soil is woodland. The remainder is in cropland, pasture, and engineering uses. It is fairly well suited to these uses.

This soil is suited to row crops and small grains. Major management problems are the seasonal high water table and low nutrient-holding capacity. Drainage can be provided by open ditches, tile drains, or a combination of these. When tile drains are used a filter is needed to prevent sand from entering the tile lines. Water-control structures can help achieve desired water levels during

dry seasons. Because of the rapid leaching of nutrients from this soil, frequent applications of fertilizer and limestone are needed for good plant growth. Maintaining crop residue on or near the surface reduces soil blowing, helps to maintain soil tilth and organic matter content, and improves yields.

This soil is suited to pasture and hay. Shallow surface drains help control surface water in wet seasons. The use of this soil for pasture or hay is also effective in controlling soil blowing. Proper stocking, pasture rotation, deferment of grazing, and restricted use during wet periods help to keep the pasture and soil in good condition.

This soil is suited to woodland. Where competing vegetation is controlled or removed, seedlings can survive and grow well. This can be done by site preparation, burning, spraying, cutting, or girdling. There are moderate equipment limitations and seedling mortality rates to contend with when planting or harvesting trees. Loblolly pine and slash pine are suitable to plant.

This soil is suited to most engineering uses. Wetness is a severe limitation for septic tank absorption fields and a moderate limitation for dwellings, local roads and streets, and most recreational uses. Shaping the area and adding fill material can decrease the limitation for septic tank absorption fields. The limitation for dwellings, local roads and streets, and most recreational uses can be reduced with open ditches, tile drains, or a combination of these.

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

11—Argent loam. This nearly level, poorly drained soil is on concave to flat, wet areas in irregular patterns of 25 to 5,000 acres in size.

Typically, the surface layer is very dark gray loam 5 inches thick. The subsoil is grayish clay to a depth of 57 inches and below this, to 91 inches, it is grayish clay loam.

This soil is medium in natural fertility, low in organic matter content, and high in available water capacity. Reaction is extremely acid to medium acid in the upper 5 feet and medium acid to moderately alkaline below that. Permeability is slow. The seasonal high water table is within a foot of the surface.

Included with this soil in mapping are a few small areas of Yemassee and Wahee soils. These inclusions make up about 15 percent of the unit.

Most of this Argent soil is woodland. The remainder is in cropland, pasture, and engineering uses. This soil is well suited to cropland, pasture, and woodland. It is poorly suited to engineering uses.

This soil is well suited to corn, soybeans, and small grains. The major management problems are the seasonal high water table and the slow permeablity of the subsoil. Because of the slow subsoil permeability, shallow surface drains and open ditches are commonly used to lower the water table. Returning crop residue to the soil helps to improve fertility, improve tilth, and increase water infiltration.

This soil is well suited to pasture. Because of the high water table and the hazard of compaction, a high level of management is required for satisfactory yields. Shallow surface drains are needed to remove excess surface water and lower the water table. Proper stocking, pasture rotation, and restricted grazing during wet periods help to keep the pasture and soil in good condition.

This soil is well suited to woodland. It has severe management problems of equipment limitations and seedling mortality when planting or harvesting trees where there is no system for removal of excess surface water. The survival rate of seedlings increases when excess surface water is removed and the competing vegetation is controlled. Competing vegetation can be controlled with site preparation, burning, spraying, cutting, girdling, or a combination of these. Loblolly pine, slash pine, American sycamore, and water oak are among the trees suitable to plant.

This soil is poorly suited to most engineering uses. The clayey subsoil and the high water table are severe limitations for septic tank absorption fields. Filling with suitable material, shaping the site, and increasing the size of the absorption field will help reduce the limitations. Wetness is a severe limitation for dwellings, roads and streets, and most recreational uses. It can be reduced with open ditches.

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

13—Bladen fine sandy loam. This poorly drained, nearly level clayey soil is in broad low areas and shallow drainageways. Mapped areas are commonly somewhat elongated and range from 20 to more than 100 acres.

Typically, the surface layer is black fine sandy loam about 7 inches thick. The subsurface layer, which extends to a depth of 13 inches, is light brownish gray fine sandy loam. The subsoil, which extends to a depth of 58 inches, is grayish clay. The underlying material is grayish sandy clay loam.

This soil is low in natural fertility and organic matter content. The available water capacity is moderate. Reaction is extremely acid to strongly acid throughout except in the surface layer where limed. Permeability is slow. The water table is within a foot of the surface during wet seasons.

Included with this unit in mapping are a few small areas of Argent, Cape Fear, and Wahee soils. These inclusions make up about 20 percent of the unit.

About 80 percent of this Bladen soil is woodland. The remainder is in cropland, pasture, and engineering uses. This soil is well suited to cropland, poorly suited to

pasture and engineering uses, and well suited to woodland.

This soil is suited to corn, soybeans, and small grains. The major management problems are the seasonal high water table and the slow permeability of the subsoil. Because of the slow subsoil permeability, surface drains and open ditches are used to remove excess surface water and lower the water table. Returning crop residue to the soil improves fertility, improves tilth, increases water infiltration, and improves yields.

This soil is suited to pasture. Because of the high water table and the hazard of compaction, a high level of management is required for satisfactory yields. Shallow surface drains are needed to remove excess surface water and lower the water table to desired levels. Proper stocking, pasture rotation, and restricted grazing during wet periods help to keep the pasture and soil in good condition.

This soil is well suited to trees. It has severe management problems for equipment and seedling survival in areas where there is no system for removing excess surface water. The seedling survival rate increases where excess surface water is removed and competing vegetation is controlled. Competing vegetation can be controlled with site preparation, burning, spraying, cutting, girdling, or a combination of these. Loblolly pine, slash pine, American sycamore, and water oak are among the trees suitable to plant.

This soil is poorly suited to most engineering uses. The slow permeability of the subsoil and the high water table are severe limitations for septic tank absorption fields. Filling with suitable material, shaping the site, and increasing the size of the absorption field will reduce the limitations. Wetness is a severe limitation for dwellings, roads and streets, and most recreational uses. It can be reduced with open ditches.

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

14B—Blanton loamy fine sand, 0 to 6 percent slopes. This well drained, nearly level to gently sloping soil is on ridges and side slopes of the Coastal Plain. Mapped areas are 5 to 500 acres.

Typically, the surface layer is gray loamy fine sand about 4 inches thick. The subsurface layer, which extends to a depth of 45 inches, is very pale brown loamy fine sand. The subsoil, to a depth of 80 inches, is yellowish brown sandy clay loam with gray mottles in the lower part.

The soil is low in natural fertility and content of organic matter and is very low in available water capacity. Reaction is medium acid or very strongly acid in the surface layer and strongly acid to very strongly acid in the subsoil. Permeability is rapid in the surface and subsurface layers and moderate in the subsoil. The seasonal high water table is at a depth of 5 to 6 feet.

Included with this soil in mapping are a few small areas of soils with 6 to 15 percent slopes and also small areas of Albany, Bonneau, and Ocilla soils. These inclusions make up less than 15 percent of the unit.

About 80 percent of this Blanton soil is woodland. The remainder is in cropland, pasture, and engineering uses. This soil is suited to cropland, to hay and pasture, and to trees.

This soil is suited to row crops and small grains. The major management problem is the low nutrient-holding capacity. Because of the rapid leaching of nutrients from this soil, frequent applications of fertilizer and limestone are needed for good plant growth. Maintaining crop residue on or near the surface reduces soil blowing, helps to maintain soil tilth and organic matter content, and improves yields.

This soil is suited to pasture and hay. The use of this soil for pasture or hay is also effective in controlling soil blowing. Proper stocking and pasture rotation help to keep the pasture and soil in good condition.

This soil is suited to trees. There are no major hazards. Seedlings survive and grow well where competing vegetation is controlled or removed. This can be done by site preparation, burning, spraying, cutting, or girdling. There are moderate equipment limitations and seedling mortality rates to contend with when planting or harvesting trees. Slash pine is suitable to plant.

This soil is suited to most engineering uses. The sandy texture is a severe limitation for septic tank absorption fields and a slight limitation for dwellings. Areas used for recreation can be protected from soil blowing and dust by maintaining plant cover.

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

15—Bohicket association. This map unit consists of nearly level, very poorly drained soils that are flooded twice daily by salt water. It is on broad tidal flats that border the Atlantic Ocean and extend several miles inland along some of the larger rivers. Mapped areas are irregular in shape and commonly are more than 100 acres in size but range from 10 to more than 1,000 acres.

Bohicket soil makes up about 65 percent of this unit. Typically, the surface layer is dark grayish brown clay about 9 inches thick. The underlying material, to a depth of 85 inches, is very dark grayish brown, black, and dark greenish gray clay.

This soil is high in natural fertility and moderate in organic matter content. The available water capacity is very low. This soil is slightly acid to moderately alkaline when continuously saturated with sea water. It becomes extremely acid when allowed to dry. The salt content is high or very high. Permeability is very slow. This soil is commonly flooded under about 3 feet of water twice daily.

Included with this soil in mapping are small areas of Bladen, Cape Fear, Levy, and Santee soils. Small irregularly shaped islands and mounds of dredged materials that are not covered by sea water are also included. These inclusions make up about 35 percent of the unit.

With few exceptions, all areas of this unit are in marsh grasses. Depth of water is controlled in a few small areas that are used for fishponds or managed for waterfowl. This unit is not suited to cropland, pasture, woodland, or engineering uses. This unit is not suited to cropland. Because of its high sulfur and salt content, and the difficulty of water control, this unit is not used for crops.

This unit is not suited to improved pasture. Because of its salt and sulfur content, its inability to support the weight of livestock, and the difficulty of water control, this unit is not used for pasture.

This unit is unsuited to woodland. There are no known species of trees that will grow on this unit in its natural state because of its salt and sulfur content and the difficulty of water control.

This unit is not suited to engineering uses. It is commonly flooded twice daily under about 3 feet of salt water. This, coupled with its low strength and high sulfur content, results in severe limitations for septic tank absorption fields, dwellings, roads and streets, and recreational uses.

This unit is in capability subclass VIIIw. It is not suited to trees.

16A—Bonneau fine sand, 0 to 2 percent slopes. This well or moderately well drained soil is located on nearly level uplands of the Coastal Plain. Mapped areas are irregular in shape and are 5 to 100 acres in size.

Typically, the surface layer is dark grayish brown fine sand about 5 inches thick. The subsurface layer, which extends to a depth of 25 inches, is light yellowish brown and pale yellow fine sand. The subsoil, to a depth of 77 inches, is mottled brown, gray, and yellow sandy clay loam.

This soil is low in natural fertility and content of organic matter. It has a moderate available water capacity. It is very strongly acid or strongly acid throughout, except in the surface layer where limed. Permeability is rapid in the surface and subsurface layers and moderate in the subsoil. The water table is 3.5 to 5 feet below the surface during winter and early in spring.

Included with this soil in mapping are a few small areas of Albany, Blanton, Chisolm, Norfolk, and Ocilla soils. A few small areas that contain a layer that is more than 5 percent plinthite are included, primarily in the vicinity of Ashton and Smoaks. Also included are small wet areas shown on the map by wet spot symbols. These inclusions make up about 15 percent of the unit.

About 50 percent of this Bonneau soil is used for crops or pasture. This soil is suited to cropland, pasture, woodland, and most engineering uses.

This soil is suited to row crops and small grains. The major management problems are the low nutrient-holding capacity and droughtiness of this soil. Because of the rapid leaching of nutrients from this soil, frequent applications of fertilizer or limestone are needed for good crop production. Maintaining crop residue on or near the surface reduces soil blowing, maintains soil tilth and organic matter content, and improves yield.

This soil is well suited to pasture and hay. The use of this soil for pasture or hay is also effective in reducing soil blowing. Proper stocking, pasture rotation, deferment of grazing, and restricted use during wet periods help to keep the pasture and soil in good condition.

This soil is well suited to woodland. There are no major hazards. Seedlings survive and grow well where competing vegetation is controlled or removed. This can be done by site preparation, burning, spraying, cutting, or girdling. There are moderate equipment limitations and seedling mortality rates to contend with when planting or harvesting trees. Loblolly pine and longleaf pine are suitable to plant.

This soil is suited to most urban uses. The seasonal water table is a moderate limitation for septic tank absorption fields. This limitation can be reduced by enlarging the filter field. Because of the sandy surface this soil has moderate limitations for recreational development. Most other urban uses are moderately limited by the wetness.

This soil is in capability subclass IIs. The woodland ordination symbol is 2s.

16B—Bonneau fine sand, 2 to 6 percent slopes. This well drained or moderately well drained, gently sloping soil is on low ridges and side slopes of the Coastal Plain. Slopes are uniform to convex. Mapped areas are 5 to 100 acres.

Typically, the surface layer is dark grayish brown fine sand about 5 inches thick. The subsurface layer, which extends to a depth of 25 inches, is light yellowish brown and pale yellow fine sand. The subsoil, to a depth of 77 inches, is mottled brown, gray, and yellow sandy clay loam.

This soil is low in natural fertility and content of organic matter. It has a moderate available water capacity. Reaction is very strongly acid or strongly acid throughout, except in the surface layer where limed. Permeability is rapid in the surface and subsurface layers and moderate in the subsoil. The water table is 3.5 to 5 feet below the surface during the winter and early in spring.

Included with this soil in mapping are a few small areas of Albany, Blanton, Chisolm, Norfolk, and Ocilla soils. These inclusions make up about 15 percent of the unit.

About 50 percent of this Bonneau soil is used for crops or pasture. This soil is suited to cropland, pasture, woodland, and most engineering uses.

This soil is suited to row crops, small grains, and grasses. The major management problems are low nutrient-holding capacity and droughtiness of this soil. Because of the rapid leaching of nutrients from this soil, frequent applications of fertilizer and limestone are needed for crop production. Maintaining crop residue on or near the surface reduces soil blowing, maintains tilth and organic matter content, and improves yields. A secondary limitation is the hazard of erosion occurring on these sloping soils. This limitation can be reduced by planting close-growing crops, stripcropping, or planting on the contour.

This soil is well suited to pasture and hay. The use of this soil for pasture or hay is also effective in controlling soil losses by wind and water. Proper stocking, pasture rotation, deferment of grazing, and restricted use during wet periods help to keep the pasture and soil in good condition.

This soil is well suited to woodland, but has a moderate equipment limitation and a moderate seedling mortality limitation when planting and harvesting trees. Seedlings survive and grow well where competing vegetation is controlled. This can be done by site preparation, burning, spraying, cutting, or girdling. Loblolly pine and longleaf pine are suitable to plant.

This soil is suited to most engineering uses. The seasonal high water table is a moderate limitation for septic tank absorption fields. This limitation can be reduced by increasing the size of the filter field. The sandy surface is a moderate limitation for recreation uses. Wetness is a moderate limitation for most other urban uses.

This soil is in capability subclass IIs. The woodland ordination symbol is 2s.

18B—Alpin fine sand, 0 to 6 percent slopes. This excessively drained, nearly level to gently sloping soil is on broad ridges of the higher uplands. Mapped areas vary from 20 acres to more than 100 acres.

Typically, the surface layer is grayish brown fine sand about 6 inches thick. The subsurface layer, which extends to a depth of 45 inches, is very pale brown fine sand. The subsoil, to a depth of more than 80 inches, is brownish fine sand with yellowish, loamy fine sand layers that are up to 0.1 inch thick.

This soil is low in natural fertility and organic matter content. Available water capacity is low or very low. Reaction is very strongly acid to medium acid, except in the surface layer where limed. Permeability is very rapid. Depth to the seasonal high water table is more than 60 inches.

Included with this soil in mapping are a few small areas of Albany and Murad soils, a few areas of poorly drained soils 1 to 3 acres in size indicated on the map by wet spot symbols, and a few small areas with slopes of 6 to 10 percent. These inclusions make up about 15 percent of the unit.

About 80 percent of this Alpin soil is woodland. The remainder is in cropland, pasture, and engineering uses. This soil is poorly suited to cropland, suited to pasture, and well suited to woodland and most engineering uses.

This soil is poorly suited to row crops and small grains. Major problems are droughtiness, soil blowing, and low nutrient-holding capacity. Fertilizers are more efficient for crop production when applied at intervals rather than in a single application. Soil blowing is a moderate hazard in large cultivated fields. Stripcropping with close-growing crops will help reduce soil blowing and protect young plants. Good management practices such as minimum tillage, maintaining crop residue on or near the surface, and use of cover crops increase water infiltration and nutrient-holding capacity and decrease soil blowing.

This soil is suited to pasture and hay. Major management problems are droughtiness and low available water capacity and low nutrient-holding capacity. Bermudagrass and bahiagrass grow well if they are properly fertilized and managed. The use of this soil for pasture or hay is also effective in controlling soil blowing.

This soil is fairly well suited to woodland. There are no major hazards. It has moderate management problems of equipment limitations and seedling mortality because of the sandy texture. The seedling mortality rate can be reduced by planting in a furrow. Slash pine and loblolly pine are suitable to plant.

This soil is well suited to most engineering uses. It is well suited to dwellings, local roads and streets, and septic tank absorption fields. Seepage could be a problem in densely developed urban areas or where absorption fields are near drainageways. The deep sandy texture is a moderate limitation for recreational uses.

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

19—Cape Fear loam. This very poorly drained, nearly level soil is in low depressional areas and along the drainageways on the lower marine terraces. Mapped areas are 10 to more than 100 acres.

Typically, the surface layer is black loam about 3 inches thick. The subsoil, which extends to a depth of 36 inches, is dark gray clay. The underlying material, to a depth of 84 inches, is gray sand.

This soil is low in natural fertility and medium in organic matter content. Available water capacity is moderate. Reaction is very strongly acid to medium acid, except in the surface layer where limed. Permeability is slow, and the water table is at or within 1.5 feet of the surface in wet seasons.

Included with this soil in mapping are a few small areas of Ogeechee, Levy, and Williman soils. These inclusions make up about 20 percent of the unit.

About 90 percent of this Cape Fear soil is in woodland. The remainder is in cropland, pasture, and engineering uses. This soil is well suited to cropland, pasture, and woodland. It is poorly suited to engineering uses.

This soil is well suited to corn, soybeans, and small grains. The major problems are the seasonal high water table and the slow permeability of the subsoil. When used for cultivated crops, intensive drainage measures are required. Because of the slow permeability, open ditches, surface drains, or a combination of these are used to drain this soil. Winter cover crops and returning crop residue to the soil will help maintain organic matter content, increase tilth, and improve yields.

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

This soil is well suited to trees, and many areas remain in native hardwoods. Control of competing vegetation improves the seedling survival rates. This can be done by site preparation, burning, spraying, cutting, or girdling. Removal of excess surface water reduces equipment hazards and improves seedling survival rates and the tree root enviroment. Loblolly pine, slash pine, American sycamore, and water oak are among the trees suitable to plant.

This soil is poorly suited to most engineering uses. The slow permeability of the clayey subsoil and the high water table are severe limitations for septic tank absorption fields. Filling with suitable material, shaping the site, and increasing the size of the absorption field will reduce these limitations. Wetness is a severe limitation for dwellings, roads and streets, and most recreational uses. It can be reduced with open ditches.

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

20—Capers association. This map unit consists of very poorly drained, nearly level soils that occur on tidal flats that are flooded daily. The landscape consists of marshes dissected by an occasional stream. The soils occupy intermediate positions between the upland and soils that are flooded with salt water for longer periods and at greater depths. These soils formed in clayey marine sediment. Mapped areas are irregular in shape except those elongated areas parallel to tidal streams. Individual areas range in size from small areas dissected by streams to areas that are more than 1,000 acres.

Capers soils make up about 70 percent of this unit. Typically, the surface layer is dark gray clay about 16 inches thick. The underlying material, to a depth of 85 inches, is dark gray clay.

This soil is high in natural fertility and moderate in organic matter content. It has a very low available water capacity. Under continuous saturated conditions, it ranges from medium acid to moderately alkaline throughout. After drying, pale yellow sulfur compounds are common on the surface, and the soil becomes extremely acid. This soil has very slow permeability. The water table ranges from a foot below the surface to a foot above the surface. Flooding is frequent.

Included with this soil in mapping are small areas of Hobonny and Levy soils. Also included are small islands, commonly less than 5 acres, of both sandy and clayey soils. These inclusions make up about 30 percent of the unit.

With few exceptions, all of this unit is in marsh grasses. The water depth is controlled in a few areas that are used for fishponds or managed for waterfowl habitat. This unit is poorly suited to cropland, pasture, woodland, and engineering uses.

This unit is not suited to cropland because of the salt and sulfur content and the periodic flooding.

This unit is not suited to improved pasture because of the salt and sulfur content and the periodic flooding. It can be used for grazing if native grasses are managed.

This unit is unsuited to woodland. Trees will not grow on this unit in its natural state because of the salt and sulfur content and the periodic flooding.

This unit is not suited to engineering uses. The water table ranges from a foot above the surface to about a foot below the surface. The wetness and periodic flooding are severe limitations for septic tank absorption fields, dwellings, roads and streets, and recreational uses.

This unit is in capability subclass VIIIw. It is not suited to trees.

21—Chipley fine sand, 0 to 2 percent slopes. This moderately well drained soil is located on broad, nearly level ridges. Mapped areas are irregular in shape and range from 5 to 300 acres in size.

Typically, the surface layer is dark grayish brown fine sand about 6 inches thick. The underlying material, to a depth of 94 inches, is fine sand. The upper part is mottled brownish yellow and yellowish brown, and the lower part is mottled light gray.

This soil is low in natural fertility and organic matter content. The available water capacity is low. The soil is very strongly acid to slightly acid except in the surface layer where limed. Permeability is rapid. The water table is 2 to 3 feet below the surface during wet seasons.

Included with this soil in mapping are a few areas of Albany, Blanton, Echaw, and Lakeland soils. Also included are small wet areas shown on the map by wet

spot symbols. These inclusions make up about 20 percent of the unit.

About 75 percent of this Chipley soil is woodland. The remainder is in cropland, pasture, and engineering uses. This soil is suited to cropland, pasture, and most engineering uses. It is well suited to woodland.

This soil is suited to corn and small grains. It is poorly suited to soybeans. Droughtiness and the low nutrient-holding capacity are the major hazards when this soil is used for cultivated crops. Because of the low nutrient-holding capacity of this soil, frequent applications of fertilizer and limestone are needed for good plant growth. Large open fields are subject to soil blowing in dry seasons. Minimum tillage, winter cover crops, and stripcropping of small grains perpendicular to the prevailing wind direction help prevent soil blowing. Returning crop residue to the soil helps to improve fertility, reduce erosion, and improve yields.

This soil is suited to pasture and hay. Deep-rooted grasses and grasses that tolerate droughtiness, such as bermudagrass, are well adapted to this soil. Proper stocking, pasture rotation, deferment of grazing, and restricted use during wet periods help to keep the pasture and soil in good condition.

This soil is well suited to trees. Seedlings survive and grow well where competing vegetation is controlled or removed. This can be done by site preparation, burning, spraying, cutting, or girdling. There is only a moderate equipment limitation to be concerned with when planting or harvesting trees. Slash pine and loblolly pine are suitable to plant.

This soil is poorly suited to most engineering uses. The high water table is a limitation for septic tank absorption fields. This limitation can be reduced by adding suitable fill material. Because of its sandy texture, seepage is a problem in some densely developed areas or where absorption fields are near drainageways. Wetness is a moderate limitation for dwellings and local roads and streets. This limitation can be reduced by drainage. The sandy texture is a severe limitation for all recreational uses.

This soil is in capability subclass IIIs. The woodland ordination symbol is 2s.

22—Chisolm loamy fine sand, 0 to 2 percent slopes. This nearly level, well drained to moderately well drained soil is at the higher elevations in convex irregular patterns. Mapped areas are 5 to 100 acres in size.

Typically, the surface layer is dark grayish brown loamy fine sand about 10 inches thick. The subsurface layer, which extends to a depth of 23 inches, is brownish yellow loamy sand. The subsoil, which extends to a depth of 57 inches, is strong brown sandy clay loam. The underlying material is yellowish sandy loam and loamy sand.

This soil is low in natural fertility and organic matter content. It has a moderate available water capacity. It is very strongly acid to medium acid to a depth of 6 feet, except in the surface layer where limed. Permeability is moderate. The seasonal high water table is 3.5 to 5.0 feet below the surface.

Included with this soil in mapping are small areas of Eddings, Coosaw, and Nemours soils. These inclusions make up about 20 percent of the unit.

About 50 percent of this Chisolm soil is used for crops or pasture. Most of the remainder is in woodland. This soil is suited to cropland, pasture, woodland, and most engineering uses.

This soil is suited to corn, soybeans, small grain, tobacco, and watermelons. Major management problems are the low nutrient-holding capacity and the droughtiness of this soil. Because of the rapid leaching of nutrients from this soil, frequent applications of fertilizer and limestone are needed for good plant growth. Minimum tillage, winter cover crops, and stripcropping of small grains perpendicular to the prevailing wind direction can reduce soil blowing. Maintaining crop residue on or near the surface reduces runoff, reduces soil blowing, and helps to maintain soil tilth and organic matter content.

This soil is well suited to pasture and hay. The use of this soil for pasture or hay is also effective in reducing soil blowing. Proper stocking, pasture rotation, deferment of grazing, and restricted use during wet periods help to keep the pasture and soil in good condition.

This soil is well suited to woodland. There is a moderate equipment limitation and a moderate seedling survival rate to contend with when planting or harvesting trees. Seedling survival rates can be raised by removing competing vegetation. This can be done by site preparation, burning, spraying, cutting, or girdling. Loblolly pine and slash pine are suitable to plant.

This soil is suited to most engineering uses. The seasonal high water table is a moderate limitation for septic tank absorption fields. This limitation can be reduced by increasing the size of the filter field. It has slight limitations for dwellings and roads and streets. The sandy surface is a moderate limitation for recreation uses.

This soil is in capability subclass IIs. The woodland ordination symbol is 2s.

24—Coosaw loamy fine sand. This somewhat poorly drained, nearly level soil is on broad, low ridges. Mapped areas are irregular in shape and range from 5 to 300 acres in size.

Typically, the surface layer is dark gray loamy fine sand about 5 inches thick. The subsurface layer, which extends to a depth of 32 inches, is very pale brown and light gray loamy fine sand. The subsoil, which extends to a depth of 72 inches, is mottled strong brown sandy clay loam in the upper part and mottled gray sandy clay loam in the lower part. The underlying material, to a depth of 99 inches, is mottled gray loamy fine sand.

This soil is low in natural fertility and organic matter content. The available water capacity is moderate. This soil is very strongly acid to medium acid to a depth of about 30 inches, except where limed, and very strongly acid or strongly acid below a depth of about 30 inches. Permeability is moderate. The water table is 1 foot to 2 feet below the surface during wet seasons.

Included with this soil in mapping are a few small areas of soils that have slopes of more than 2 percent slopes. Also included are a few small areas of Yauhannah, Eddings, and Chipley soils. Small, wet depressed areas are included and are shown on the map by wet spot symbols. These inclusions make up about 10 percent of the unit.

About 70 percent of this Coosaw soil is woodland. The remainder is in cropland, pasture, and engineering uses. This soil is suited to cropland, woodland, and most engineering uses. It is well suited to pasture.

This soil is suited to corn, small grains, and a variety of truck crops. It is well suited to soybeans. Management problems are the seasonally high water table, the low water- and nutrient-holding capacity, and some soil blowing on large, unprotected fields. Drainage can be provided by open ditches, tile drains, or a combination of these. Split applications of fertilizers are more effective than single applications. Minimum tillage and maintaining crop residue on or near the surface help to reduce soil blowing, increase water infiltration, improve tilth, maintain organic matter content, and improve yields.

This soil is well suited to pasture and hay. Shallow surface drains may be needed in some areas to remove excess surface water. Proper stocking, pasture rotation, timely deferment of grazing, and restricted use during wet periods help keep the pasture and soil in good condition.

This soil is suited to trees. Most wooded areas are managed for pines. There are only moderate equipment limitations and seedling mortality limitations. Seedlings survive and grow well where competing vegetation is controlled or removed. This can be done by site preparation, burning, spraying, cutting, or girdling. Slash pine and loblolly pine are among the trees more suited to plant. A large portion of the wooded areas are well suited to wildlife habitat (fig. 1).

Figure 1.—Timber production and quail hunting are compatible on Coosaw loamy fine sand.

This soil is suited to most engineering uses. Wetness is a severe limitation for septic tank absorption fields. This limitation can be reduced by increasing the size of the filter field or adding suitable fill material. Wetness is a moderate limitation for dwellings, local roads and streets, and most recreational uses. This limitation can be reduced with open ditches, tile drains, or a combination of these. Shaping the site, adding fill material, and diverting surface water are also used to reduce these limitations.

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

25—Coxville fine sandy loam. This nearly level, poorly drained soil is in low areas, in slight depressions, and along drainageways. Mapped areas are 5 to more than 50 acres.

Typically, the surface layer is dark gray fine sandy loam about 10 inches thick. The subsoil, which extends to a depth of 82 inches, is mottled gray sandy clay. The underlying material, to a depth of 90 inches, is mottled gray sandy clay loam with strata of sandy loam.

This soil is low in natural fertility and organic matter content. The available water capacity is high. This soil ranges from extremely acid to strongly acid throughout except in the surface layer in limed areas. Permeability is moderately slow. The water table is at or within 1.5 feet of the surface during wet seasons.

Included with this soil in mapping are small areas of Paxville and Lynchburg soils. These inclusions make up about 15 percent of the unit.

About 65 percent of this Coxville soil is woodland. This soil is well suited to woodland, cropland, and pasture. It is poorly suited to most engineering uses.

This soil is well suited to corn, soybeans, small grains, and grasses for hay. Management problems are the seasonal high water table and the moderately slow permeability. When this soil is cultivated, moderate to intensive drainage measures are needed. Because of the moderately slow permeability open ditches are commonly used to lower the water table. Tile drains or a combination of tile drains and open ditches are used in a few areas. Returning crop residue to the soil helps improve fertility, improve tilth, and increase water infiltration.

This soil is well suited to pasture. Grasses that can tolerate a relative high water table, such as bahiagrass, are most suited. Some form of drainage such as open ditches and shallow surface drains aids good pasture management. Proper stocking, pasture rotation, timely deferment of grazing, and restricted use during wet periods help to keep the pasture and soil in good condition.

This soil is well suited to trees, and a few small areas remain in native hardwoods. Competing vegetation can be controlled by site preparation, burning, spraying, cutting, or girdling. Severe equipment limitations are problems when planting or harvesting trees. Loblolly pine, slash pine, sweetgum, and American sycamore are among the trees that grow best.

This soil is poorly suited to most engineering uses. It has severe limitations for septic tank absorption fields, dwellings, roads and streets, and most recreational uses. The moderately slow permeability and the seasonal high water table are difficult to overcome. Most wetness limitations can be reduced by properly designed and carefully installed drainage. The limitations for septic tank absorption fields can be reduced by adding suitable fill and increasing the size of the filter field. Consideration to future maintenance and functioning of a drainage system is important in planning for urban development.

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

27—Hobcaw fine sandy loam. This very poorly drained, nearly level soil is in low depressional areas and along drainageways on the lower marine terraces. Mapped areas are 5 to more than 50 acres.

Typically, the surface layer is black fine sandy loam about 16 inches thick. The subsoil, which extends to a depth of 51 inches, is mottled grayish fine sandy loam and sandy clay loam. The underlying material, to a depth of 70 inches, is mottled grayish brown loamy fine sand.

This soil is medium in natural fertility and organic matter content. It has a moderate available water capacity. It is very strongly acid to slightly acid throughout the profile. Permeability is moderate. During wet seasons the water table is within a foot of the surface, or the soil is ponded with water to a depth of a foot.

Included with this soil in mapping are a few areas of Argent, Bladen, Wadmalaw Variant, and Williman soils. These inclusions make up about 20 percent of the unit.

Nearly all of this Hobcaw soil is woodland. This soil is well suited to cropland, pasture, and woodland. It is poorly suited to engineering uses.

This soil is suited to corn, soybeans, and small grains. The major management problem is the seasonal high water table. When this soil is cultivated, intensive drainage measures are needed. Open ditches, tile drains, or a combination of these can be used to drain this soil. Winter cover crops and crop residue returned to the soil will help control soil blowing and maintain the organic matter content.

This soil is well suited to pasture. Grasses that thrive on moist soils, such as bahiagrass, are commonly used. Shallow surface drains help to overcome limitations caused by the high water table. Proper stocking, pasture rotations, timely deferment of grazing, and restricted use during wet periods help to keep the pasture and soil in good condition.

This soil is well suited to trees, and a few small areas remain in native hardwoods. Control of competing vegetation is required for young plants. This can be done by site preparation, burning, spraying, cutting, or girdling. Equipment limitations are a major problem during wet seasons unless a system to remove excess surface water has been installed. Loblolly pine, slash pine, American sycamore, water tupelo, and sweetgum are among the trees suited to plant.

Wetness is a severe limitation for dwellings, septic tank absorption fields, and roads. Because of the unavailability of suitable drainage outlets, this limitation generally cannot be reduced economically.

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

28—Dunbar fine sandy loam. This nearly level, somewhat poorly drained soil is on smooth interstream divides. Mapped areas are irregular in shape and range from 5 to about 50 acres.

Typically, the surface layer is very dark gray fine sandy loam about 6 inches thick. The subsurface layer, which extends to a depth of 10 inches, is light yellowish brown fine sandy loam. The subsoil, to a depth of 78 inches, is mottled yellowish brown and gray sandy clay.

This soil is low in natural fertility and organic matter content. The available water capacity is high. This soil is extremely acid to strongly acid, except in the surface layer where limed. Permeability is moderately slow. The water table is 1.0 foot to 2.5 feet below the surface during wet seasons.

Included with this soil in mapping are a few areas of Pelham, Paxville, and Goldsboro soils. Also included are small, wet depressional areas shown on the map by wet spot symbols. These inclusions make up about 10 percent of the unit.

About 60 percent of this Dunbar soil is woodland. It is well suited to woodland, cropland, and pasture. It is poorly suited to most engineering uses.

This soil is well suited to corn, soybeans, small grains, and grasses for hay. A seasonal high water table is the major management problem when this soil is used for row crops. Because of the moderately slow permeability, open ditches and shallow surface drains can be used to drain this soil. Carefully designed and installed tile drainage systems can help in some areas. Returning crop residue to the soil helps to improve fertility, improve tilth, and increase water infiltration.

This soil is well suited to pasture. Grasses that can tolerate a relative high water table, such as bahiagrass, are commonly used. Good pasture management in most areas requires some drainage. Because of the moderately slow permeability, open ditches and shallow surface drains are the most efficient. Proper stocking, pasture rotation, timely deferment of grazing, and restricted use during wet periods help to keep the pasture and soil in good condition.

This soil is well suited to trees, and a few small areas remain in native hardwoods and pine. There is a moderate seedling mortality rate where the competing vegetation is not controlled by site preparation, burning, spraying, cutting, or girdling. Moderate equipment limitations are problems when planting or harvesting trees. Loblolly pine, slash pine, sweetgum, and yellow poplar are among the trees suited to plant.

This soil is poorly suited to most engineering uses. It has severe limitations for dwellings, septic tank absorption fields, and roads. The moderately slow permeability and the seasonal high water table are the major concerns, and they are difficult to overcome. Well designed drainage systems, adding suitable fill material, and shaping of the surface to remove excessive water are measures that will help improve the suitability of this soil for urban use.

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

30—Echaw loamy fine sand. This nearly level, moderately well drained soil is on broad ridges and flats of the lower Coastal Plain. Mapped areas are generally elongated and parallel to drainageways. They range from 5 to 1,000 acres in size.

Typically, the surface layer is very dark gray and grayish brown loamy fine sand about 8 inches thick. The subsurface layer, which extends to a depth of 38 inches, is yellowish loamy fine sand. The subsoil, to a depth of 65 inches, is black loamy fine sand.

This soil is low in natural fertility and content of organic matter. It has a low available water capacity. It is very strongly acid to medium acid throughout. It has moderately rapid or rapid permeability. The water table is 2.5 to 5.0 feet below the surface in wet seasons.

Included with this soil in mapping are areas of soils that have a thicker surface layer and areas of Albany, Chipley, Leon, and Seagate soils. These inclusions make up approximately 15 percent of the unit.

About 80 percent of this Echaw soil is woodland. This soil is suited to cropland, pasture, woodland, and some engineering uses.

This soil is suited to row crops and small grains. Major management problems are the seasonally high water table and low nutrient-holding capacity. Drainage can be provided by open ditches, tile drains, or a combination of these. When tile drains are used a filter is needed to prevent sand from entering the tile lines. Water-control structures will help control water levels during dry seasons. Because of the rapid leaching of nutrients from this soil, frequent applications of fertilizer and limestone are needed for good plant growth. Maintaining crop residue on or near the surface reduces soil blowing, helps to maintain soil tilth and organic matter content, and improves yields.

This soil is suited to pasture and hay. The use of this soil for pasture or hay is also effective in controlling soil

blowing. Proper stocking, pasture rotation, deferment of grazing, and restricted use during wet periods help to keep the pasture and soil in good condition.

This soil is suited to woodland. There are no major hazards. Seedlings survive and grow well where competing vegetation is controlled or removed. This can be done by site preparation, burning, spraying, cutting, or girdling. There are moderate equipment limitations to contend with when planting or harvesting trees. Loblolly pine, longleaf pine, and slash pine are suited to plant.

This soil is suited to most engineering uses. Wetness is a severe limitation for septic tank absorption fields and moderate limitation for most recreational uses. Shaping the area and adding fill material can be used to reduce the limitation for the septic tank absorption fields. The limitation for recreational uses can be reduced with open ditches, tile drains, or a combination of these. This soil has slight limitations for dwellings and local roads and streets.

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

31B—Eddings fine sand, 0 to 6 percent slopes. This well drained, nearly level to gently sloping soil is on the higher ridges. Mapped areas are mostly 5 to 35 acres.

Typically, the surface layer is a dark grayish brown fine sand about 9 inches thick. The subsurface layer, which extends to a depth of 56 inches, is a pale brown and very pale brown fine sand. The subsoil is yellowish brown and brownish yellow sandy clay loam to a depth of 72 inches and is mottled yellowish brown, yellowish red, and light gray sandy loam to a depth of 85 inches.

This soil is low in natural fertility and organic matter content. The available water capacity is low. Reaction ranges from slightly acid to very strongly acid. Permeability is rapid in the surface and subsurface horizons and moderate in the subsoil. The seasonal high water table is 3.5 to 4.5 feet below the surface.

Included with this soil in mapping are a few small areas of Coosaw, Blanton, and Chipley soils. Also included are a few poorly drained areas 1 to 3 acres in size indicated on the map by wet spot symbols. These inclusions make up about 15 percent of the unit.

About 70 percent of this Eddings soil is in pasture or crops. The remainder is in woodland or engineering uses. This soil is suited to crops, hay, pasture, and woodland. It is suited to most engineering uses.

This soil is suited to row crops and small grains. Major management problems are low nutrient-holding capacity, soil blowing, and droughtiness. Close-growing crops or windstrips planted at right angles to the prevailing wind direction will help reduce wind erosion and protect young plants. Fertilizers are more efficient on this soil when applied at intervals rather than in single applications. Good management practices such as minimum tillage and use of cover crops increase water infiltration and nutrient-holding capacity. They also decrease soil blowing.

This soil is suited to pasture and hay. It is also an effective way of controlling soil blowing on this droughty soil. Bermudagrass and bahiagrass grow well if properly fertilized and managed for pasture and hay.

This soil is suited to woodland. Moderate equipment limitations and moderate seedling survival rates are hazards when planting and harvesting trees. Planting seedlings in a furrow improves the seedling survival rate by increasing the available water and reducing the plant competition. Slash pine, loblolly pine, and longleaf pine are suitable to plant.

This soil is suited to most engineering uses. It has moderate limitations for septic tank absorption fields and slight limitations for dwellings and local roads and streets. The moderate limitations for septic tank absorption fields can be reduced by increasing the size of the filter field. The thick, sandy surface layer is a moderate limitation for camp and picnic areas and a severe limitation for playgrounds, paths, and trails.

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

35—Wadmalaw Variant loamy sand. This poorly drained soil with pebbles and cobbles of ironstone is on broad and nearly level areas. Mapped areas are irregular in shape and range from 10 to 135 acres in size.

Typically, the surface layer is a brownish loamy sand about 9 inches thick. The subsoil is grayish brown sandy loam to a depth of 31 inches, grayish brown and gray cobbly sandy clay loam and cobbly sandy clay to a depth of 42 inches, and gray sandy clay loam to a depth of 80 inches.

This soil is low in natural fertility and organic matter content, and the available water capacity is moderate. Reaction ranges from very strongly acid to slightly acid in the surface layer and strongly acid to neutral in the subsoil. Permeability is moderately slow. The water table is between a foot above and a foot below the surface about 5 months of most years.

Included with this soil in mapping at the higher elevations are a few small areas of moderately well drained soils that have a sandy surface layer about 30 inches deep. These inclusions make up about 10 percent of the unit.

About 90 percent of this Wadmalaw Variant soil is in woodland. The remainder is in cropland, pasture, and engineering uses. It is well suited to cropland, hay, pasture, and woodland. It is poorly suited to most engineering uses.

This soil is well suited to row crops and small grains. Major problems are the seasonal high water table and ironstone cobbles. Drainage can be provided by open ditches, tile drains, or a combination of these. Winter cover crops and returning crop residue to the soil will

help maintain the organic matter content, improve tilth, and increase yields.

This soil is well suited to pasture. The seasonal high water table is the major problem, and this can be reduced by open ditches or shallow surface drains. Grasses that thrive well on moist soils, such as bahiagrass, are commonly used. Proper stocking, pasture rotations, timely deferment of grazing, and restricted use during wet periods help to keep the pasture and soil in good condition.

This soil is well suited to woodland. It is well suited to loblolly pine, sweetgum, and water tupelo. Seedlings survive and grow well where competing vegetation is controlled or removed. This can be done by site preparation, burning, spraying, cutting, or girdling. There are moderate equipment and seedling mortality rates to contend with when planting or harvesting trees. Loblolly pine, slash pine, water tupelo, and sweetgum are suitable to plant.

This soil is suited to most engineering uses. Wetness is a severe limitation for septic tank absorption fields, dwellings, local roads and streets, and most recreational uses. Dwellings and local roads and streets are limited because this soil is subject to ponding. These limitations can be reduced by adding suitable fill material, surface drainage, shaping the site to remove excess surface water, and increasing the size of the filter field.

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

36—Goldsboro loamy fine sand. This nearly level, moderately well drained soil is on uplands at or near the higher elevations. Mapped areas are 5 to 200 acres.

Typically, the surface layer is grayish brown loamy fine sand about 7 inches thick. The subsurface layer, which extends to a depth of 13 inches, is light yellowish brown loamy fine sand. The subsoil is sandy clay loam. To a depth of 48 inches, it is yellowish brown with gray mottles in the lower part. Below this, it is light gray to a depth of 85 inches.

This soil is low in natural fertility and organic matter content. The available water capacity is moderate. This soil is very strongly acid or strongly acid throughout except in the surface layer where limed. Permeability is moderate. The water table is 2 to 3 feet below the surface during wet seasons.

Included with this soil in mapping are a few narrow areas that have slopes of slightly more than 2 percent and a few small areas of Bonneau, Coxville, Dunbar, Ocilla, and Rains soils. Also included are wet areas shown on the map by wet spot symbols. These inclusions make up about 10 percent of the unit.

About 75 percent of this Goldsboro soils is in crops and pasture. This soil is well suited to cropland, pasture, and woodland. It is suited to most engineering uses.

This soil is well suited to corn, soybeans, small grains, and grasses for hay. At the higher elevations some areas of this soil can be cultivated without special treatment. A large portion of this soil, however, requires some drainage for good yields and easier management. Open ditches, tile drains, or a combination of these can be used to drain this soil. Returning crop residue to the soil improves fertility, increases water infiltration, and increases water-holding capacity.

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

This soil is well suited to trees. Tree seedlings survive and grow well if competing vegetation is controlled or removed. This can be done by site preparation, burning, cutting, or girdling. Because of the wetness, moderate equipment limitations are encountered when harvesting in wet seasons. These can be overcome by harvesting during dry seasons. Loblolly pine, slash pine, yellow-poplar, American sycamore, and sweetgum are among the trees suitable to plant.

This soil has slight limitations for dwellings, roads and streets, and most recreational uses. The high water table is a severe limitation for septic tank absorption fields. This limitation can be reduced by adding suitable fill material and shaping the surface over the absorption field to remove excess surface water.

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

37—Handsboro muck. This nearly level, very poorly drained soil is located in broad marsh areas that are flooded frequently with salt water. It is high in salt and sulfur content and supports a dense cover of marsh grasses. Mapped areas are dissected by tidal streams and are 20 to more than 1,000 acres in size.

Typically, this soil is brown organic material to a depth of 40 inches. The underlying material, to a depth of 80 inches, is dark greenish gray clay.

This soil is high in natural fertility and organic matter content. Available water capacity is very low. This soil is neutral to moderately alkaline in its saturated natural state; after drying it becomes extremely acid. Permeability is moderate in the upper part and very slow in the lower part. The water table is at or above the surface most of the year and frequently floods.

Included with this soil in mapping are a few small areas of Hobcaw, Levy, and Santee soils. These inclusions make up about 20 percent of the unit.

About 90 percent of this Handsboro soil remains in its natural state. It is unsuited to woodland, pasture, cropland, and engineering uses. This soil is best suited to wetland wildlife habitat.

This soil is not suited to row crops because it is flooded twice daily by tidal action.

Figure 2.—Abandoned ricefields on Pungo muck are used primarily for wildlife habitat.

This soil is not suited to pasture development. The native vegetation is mostly needle rush with some seawater bermudagrass, big cordgrass, and marshhay cordgrass. Where managed, these plants furnish some native pasture.

This organic soil is not suited to trees. It is flooded twice daily, frequently with salt water.

This soil is unsuitable for engineering uses because of the flooding. It has severe limitations for recreational uses.

This soil is in capability subclass VIIIw. It has not been assigned a woodland ordination symbol.

38—Pungo muck. This nearly level, very poorly drained soil consists of thick organic material and is frequently bordered by freshwater streams. It supports a dense cover of marsh grasses. Mapped areas are 100 to more than 1,000 acres.

Typically, the surface layer is black muck about 4 inches thick. The next layer, to a depth of 72 inches, is a dark reddish brown muck.

This soil is medium in natural fertility and high in organic matter content. Available water capacity is very high. This soil is extremely acid throughout. Permeability is moderately slow to moderately rapid. Unless this soil is protected, the water table ranges from the surface to a foot below the surface. Pungo soil is rarely flooded. Where drained artifically, it has undergone decomposition and subsidence.

Included with this soil in mapping are small areas of very poorly drained Hobcaw, Levy, and Santee soils. Small areas of Handsboro, Capers, and Bohicket soils are also included. These inclusions make up about 20 percent of the unit.

About 90 percent of this Pungo soil is in freshwater grasses such as giant cutgrass, southern cattail, soft stem bullrush, needle rush, and alligatorweed. A few areas support sparse stands of young baldcypress and maple and a thick undergrowth of briars and vines. Many of these areas were used for rice prior to the twentieth century (fig. 2). This soil is poorly suited to cropland, pasture, engineering uses, and woodland. It is best suited to wetland wildlife habitat.

This soil is poorly suited to row crops. The high water table and flooding are limitations that are difficult to overcome.

This soil is poorly suited to pasture. The high water table and flooding are limitations that are difficult to overcome.

This organic soil is poorly suited to trees. It has a freshwater water table at the surface or above it most of the year, and it is difficult to manage.

This soil is poorly suited to engineering uses and has severe limitations for recreational development. It is used mainly for wildlife habitat (fig. 3).

This soil is in capability subclass VIIw. The woodland ordination symbol is 5w.

40—Leon sand. This poorly drained, nearly level soil is on lower flat to concave areas adjacent to the very poorly drained streams. Mapped areas range from 5 to more than 100 acres.

Typically, the surface layer is black sand 6 inches deep. The subsurface layer, which extends to a depth of 19 inches, is light brownish gray sand. Below this, to a depth of 58 inches, there are alternate layers of dark reddish brown and dark grayish brown sand. The underlying material, to a depth of 72 inches, is brown sand.

This soil is low in natural fertility and content of organic matter and very low in available water capacity. It is extremely acid to strongly acid except in the surface layer where limed. Permeability is rapid in the surface and subsurface layers and moderate to moderately rapid in the subsoil. The water table is less than a foot below the surface for 1 to 4 months during periods of high rainfall and recedes to a depth of more than 40 inches during very dry seasons.

Included with this soil in mapping are a few small areas of Chipley, Echaw, Lynn Haven, Osier, and Seagate soils. These inclusions make up about 20 percent of the unit.

About 90 percent of this Leon soil is woodland, the remainder is in crops and pasture. This soil is suited to cropland, woodland, and pasture and poorly suited to most engineering uses.

This soil is suited to row crops, small grains, and some truck crops. The low nutrient-holding capacity and the seasonal high water table are the major management problems. Fertilizers are more efficient if applied at intervals rather than in single applications. Open ditches, tile drains, or a combination of these can be used to drain this soil. Filters aid in keeping fine sand from entering tile drains. Water-control structures will help maintain the water table at a desired level during the growing season. The use of winter cover crops will help prevent soil blowing and will also add organic matter to the soil.

This soil is suited to pasture and hay. Obtaining adequate drainage during wet seasons is a major

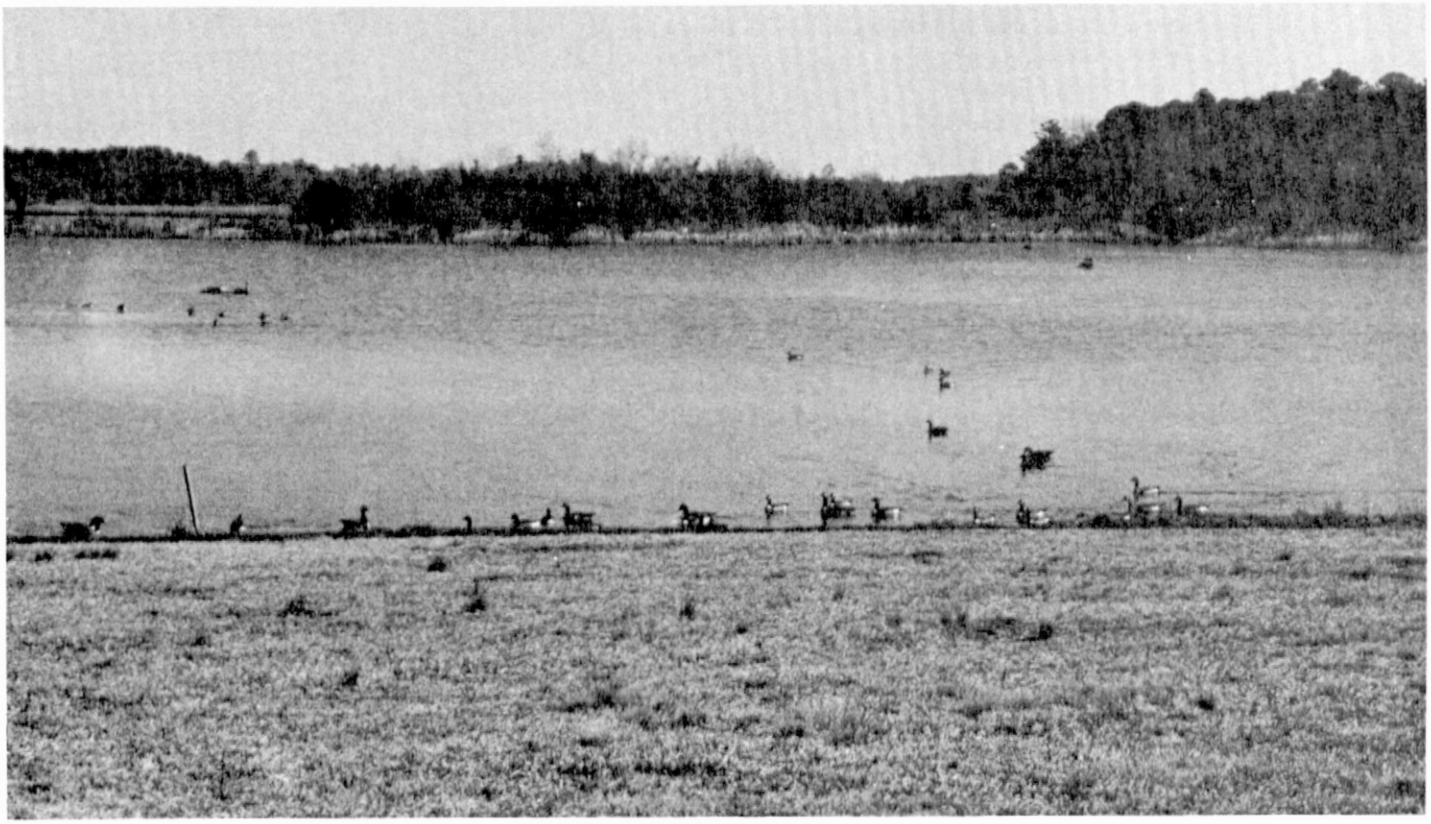


Figure 3.—Pond constructed on Pungo muck.

management problem. Grasses adapted to a wide range of moisture conditions are best suited to this soil. Frequent applications of fertilizers are needed for satisfactory yields. Proper stocking, pasture rotation, timely deferment of grazing, and restricted use during wet periods help to keep the pasture and soil in good condition.

This soil is suited to trees. Most wooded areas are dominantly in pines. There are severe limitations for equipment use and seedling survival on this soil unless there is a system for the removal of excess surface water. Removing competing vegetation will aid seedlings to survive and grow well. This can be done by site preparation, burning, spraying, cutting, or girdling. Slash pine and loblolly pine are among the trees suitable to plant.

This soil is poorly suited to most engineering uses. The high water table is a severe limitation for septic tank absorption fields, dwellings, and local roads and streets. In some areas this limitation can be reduced by properly designed and carefully installed drainage systems. But because the soils are low, locating suitable drainage outlets is often difficult. The limitation for septic tank absorption fields can be reduced by adding suitable fill material.

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

41—Lynchburg loamy fine sand. This nearly level, somewhat poorly drained soil is on low or slightly depressed upland flats. Mapped areas are irregular in shape and range from 5 to 100 acres.

Typically, the surface layer is dark gray loamy fine sand about 6 inches thick. The subsurface layer, which extends to a depth of 10 inches, is yellowish brown loamy fine sand. The subsoil, to a depth of 84 inches, is mottled yellowish brown sandy clay loam in the upper part and mottled gray sandy clay loam in the lower part.

This soil is low in natural fertility and organic matter content. The available water capacity is moderate. It is extremely acid to strongly acid throughout except in the surface and subsurface layers where limed. Permeability is moderate. The water table is 0.5 foot to 1.5 feet below the surface during wet seasons.

Included with this soil in mapping are small areas of Coxville, Ocilla, Pelham, and Seagate soils. Also included are a few wet areas shown on the map by wet spot symbols. These inclusions make up about 20 percent of the unit.

About 60 percent of this Lynchburg soil is woodland. This soil is well suited to cropland, pasture, and woodland. It is poorly suited to most engineering uses.

This soil is well suited to corn, soybeans, small grains, and grasses for hay. The major management problem is the seasonal high water table. When this soil is used for crops, drainage is needed for consistently satisfactory yields. Open ditches, tile drains, or a combination of these can be used to drain this soil. Returning crop residue to the soil improves fertility, reduces crusting, and increases water infiltration.

This soil is well suited to pasture. Most areas, particularly those used for winter grazing, require some drainage for good pasture management. Overgrazing or grazing when the soil is too wet will cause surface compaction and poor tilth. Proper stocking, pasture rotation, timely deferment of grazing, and restricted use during wet periods help to keep the pasture and soil in good condition.

This soil is well suited to trees. Tree seedlings survive and grow well if competing vegetation is controlled or removed. This can be done by site preparation, burning, cutting, or girdling. Because of the wetness, moderate equipment limitations are encountered during harvesting in wet seasons. These can be overcome by harvesting during dry seasons. Slash pine, loblolly pine, American sycamore, and sweetgum are among the trees suitable to plant.

This soil is poorly suited to most engineering uses. The high water table is a severe limitation for septic tank absorption fields and dwellings. The limitation for absorption fields can be reduced by adding suitable fill material. This soil has moderate limitations for roads and streets. These can be reduced by lowering the water table with tile drains, open ditches, or a combination of these. Wetness is a limitation to the use of this soil for recreational development.

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

42—Lynn Haven fine sand. This poorly drained, nearly level soil is in slight depressions adjacent to streams. Most areas are somewhat elongated and range from 20 to more than 100 acres.

Typically, the surface layer is black fine sand about 9 inches thick. The subsurface layer, which extends to a depth of 18 inches, is gray fine sand. The subsoil, which extends to a depth of 50 inches, is very dark brown or black fine sand. The underlying material, to a depth of 70 inches, is dark reddish brown fine sand.

This soil is moderate in natural fertility and organic matter content. Available water capacity is low. It is extremely acid to strongly acid throughout except in the surface layer in limed areas. Permeability is moderate or moderately rapid. The water table is within a foot of the surface for periods of 2 to 6 months in the wet seasons. During extended dry periods it is below a depth of 40 inches.

Included with this soil in mapping are a few areas of Osier, Pickney, and Paxville soils and a few areas with sandy loam at depths below 50 inches. These inclusions make up about 15 percent of the unit, but individual areas are generally less than 3 acres.

About 90 percent of this Lynn Haven soil is woodland. The remainder is in crops or pasture. This soil is suited

to cropland, pasture, and woodland. It is poorly suited to engineering uses.

When properly managed, this soil is suited to row crops. Major management problems are the seasonal high water table and low nutrient- and water-holding capacity. Drainage can be provided by open ditches, tile drains, or a combination of these. When tile drains are used a filter will help prevent sand from entering the tile lines. Frequent applications of fertilizer and limestone are needed for good crop production. Water-control structures will help maintain desired water levels and prevent bank sluffing and caving in open ditches.

This soil is suited to pasture. It is well suited to bermudagrass and suited to bahiagrass. Drainage will insure more consistent yields. Shallow surface drains are commonly used. Proper stocking, pasture rotation, timely deferment of grazing, and restricted use during wet seasons help to keep the pasture and soil in good condition.

This soil is suited to woodland. Equipment limitations and seedling survival rates are severe management problems on this soil unless there is a system to remove excess surface water. Removing competing vegetation will aid seedlings to survive and grow well. This can be done by site preparation, burning, spraying, cutting, or girdling. Slash pine and loblolly pine are among the trees suitable to plant.

This soil is poorly suited to most engineering uses. The high water table is a severe limitation for septic tank absorption fields, dwellings, and local roads and streets. In some areas, the water table can be lowered by properly designed and carefully installed drainage. Obtaining suitable drainage outlets is often difficult, however, because this soil is generally low. The limitation for septic tank absorption fields can be reduced by adding suitable fill material.

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

43A—Nemours fine sandy loam, 0 to 2 percent slopes. This nearly level, moderately well drained soil is on uplands of the lower part of the Coastal Plain. Mapped areas are irregular in shape and range from 5 to 200 acres in size.

Typically, the surface layer is dark grayish brown fine sandy loam about 9 inches thick. The subsoil is mottled red clay to a depth of 32 inches, and below this it is gray clay to a depth of 60 inches.

This soil is low in natural fertility, low in content of organic matter, and moderate in available water capacity. It is very strongly acid to slightly acid in the surface and subsurface layers and extremely acid to strongly acid below that. Permeability is slow. The seasonal high water table is 1.5 to 2.5 feet below the surface.

Included with this soil in mapping are a few small areas of soils that have a surface horizon slightly thicker than 20 inches, a few narrow areas next to drainageways of soils with slopes of more than 2 percent, and a few intermingled areas of Wahee, Bladen, and Yauhannah soils. These inclusions make up about 15 percent of the unit.

About 75 percent of this Nemours soil is woodland. It is well suited to cropland, hay, pasture, and suited to wildlife and most engineering uses.

This soil is well suited to corn, soybeans, and small grains. Major management problems are the seasonal high water table and the slow permeability of the subsoil. Drainage can be provided by shallow open ditches that remove excess surface water. Returning crop residue to the soil improves fertility, reduces crusting, and increases water infiltration.

This soil is well suited to bermudagrass and bahiagrass for pasture and hay. Some areas may require shallow surface drains for good pasture management. Proper stocking, pasture rotation, deferment of grazing, and restricted use during wet periods help to keep the pasture and soil in good condition.

This soil is suited to woodland. Control or removal of competing vegetation is required for young plants to survive and grow well. This can be done by site preparation, burning, spraying, cutting, or girdling. Equipment limitations are moderate and seedling mortality is slight. Loblolly pine and slash pine are suitable to plant.

This soil is suited to most engineering uses. The slow permeability and seasonal high water table are severe limitations for septic tank absorption fields. These can be reduced by adding suitable fill material and by increasing the size of the absorption field. Wetness is a moderate limitation for dwellings and for roads and streets. This can be reduced by using open ditches and shallow surface drains.

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

43B—Nemours fine sandy loam, 2 to 6 percent slopes. This gently sloping soil is on broad ridges and on some narrow slopes along streams and drainageways. Mapped areas are 5 to 100 acres.

Typically, the surface layer is dark grayish brown fine sandy loam about 9 inches thick. The subsoil is mottled red clay to a depth of 32 inches, and below this it is gray clay to a depth of 60 inches.

This soil is low in natural fertility and organic matter content. Available water capacity is moderate. This soil is extremely acid to strongly acid throughout except in the surface and subsurface layers in limed areas. Permeability is slow. The water table is 1.5 to 2.5 feet below the surface for 2 to 4 months most years.

Included with this soil in mapping are a few small areas of well and moderately well drained soils with a surface layer slightly thicker than 20 inches, a few small eroded areas with a surface layer of sandy clay loam, and small wet areas shown on the map by wet spot

symbols. Also intermingled are a few small areas of Yauhannah, Yemassee, and Wahee soils. These inclusions make up about 15 percent of the unit.

About 60 percent of this Nemours soil is woodland. The remainder is in crops and pasture. This soil is suited to cropland, woodland, pasture, and most engineering uses.

This soil is suited to corn, soybeans, small grains, and grassed for hay and pasture. Management problems are the slow permeability of the subsoil and the control of erosion. Minimum tillage, contour tillage, terraces, and grassed waterways will reduce erosion. Returning crop residue to the soil improves fertility, reduces crusting, increases the water infiltration, reduces runoff, and controls erosion.

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

This soil is suited to woodland. Control of competing vegetation is needed for seedling survival. This can be done by site preparation, burning, spraying, cutting, or girdling. Loblolly pine and slash pine are suitable to plant.

This soil is suited to most engineering uses. It has severe limitations for septic tank absorption fields and moderate limitations for dwellings, local roads and streets, and recreational uses. The slow subsoil permeability is a severe limitation for septic tank absorption fields and moderate limitation for dwellings, local roads and streets, and recreational uses. These limitations can be reduced by adding suitable fill material, removing surface water, and increasing the size of the filter field.

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

44A—Norfolk loamy fine sand, 0 to 2 percent slopes. This nearly level, well drained soil is on broad upland ridges and flats. Mapped areas are 5 to 200 acres.

Typically, the surface layer is grayish brown loamy fine sand about 9 inches thick. The subsurface layer, which extends to a depth of 17 inches, is very pale brown loamy fine sand. The subsoil is strong brown sandy clay loam to a depth of 44 inches. Below this, it is strong brown sandy clay loam with yellow and gray mottles to a depth of 85 inches.

This soil is low in natural fertility and low in organic matter content. Available water capacity is moderate. This soil is very strongly acid or strongly acid except in the surface and subsurface layers where limed. Permeability is moderate. The seasonal high water table is 4.0 to 6.0 feet below the surface.

Included with this soil in mapping are small areas of Bonneau, Goldsboro, Lynchburg, and Ocilla soils. Also included are small wet depressions shown on the map by wet spot symbols and small areas with more than 2 percent slopes. A few small areas that have a layer that is more than 5 percent plinthite are also included, primarily in the vicinity of Smoaks. These inclusions are less than 15 percent of the map unit.

About 65 percent of this Norfolk soil is used for crop and pasture. Most of the remainder is woodland. This soil is well suited to cropland, pasture, woodland, and most engineering uses.

This soil is well suited to corn, soybeans, tobacco, and small grains. Returning crop residue to the soil helps to maintain good tilth and organic matter content.

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

This soil is well suited to trees. There are no significant equipment or management limitations. Loblolly pine and slash pine are among the trees suitable to plant.

This soil is suited to most engineering uses. The seasonal high water table is a moderate limitation for septic tank absorption fields. This limitation can be reduced by increasing the size of the field. This soil has slight limitations for dwellings and local roads and streets.

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

44B—Norfolk loamy fine sand, 2 to 6 percent slopes. This well drained soil is on gently sloping upland ridges and along breaks to streams and drainageways. Mapped areas are 5 to 20 acres in size.

Typically, the surface layer is grayish brown loamy fine sand about 9 inches thick. The subsurface layer, which extends to a depth of 17 inches, is very pale brown loamy fine sand. The subsoil is strong brown sandy clay loam to a depth of 44 inches. Below this, it is strong brown sandy clay loam with yellow and gray mottles to a depth of 85 inches.

This soil is low in natural fertility and low in organic matter content. Available water capacity is moderate. This soil is very strongly acid or strongly acid except in the surface and subsurface layers where limed. Permeability is moderate. The seasonal high water table is 4.0 to 6.0 feet below the surface.

Included with this soil in mapping are small narrow areas of soils with slopes greater than 6 percent; areas of Bonneau, Goldsboro, and Nemours soils; and areas of soils with solum thickness of less than 60 inches. These inclusions are less than 15 percent of the unit.

About 70 percent of this Norfolk soil is woodland. This soil is well suited to cropland, hay, pasture, and woodland. It is suited to most engineering uses.

This soil is well suited to corn, soybeans, small grains, and grasses for hay. Erosion is a moderate hazard on this soil. Contour stripcropping, minimum tillage, and grassed waterways can help to control erosion. Crop residue kept on or near the surface increases water infiltration, reduces crusting, improves fertility, and reduces erosion.

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

This soil is well suited to woodland. There are no significant limitations for woodland use or management. Loblolly pine and slash pine are the recommended trees to plant.

This soil is suited to most engineering uses. The seasonal high water table is a moderate limitation for septic tank absorption fields. This limitation can be reduced by increasing the size of the field. This soil has slight limitations for dwellings and for local roads and streets.

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

45—Ocilla loamy sand. This nearly level, somewhat poorly drained soil is on broad interstream divides and side slopes. Mapped areas are 5 to 100 acres.

Typically, the surface layer is dark gray loamy sand about 9 inches thick. The subsurface layer, which extends to a depth of 25 inches, is brown loamy sand. The subsoil is mottled brownish and yellowish sandy loam to a depth of 68 inches. Below this, it is light gray sandy loam to a depth of 85 inches.

This soil is low in natural fertility and low in organic matter content. Available water capacity is low. This soil is very strongly acid or strongly acid throughout except in the surface layer in limed areas. Permeability is moderate. The water table is 1.0 foot to 2.5 feet below the surface during winter and early in spring.

Included with this soil in mapping are areas of soils with accumulations of iron and organic material, areas of soils with surface layers more than 40 inches thick, and small areas of Lynchburg and Seagate soils. These inclusions make up about 15 percent of the unit.

About 60 percent of this Ocilla soil is used for crops and pasture. The remainder is in woodland and engineering uses. This soil is suited to cropland, pasture, woodland, and most engineering uses.

This soil is suited to corn and soybeans. The low nutrient-holding capacity and the seasonal high water table are major management concerns. If this soil is used for cultivated crops, it is necessary to lower the water table through the use of tile drains, open ditches, or a combination of both. Fertilizers are more effective if applied at intervals rather than in single applications. Water-control structures in ditches will help to maintain the water table at desired levels. Returning the crop residue to the soil improves fertility, improves tilth, and increases the water infiltration rate.

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

This soil is suited to woodland. Moderate seedling survival rates and equipment limitations are hazards when planting or harvesting trees. Removal of excess surface water will reduce these limitations. Loblolly pine and slash pine are suitable to plant.

This soil is suited to most engineering uses, but the wetness is a severe limitation for septic tank absorption fields. This limitation can be reduced by increasing the size of the filter field and adding suitable fill material. The sandy surface and high water table are moderate limitations for building sites and recreational development. These limitations can be reduced with open ditches, tile drains, or a combination of these.

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

46—Ogeechee loamy fine sand. This nearly level, poorly drained soil is on lower concave to flat areas. Mapped areas are irregular in shape and 5 to 200 acres in size.

Typically, the surface layer is very dark gray loamy fine sand about 6 inches thick. The subsurface layer, which extends to a depth of 16 inches, is gray loamy fine sand. The subsoil is mottled gray sandy clay loam to a depth of 58 inches and sandy loam below that.

This soil is low in natural fertility and organic matter content. The available water capacity is moderate. Reaction is very strongly acid or strongly acid. Permeability is moderate. The water table is within 6 inches of the surface up to 6 months each year.

Included with this soil in mapping are small areas of Coosaw, Hobcaw, and Williman soils. These inclusions make up about 15 percent of the unit.

About 70 percent of this Ogeechee soil is woodland. This soil is well suited to cropland, hay, pasture, and woodland. It is poorly suited to engineering uses.

This soil is well suited to corn and soybeans. The seasonal high water table is the major management problem. It can be lowered by using open ditches, tile drains, or a combination of the two. Returning crop residue to the soil improves fertility, reduces crusting, and increases water infiltration.

This soil is well suited to pasture grasses. Where drained this soil is well suited to bermudagrass and bahiagrass. Drainage can be provided by using shallow surface drains. Proper stocking, pasture rotation, deferment of grazing, and restricted use during wet seasons help keep the pasture and soil in good condition.

This soil is well suited to woodland. There is a severe equipment limitation and moderate seedling survival rate. Removal of excess surface water and removal of competing vegetation by site preparation, burning, spraying, cutting, or girdling will help to overcome these limitations. Loblolly pine and slash pine are suitable to plant.

This soil is poorly suited to engineering uses. It has severe limitations for septic tank absorption fields, dwellings, and local roads and streets. These limitations can be reduced by adding suitable fill material, increasing the size of the field, and removing excess surface water. The wetness is a severe limitation for recreational uses.

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

47—Okeetee fine sandy loam. This nearly level, somewhat poorly drained soil is on convex ridgetops and knolls. Mapped areas are irregular in shape and range from 20 to 125 acres.

Typically, the surface layer is dark gray fine sandy loam about 5 inches thick. The subsurface layer, which extends to a depth of 8 inches, is grayish fine sandy loam. The subsoil is brown clay loam to a depth of 12 inches, and below this it is grayish clay to a depth of 48 inches. The underlying material, to a depth of 75 inches, is grayish sandy clay loam.

This soil is low in natural fertility and organic matter. Available water capacity is moderate. Reaction ranges from very strongly acid to mildly alkaline. Permeability is slow. The water table is within 0.5 to 1.0 foot of the surface for 4 to 6 months most years.

Included with this soil in mapping are small areas of Argent and Santee soils. These inclusions make up about 10 percent of the unit.

About 90 percent of this Okeetee soil is woodland, and the remainder is in crops and pasture. This soil is well suited to woodland, cropland, hay, and pasture. It is poorly suited to most engineering uses.

This soil is well suited to corn and soybeans. The major management problems are the seasonal high water table and the slow permeability of the subsoil. Drainage can be provided by open ditches. The returning of crop residue to the soil improves fertility, improves tilth, and increases water infiltration.

This soil is well suited to pasture and hay grasses such as bermudagrass and bahiagrass. Surface drains will help lower the water table. Restricted grazing during wet times, pasture rotation, and deferment of grazing help keep the pasture and soil in good condition.

This soil is well suited to woodland. There are no major hazards. Competing vegetation can be controlled and removed by site preparation, burning, spraying, cutting, or girdling. This increases the rate of seedling survival. Moderate equipment limitations and moderate seedling mortality are hazards to be concerned with when planting or harvesting trees. This soil is well suited to loblolly pine, slash pine, and sweetgum.

This soil is poorly suited to most engineering uses. Wetness is a severe limitation for septic tank absorption fields, dwellings, and local roads and streets and a moderate limitation for most recreational uses. These limitations can be reduced by using open ditches and shallow surface drains, increasing the size of the absorption area, and adding suitable fill material.

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

49—Osier loamy sand. This poorly drained, nearly level soil is in low depressional areas. Most areas are adjacent to streams and are somewhat elongated. Mapped areas range from 10 acres to more than 100 acres.

Typically, the surface layer is very dark gray loamy sand about 6 inches thick. The underlying material, to a depth of 75 inches, is light grayish brown and white sand.

This soil is low in natural fertility and organic matter content. The available water capacity is very low. It is very strongly acid to medium acid throughout. Permeability is rapid. The water table is within a foot above or below the surface during wet seasons.

Included with this soil in mapping are small areas of soils composed of mixed materials and a few areas where a loamy subsoil is at a depth of 40 to 60 inches. These inclusions make up about 15 percent of the unit.

About 90 percent of this Osier soil is woodland. The remainder is in crops or pasture. This soil is suited to cropland, pasture, and woodland uses. It is poorly suited to most engineering uses.

When properly managed, this soil is suited to row crops and small grains. Wetness and ponding for brief periods are hazards if crops are grown, but fair yields can be obtained if this soil is drained and protected from ponding. Open ditches, tile drains, or a combination of these can be used to remove excess water. Ditches are difficult to maintain because of the side banks sluffing and caving. Filters can help prevent sand from clogging the tile drain lines. Returning crop residue to the soil will improve the nutrient-holding capacity. Fertilizers are more effective if applied at intervals rather than in single applications.

This soil is suited to pasture when it is drained and protected from ponding. Major hazards are wetness, ponding, and low nutrient-holding capacity. Shallow surface drains will help to overcome the wetness limitation.

This soil is suited to woodland. The high water table and sandy textures are severe limitations to equipment use and seedling survival. Removal of the excess surface water and control of the competing vegetation by site preparation, burning, cutting, spraying, or girdling will help to reduce these limitations.

This soil is poorly suited to engineering uses. The high water table and ponding are severe limitations for septic tank absorption fields, dwellings, and recreational uses. The difficulty and expense of reducing these limitations generally prohibit the development of this soil for engineering uses.

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

50—Paxville fine sandy loam. This very poorly drained, nearly level soil is in low depressional areas along the drainageways. Mapped areas are 10 to 100 acres.

Typically, the surface layer is black fine sandy loam about 13 inches thick. The subsurface layer, which extends to a depth of 18 inches, is very dark gray fine sandy loam. The subsoil is dark gray sandy clay loam to a depth of 60 inches, and below that it is gray sandy loam to a depth of 85 inches.

This soil is low in natural fertility and medium in organic matter content. Available water capacity is moderate. This soil is very strongly acid or strongly acid throughout except in the surface and subsurface layers where limed. Permeabilty is moderate. The water table is either near the surface or this soil is ponded for 4 to 6 months most years.

Included with this soil in mapping are small areas of Coxville, Pelham, Pickney, and Rains soils. These inclusions are about 15 percent of the unit.

About 90 percent of this Paxville soil is woodland. The remainder is in crops or pasture. This soil is well suited to cropland, pasture, and woodland. It is poorly suited to engineering uses.

This soil is well suited to corn, soybeans, and small grains. When it is cultivated, major management problems are the seasonal high water table and the ponding. Drainage can be provided by open ditches, tile drains, or a combination of these. Crop residue returned to the soil and winter cover crops will help maintain the organic matter content, improve tilth, and increase water infiltration.

This soil is well suited to pasture. Surface drainage can be provided by shallow surface drains and open ditches. Grasses that thrive well on moist soils, such as bahiagrass, are commonly used. Proper stocking, pasture rotations, timely deferment of grazing, and restricted use during wet periods help to keep the pasture and soil in good condition.

This soil is well suited to woodland. Control of competing vegetation is required for young plants. This can be done by site preparation, burning, spraying, cutting, or girdling. Removal of excess surface water reduces equipment hazards, improves seedling survival rates, and improves the tree root environment. Loblolly pine, slash pine, American sycamore, water tupelo, and sweetgum are among the trees suitable to plant.

This soil is poorly suited to most engineering uses. It has severe limitations for septic tank absorption fields, dwellings, roads and streets, and recreational uses. Because of the unavailability of suitable drainage outlets, the cost of water-control measures to lower the high water table and reduce these limitations to satisfactory levels is generally prohibitive.

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

51—Pelham loamy sand. This nearly level, poorly drained soil is in low areas, in shallow depressions, and along drainageways. Mapped areas are 10 to more than 100 acres in size.

Typically, the surface layer is very dark gray loamy sand about 6 inches thick. The subsurface layer, which extends to a depth of 30 inches, is brown or gray fine sand. The subsoil, which extends to a depth of 85 inches, is mottled grayish brown and gray sandy clay loam.

This soil is low in natural fertility and low in organic matter content. Available water capacity is low. This soil is very strongly acid or strongly acid except for the surface layer where limed. Permeabilty is moderate. The water table is within 0.5 foot to 1.5 feet of the surface during winter and early spring.

Included with this soil in mapping are a few areas of Echaw, Albany, Paxville, and Rains soils. These inclusions make up about 15 percent of the unit.

About 70 percent of this Pelham soil is woodland. The remainder is in cropland, pasture, or engineering uses. This soil is suited to cropland, pasture, and woodland. It is poorly suited to most engineering uses.

This soil is suited to row crops and small grains. Major management problems are the seasonal high water table and low nutrient-holding capacity. Drainage can be provided by open ditches, tile drains, or a combination of these. When tile drains are used a filter will prevent sand from entering the tile lines. Water-control structures in open ditches will help maintain desired water levels during dry seasons. Because of the rapid leaching of nutrients from this soil frequent applications of fertilizer and limestone are needed for good plant growth. Maintaining crop residue on or near the surface reduces soil blowing, helps to maintain soil tilth and organic matter content, and improves yields.

This soil is suited to pasture and hay. Shallow surface drains will aid in removing excess surface water. The use of this soil for pasture or hay is also effective in controlling soil blowing. Proper stocking, pasture rotation, deferment of grazing, and restricted use during wet periods help to keep the pasture and soil in good condition.

This soil is suited to woodland. The major hazard is excess surface water. Where competing vegetation is controlled or removed, seedlings survive and grow well. This can be done by site preparation, burning, spraying,

cutting, or girdling. There are moderate equipment limitations and seedling survival rates when planting or harvesting trees. Loblolly pine and slash pine are suitable to plant.

This soil is poorly suited to most engineering uses. Wetness is a severe limitation for septic tank absorption fields, dwellings, local roads and streets, and most recreational uses. Shaping the area and adding fill material can be used to decrease the limitation for the septic tank absorption fields. The limitation for dwellings, local roads and streets, and most recreational uses can be reduced with open ditches, tile drains, or a combination of these.

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

52—Pickney loamy sand. This nearly level, very poorly drained soil is in depressions and drainageways. Mapped areas are elongated and range from about 10 to more than 100 acres.

Typically, the surface layer is black loamy sand about 31 inches thick. The underlying material, to a depth of 82 inches, is light gray or light brownish gray sand.

This soil is low in natural fertility. The organic matter content is medium. The available water capacity is low. This soil is extremely acid to strongly acid in the surface layer and very strongly acid to medium acid in the underlying layer. Permeability is rapid. The water table is from a foot above to a foot below the surface during wet seasons.

Included with this soil in mapping are small areas that have thin layers of sandy loam between depths of 40 and 80 inches. Also included are small areas of Lynn Haven, Paxville, Pelham, and Plummer soils. These inclusions make up about 20 percent of the unit.

About 90 percent of this Pickney soil is woodland. The remainder is in crops and pasture. This soil is poorly suited to cropland, pasture, and most engineering uses. It is well suited to woodland.

This soil is poorly suited to most locally grown crops because of the seasonal high water table and the low nutrient-holding capacity. If it is used for cultivated crops, intensive water-control measures are needed. Open ditches, tile drains, or a combination of these can be used to drain this soil. Open ditches are difficult to maintain because of the side banks caving. Because this soil leaches rapidly, fertilizers are more effective if applied at frequent intervals rather than once yearly. Returning crop residue to the soil increases the nutrient-holding capacity, the fertility, and the water infiltration rates.

This soil is poorly suited to pasture. Because of the seasonal high water table this soil requires intensive water-control measures for good pasture management. Open ditches and shallow surface drains can be used to drain this soil. Because of the sandy texture, plant nutrients leach rapidly and frequent applications of fertilizer are desirable. Proper stocking, pasture rotation, timely deferment of grazing, and restricted use during wet periods help to keep the pasture and soil in good condition.

This soil is suited to woodland. Because this soil is in depressions and along drainageways it normally has adequate water for good tree growth. Removal of excess surface water and control of competing vegetation is essential for seedlings to survive and grow. Severe equipment limitations and low seedling survival rates are problems of management when planting or harvesting trees. Loblolly pine, baldcypress, water tupelo, sweetgum, and yellow-poplar are among the trees suitable to plant.

This soil is poorly suited to most engineering uses. Wetness is a severe limitation for septic tank absorption fields, dwellings, and local roads and streets. This soil also has severe limitations for most recreational uses. The limitation for septic tank absorption fields can be reduced by adding suitable fill material, increasing the size of the filter field, and shaping the field area. Open ditches, tile drains with filters, or a combination of these can be used to lower the water table and improve the suitability of this soil for dwellings and for roads and streets. Because this soil is in drainageways or at the lowest elevations, adequate drainage is difficult and expensive.

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

53—Plummer loamy sand. This nearly level, poorly drained soil is along drainageways. Mapped areas are elongated and are 10 to more than 100 acres in size.

Typically, the surface layer is very dark gray loamy sand about 7 inches thick. The subsurface, which extends to a depth of 57 inches, is grayish loamy sand. The subsoil, to a depth of 85 inches, is gray sandy clay loam in the upper part and dark gray sandy loam in the lower part.

This soil is low in natural fertility, and the organic matter content is low. Available water capacity is low. This soil is extremely acid to strongly acid throughout. Permeability is moderately rapid in the sandy surface horizon and moderate in the subsoil. The water table varies from 2 feet above the surface to 1.5 feet below the surface for up to 8 months each year.

Included with this soil in mapping are small areas of poorly drained soils on flood plains, a few areas that have a black surface layer more than 10 inches thick, a few areas that have a very pale brown subsurface layer, and some areas where the subsoil is at a depth of less than 40 inches. These inclusions are less than 15 percent of the unit.

About 90 percent of this Plummer soil is woodland. The remainder is in crops or pasture. This soil is suited to cropland, pasture, and woodland. It is poorly suited to most engineering uses.

When properly managed, this soil is suited to row crops and small grains. If it is cultivated, wetness and ponding for brief periods are hazards. Fair yields can be obtained if this soil is drained and protected from ponding. Open ditches, tile drains, or a combination of these can be used to drain this soil. Open ditches are difficult to maintain because of the side banks sluffing and caving. Filters may be needed with tile drains to keep sand from clogging the tile lines. Returning the crop residue to the soil will improve the nutrient-holding capacity. Fertilizers are more efficient if applied at intervals rather than in single applications.

This soil is suited to pasture when it is drained and protected from ponding. Major hazards are wetness, ponding, and low nutrient-holding capacity. Shallow surface drains will help to overcome the wetness limitation. Fertilizers are more effective if applied at intervals rather than in single applications.

This soil is suited to woodland. The high water table and sandy textures are severe limitations to equipment use and seedling survival. Removal of the excess surface water and control of the competing vegetation by site preparation, burning, cutting, spraying, or girdling can help to overcome these limitations.

This soil is poorly suited to engineering uses. The high water table and ponding are severe limitations for septic tank absorption fields, dwellings, and recreational uses. The difficulty and expense of overcoming these limitations generally prohibit the development of this soil for engineering uses.

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

55—Rains sandy loam. This poorly drained, nearly level soil is in broad flat areas, slightly depressional oval bays, and shallow drainageways. Mapped areas are 10 to 200 acres.

Typically, the surface layer is very dark gray sandy loam about 5 inches thick. The subsurface layer, which extends to a depth of 10 inches, is light brownish gray sandy loam. The subsoil, to a depth of 90 inches, is mottled gray sandy clay loam.

This soil is low in natural fertility and organic matter content. The available water capacity is moderate. This soil is very strongly acid or strongly acid throughout except in the surface layer where limed. Permeability is moderate. The water table is at or near the surface during wet seasons.

Included with this soil in mapping are a few small areas of Dunbar, Osier, Paxville, and Plummer soils. These inclusions make up about 20 percent of the unit.

About 70 percent of this Rains soil is woodland. It is well suited to cropland, pasture, and woodland. It is poorly suited to most engineering uses.

This soil is well suited to corn, soybeans, and small grains. The major hazard is the seasonal high water table. If this soil is used for cultivated crops, adequate drainage is necessary for good crop yields. This can be accomplished through the use of open ditches, tile drains, or a combination of these. Water-control structures in open ditches will help maintain desired water levels during dry seasons. Returning crop residue to the soil improves fertility, reduces crusting, and increases the water infiltration rate.

This soil is well suited to pasture. The major hazard is the seasonal high water table. Good pasture management requires sufficient drainage to remove excess surface water and to lower the water table. This can be obtained through the use of shallow surface drains. Proper stocking, pasture rotation, timely deferment of grazing, and restricted use during wet periods help to keep the pasture and soil in good condition.

This soil is well suited to trees, and a few areas remain in native hardwoods. Some water-control measures to remove excess surface water may be required for good woodland management (fig. 4). Seedlings survive and grow well where competing vegetation is controlled or removed. This can be done by site preparation, burning, spraying, cutting, or girdling. Wetness is a severe limitation to equipment use and seedling survival. Among the trees suitable to plant are loblolly pine, slash pine, sweetgum, and American sycamore.

This soil is poorly suited to most engineering uses. The high water table is a severe limitation for septic tank absorption fields, building sites, local roads and streets, and recreational development. These limitations can be reduced by adding suitable fill material, increasing the size of the filter field, shaping the area to remove surface water, and installing drainage systems.

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

57—Santee loam. This nearly level, very poorly drained soil is in low areas along drainageways, in oval bays, and on broad flats. Areas occur in irregular patterns of 25 to 1,200 acres in size.

Typically, the surface is very dark gray loam 9 inches thick. The subsoil is gray clay to a depth of 65 inches, and below this it is gray sandy loam.

This soil is high in natural fertility, and the organic matter content is moderate. Available water capacity is high. This soil is strongly acid to mildly alkaline throughout. Permeability is slow. The water table is from a foot above to a foot below the surface for about 4 months during most years. Flooding is frequent.

Included with this soil in mapping are a few areas of Hobcaw and Williman soils. These inclusions make up about 10 percent of the unit.

About 90 percent of this Santee soil is woodland. The remainder is in cropland, pasture, and engineering uses. This soil is suited to cropland, well suited to pasture and woodland, and poorly suited to most engineering uses.

Figure 4.—Water control on poorly drained Rains sandy loam enhances reforestation and timber management.

This soil is suited to soybeans and small grains. The major management problems are the seasonal high water table and the slow permeability of the subsoil. When this soil is used for cultivated crops, intensive drainage measures are required. Drainage can be provided by open ditches and shallow surface drains. Crop residue returned to the soil and winter cover crops will help maintain organic matter content, improve tilth, increase water infiltration, and improve fertility.

This soil is well suited to pasture grasses that thrive well on moist soils, and many areas are planted to bahiagrass. Surface drainage, which can be provided by shallow surface drains, will increase production. Proper stocking, pasture rotations, timely deferment of grazing, and restricted use during wet periods help to keep the pasture and soil in good condition.

This soil is well suited to trees. Control of competing vegetation is required for young plants. This can be done by site preparation, burning, spraying, cutting, or girdling. Removal of excess surface water reduces equipment hazards, increases seedling survival rates, and improves the tree root environment. Loblolly pine, sweetgum, water tupelo, and American sycamore are among the trees suitable to plant.

This soil is poorly suited to most engineering uses. Wetness and slow permeability are severe limitations for septic tank absorption fields, dwellings, local roads and streets, and recreational uses. These limitations can be reduced by installing drainage systems, shaping the site, diverting surface water, adding suitable fill material, and increasing the size of the filter field.

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

58—Scranton loamy sand. This somewhat poorly drained soil is in broad, nearly level flats and slight depressions. Mapped areas are irregular in shape and range from about 10 to 100 acres in size.

Typically, the surface layer is black loamy sand about 7 inches thick. The underlying material, to a depth of 85 inches, is grayish brown and brownish gray fine sand.

This soil is low in natural fertility and organic matter content. Available water capacity is low. This soil ranges from very strongly acid or strongly acid except in the surface layer where limed. Permeability is rapid. The water table is 0.5 foot to 1.5 feet below the surface for 6 months of most years.

Included with this soil in mapping are a few small areas of Blanton, Echaw, and Chipley soils. These inclusions make up about 15 percent of the unit.

About 95 percent of this Scranton soil is woodland. The remainder is in crops and pasture. This soil is suited to cropland, pasture, and woodland. It is poorly suited to most engineering uses.

This soil is suited to most cultivated crops. Major management problems are the seasonal high water table and low nutrient-holding capacity. Drainage can be provided by open ditches, tile drains, or a combination of these. When tile drains are used a filter is needed to prevent sand from entering the tile lines. Water-control structures in open ditches will help maintain the desired water level during dry seasons. Because of the rapid leaching of this soil, frequent applications of fertilizers and limestone are needed for good plant growth. Maintaining crop residue on or near the surface reduces soil blowing, maintains soil tilth, increases organic matter content, and increases water infiltration.

This soil is suited to pasture and hay. Grasses that thrive on moist soils, such as bahiagrass, are commonly planted. Shallow surface drains are commonly used to remove excess surface water. Proper stocking, pasture rotations, timely deferment of grazing, and restricted use during wet periods help keep the pasture and soil in good condition.

This soil is suited to trees. Control of competing vegetation is required for young plants. This can be done by site preparation, burning, spraying, cutting, or girdling. Equipment limitations are a problem during wet seasons unless there is a system to remove excess surface water. Loblolly pine and slash pine are suitable to plant.

This soil is poorly suited to most engineering uses. The high water table is a severe limitation for septic tank absorption fields. Because of the sandy texture, ground water pollution could also be a problem in densely developed areas or where absorption fields are near drainageways. Wetness is a moderate limitation for dwellings and local roads and streets. The sandy texture is a severe limitation for all recreational uses. The limitations for septic tank absorption fields can be reduced by adding suitable fill material. The other limitations can be reduced by drainage and shaping the surface to remove excess surface water.

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

59—Seagate fine sand. This somewhat poorly drained, nearly level soil is in areas bordering streams and in areas intermediate between ridges and low wet areas. Mapped areas are 5 to 60 acres in size.

Typically, the surface layer is gray fine sand about 14 inches thick. The subsoil is stratified brownish loamy fine sand and gray sandy clay loam to a depth of 85 inches.

This soil is low in natural fertility and in organic matter content and is moderate in available water capacity. It is extremely acid to medium acid. Permeability is rapid in the surface and subsurface layers and moderate in the loamy subsoil. The seasonal water table is 1.5 to 2.5 feet below the surface in wet seasons.

Included with this soil in mapping are small areas of Echaw, Leon, and Ocilla soils. These inclusions make up about 15 percent of the unit.

About 90 percent of this Seagate soil is woodland. This soil is suited to cropland, pasture, and woodland. It is poorly suited to most engineering uses.

This soil is suited to row crops and small grains. Major management problems are the seasonal high water table and low nutrient-holding capacity. Drainage can be provided by open ditches, tile drains, or a combination of these. When tile drains are used a filter is needed to prevent sand from entering the tile lines. Water-control structures can help maintain desired water levels during dry seasons. Because of the rapid leaching of nutrients from this soil, frequent applications of fertilizer and limestone are needed for good plant growth. Maintaining crop residue on or near the surface reduces soil blowing, helps to maintain soil tilth and organic matter content, and improves yields.

This soil is suited to pasture and hay. Shallow surface drains are used to remove excess surface water. The use of this soil for pasture or hay is also effective in controlling soil blowing. Proper stocking, pasture rotation, deferment of grazing, and restricted use during wet periods help to keep the pasture and soil in good condition.

This soil is suited to woodland. The major hazard is excess surface water. Seedlings survive and grow well where competing vegetation is controlled or removed. This can be done by site preparation, burning, spraying, cutting, or girdling. There are moderate equipment limitations and seedling survival rates when planting or harvesting trees. Loblolly pine and slash pine are suitable to plant.

This soil is poorly suited to most engineering uses. Wetness is a limitation for septic tank absorption fields and moderate limitation for dwellings and local roads and streets. These limitations can be reduced by adding suitable fill material, increasing the size of the filter field, shaping the area to remove excess surface water, and installing a drainage system.

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

62—Yauhannah fine sandy loam. This moderately well drained, nearly level soil is in broad, flat to slightly convex areas in the lower part of the county. Mapped areas range from 5 to 100 acres in size.

Typically, the surface layer is dark grayish brown fine sandy loam about 13 inches thick. The subsoil, which extends to a depth of 65 inches, is sandy clay loam. The upper part of the subsoil is mottled brown and yellow, and the lower part is brown and yellow and mottled with gray. The underlying material, to a depth of 98 inches, is mottled grayish fine sandy loam.

This soil is low in natural fertility and organic content. It is moderate in available water capacity. This soil is very strongly acid to medium acid except in the surface layer where limed. Permeability is moderate. The water table is 1.5 to 2.5 feet below the surface during wet seasons.

Included with this soil in mapping are a few small areas of soils that are well drained and also small areas of Nemours, Yemassee, and Coosaw soils. These inclusions make up about 20 percent of the unit.

About 60 percent of this Yauhannah soil is cropland. This soil is well suited to cropland, pasture, woodland, and most engineering uses.

This soil is well suited to corn, cotton, soybeans, small grain, and grasses for hay. At the higher elevations this soil can be cultivated without special treatment. A large portion of this soil requires some drainage for good yields and management. Open ditches, tile drains, or a combination of these can be used to drain this soil. Returning crop residue to the soil improves fertility, increases water infiltration, and increases water-holding capacity.

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

This soil is well suited to trees. Tree seedlings survive and grow well if competing vegetation is controlled or removed. This can be done by site preparation, burning, cutting, or girdling. The wetness is a moderate equipment limitation when harvesting in wet seasons. This limitation can be reduced by harvesting during dry seasons. Loblolly pine, slash pine, yellow-poplar, American sycamore, and sweetgum are among the trees suitable to plant.

This soil has slight limitations for dwellings, roads and streets, and most recreational uses. Because the water table is within 1.5 to 2.5 feet of the surface during wet seasons, it is a severe limitation for septic tank absorption fields. This limitation can be reduced by adding suitable fill material and shaping the surface over the absorption field.

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

64—Wahee fine sandy loam. This nearly level, somewhat poorly drained soil is in broad, flat low areas. Mapped areas are irregular in shape and range from 5 to 200 acres.

Typically, the surface layer is dark gray fine sandy loam about 6 inches thick. The subsurface layer which extends to a depth of 12 inches, is mottled light yellowish brown fine sandy loam. The subsoil, to a depth of 17 inches, is mottled brownish yellow sandy clay loam. Below this, to a depth of 39 inches, it is mottled gray clay, and below this, to a depth of 80 inches, it is mottled pale olive clay loam.

This soil is medium in natural fertility and organic matter content. The available water capacity is high. This soil is strongly acid or very strongly acid except in the surface and subsurface layers where limed. Permeability is slow. The water table is 0.5 foot to 1.5 feet below the surface during wet seasons.

Included with this soil in mapping are a few small areas of Bladen, Cape Fear, Yauhannah, and Yemassee soils. These inclusions make up about 10 percent of the unit.

About 60 percent of this Wahee soil is woodland. The remainder is in cropland, pasture, and engineering uses. This soil is suited to cropland; well suited to pasture and woodland; and poorly suited to most engineering uses.

This soil is suited to corn, soybeans, small grains, and grasses for hay. The major management problems are the seasonal high water table and the slow permeability of the subsoil. When this soil is used for cultivated crops, moderate to intensive drainage measures are required. Because of the slow permeability, open ditches along with shallow surface drains are commonly used to drain the soil. Returning crop residue to the soil improves fertility, reduces crusting, and increases water infiltration.

This soil is well suited to pasture. Grasses that tolerate relative high water tables, such as bahiagrass, are commonly used. Most areas of this soil require some drainage for good pasture management. Because of the slow permeability, open ditches and shallow surface drains are generally used. Proper stocking, pasture rotation, timely deferment of grazing, and restricted use during wet periods help to keep the pasture and soil in good condition.

This soil is well suited to trees, and a few small areas remain in native hardwoods and pine. There are moderate seedling survival rates and equipment limitations when planting or harvesting trees. Control of competing vegetation is required for young plants. This can be done by site preparation, burning, spraying, cutting, or girdling.

This soil is poorly suited to most engineering uses. It has severe limitations for septic tank absorption fields, dwellings, roads and streets, and most recreational uses. The slow permeability and the seasonal high water table are the major problems, and they are difficult to overcome. These limitations can be reduced by draining

with a system that is properly designed and carefully installed, increasing the size of the filter field, adding suitable fill material, and shaping the area to remove excess surface water.

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

65B—Lakeland fine sand, 0 to 6 percent slopes. This excessively drained, nearly level to gently sloping soil is on the higher ridges. Mapped areas range from 10 to more than 100 acres.

Typically, the surface layer is dark grayish brown fine sand about 6 inches thick. The underlying material, to a depth of 100 inches, is yellowish brown and pale brown fine sand.

This soil is low in natural fertility and organic matter content. The available water capacity is low. Reaction is very strongly acid to medium acid throughout. Permeability is very rapid. The water table is more than 6 feet below the surface.

Included with this soil in mapping are a few areas of soils adjacent to drainageways with more than 6 percent slopes and small wet areas shown on the map by wet spot symbols. Also included are a few intermingled areas of Eddings, Murad, and Chipley soils. These inclusions make up about 20 percent of the unit.

About 70 percent of this Lakeland soil is woodland. The remainder is in cropland, pasture, and engineering uses. It is suited to cropland, pasture, and woodland and well suited to engineering uses.

This soil is suited to corn, and some of the other locally grown crops. The major management problems on this soil are its droughtiness and low nutrient-holding capacity. Large unprotected fields are subject to soil blowing. Good management practices normally include irrigation, a high amount of fertilization, good residue management, and protection from soil blowing. Fertilizers are more effective on this soil when applied at intervals rather than in single applications. Minimum tillage, the use of cover crops, and including grasses and legumes in the cropping system increase the water- and nutrient-holding capacity. Close-growing crops or windstrips planted at right angles to the prevailing wind direction will help reduce soil blowing and protect young plants. Crop residue left on the surface until spring planting will also help reduce soil blowing.

This soil is suited to pasture and hay. Because of its low water- and nutrient-holding capacity, deep-rooted plants such as improved bermudagrass are preferred. Split applications of fertilizers are more effective than single applications. Proper stocking, pasture rotation, and deferment of grazing help to keep the pasture and soil in good condition. Good pasture management will also help control soil blowing.

This soil is suited to trees. Seedlings survive and grow well where competing vegetation is controlled or removed. This can be done by site preparation, burning, spraying, cutting, or girdling. Equipment limitations and seedling survival rates are moderate. Loblolly pine and slash pine are among the trees suitable to plant.

This soil is well suited to most engineering uses. It has slight limitations for dwellings and local roads and streets. The hazard of ground water pollution is a severe limitation for septic tank absorption fields. The sandy surface is a moderate limitation for most recreational uses.

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

66—Williman loamy fine sand. This nearly level, poorly drained soil is in low areas, in shallow depressions, and along drainageways. Mapped areas are 5 to 200 acres.

Typically, the surface layer is black loamy fine sand about 5 inches thick. The subsurface layer, which extends to a depth of 22 inches, is dark gray or grayish brown loamy fine sand. The subsoil, to a depth of 67 inches, is mottled dark brown to mottled gray sandy clay loam.

This soil is low in natural fertility and organic matter content. The available water capacity is moderate. This soil is extremely acid to strongly acid except in the surface and subsurface layers where limed. Permeability is moderate. The water table is at, or within a foot below, the surface during wet seasons.

Included with this soil in mapping are a few small areas of Bladen, Hobcaw, Murad, Scranton, and Yemassee soils. These inclusions make up about 20 percent of the unit.

About 80 percent of this Williman soil is woodland. The remainder is in cropland, pasture, and engineering uses. It is suited to cropland, well suited to pasture and woodland, and poorly suited to engineering uses.

This soil is suited to corn and soybeans. The seasonal high water table is the major management concern. When this soil is used for cultivated crops, drainage is required. Open ditches, tile drains, or a combination of these can be used to drain this soil. Fertilizers are more effective if applied at intervals rather than in single applications. Returning crop residue to the soil improves fertility, increases available water content, and improves yields.

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

This soil is well suited to woodland. Control of competing vegetation is required for young plants. This can be done by site preparation, burning, spraying, or girdling. Severe equipment limitations are encountered

when planting or harvesting trees. Poor seedling survival rates are common on poorly managed areas. Loblolly pine, slash pine, sweetgum, and water oak are suitable to plant.

This soil is poorly suited to most engineering uses. The high water table is a severe limitation for septic tank absorption fields, dwellings, roads and streets, and most recreational uses. These limitations can be reduced by installing ditches, tile drains, or a combination of these; by adding suitable fill material; and by shaping the surface to divert surface water.

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

68—Yemassee loamy fine sand. This nearly level, somewhat poorly drained soil is in broad, flat intermediate areas between draws and ridgetops. It occurs in irregular patterns of 5 to 200 acres in size.

Typically, the surface layer is very dark gray loamy fine sand about 10 inches thick. The subsoil, to a depth of 15 inches, is brownish yellow fine sandy loam. Below this, to a depth of 65 inches, it is mottled gray sandy clay loam. The substratum, to a depth of 80 inches, is mottled gray fine sandy loam.

This soil is low in natural fertility and organic matter content and moderate in available water capacity. It is extremely acid to strongly acid except in the surface and subsurface layers where limed. Permeability is moderate, and the seasonal high water table is 1.0 foot to 1.5 feet below the surface in wet seasons.

Included with this soil in mapping are small areas of Chisolm, Nemours, Wahee, and Williman soils. These inclusions make up about 15 percent of the unit.

About 50 percent of this Yemassee soil is cropland. This soil is well suited to cropland, pasture, and woodland. It is poorly suited to most engineering uses.

This soil is well suited to corn, soybeans, small grain, and grasses for hay. The seasonal high water table is the major management concern. When this soil is used for crops, drainage is required for consistently satisfactory yields. Open ditches, tile drains, or a combination of these can be used to drain this soil. Returning crop residue to the soil improves fertility, reduces crusting, and increases water infiltration.

This soil is well suited to pasture. Most areas require some drainage for good pasture management. Shallow surface drains can be used to reduce the wetness problems. Proper stocking, pasture rotation, timely deferment of grazing, and restricted use during wet periods help to keep the pasture and soil in good condition.

This soil is well suited to trees. Tree seedlings survive and grow well if competing vegetation is controlled or removed. This can be done by site preparation, burning, cutting, or girdling. Wetness is a moderate equipment limitation during harvesting in wet seasons. This limitation can be overcome by harvesting during dry seasons. Slash pine, loblolly pine, American sycamore, and sweetgum are among the trees suitable to plant.

This soil is poorly suited to most engineering uses. The high water table is a severe limitation for septic tank absorption fields and dwellings. This limitation can be reduced by adding suitable fill material, increasing the size of the filter field, and shaping the site to remove surface water. It has moderate limitations for roads and streets. These can be reduced by lowering the water table with tile drains, open ditches, or a combination of these. Wetness also restricts the use of this soil for recreational development.

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

69—Murad loamy fine sand. This nearly level, moderately well to somewhat poorly drained soil is in broad, flat to convex areas. Mapped areas are 5 to 200 acres in size.

Typically, the surface layer is dark grayish brown loamy fine sand about 7 inches thick. The subsurface layer, which extends to a depth of 47 inches, is loamy fine sand. It is brown and yellow in the upper part and light gray in the lower part. The subsoil, to a depth of 78 inches, is sandy clay loam. It is mottled yellowish brown in the upper part and gray in the lower part.

This soil is low in natural fertility and organic matter content. Available water capacity is moderate. This soil is very strongly acid or strongly acid except in the surface layer where limed. Permeability is rapid in the sandy horizons and moderate in the subsoil. The water table is 1.5 to 3.0 feet below the surface in wet seasons.

Included with this soil in mapping are small areas of Coosaw, Eddings, and Williman soils. These inclusions make up about 20 percent of the unit.

About 70 percent of this Murad soil is woodland. The remainder is in cropland, hay, and pasture. This soil is suited to cropland, hay, pasture, and woodland. It is poorly suited to most engineering uses.

This soil is suited to corn and soybeans. The seasonal high water table is the major management concern. When this soil is used for cultivated crops, drainage is needed for good crop yields. Open ditches, tile drains, or a combination of these can be used to drain this soil. Fertilizers are more effective if applied at intervals rather than in single applications. Returning crop residue to the soil helps to retain plant nutrients, increase available water content, and improve yields.

This soil is suited to pasture. Grasses that can tolerate relatively high water tables, such as bahiagrass, are recommended. Most areas require some drainage for good pasture management. Open ditches and shallow surface drains can be used to drain this soil. Proper stocking, pasture rotation, timely deferment of grazing, and restricted use during wet periods help to keep the pasture and soil in good condition.

This soil is suited to woodland. Control of competing vegetation is required for young plants. This can be done by site preparation, burning, spraying, or girdling. Severe equipment limitations are encountered when planting or harvesting trees. Poor seedling survival rates are common on poorly managed areas. Loblolly pine, slash pine, sweetgum, and water oak are suitable to plant.

This soil is poorly suited to most engineering uses. The high water table is a severe limitation for septic tank absorption fields and a moderate limitation for dwellings, roads and streets, and most recreational uses. These limitations can be reduced by installing open ditches, tile drains, or a combination of these; adding suitable fill material; and shaping the site to divert surface water.

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

70—Levy mucky silty clay loam. This nearly level, saturated frequently flooded soil is in marsh or swamplike areas. Mapped areas are somewhat elongated and range from less than 100 acres to more than 1,000 acres.

Typically, the surface layer is overlain by about 5 inches of organic matter consisting of leaves, stems, and roots. The surface layer is dark gray muck silty clay loam about 7 inches thick. The underlying material, to a depth of 60 inches, is dark gray silty clay.

This soil is low in natural fertility and medium in organic matter content. The available water capacity is high. This soil is extremely acid to strongly acid throughout the profile. Permeability is slow. The water table is 1.0 foot to 2.0 feet above the surface most of the time.

Included with this soil in mapping are a few small areas of Argent, Cape Fear, and Pungo soils. These inclusions make up about 30 percent of the unit.

Most areas of this soil are in marsh grasses. A few areas are woodland. This soil is poorly suited to cropland, pasture, woodland, and engineering uses.

This soil is poorly suited to most of the locally grown crops. To obtain adequate water control on this soil would require extensive ditching, diking, and pumping.

This soil is poorly suited to pasture. In their unimproved condition they will not support livestock. Obtaining adequate water control on this soil would require extensive ditching, diking, and pumping.

This soil is poorly suited to woodland. Because it is almost continuously saturated with water and flooded most of the time, it would be expensive and difficult to get tree seeds or seedlings to grow. Where adequate water control is provided, water tupelo, sweetgum, red maple, and bald cypress are well suited. When used for woodland this soil has severe limitations for equipment use and seedling survival.

This soil is poorly suited to engineering uses. The low bearing strength, the continuous saturation, and the flooding severely limit this soil for septic tank absorption fields, dwellings, roads and streets, and most recreational uses.

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

71—Haplaquents, loamy. This nearly level soil consists of wet, loamy soil material in areas where the soil has been removed to a depth of 3 to 15 feet. Mapped areas are generally small but range from 5 to more than 50 acres in size.

The soil material is dominantly loamy to a depth of about 5 feet and sandy below that. It is dominantly gray with mottles of yellow and strong brown.

This soil is low in natural fertility and in content of organic matter. The available water capacity is moderate to low. This soil is commonly very strongly acid but ranges to neutral.

Included in this unit in mapping are filled areas of clay, silt, and sand dredged from the Intracoastal Waterway and pumped on low marshy islands.

About half of this soil is woodland. The remainder is in cropland, pasture, or recreation sites. Some areas have been converted to fish ponds. The suitability of this unit for specific land uses varies with texture and drainage.

These soils are suited to pine trees and pasture where excess surface water has been removed. Some areas are adapted to cropland, recreation, and wildlife habitat. This unit is so variable that onsite investigation is needed to determine its suitability and limitations for any proposed use.

This unit is not assigned a capability subclass or woodland ordination symbol.

73—Torhunta-Osier association. This map unit consists of nearly level, poorly drained and very poorly drained soils on flood plains, in depressions, and in drainageways. Mapped areas range from 100 to more than 1,000 acres in size and are 30 to 50 percent Torhunta soil and 20 to 30 percent Osier soil. The Osier soil is generally near present and former streambeds. The Torhunta soil is in areas flooded by fairly slow-moving water and is commonly between the Osier soil and the uplands. These soils occupy the lowest elevations in their geographical areas and are covered with water during periods of high rainfall. They are densely covered with hardwoods and swamplike vegetation (fig. 5).

Typically, the Torhunta soil has a surface layer of very dark gray fine sandy loam about 11 inches thick. The subsoil layer, to a depth of 25 inches, is grayish brown fine sandy loam. Below this, to a depth of 25 inches, is grayish brown fine sandy loam. Below this, to a depth of 57 inches, it is gray fine sandy loam. The underlying material, to a depth of 80 inches, is light gray fine sand.

Typically, the Osier soil has a surface layer of very dark gray loamy sand about 6 inches thick. The underlying material, to a depth of 75 inches, is light grayish brown and white sand.

These soils are low in natural fertility. The organic matter is low. The available water capacity is moderate in the Torhunta soil and very low in the Osier soil. Reaction varies widely, but in the Torhunta soil it is commonly extremely acid to strongly acid in the upper 40 inches and medium acid to neutral below that. It is very strongly acid to medium acid in the Osier soil. Permeability is moderately rapid in the Torhunta soil and rapid in the Osier soil. The seasonal high water table ranges from a flooded condition to a depth of 1.5 feet below the surface.

Included in this unit in mapping are small areas of Rains, Coxville, and Cape Fear soils. These inclusions make up about 20 percent of the unit.

Nearly all of this unit is woodland. A few small areas are in unimproved pasture. This unit is poorly suited to cropland, pasture, and engineering uses. It is suited to trees.

These soils are poorly suited to row crops. The high water table and flooding are limitations that are difficult to overcome.

These soils are poorly suited to pasture. The high water table and flooding are limitations that are difficult to overcome.

These soils are suited to trees, and most areas remain in native hardwoods. Although pines grow well on these soils, they are difficult to establish because of the high water table and frequent flooding. These soils are densely populated with a wide variety of hardwoods including red maple, water tupelo, bald cypress, sweetgum, and American sycamore. All of these hardwoods grow well on these soils. Because of the extreme difficulty of replanting, management of natural stands is of extreme importance. Severe equipment limitations and severe seedling survival rates are major management problems.

These soils are poorly suited to engineering uses. They are severely limited for septic tank absorption fields, dwellings, and recreational uses by the high water table, flooding of the Torhunta soil, and ponding of the Osier soil. The difficulty and expense of reducing these

Figure 5.—Soils of the Torhunta-Osier association are best suited to hardwoods and wetland wildlife.

limitations generally prohibit the development of these soils for engineering uses.

These soils are in capability subclass VIw. The woodland ordination symbol is 2w for the Torhunta soil and 3w for the Osier soil.

prime farmland

The best land for farming is called 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 providing the Nations's short- and long-range needs for food and fiber. Because the amount of this high-quality farmland is limited, it should be used with wisdom and foresight.

Prime farmland is the land best suited to producing food, feed, forage, fiber, and oilseed crops. It has the soil quality, growing season, and moisture supply needed to economically produce sustained high yields of crops when it is treated and managed with acceptable farming methods. Given minimal imputs of energy and economic resources, prime farmland produces higher yields and less damage to the environment than farming other kinds of land.

Prime farmland may now be cropland, pasture, woodland, or anything other than urban and built-up land or water areas. It must either be used for producing food or fiber or be available for these uses.

The soils that make up prime farmland usually have an adequate and dependable supply of moisture from precipitation or irrigation. The temperature and growing season are favorable. The acidity or alkalinity is suitable. These soils have few, if any, rocks and are permeable to water and air. They are not excessively erodible or saturated with water for long periods and are not frequently flooded during the growing season. The slope gradient is usually less than 6 percent. More information on the criteria for prime farmland soils can be obtained at the local office of the Soil Conservation Service.

Nearly 21 percent of Colleton County, or about 139,000 acres, is prime farmland. It is scattered throughout the county, but most is in the northern part, mainly in map units 3 and 4 of the general soil map. Approximately 55,000 acres of this prime farmland is used for crops. The crops grown on this land, mainly corn and soybeans, account for about 80 percent of the income from crops.

There has been no large-scale conversion of prime farmland to industrial and urban uses in Colleton County. The loss of prime farmland to nonfarm uses increases farming on less suitable soils that require more intensive conservation measures and are generally less productive.

The soil map units that make up the prime farmland in Colleton County are listed in this section, but this list is not a recommendation for a particular land use. Some soils that have limitations—such as a high water table, flooding, or inadequate rainfall—may qualify as prime farmland if these limitations are overcome by certain corrective measures. These measures, if any, are shown in parentheses. Onsite evaluation is necessary, however, to see if these measures are effective.

The following map units meet the requirements for prime farmland except where the use is urban or built-up land or where they fail to meet the criteria indicated in parentheses.

36	Goldsboro loamy fine sand
41	Lynchburg loamy fine sand (where drained sufficiently for cropland)
43A	Nemours fine sand loam, 0 to 2 percent slopes
43B	Nemours fine sandy loam, 2 to 6 percent slopes
44A	Norfolk loamy fine sand, 0 to 2 percent slopes
44B	Norfolk loamy fine sand, 2 to 6 percent slopes
62	Yauhannah fine sandy loam
68	Yemassee loamy fine sand (where drained sufficiently for cropland)

use and management of the soils

This soil survey is an inventory and evaluation of the soils in the survey area. It can be used to adjust land uses to the limitations and potentials of natural resources and the environment. Also, it can help avoid soil-related failures in land uses.

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

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

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

Contractors can use this survey to locate sources of sand and gravel, roadfill, and topsoil. They can use it to identify areas where 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, and James Williams, district conservationist, Soil Conservation Service, helped prepare this section.

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

Planners of management systems for individual fields or farms should consider the detailed information given in the description of each soil under "Detailed soil map units." Specific information can be obtained from the local office of the Soil Conservation Service or the Cooperative Extension Service.

About 110,000 acres in Colleton County was used for crops and pasture in 1975, according to the Colleton County Soil and Water Conservation District. Of this total, 25,000 acres was in permanent pasture; 76,000 acres in row crops, mainly corn and soybeans; and 8,000 acres in close-growing crops, mainly wheat and oats. The rest was idle cropland.

The soils in Colleton County have good potential for increased production of food. In 1967, according to the Conservation Needs Inventory (*8*), more than 237,000 acres of potentially good cropland was in woodland and about 18,000 acres was in pasture. In addition to the reserve productive capacity represented by this land, food production could also be increased considerably by extending better crop production technology to all cropland in the county.

In general, the soils in the county that are well suited to crops are also well suited to urban development. In 1967, there was about 27,000 acres of urban and built-up land in Colleton County. This figure has been growing at the rate of about 350 acres per year.

Soil erosion by water is a major concern on less than 1 percent of the land in the county. There is an erosion hazard on about 3 percent of the cropland and pasture. Erosion commonly occurs when the fields are bare of plant cover or when the soil is disturbed. Most areas with a hazard of erosion have slopes of more than 2 percent.

Loss of the surface layer through erosion is damaging for two reasons. First, productivity is reduced as the surface layer is lost and part of the subsoil is incorporated into the plow layer. This is especially damaging on soils that have a clayey subsoil, such as the Nemours soil. Second, soil erosion on farmland results in sedimentation in streams and decreases the quality of water for municipal use, for recreation, and for fish and wildlife.

Erosion control practices generally provide protective surface cover, reduce runoff, and increase infiltration. A

cropping system that keeps plant cover on the soil for extended periods can hold erosion losses to amounts that will not reduce the productive capacity of the soils. On livestock farms, which require pasture and hay, the legumes and grass forage crops in the cropping system reduce erosion on the sloping land and may provide nitrogen for the following crop.

Minimizing tillage and leaving crop residue on the surface help increase infiltration and reduce the hazards of runoff and erosion. Conservation tillage, which has been increasingly used, requires weed control and residue management.

Terraces reduce runoff and erosion by reducing the length of slope. They are most practical on the gently sloping Nemours and Norfolk soils. In Colleton County, however, most areas of gently sloping soils are small, which commonly makes diversions and grassed waterways the most suitable structural means of erosion control.

Contouring and contour stripcropping are erosion control practices that can be used in the county. Contour stripcropping is especially practical on gently sloping sandy soils such as Blanton, Bonneau, and Eddings soils on which the instability of the sandy soil is a limitation to structural erosion control measures.

Soil blowing is a hazard on the sandy Blanton, Bonneau, Alpin, Chipley, Chisolm, Echaw, Eddings, and Lakeland soils. Soil blowing can damage these soils if extensive areas are left unprotected. Most of the damage of soil blowing in Colleton County is done to young, tender plants. Annual wind control strips, windbreaks, cover crops, surface mulch, and surface roughened by proper tillage minimize soil blowing on these soils.

Information on the design of erosion control practices for each kind of soil is contained in the Technical Guide, available in local offices of the Soil Conservation Service.

Soil drainage is the major management need on about 52 percent of the acreage used for crops and pasture. Bohicket, Capers, Handsboro, Hobcaw, Levy, Pickney, Pungo, Osier, and Torhunta soils are so naturally wet that the production of crops common to the county is generally not possible. These poorly and very poorly drained soils make up about 106,500 acres in the county.

Wetness significantly damages crops on the somewhat poorly drained Albany, Coosaw, Dunbar, Lynchburg, Ocilla, and Wahee soils; the poorly drained Argent, Bladen, Coxville, Leon, Lynn Haven, Ogeechee, Pelham, Plummer, Rains, Wadmalaw, and Williman soils; and the very poorly drained Cape Fear, Paxville, Santee, Scranton, and Seagate soils. Crops may be damaged some years on the moderately well drained Goldsboro, Nemours, and Okeetee soils.

Levy and Pungo soils are subject to flooding by fresh water. Capers, Bohicket, and Handsboro soils are subject to flooding by salt water.

The best design of both surface and subsurface drainage systems is determined to a large extent by the kind of soil. If row crops are to be grown, a combination of surface drainage and tile drainage is needed in most areas of the somewhat poorly drained soils, the poorly drained soils, and the very poorly drained soils that can be drained sufficiently for row crops. For special intensive row crops, such as tobacco or truck crops, a combination of surface and subsurface drainage is needed on most areas of the moderately well drained soils. Tile drainage is very slow in the Argent, Bladen, Coxville, Dunbar, Nemours, Okeetee, Santee, and Wahee soils. When tile drains are used on Argent and Scranton soils, a filter is needed to prevent sand from entering the tile lines.

Low water-holding capacity is a limitation on Alpin, Blanton, Bonneau, Chipley, Chisolm, Echaw, Eddings, and Lakeland soils. This limitation can be reduced through crop residue management, proper crop selection, and irrigation. Pasture grasses such as bahiagrass and bermudagrass and drought-tolerant crops such as grain sorghum are well suited to these soils. Also, because of the rapid leaching of nutrients from these soils, frequent applications of fertilizer and lime are needed for good plant growth.

The Bohicket, Capers, and Handsboro soils and Beaches are too saline to grow crops or pasture. The Fripp soils and the Beaches are too sandy for crops or pasture.

Soil fertility is naturally low in most of the soils in the county. The Albany, Alpin, Blanton, Chipley, Coosaw, Fripp, Lakeland, and Osier soils also have low nutrient-holding capacities. In the Argent and Santee soils, the natural fertility is medium or high. Most of the soils are very strongly to slightly acid. The Argent, Bohicket, Capers, Hobcaw, Okeetee, and Santee soils are very strongly acid to moderately alkaline. The Handsboro soils are neutral to moderately alkaline.

Many of the upland soils are very strongly acid in their natural state and require regular applications of lime for good growth of most crops. The levels of available phosphorus and potash are naturally low in most of these soils.

Additions of lime and fertilizer on any soil should be based on soil tests, the needs of the crop, and the desired level of yields. The Cooperative Extension Service can help in determining the kinds and amounts of fertilizer and lime to apply.

Most of the soils used for crops in the county have a surface layer of sandy loam or loamy sand. The tilth is generally good on most of the well drained to somewhat poorly drained soils, and these soils can be worked over a medium to wide range of moisture conditions. Most of the poorly drained and very poorly drained soils,

however, can be worked over only a limited range of moisture conditions.

Fall plowing is generally not a good practice on the gently sloping soils that are subject to erosion by water or on soils that are subject to soil blowing. If fall tillage operations are performed, equipment should be used that will leave a significant amount of residue on the surface.

Field crops suited to the soils and climate of the county include many that are not now commonly grown. Corn, soybeans, and tobacco are the principal row crops. Wheat, oats, and rye are the common close-growing crops. Coastal bermudagrass and bahiagrass produce the pasture and hay.

Special crops grown commercially in the county are vegetables, small fruits, and nursery plants. A small acreage is used for melons, stringbeans, lima beans, peas, sweet corn, tomatoes, and other vegetables and small fruits. In addition, large areas can be adapted to other special crops such as grapes.

The soils that have good natural drainage and moderate available water capacity and that warm up early in spring are especially well suited to many vegetables and small fruits. These include the Bonneau, Chisolm, and Norfolk soils. If they have well designed drainage systems, the moderately well drained Goldsboro, Nemours, and Yauhannah soils are well suited to many vegetables and small fruits. Crops can generally be planted and harvested earlier on all of these soils than on the other soils in the county.

Most of the well drained soils in the county are suitable for orchards and nursery plants. Soils in low areas where frost is frequent and air drainage is poor, however, generally are poorly suited to early vegetables, small fruits, and orchards.

More information and suggestions for growing special crops can be obtained from local offices of the Cooperative Extension Service and the Soil Conservation Service.

yields per acre

The average yields per acre that can be expected of the principal crops under a high level of management are shown in table 5. In any given year, yields may be higher or lower than those indicated in the table because of variations in rainfall and other climatic factors.

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

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

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

Crops other than those shown in table 5 are grown in the survey area, but estimated yields are not listed because the acreage of such crops is small. The local office of the Soil Conservation Service or of the Cooperative Extension Service can provide information about the management and productivity of the soils.

land capability classification

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

In the capability system, soils are generally grouped at three levels: capability class, subclass, and unit. Only class and subclass are used in this survey. These levels are defined in the following paragraphs.

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

Class I soils have few limitations that restrict their use.

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

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

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

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

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

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

Class VIII soils and miscellaneous areas have limitations that nearly preclude their use for commercial crop production.

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

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

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

woodland management and productivity

Norman W. Runge, forester, Soil Conservation Service, helped prepare this section.

Forest once covered much of the area that is now Colleton County. Pine, oak, and hickory were on the uplands, and baldcypress and bottomland hardwoods were in the low wet areas. The virgin forests provided material for naval stores and the logging industry.

Trees now cover about 70 percent of the county. The dominant forest type is pine, but hardwoods are dominant in the broad, low areas and drainageways. Loblolly pine is the most common species. Longleaf pine, slash pine, and pond pine are minor in extent. Hardwoods are commonly intermingled in the pine forests except in areas that have been replanted. The more common hardwoods include water oak, sweetgum, blackgum, American sycamore, water tupelo, yellow-poplar, and baldcypress.

Soils differ in their suitability for trees according to their location and other characteristics. The most important characteristics are those that determine the supply of moisture and the growing space for roots. Among such characteristics are the thickness and texture of the surface layer and subsoil, the depth to root-restricting layers, depth to the water table, and content of salinity.

With the exception of those in areas flooded by salt water, most of the soils in Colleton County are suited or well suited to trees. The soils in about 5 percent of the county are droughty, are organic, or have stained organic layers that restrict root penetration to some extent. The climate, however, is very favorable for root growth. Rainfall averages about 52 inches annually and the number of frost-free days averages about 189 days annually. The overall potential is high for tree growth.

Woodland management has improved significantly during recent years. The number of wildfires resulting from uncontrolled burning, which was common in the area about two decades ago, has been significantly reduced by fire protection and prescribed burning. Drainage ditches with access roads on the spoil banks are common in large, low, wet, wooded areas. Droughty areas are furrowed, and the seedlings are planted in the furrows. The low wet areas are bedded, and the seedlings are planted on the top of the beds. Additional woodland management might include planting genetically improved seedlings, water management to stabilize the water table, and fertilization.

The commercial value of wood products in the county is substantial, but below its potential. Much of the woodland is owned by major paper companies and is managed for pulp production. In addition to the commercial value of the wood, other woodland values include use for grazing, wildlife habitat, recreation, natural beauty, and watershed protection.

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

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

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

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

Ratings of *equipment limitation* reflect the characteristics and conditions of the soil that restrict use of the equipment generally needed in woodland management or harvesting. A rating of *slight* indicates that use of equipment is not limited to a particular kind of

equipment or time of year; *moderate* indicates a short seasonal limitation or a need for some modification in management or in equipment; and *severe* indicates a seasonal limitation, a need for special equipment or management, or a hazard in the use of equipment.

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

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

The *potential productivity* of merchantable or *common trees* on a soil is expressed as a *site index*. This index is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. Site index was determined at age 30 years for eastern cottonwood, 35 years for American sycamore, and 50 years for all other species. The site index applies to fully stocked, even-aged, unmanaged stands. Commonly grown trees are those that woodland managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability.

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

recreation

The soils of the survey area are rated in table 8 according to limitations that affect their suitability for recreation. The ratings are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewerlines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation are also important. Soils subject to flooding are limited for recreation use by the duration and intensity of flooding and the season when flooding occurs. In planning recreation facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

In table 8, the degree of soil limitation is expressed as slight, moderate, or severe. *Slight* means that soil properties are generally favorable and that limitations are minor and easily overcome. *Moderate* means that limitations can be overcome or alleviated by planning, design, or special maintenance. *Severe* means that soil properties are unfavorable and that limitations can be offset only by costly soil reclamation, special design, intensive maintenance, limited use, or by a combination of these measures.

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

Camp areas require site preparation such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The best soils have mild slopes and are not wet or subject to flooding during the period of use. The surface has few or no stones or boulders, absorbs rainfall readily but remains firm, and is not dusty when dry. Strong slopes and stones or boulders can greatly increase the cost of constructing campsites.

Picnic areas are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The best soils for picnic areas are firm when wet, are not dusty when dry, are not subject to flooding during the period of use, and do not have slopes or stones or boulders that increase the cost of shaping sites or of building access roads and parking areas.

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

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

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

wildlife habitat

William J. Melven, biologist, Soil Conservation Service, helped prepare this section.

The early settlers depended on wildlife. White-tailed deer, gray squirrel, and cottontail were hunted for food, and their hides were used for clothing and as items of trade. Later, hunting was mostly for sport.

The principal game species in the county at present are eastern cottontail, gray squirrel, white-tailed deer, wild turkey, and bobwhite quail. Mourning dove inhabits the county and is also a migratory species. Squirrel, rabbit, dove, and quail are the most commonly hunted small game, and deer is the most commonly hunted big game. Turkey hunting is increasing as a result of restocking efforts of the South Carolina Wildlife and Marine Resources Department.

Recently, people have become interested in wildlife for purposes other than hunting. Watching, listening to, photographing, and painting wildlife have all become popular.

The diversity of wildlife in Colleton County is the result of the wide variety of wildlife habitat available. The habitat varies from dry, upland ridges with sparse vegetation to upland hardwood sites that produce a variety of food and cover for wildlife to pine plantations. Bottom lands provide a different kind of habitat, and farm ponds, lakes, and streams supply favorable conditions for many species of fish. The southeastern section of the county has an extensive amount of marshland that extends inland for many miles along the major streams. These marsh areas are suitable for ducks, geese, and other wetland wildlife.

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

In table 9, the soils in the survey area are rated according to their potential for providing habitat for various kinds of wildlife. This information can be used in planning parks, wildlife refuges, nature study areas, and other developments for wildlife; in selecting soils that are suitable for establishing, improving, or maintaining specific elements of wildlife habitat; and in determining the intensity of management needed for each element of the habitat.

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

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

Grain and seed crops are domestic grains and seed-producing herbaceous plants. Soil properties and features that affect the growth of grain and seed crops are depth of the root zone, texture of the surface layer, available water capacity, wetness, slope, and flood hazard. 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, flood hazard, and slope. Soil temperature and soil moisture are also considerations. Examples of grasses and legumes are fescue, lovegrass, bahiagrass, clover, and alfalfa.

Wild herbaceous plants are native or naturally established grasses and forbs. 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, and flood hazard. Soil temperature and soil moisture are also considerations. Examples of wild herbaceous plants are bluestem, goldenrod, beggarweed, wheatgrass, and grama.

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, the available water capacity, and wetness. Examples of these plants are oak, poplar, cherry, sweetgum, apple, hawthorn, dogwood, hickory, blackberry, and blueberry. Examples of fruit-producing shrubs that are suitable for planting on soils rated *good* are pyracantha, autumn-olive, and crabapple.

Coniferous plants furnish browse, seeds, and cones. Soil properties and features that affect the growth of coniferous trees, shrubs, and ground cover are depth of the root zone, available water capacity, and wetness. Examples of coniferous plants are pine and cedar.

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, and slope. Examples of wetland plants are smartweed,

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

Shallow water areas have an average depth of less than 5 feet. Some are naturally wet areas. Others are created by dams, levees, or other water-control structures. Soil properties and features affecting shallow water areas are wetness, slope, and permeability. Examples of shallow water areas are marshes, waterfowl feeding areas, and ponds.

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

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

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

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

engineering

W. Burton Wells, state conservation engineer, and Robert E. Thompson, agricultural engineer, Soil Conservation Service, helped prepare this section.

This section provides information for planning land uses related to urban development and to water management. Soils are rated for various uses, and the most limiting features are identified. The ratings are given in the following tables: Building site development, Sanitary facilities, Construction materials, and Water management. The ratings are based on observed performance of the soils and on the estimated data and test data in the "Soil properties" section.

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

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

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

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

This information can be used to (1) evaluate the potential of areas for residential, commercial, industrial, and recreation uses; (2) make preliminary estimates of construction conditions; (3) evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; (4) evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; (5) plan detailed onsite investigations of soils and geology; (6) locate potential sources of sand, earthfill, and topsoil; (7) plan drainage systems, irrigation systems, ponds, and other structures for soil and water conservation; and (8) predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

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

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

building site development

Table 10 shows the degree and kind of soil limitations that affect shallow excavations, dwellings with and without basements, small commercial buildings, local roads and streets, and lawns and landscaping. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required. Special feasibility studies may be required where the soil limitations are severe.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for basements, graves, utility lines, open ditches, and other purposes. The ratings are based on soil properties, site features, and observed performance of the soils. The ease of digging, filling, and compacting is affected by the stone content; soil texture; and slope. The time of the year that excavations can be made is affected by the depth to a seasonal high water table and the susceptibility of the soil to flooding. The resistance of the excavation walls or banks to sloughing or caving is affected by soil texture and the depth to the water table.

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

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

sanitary facilities

Table 11 shows the degree and the kind of soil limitations that affect septic tank absorption fields, sewage lagoons, and sanitary landfills. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required.

Table 11 also shows the suitability of the soils for use as daily cover for landfills. A rating of *good* indicates that soil properties and site features are favorable for the use and good performance and low maintenance can be expected; *fair* indicates that soil properties and site features are moderately favorable for the use and one or more soil properties or site features make the soil less desirable than the soils rated good; and *poor* indicates that one or more soil properties or site features are unfavorable for the use and overcoming the unfavorable properties requires special design, extra maintenance, or costly alteration.

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 72 inches is evaluated. The ratings are based on soil properties, site features, and observed performance of the soils. Permeability, a high water table, and flooding affect absorption of the effluent. Large stones 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 effectively filter the effluent. Many local ordinances require that this material be of a certain thickness.

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

Table 11 gives ratings for the natural soil that makes up the lagoon floor. The surface layer and, generally, 1 or 2 feet of soil material below the surface layer are excavated to provide material for the embankments. The ratings are based on soil properties, site features, and observed performance of the soils. Considered in the ratings are slope, permeability, a high water table, flooding, large stones, and content of organic matter.

Excessive seepage due to rapid permeability of the soil or a water table that is high enough to raise the level of sewage in the lagoon causes a lagoon to function unsatisfactorily. Pollution results if seepage is excessive or if floodwater overtops the lagoon. A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope can cause construction problems, and large stones can hinder compaction of the lagoon floor.

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

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

The ratings in table 11 are based on soil properties, site features, and observed performance of the soils. Permeability, a high water table, slope, and flooding affect both types of landfill. Texture, stones and boulders, highly organic layers, and soil reaction affect trench type landfills. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, a limitation rated slight or moderate may not be valid. Onsite investigation is needed.

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

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

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

construction materials

Table 12 gives information about the soils as a source of roadfill, sand, gravel, and topsoil. The soils are rated *good, fair,* or *poor* as a source of roadfill and topsoil. They are rated as a probable or improbable source of sand and gravel. The ratings are based on soil properties and site features that affect the removal of the soil and its use as construction material. Normal compaction, minor processing, and other standard construction practices are assumed. Each soil is evaluated to a depth of 5 or 6 feet.

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

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

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

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

Sand and gravel are natural aggregates suitable for commercial use with a minimum of processing. Sand and gravel are used in many kinds of construction. Specifications for each use vary widely. In table 12, only the probability of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material.

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

given in the soil series descriptions. Gradation of grain sizes is given in the table on engineering index properties.

A soil rated as a probable source has a layer of clean sand or gravel or a layer of sand or gravel that is up to 12 percent silty fines. This material must be at least 3 feet thick and less than 50 percent, by weight, large stones. All other soils are rated as an improbable source. Coarse fragments of soft bedrock, such as shale and siltstone, are not considered to be sand and gravel.

Topsoil is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area.

Plant growth is affected by toxic material and by such properties as soil reaction, available water capacity, and fertility. The ease of excavating, loading, and spreading is affected by rock fragments, slope, a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, a water table, rock fragments, bedrock, and toxic material.

Soils rated *good* have friable loamy material to a depth of at least 40 inches. They are free of stones and cobbles, have little or no gravel, and have slopes of less than 8 percent. They are low in content of soluble salts, are naturally fertile or respond well to fertilizer, and are not so wet that excavation is difficult.

Soils rated *fair* are sandy soils, loamy soils that have a relatively high content of clay, soils that have only 20 to 40 inches of suitable material, soils that have an appreciable amount of gravel, stones, or soluble salts, or soils that have slopes of 8 to 15 percent. The soils are not so wet that excavation is difficult.

Soils rated *poor* are very sandy or clayey, have less than 20 inches of suitable material, have a large amount of gravel, stones, or soluble salts, have slopes of more than 15 percent, or have a seasonal water table at or near the surface.

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

water management

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

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

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

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

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

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

Aquifer-fed excavated ponds are pits or dugouts that extend to a ground-water aquifer or to a depth below a permanent water table. Excluded are ponds that are fed only by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Excavated ponds are affected by depth to a permanent water table, permeability of the aquifer, and quality of the water as inferred from the salinity of the soil. The content of large stones affect the ease of excavation.

Drainage is the removal of excess surface and subsurface water from the soil. How easily and effectively the soil is drained depends on the depth to bedrock, to a cemented pan, or to other layers that affect the rate of water movement; permeability; depth to a high water table or depth of standing water if the soil is subject to ponding; slope; susceptibility to flooding; subsidence of organic layers; and potential frost action. Excavating and grading and the stability of ditchbanks are affected by large stones, slope, and the hazard of cutbanks caving. The productivity of the soil after drainage is adversely affected by extreme acidity or by toxic substances in the root zone, such as salts, sodium, or sulfur. Availability of drainage outlets is not considered in the ratings.

Irrigation is the controlled application of water to supplement rainfall and support plant growth. The design and management of an irrigation system are affected by depth to the water table, the need for drainage, flooding, available water capacity, intake rate, permeability, erosion hazard, and slope. The construction of a system is affected by large stones. The performance of a system is affected by the depth of the root zone, the amount of salts or sodium, and soil reaction.

Grassed waterways are natural or constructed channels, generally broad and shallow, that conduct surface water to outlets at a nonerosive velocity. Wetness affects the construction of grassed waterways. Low available water capacity, toxic substances such as salts, 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.

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

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

engineering index properties

Table 14 gives estimates of the engineering classification and of the range of index properties for the major layers of each soil in the survey area. Most soils have layers of contrasting properties within the upper 5 or 6 feet.

Depth to the upper and lower boundaries of each layer is indicated. The range in depth and information on other properties of each layer are given for each soil series under "Soil series and their morphology."

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

Rock fragments larger than 3 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.

physical and chemical properties

Table 15 shows estimates of some characteristics and features that affect soil behavior. These estimates are given for the major layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter.

In this table, the estimated clay content of each major soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

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

Permeability refers to the ability of a soil to transmit water or air. The estimates indicate the rate of downward movement of water when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems, septic tank absorption fields, and construction where the rate of water movement under saturated conditions affects behavior (*5*).

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each major soil layer. The capacity varies, depending on soil properties that affect the retention of water and the depth of the root zone. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Reaction is a measure of acidity or alkalinity and is expressed as a range in pH values. The range in pH of each major horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Shrink-swell potential is the potential for volume change in a soil with a loss or gain in moisture. Volume change occurs mainly because of the interaction of clay minerals with water and varies with the amount and type of clay minerals in the soil. The size of the load on the soil and the magnitude of the change in soil moisture content influence the amount of swelling of soils in place. Laboratory measurements of swelling of undisturbed clods were made for many soils. For others, swelling was estimated on the basis of the kind and amount of clay minerals in the soil and on measurements of similar soils.

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

Shrink-swell potential classes are based on the change in length of an unconfined clod as moisture content is increased from air-dry to field capacity. The change is based on the soil fraction less than 2 millimeters in diameter. The classes are *low*, a change of less than 3 percent; *moderate*, 3 to 6 percent; and *high*, more than 6 percent. *Very high*, greater than 9 percent, is sometimes used.

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter (up to 4 percent) and on soil structure and permeability. Values of K range from 0.05 to 0.69. The higher the value the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur without affecting crop productivity over a sustained period (*9*). The rate is in tons per acre per year.

soil and water features

Table 16 gives estimates of various soil and water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are used to estimate runoff from precipitation. Soils not protected by vegetation are assigned to one of four groups. They are grouped according to the intake of water when the soils are thoroughly wet and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

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

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

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

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a permanent high water table, soils that have a claypan or clay layer at or near the surface, and

soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

Some of the soils are shown in Table 16 with dual hydrologic groups, for example A/D. This means that under natural conditions the soil is in group D, but by artificial methods the water table can be lowered to the point that the soil fits in group A. Onsite investigation is needed, however, to determine the hydrologic group of the soil at any particular location because there are different degrees of drainage and water table control.

Flooding, the temporary inundation of an area, is caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt and water in swamps and marshes are not considered flooding.

Table 16 gives the frequency and duration of flooding and the time of year when flooding is most likely.

Frequency, duration, and probable dates of occurrence are estimated. Frequency is expressed as none, rare, common, occasional, and frequent. *None* means that flooding is not probable; *rare* that it is unlikely but possible under unusual weather conditions; *common* that it is likely under normal conditions; *occasional* that it occurs on an average of no more than once in 2 years; and *frequent* that it occurs on an average of more than once in 2 years. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, and *long* if more than 7 days. Probable dates are expressed in months; November-May, for example, means that flooding can occur during the period November through May.

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and absence of distinctive horizons that form in soils that are not subject to flooding.

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

High water table (seasonal) is the highest level of a saturated zone in the soil in most years. The depth to a seasonal high water table applies to undrained soils. The estimates are based mainly on the evidence of a saturated zone, namely grayish colors or mottles in the soil. Indicated in table 16 are the depth to the seasonal high water table; the kind of water table—that is, perched, artesian, or apparent; and the months of the year that the water table commonly is high. A water table that is seasonally high for less than 1 month is not indicated in table 16.

An apparent water table is a thick zone of free water in the soil. It is indicated by the level at which water stands in an uncased borehole after adequate time is allowed for adjustment in the surrounding soil. An artesian water table is under hydrostatic head, generally beneath an impermeable layer. When this layer is penetrated, the water level rises in an uncased borehole. A perched water table is water standing above an unsaturated zone. In places an upper, or perched, water table is separated from a lower one by a dry zone.

Only saturated zones within a depth of about 6 feet are indicated. A plus sign preceding the range in depth indicates that the water table is above the surface of the soil. The first numeral in the range indicates how high the water rises above the surface. The second numeral indicates the depth below the surface.

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

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

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

classification of the soils

The system of soil classification used by the National Cooperative Soil Survey has six categories (*7*). Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or from laboratory measurements. In table 17, the soils of the survey area are classified according to the system. The categories are defined in the following paragraphs.

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

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

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

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

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Mostly the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle-size class, mineral content, temperature regime, depth of the root zone, consistence, moisture equivalent, slope, and permanent cracks. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is fine-loamy, mixed, nonacid, mesic Typic Haplaquents.

SERIES. The series consists of soils that have similar horizons in their profile. The horizons are similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile. The texture of the surface layer or of the substratum can differ within a series.

soil series

In this section, each soil series recognized in the survey area is described. The descriptions are arranged in alphabetic order.

Characteristics of the soil and the material in which it formed are identified for each series. The soil is compared with similar soils and with nearby soils of other series. A pedon, a small three-dimensional area of soil, that is typical of the series in the survey area is described. The detailed description of each soil horizon follows standards in the Soil Survey Manual (*6*). Many of the technical terms used in the descriptions are defined in Soil Taxonomy (*7*). 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."

Albany series

The Albany series consists of somewhat poorly drained soils that formed in deposits of sandy and loamy sediments. They are rapidly permeable in the surface and subsurface horizons and moderately permeable in the subsoil. These nearly level soils often occur on broad flats. Slopes are 0 to 2 percent. These soils are classified as loamy, siliceous, thermic Grossarenic Paleudults.

Albany soils are on the same type landscape as Blanton, Ocilla, and Pelham soils. Blanton soils are

higher than Albany soils and do not have mottles of chroma 2 or less in the upper B horizon. Ocilla and Pelham soils have a sandy A horizon that is less than 40 inches thick. Pelham soils are also poorly drained.

Typical pedon of Albany loamy sand, 0 to 2 percent slopes, 2.2 miles east of Walterboro; 3,000 feet north of junction of S.C. Highway 64 and secondary road 457; 100 feet north of hedgerow in center of cultivated field.

Ap—0 to 8 inches; very dark grayish brown (10YR 3/2) loamy sand; weak fine granular structure: very friable; many fine and medium roots; common uncoated sand grains; slightly acid; clear smooth boundary.

A21—8 to 26 inches; brownish yellow (10YR 6/8) loamy sand; few fine faint light gray mottles; weak fine granular structure; very friable; common fine and medium roots; common uncoated sand grains; strongly acid; clear wavy boundary.

A22—26 to 44 inches; brownish yellow (10YR 6/6) loamy sand; common medium distinct strong brown (7.5YR 5/8) and few fine faint light gray mottles; weak fine granular structure; very friable; few medium roots; common uncoated sand grains; very strongly acid; gradual wavy boundary.

A23—44 to 50 inches; very pale brown (10YR 7/3) sand; single grained; loose; very strongly acid; clear smooth boundary.

B1—50 to 57 inches; brownish yellow (10YR 6/6) loamy sand; common fine distinct strong brown (7.5YR 5/6) and few fine distinct light gray mottles; weak fine granular structure; very friable; common uncoated sand grains; very strongly acid; clear wavy boundary.

B21tg—57 to 84 inches; gray (10YR 6/1) sandy clay loam; common medium distinct red (10R 4/8) and common fine distinct brownish yellow (10YR 6/6) mottles; weak medium subangular blocky structure; friable; thin patchy clay films; very strongly acid.

The thickness of the solum ranges from 60 to more than 80 inches. Reaction ranges from very strongly acid to medium acid except in the surface horizon where limed.

The A horizon is 40 to 80 inches thick. The A1 or Ap horizon has hue of 10YR to 5Y, value of 3 to 6, and chroma of 1 or 2. The A2 horizon has hue of 10YR to 2.5Y, value of 5 to 8, and chroma of 2 to 8. Some pedons have mottles in shades of gray, yellow, brown, or a combination of these colors. The A horizon is dominantly loamy sand but ranges to sand, fine sand, and loamy fine sand.

The B1 horizon has hue of 10YR or 2.5Y, value of 5 to 8, and chroma of 4 to 6. Some pedons have mottles in shades of gray, yellow, brown, or a combination of these colors. The B1 horizon is loamy sand, sandy loam, or fine sandy loam.

The B2t horizon has hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 1 to 8. Some pedons have mottles in shades of red, brown, yellow, gray, or a combinaion of these colors. Some pedons do not have a dominant color in the lower part of the Bt horizon but are mottled in shades of red, yellow, and gray. The B2t horizon is sandy clay loam or sandy loam.

Alpin series

Alpin series consists of excessively drained very rapidly permeable soils that formed on the higher uplands in deposits of sandy sediment. These nearly level and gently sloping soils commonly occur on higher uplands. Slopes are 0 to 6 percent. These soils are classified as thermic, coated Typic Quartzipsamments.

Alpin soils are on the same type landscape as Blanton, Bonneau, Chipley, and Echaw soils. Blanton and Bonneau soils have argillic horizons. Chipley soils have chroma of 2 or less within 40 inches of the surface. Echaw soils have a Bh horizon less than 80 inches from the surface.

Typical pedon of Alpin fine sand, 0 to 6 percent slopes, 2.8 miles northwest of Walterboro; 4,300 feet northwest of junction of secondary roads 461 and 21; 2,500 feet west of secondary road 461.

Ap—0 to 6 inches; grayish brown (10YR 5/2) fine sand; single grained; loose; common fine and medium roots; strongly acid; clear smooth boundary.

A21—6 to 27 inches; light yellowish brown (10YR 6/4) fine sand; single grained; loose; common fine and medium roots; few fine black organic specks from Ap horizon; strongly acid; clear smooth boundary.

A22—27 to 45 inches; very pale brown (10YR 7/4) fine sand; few fine distinct brownish yellow mottles; single grained; loose; few fine and medium roots; few uncoated sand grains; strongly acid; gradual wavy boundary.

A2&B21—45 to 60 inches; very pale brown (10YR 7/4) fine sand; single grained; loose; common uncoated sand grains; common brownish yellow (10YR 6/6) loamy fine sand lamellae about 0.1 inches thick that make up about 10 percent of the mass; sand grains in lamellae are coated and weakly bridged with clay; individual lamella are discontinuous in length within the pedon; few fine and medium roots; strongly acid; gradual irregular boundary.

A2&B22—60 to 75 inches; light yellowish brown (10YR 6/4) fine sand; single grained; loose; common very pale brown (10YR 8/3) mottles and clean individual sand grains; common brownish yellow (10YR 6/6) loamy fine sand lamellae 0.1 inch thick, sand grains in lamellae are coated; individual lamellae are discontinuous in length within the pedon; strongly acid; gradual wavy boundary.

A2&B23—75 to 85 inches; very pale brown (10YR 8/3) fine sand; single grained; loose; common distinct yellowish brown (10YR 5/8) loamy fine sand lamellae 0.1 inch thick, sand grains in lamellae are coated; individual lamellae are discontinuous in length within the pedon; number of lamellae decreases to about 50 percent of the above layer; strongly acid.

The thickness of the solum is more than 80 inches. Reaction is very strongly acid to medium acid except in the Ap or A1 horizon where limed.

The A horizon is 45 to 58 inches thick. The Ap or A1 horizon has hue of 10YR, value of 4 or 5, and chroma of 2 or 3. The A2 horizon has hue of 10YR or 7.5YR, value of 5 to 7, and chroma of 4 to 8. It is sand, fine sand, or loamy fine sand. Some pedons have small pockets of light gray or white sand grains below a depth of 40 inches.

The A2&B2 horizon is 45 to 60 inches thick. The A2 portion of this horizon has hue of 10YR or 7.5YR, value of 5 to 7, and chroma of 3 to 8. The B2 portion has hue of 10YR or 7.5YR, value of 5 or 6, and chroma of 6 or 8. It is loamy sand, loamy fine sand, or sandy loam. Lamellae range from 0.05 to 0.6 inches thick. These lamellae range from one-fourth of an inch to more than 36 inches in horizontal length within the pedon.

Argent series

The Argent series consists of poorly drained, slowly permeable soils that formed in deposits of clayey sediment. These nearly level soils often occur on narrow to broad flat areas adjacent to drainageways. Slopes are 0 to 2 percent. These soils are classified as fine, mixed, thermic Typic Ochraqualfs.

Argent soils are on landscapes similar to those occupied by Bladen, Santee, Wahee, Nemours, or Yemassee soils. Bladen soils are strongly acid or very strongly acid throughout. Santee soils have a mollic epipedon. Wahee soils are somewhat poorly drained. Nemours soils are moderately well drained. Yemassee soils have loamy textures and are moderately well drained.

Typical pedon of Argent loam 2.3 miles west of junction U.S. 17 and S.C. Highway 64 at Jacksonboro; 2,350 feet north of U.S. 17 and 50 feet southwest of woods road.

A1—0 to 5 inches; very dark gray (10YR 3/1) loam; moderate medium granular structure; friable; many fine, common medium, and common large roots; very strongly acid; clear wavy boundary.

B21tg—5 to 34 inches; grayish brown (10YR 5/2) clay; common medium distinct brownish yellow (10YR 6/6) mottles; moderate medium subangular blocky structure; firm, sticky, plastic; prominent clay film on faces of peds; few fine and few medium roots; few fine flakes of mica; very strongly acid; gradual smooth boundary.

B22tg—34 to 57; gray (10YR 5/1) clay; common medium distinct olive brown (2.5Y 4/4) mottles; moderate medium subangular blocky structure; firm, very sticky, very plastic; thin patchy clay film on faces of peds; few fine roots; few fine flakes of mica; medium acid; gradual smooth boundary.

B3g—57 to 91 inches; olive gray (5Y 5/2) clay loam; common coarse distinct light olive brown (2.5Y 4/4) and common coarse distinct dark greenish gray (5GY 4/1) mottles; massive; firm, sticky, plastic; common medium white particles of marl; common fine flakes of mica; medium acid.

The thickness of the solum ranges from 54 to more than 80 inches. It is extremely acid to medium acid in the upper 50 inches and medium acid to moderately alkaline below that.

The A1 horizon has hue of 10YR, value of 2 or 3, and chroma of 1 or 2. The A2 horizon, where present, has hue of 10YR or 2.5Y, value of 4 to 6, chroma of 1 or 2. The A horizon is dominantly loam but includes fine sandy loam and clay loam.

The B2tg horizon has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 0 to 2. It is dominantly clay but ranges to sandy clay in some pedons. The B3 horizon has hue of 10YR to 5Y, value of 5 or 6, and chroma of 1 or 2. It is sandy clay loam or clay loam.

Bladen series

The Bladen series consists of poorly drained, slowly permeable soils that formed in deposits of thick, clayey sediment. These soils occur on broad, low, nearly level flats and in shallow drainageways. Slopes are commonly less than 1 percent but range up to 2 percent. These soils are classified as clayey, mixed, thermic Typic Albaquults.

Bladen soils are on landscapes similar to those occupied by Argent, Cape Fear, Nemours, and Wahee soils. Argent soils have a finer textured A horizon than do the Bladen soils and have a base saturation of more than 35 percent at a depth of 50 inches below the top of the argillic horizon. Cape Fear soils are at the lowest elevations in the landscape and have a thicker, darker A horizon than do the Bladen soils. Nemours soils are moderately well drained and are at higher elevations. Wahee soils are somewhat poorly drained, are at intermediate elevations, and are commonly between the Nemours and Bladen soils.

Typical pedon of Bladen fine sandy loam about 6.2 miles northwest of Jacksonboro; 4 miles north of intersection of secondary road 40 and S.C. Highway 64; 1,750 feet west of secondary road 40; 50 feet north of unimproved road.

A1—0 to 7 inches; black (10YR 2/1) fine sandy loam; weak medium granular structure; very friable; many fine and many medium roots; extremely acid; clear smooth boundary.

A2—7 to 13 inches; light brownish gray (2.5Y 6/2) fine sandy loam; common medium distinct brownish yellow (10YR 6/6) and common medium distinct yellowish brown (10YR 5/6) mottles; weak fine granular structure; very friable; common fine and common medium roots; extremely acid; clear wavy boundary.

B21tg—13 to 35 inches; gray (10YR 5/1) clay; common medium distinct yellowish brown (10YR 5/6), common medium faint very dark gray (10YR 3/1) and few medium prominent red (2.5YR 4/6) mottles; moderate medium subangular blocky structure; very firm; patchy clay films on faces of most peds; few medium and few large roots; extremely acid; gradual smooth boundary.

B22tg—35 to 52 inches; dark gray (10YR 4/1) clay; many medium distinct yellowish brown (10YR 5/6), many medium faint gray (10YR 5/1), and few medium prominent red (2.5YR 4/6) mottles; weak medium subangular blocky structure; very firm, sticky; patchy clay films on faces of most peds; few medium roots; extremely acid; gradual smooth boundary.

B23tg—52 to 58 inches; dark gray (5Y 4/1) clay; common medium distinct yellowish brown (10YR 5/6), common medium distinct light gray (5Y 6/1), common medium distinct greenish gray (5BG 6/1), and a few medium prominent red (2.5YR 4/8) mottles; weak medium subangular blocky structure; very firm, sticky; patchy clay films on faces of some peds; extremely acid; gradual smooth boundary.

B3g—58 to 64 inches; gray (5Y 6/1) sandy clay loam; common medium distinct yellowish brown (10YR 5/6), few fine distinct dark yellowish brown, and a few fine faint light gray mottles; weak medium subangular blocky structure; firm; extremely acid; gradual smooth boundary.

Solum thickness ranges from 60 to more than 80 inches. It ranges from extremely acid to strongly acid throughout except in the surface layer where limed.

The A1 or Ap horizon has hue of 10YR or 5Y, value of 2 to 4, and chroma of 1 or 2. The A2 horizon has hue of 10YR to 5Y, value of 5 to 7, and chroma of 1 or 2. It is sandy loam, fine sandy loam, or loam. Few to common mottles in shades of brown and yellow occur in some pedons.

The B2tg horizon has hue of 10YR to 5Y, value of 4 to 6, and chroma of 0 to 2. It commonly is clay but includes sandy clay and clay loam. Thin lenses, fingers, and pockets of fine sandy loam or loamy fine sand are common in this horizon is some pedons. There are few to many mottles in shades of gray, yellow, brown, red, or a combination of these throughout the horizon.

The B3g horizon has hue of 10YR to 5Y, value of 5 or 6, and chroma of 1 or 2. It is fine sandy loam, sandy clay loam, sandy clay, or clay. Few to common lenses and pockets of loamy fine sand are in some pedons. There are few to common mottles in shades of gray, yellow, brown, red, or a combination of these throughout the horizon in most pedons.

Blanton series

The Blanton series consists of well drained soils that formed in deposits of sandy and loamy sediment. They are rapidly permeable in the sandy surface layer and moderately permeable in the subsoil. These nearly level to gently sloping soils are on ridges and side slopes. Slopes are 0 to 6 percent. These soils are classified as loamy, siliceous, thermic Grossarenic Paleudults.

Blanton soils are on landscapes similar to those occupied by Albany, Bonneau, and Ocilla soils. Albany soils are wetter than Blanton soils and have a seasonal high water table within 30 inches of the surface. Bonneau and Ocilla soils have A horizons 20 to 40 inches thick. Ocilla soils have mottles of chroma 2 or less in the upper 30 inches.

Typical pedon of Blanton loamy fine sand, 0 to 6 percent slopes; about 12.6 miles west of Walterboro; 1.1 miles south of junction of secondary road 403 and U.S. Highway 21; 50 feet west of U.S. Highway 21.

A1—0 to 4 inches; gray (10YR 5/1) loamy fine sand; weak medium granular structure; very friable; many uncoated sand grains; strongly acid; clear wavy boundary.

A2—4 to 45 inches; very pale brown (10YR 7/3) loamy fine sand; single grained; loose; few medium dark reddish brown nodules; many uncoated sand grains; strongly acid; clear wavy boundary.

B21t—45 to 58 inches; yellowish brown (10YR 5/8) sandy clay loam; few medium distinct yellowish red (5YR 5/6) mottles; weak medium subangular blocky structure; friable; sand grains coated and bridged with clay; strongly acid; gradual smooth boundary.

B22t—58 to 70 inches; brownish yellow (10YR 6/6) sandy clay loam; common medium distinct red (2.5YR 5/8) and few common distinct gray (10YR 6/1) mottles; moderate medium subangular blocky structure; friable; sand grains coated and bridged with clay; less than 5 percent coarse yellowish red plinthite nodules; strongly acid; gradual smooth boundary.

Solum thickness ranges from 60 to more than 80 inches. It is medium acid to very strongly acid in the A horizon and strongly acid to very strongly acid in the Bt horizon.

The A1 or Ap horizon has hue of 10YR, value of 3 to 6, and chroma of 1 to 3. The A2 horizon has hue of 7.5YR to 2.5Y, value of 5 to 8, and chroma of 1 to 8. It is sand, fine sand, loamy sand, or loamy fine sand.

The B2t horizon has hue of 7.5YR or 10YR, value of 5 to 7, and chroma of 3 to 8; the lower part of the B2t horizon ranges to chroma of 2. It is sandy clay loam, sandy loam, or fine sandy loam. Content of plinthite ranges from 0 to 5 percent between depths of 60 and 80 inches.

Bohicket series

The Bohicket series consists of very poorly drained, very slowly permeable soils that formed in silty and clayey marine sediment. These soils are on broad, level tidal flats less than 3 feet above mean sea level. They are flooded by salt water twice daily. Slopes are less than 1 percent except on narrow borders adjacent to tidal streams. These soils are classified as fine, mixed, nonacid, thermic Typic Sulfaquents.

Bohicket soils are on the same type landscape as Capers and Handsboro soils and are bordered by a variety of soils that are not influenced by sea water. Capers soils are at slightly higher elevations and have lower *n* values than Bohicket soils. Handsboro soils are organic.

Typical pedon of Bohicket clay, in an area of Bohicket association, about 14.6 miles southeast of Green Pond on south side of Bennetts Island; 1.4 road miles southwest of Bennetts Point Public Landing; 300 feet south of upland on causeway to Hutchinson Island landing; 30 feet east of causeway.

A1—0 to 9 inches; dark grayish brown (10YR 4/2) clay; massive; very sticky; many medium and coarse pithy fibrous roots constituting 35 percent by volume; soil flows easily between fingers when squeezed and leaves small residue in hand; neutral; clear wavy boundary.

C1g—9 to 16 inches; very dark grayish brown (10YR 3/2) clay; massive; very sticky; many fine and many medium roots constituting about 25 percent by volume; soil flows easily between fingers when squeezed and leaves small residue in hand; neutral; gradual smooth boundary.

C2g—16 to 45 inches; black (5Y 2/2) clay; massive; very sticky; common fine and medium roots; soil flows easily between fingers when squeezed and leaves small residue in hand; neutral; gradual smooth boundary.

C3g—45 to 85 inches; dark greenish gray (5GY 4/1) clay; few fine distinct brown mottles; massive; sticky; soil flows easily between fingers when squeezed and leaves small residue in hand; neutral.

The soil ranges from slightly acid to moderately alkaline when in a continuous saturated condition. After drying for about 30 days, pale yellow sulfur compounds are common on the surface and the soil is extremely acid. The soil is either flooded, saturated, or nearly saturated with salt water at all times. Soil salinity is high or very high. The *n* values of all horizons within the 10- to 40-inch control section are 1 or more.

The A horizon has hue of 10YR to 5Y, value of 2 to 5, and chroma of 0 to 2. It is clay, silty clay, or silty clay loam.

The Cg horizon has hue of 10YR to 5GY, value of 2 to 7, and chroma of 0 to 2. It is clay or silty clay. Some pedons contain pockets and thin layers of sandy loam, loamy sand, or sand. Sea shells range from few to many in some pedons.

Bonneau series

The Bonneau series consists of well drained or moderately well drained, moderately permeable soils that formed in thick deposits of sandy and loamy sediment. These nearly level to gently sloping soils are on low ridges and side slopes. Slopes are 0 to 6 percent. These soils are classified as loamy, siliceous, thermic Arenic Paleudults.

Bonneau soils are on landscapes similar to those occupied by Blanton, Goldsboro, Lynchburg, Norfolk, and Ocilla soils. Blanton soils have a thicker A horizon than do the Bonneau soils. Goldsboro, Lynchburg, and Norfolk soils have a thinner A horizon. Ocilla soils are somewhat poorly drained.

Typical pedon of Bonneau fine sand, 0 to 2 percent, about 13.5 miles west of Walterboro; 2,300 feet north of junction of S.C. Highway 63 and secondary road 84; 500 feet west of secondary road 84; 135 feet west of ditch; 40 feet northwest of electric transmission pole in cultivated field.

Ap—0 to 5 inches; dark grayish brown (10YR 4/2) fine sand; weak fine granular structure; very friable; many fine and medium roots; slightly acid; abrupt wavy boundary.

A21—5 to 13 inches; light yellowish brown (2.5Y 6/4) fine sand; few fine distinct dark gray (10YR 4/1) mottles; weak fine granular structure; very friable; common fine and medium roots; medium acid; clear wavy boundary.

A22—13 to 25 inches; pale yellow (2.5Y 7/4) fine sand; few fine faint streaks of white sand; weak fine granular structure; very friable; common fine and medium roots; strongly acid; gradual wavy boundary.

B21t—25 to 45 inches; yellowish brown (10YR 5/6) sandy clay loam; common medium distinct yellowish red (5YR 5/6); weak medium subangular blocky structure; friable; few fine roots; sand grains coated and bridged with clay films; strongly acid; clear wavy boundary.

B22t—45 to 56 inches; yellowish brown (10YR 5/8) sandy clay loam; common medium distinct yellowish red (5YR 5/6); red (2.5YR 5/8), and few medium distinct light gray (10YR 7/1) mottles; weak medium subangular blocky structure; friable; sand grains coated and bridged with clay; strongly acid; gradual wavy boundary.

B23t—56 to 77 inches; mottled light gray (10YR 7/1), yellowish brown (10YR 5/8), brownish yellow (10YR 6/6), yellowish red (5YR 5/6), and red (2.5YR 4/6) sandy clay loam; weak medium subangular blocky structure; friable; sand grains coated and bridged with clay; strongly acid.

Solum thickness ranges from 60 to more than 80 inches. Reaction is strongly acid or very strongly acid except in the A horizon where limed.

The A horizon is 20 to 40 inches thick. The A1 or Ap horizon has hue of 10YR or 2.5Y, value of 3 to 5, and chroma of 1 to 3. The A2 horizon has hue of 10YR or 2.5Y, value of 5 to 7, chroma of 3 to 6. It is dominantly loamy sand but contains loamy fine sand and fine sand.

The upper part of the B2t horizon has hue of 7.5YR, 10YR, or 2.5Y; value of 5 to 7; and chroma of 4 to 8. The lower part of the B2t horizon has the same hue, value, or chroma with mottles in shades of gray, brown, red, or yellow. Mottles with chroma of 2 or less are within a depth of 60 inches. The B2t horizon is dominantly sandy clay loam but contains sandy loam in the upper part and sandy clay below a depth of 40 inches.

Cape Fear series

The Cape Fear series consists of very poorly drained, slowly permeable soils in slightly concaved areas, in low depressional areas, and along drainageways. These nearly level soils are on marine terraces at elevations below about 42 feet. Slopes are 0 to 2 percent. These soils are classified as clayey, mixed, thermic Typic Umbraquults.

Cape Fear soils are on the same type landscape as Yauhannah, Nemours, Hobcaw, Ogeechee, and Yemassee soils. Yauhannah and Nemours soils have dominant chroma of 3 or more between the lower boundary of the Ap or A1 horizon and a depth of 30 inches and are also at higher elevations than the Cape Fear soils. Hobcaw soils are less than 35 percent clay in the Bt horizon. Ogeechee and Yemassee do not have umbric epipedons, are less than 35 percent clay in the Bt horizon, and are better drained.

Typical pedon of Cape Fear loam, 15 miles southwest of Walterboro; 3.5 miles south of junction of secondary road 66 and U.S. Highway 17A; 50 feet west of secondary road 66.

A1—0 to 3 inches; black (10YR 2/1) loam; weak medium granular structure; friable; many fine grass roots; very strongly acid; clear wavy boundary.

B1—3 to 12 inches; very dark gray (10YR 3/1) clay loam; moderate subangular blocky structure; firm, plastic and sticky; few fine roots; very strongly acid; clear wavy boundary.

B21tg—12 to 27 inches; dark gray (10YR 4/1) clay; common medium distinct strong brown (7.5YR 5/8) and dark yellowish brown (10YR 4/4), few moderate distinct very dark gray (10YR 3/1) mottles; weak medium subangular blocky structure; firm, plastic and sticky; very strongly acid; gradual wavy boundary.

B22tg—27 to 36 inches; dark gray (10YR 4/1) clay; common medium distinct dark brown (10YR 3/3) and yellowish red (5YR 5/8); few fine distinct light brownish gray mottles; weak medium subangular blocky structure; firm, plastic and sticky; very strongly acid; gradual wavy boundary.

B3g—36 to 42 inches; gray (10YR 5/1) sandy clay loam; common medium distinct light olive gray (5Y 6/2) and few fine distinct dark reddish gray mottles; weak medium subangular blocky structure; friable; few pockets of loamy sand; strongly acid; gradual smooth bounday.

IIC1g—42 to 50 inches; gray (10YR 6/1) sand; common fine distinct yellowish red (5YR 4/6) and pinkish gray (5YR 6/2); few fine distinct very dark gray mottles; single grained; loose; few pockets of sandy clay; strongly acid; gradual smooth boundary.

IIC2g—50 to 84 inches; light gray (10YR 7/1) sand; single grained; loose; strongly acid.

The thickness of the solum ranges from 36 to more than 60 inches. It is very strongly acid to medium acid in all horizons except in the A horizon where limed.

The A horizon has hue of 10YR, value 2 or 3, chroma of 1 or 2. It is loam or fine sandy loam.

The B1 horizon has hue of 10YR or 2.5Y, value of 3 or 4, and chroma of 0 or 1. It is clay loam or sandy clay loam.

The B2tg horizon has hue of 10YR or 2.5Y, value of 3 to 5, and chroma of 0 to 2. It is clay, sandy clay, or clay loam. There are few to common mottles in shades of gray, yellow, olive, brown, or a combination of these colors in most pedons.

The B3g horizon has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 1 or 2. It is sandy clay loam, sandy clay, or sandy loam. There are few to common mottles in shades of gray, yellow, olive, brown, or a combination of these throughout this horizon in most pedons.

The Cg horizon has hue of 10YR or 2.5Y, value 6 or 7, and chroma of 1 or 2. It is loamy sand or sand.

Capers series

The Capers series consists of very poorly drained, very slowly permeable soils that formed in silty and clayey marine sediment. These soils are on broad, nearly level tidal flats and along the lower reaches of larger streams flowing into the tidal flats. Capers soils are flooded with brackish or sea water in most places twice daily. Slopes are 0 to 2 percent. These soils are classified as fine, mixed, nonacid, thermic, Typic Sulfaquents.

Capers soils are on the same type landscape as Bohicket, Handsboro, Pungo, and Levy soils. Bohicket soils are at slightly lower elevations and have higher *n* values than Capers soils. Handsboro soils are dominantly organic to a depth of 32 inches or more. Levy soils are mineral soils with high *n* values and are not flooded by salt water. Pungo soils are organic with no significant sulfur content and are not flooded by sea water.

Typical pedon of Capers clay, in an area of Capers association, 11.5 miles southeast of Green Pond; 8 miles southeast of junction of secondary road 161 and U.S. Highway 17; 2.8 miles south of junction of unimproved public landing road and secondary road 161; 1,250 feet east of Wiggins Public Landing; also 200 feet north of Combahee River and 200 feet east of woodland-marsh boundary.

A11—0 to 4 inches; dark gray (5Y 4/1) clay; common medium distinct reddish brown (5YR 4/4) and common medium faint very dark gray (N 3/0) mottles; massive; sticky, plastic; when squeezed in hand, soil flows between the fingers with much difficulty (*n* value about 0.3); slight sulfide odor; many medium and many fine live and dead roots; neutral; gradual wavy boundary.

A12—4 to 16 inches; dark gray (N 4/0) clay; common medium faint dark grayish brown (2.5Y 4/2) and few fine distinct dark reddish brown mottles; massive; very sticky, plastic; when squeezed in hand, soil flows between the fingers with difficulty (*n* value about 0.4); moderate sulfide odor; many medium and many fine live and dead roots; mildly alkaline; gradual wavy boundary.

C1g—16 to 41 inches; dark gray (10YR 4/1) clay; massive; very sticky, plastic; when squuezed in hand, soil flows between fingers with difficulty, leaving most of the soil in hand (*n* value about 0.5); moderate sulfide odor; common fine roots; about 25 percent by volume organic matter that is dominantly hemic; mildly alkaline; gradual wavy boundary.

C2g—41 to 85 inches; dark gray (10YR 4/1) clay; massive; very sticky, plastic; when squeezed in hand, soil flows between the fingers with slight difficulty leaving some residue in hand (*n* value about 0.8); moderate sulfide odor; less than 5 percent by volume organic matter; mildly alkaline.

Reaction, under continuous saturated conditions, ranges from medium acid to moderately alkaline throughout. After drying the soil becomes extremely acid and pale yellow sulfur compounds are common on the surface. Organic surface layers 3 to 15 inches thick are present in some pedons.

The A horizon has hue of 10YR to 5Y, value of 2 to 4, and chroma of 0 to 2. Texture is clay, silty clay, or silty clay loam. When dry, this horizon cracks and is very hard.

The Cg horizon has hue of 10YR to 5Y, value of 3 or 4, and chroma of 0 to 2. Texture is clay or silty clay.

Chipley series

The Chipley series consists of moderately well drained, rapidly permeable soils that formed in sandy sediment. These nearly level soils commonly occur on broad smooth uplands. Slopes are 0 to 2 percent. These soils are classified as thermic, coated, Aquic Quartzipsamments.

Chipley soils are near Alpin, Albany, Blanton, Echaw, and Pelham soils. Alpin soils are at higher elevations than Chipley soils and do not have gray mottles in the upper 40 inches. Albany soils are somewhat poorly drained and have an argillic horizon between depths of 40 and 60 inches. Blanton soils are at higher elevations, are moderately well drained, and have an argillic horizon between depths of 40 and 60 inches. Echaw soils are moderately well drained and have a Bh horizon between depths of 30 and 50 inches. Pelham soils are at the lower elevations, are poorly drained, and have an argillic horizon 20 to 40 inches below the surface.

Typical pedon of Chipley fine sand, 0 to 2 percent slopes, 5.2 miles northwest of Walterboro; 3,300 feet west of junction of secondary roads 51 and 64; 200 feet south of secondary road 64.

A1—0 to 6 inches; dark grayish brown (10YR 4/2) fine sand; single grained; loose; many fine and common medium roots; very strongly acid; gradual smooth boundary.

C1—6 to 19 inches; brownish yellow (10YR 6/6) fine sand; few medium distinct dark gray (10YR 4/1) streaks along root channels; single grained; loose; few fine and few medium roots; strongly acid; gradual wavy boundary.

C2—19 to 31 inches; brownish yellow (10YR 6/8) fine sand; few fine distinct reddish yellow (7.5YR 6/8) mottles and few fine faint streaks of light gray; single grained; loose; few fine roots; strongly acid; gradual wavy boundary.
C3—31 to 44 inches; yellowish brown (10YR 5/8) fine sand; common medium distinct light gray (10YR 7/2) and common medium distinct strong brown (7.5YR 5/8) mottles; single grained; loose; strongly acid; gradual wavy boundary.
C4g—44 to 63 inches; mottled light gray (10YR 7/2), strong brown (7.5YR 5/8), and pale yellow (2.5Y 8/4) fine sand; single grained; loose; strongly acid; gradual wavy boundary.
C5g—63 to 84 inches; light gray (10YR 7/2) fine sand; few medium distinct light yellowish brown (2.5Y 6/4) mottles; single grained; loose; strongly acid; gradual smooth boundary.
C6—84 to 94 inches; pale brown (10YR 6/3) fine sand; single grained; loose; strongly acid.

The thickness of the fine sand layer is 80 inches or more. It is very strongly acid to slightly acid throughout, except in the A horizon where limed.

The A horizon has hue of 10YR, value of 2 to 5, and chroma of 1 or 2. It is sand or fine sand.

The C horizon has hue of 7.5YR to 5Y, value of 5 to 8, and chroma of 2 to 8. There are few to common fine mottles in shades of gray, yellow, brown, or a combination of these colors in some pedons. Texture is sand or fine sand.

Chisolm series

The Chisolm series consists of well drained or moderately well drained, moderately permeable soils that formed in deposits of sandy and loamy sediment. These nearly level soils occur on ridges parallel to main drainageways. Slopes are 0 to 2 percent. These soils are classified as loamy, siliceous, thermic Arenic Hapudults.

Chisolm soils are on landscapes similar to those occupied by Coosaw, Yauhannah, and Nemours soils. Coosaw soils have mottles with chroma of 2 or less within the upper 10 inches of the Bt horizon. Yauhannah and Nemours soils have a B2t horizon within 20 inches of the surface. In the Nemours soils the B2t horizon is fine textured.

Typical pedon of Chisolm loamy fine sand, 0 to 2 percent slopes, near Jacksonboro; 2,500 feet east of junction U.S. 17 and secondary highway 30; 300 feet southeast of woods road.

Ap—0 to 10 inches; dark grayish brown (10YR 4/2) loamy fine sand; weak medium granular structure; very friable; medium acid; clear wavy boundary.
A2—10 to 23 inches; brownish yellow (10YR 6/6) loamy fine sand; weak medium granular structure; very friable; few dark reddish brown concretions of iron; medium acid; gradual wavy boundary.
B1—23 to 30 inches; reddish yellow (7.5YR 6/8) sandy loam; weak medium granular structure; friable; strongly acid; clear wavy boundary.
B2t—30 to 57 inches; strong brown (7.5YR 5/8) sandy clay loam; weak medium subangular blocky structure; common dusky red and yellowish red concretions of iron; friable; strongly acid; gradual wavy boundary.
B3—57 to 72 inches; mottled reddish yellow (7.5YR 6/8), red (2.5YR 4/8), and light olive gray (5Y 6/2) stratified sandy clay loam and sandy loam; weak medium subangular blocky structure; friable; strongly acid; gradual wavy boundary.
C—72 to 85 inches; brownish yellow (10YR 6/8) loamy sand; single grained; partially coated sand grains; few small pockets of sandy clay loam; few fine flakes of mica; strongly acid.

The solum ranges from 56 to 80 inches thick. It is strongly acid to medium acid to a depth of 6 feet except in the A horizon where limed.

The A horizon is 20 to 40 inches thick. The A1 horizon has hue of 10YR or 2.5Y, value of 3 to 7, and chroma of 1 to 4. The A2 horizon has hue of 10YR or 2.5Y, value of 5 to 8, and chroma of 2 to 6. The A horizon is loamy fine sand or loamy sand.

The B1 horizon, where present, has hue of 5YR to 10YR, value of 5 or 6, and chroma of 3 to 8.

The B2t horizon has hue of 2.5YR to 10YR, value of 4 to 6, and chroma of 4 to 8. It is dominantly sandy clay loam but ranges to sandy clay in the lower part of some pedons. The B3 horizon has hue of 2.5YR to 10YR, value of 4 to 6, and chroma of 3 to 8. It has mottles in shades of red, brown, yellow, or gray. The B3 horizon is fine sandy loam, loamy sand, or sand.

The C horizon has hue of 2.5YR to 10YR, value of 4 to 7, and chroma of 1 to 8. There are mottles in shades of red, brown, yellow, or gray. Texture is fine sandy loam, loamy sand, or sand.

Coosaw series

The Coosaw series consists of somewhat poorly drained, moderately permeable soils that formed in thick deposits of sandy and loamy sediment. These upland soils commonly occur on nearly level low ridges. Slopes are 0 to 2 percent. These soils are classified as loamy, siliceous, thermic Arenic Hapudults.

Coosaw soils are on landscapes similar to those occupied by Yauhannah, Chisolm, Murad, and Williman soils. Yauhannah soils are commonly at slightly higher elevations than the Coosaw soils, are moderately well drained, and have an argillic horizon less than 20 inches

below the surface. Chisolm soils are at the higher elevations and are well drained. Murad soils are in low uplands, are somewhat poorly drained, and have an argillic horizon 40 to 60 inches below the surface. Williman soils are in low areas, are poorly drained, and have an argillic horizon 20 to 40 inches below the surface.

Typical pedon of Coosaw loamy fine sand about 3.8 miles southwest of Green Pond; 200 feet south of intersection of secondary road 119 and U.S. Highway 17; 200 feet north of U.S. Highway 17.

A1—0 to 5 inches; dark gray (10YR 4/1) loamy fine sand; weak fine granular structure; very friable; many fine and common medium roots; very strongly acid; clear smooth boundary.

A21—5 to 17 inches; very pale brown (10YR 7/3) loamy fine sand; common medium faint light brownish gray (2.5Y 6/2) mottles; weak fine granular structure; very friable; common fine and common medium roots; strongly acid; clear wavy boundary.

A22—17 to 32 inches; light gray (2.5Y 7/2) fine sand; many medium faint light gray (10YR 7/1) and few fine distinct very pale brown mottles; weak medium subangular blocky structure parting to weak fine granular; very friable; few fine and few medium roots; strongly acid; clear smooth boundary.

B21t—32 to 35 inches; light yellowish brown (10YR 6/4) fine sandy loam; many medium faint brownish yellow (10YR 6/6), common medium distinct yellowish brown (10YR 5/6), and few fine distinct light brownish gray mottles; weak medium subangular blocky structure; very friable; common fine lenses of light gray fine sand; very strongly acid; clear wavy boundary.

B22t—35 to 47 inches; strong brown (7.5YR 5/6) sandy clay loam; many medium distinct gray (10YR 6/1), common medium distinct brownish yellow (10YR 6/6), and common medium distinct red (2.5YR 4/6) mottles; weak medium subangular blocky structure; friable; faint patchy clay films on faces of some peds; few fine roots; very strongly acid; gradual wavy boundary.

B23tg—47 to 56 inches; gray (10YR 6/1) sandy clay loam; many medium prominent red (2.5YR 4/6) and common medium distinct brownish yellow (10YR 6/6) mottles; weak medium subangular blocky structure; friable; faint patchy clay films on faces of some peds; very strongly acid; gradual wavy boundary.

B31g—56 to 66 inches; light gray (10YR 7/2) sandy clay loam; many medium distinct reddish yellow (5YR 6/8), and many medium distinct brownish yellow (10YR 6/6), and few medium prominent red (2.5YR 5/8) mottles; weak medium subangular blocky structure; friable; few fine flakes of mica; very strongly acid; gradual wavy boundary.

B32g—66 to 72 inches; light gray (10YR 7/2) sandy clay loam; many medium distinct brownish yellow (10YR 6/6), common medium prominent red (2.5YR 5/8), and common medium distinct reddish yellow (5YR 6/8) mottles; weak medium subangular blocky structure; very friable; few fine flakes of mica; very strongly acid; clear wavy boundary.

Cg—72 to 99 inches; light gray (10YR 7/1) loamy fine sand; many medium distinct light yellowish brown (2.5Y 6/4), many medium distinct brownish yellow (10YR 6/6), and few medium distinct yellowish brown (10YR 5/6) mottles; massive; very friable; few fine pockets of fine sandy loam; common fine flakes of mica; very strongly acid.

The solum ranges from 50 to more than 80 inches thick (fig. 6). It is very strongly acid to medium acid in the A horizon and very strongly acid or strongly acid in the B and C horizons.

The A horizon is 20 to 40 inches thick. The A1 or Ap horizon has hue of 10YR, value of 3 to 5, and chroma of 1 to 4. Very dark gray horizons are less than 10 inches thick. The A2 horizon has hue of 10YR to 5Y, value of 6 to 8, and chroma of 1 to 4. The A horizon is dominantly loamy fine sand but ranges to loamy sand and fine sand.

The B1 horizon, where present, has hue of 7.5YR to 2.5Y, value of 5 to 7, and chroma of 4 to 8. There are mottles in shades of gray, yellow, brown, red, or a combination of these colors in most pedons. Texture is sandy loam or fine sandy loam.

The upper part of the B2t horizon has hue of 2.5YR to 2.5Y, value of 4 to 6, and chroma of 3 to 8 with mottles in shades of gray, yellow, brown, red, or a combination of these colors. The lower B2t horizon and the B3 horizon have hue of 10YR to 5Y, value of 5 to 7, and chroma of 1 or 2 with mottles in shades of gray, yellow, brown, red, or a combination of these colors. The B2t horizon is commonly sandy clay loam but includes fine sandy loam and sandy loam.

The C horizon has hue of 10YR to 5Y, value of 5 to 7, and chroma of 1 to 3. It is commonly loamy fine sand but includes fine sandy loam.

Coxville series

The Coxville series consists of poorly drained, moderately slowly permeable soils that formed in thick beds of clayey sediment. These soils are in low, nearly level areas and slightly depressional areas on uplands. Slopes are 0 to 2 percent. These soils are classified as clayey, kaolinitic, thermic Typic Paleaquults.

Coxville soils are on landscapes similar to those occupied by Rains, Dunbar, Goldsboro, Lynchburg, and Paxville soils. Rains soils are at the same elevations but have a coarser textured B2t horizon. Dunbar soils are at higher elevations and have a horizon with dominant chroma of 3 or more between the lower boudary of the

A1 or Ap horizon and a depth of 30 inches. Goldsboro and Lynchburg soils are at higher elevations and have a coarser textured B2t horizon. Paxville soils are at slightly lower elevations and have an umbric epipedon.

Typical pedon of Coxville fine sandy loam about 12 miles northwest of Walterboro; 500 feet north of the junction of State Highway 64 and U. S. Highway 21; 75 feet east of U.S. Highway 21.

A1—0 to 7 inches; dark gray (10YR 4/1) fine sandy loam; weak medium granular structure; very friable; many fine, common medium, and a few large roots; few fine lenses of light gray loamy fine sand; extremely acid; clear wavy boundary.

A2—7 to 10 inches; light brownish gray (10YR 6/2) fine sandy loam; common medium distinct dark gray (10YR 4/1) mottles; weak medium granular structure; very friable; common fine and medium roots; many fine distinct light gray (10YR 7/1) lenses of loamy fine sand; extremely acid; clear wavy boundary.

B21tg—10 to 15 inches; gray (10YR 5/1) sandy clay loam; common medium distinct yellowish brown (10YR 5/6) and few medium distinct dark reddish brown (5YR 3/3) mottles; weak coarse prismatic structure parting to weak medium subangular blocky; friable; faint patchy clay films on faces of some peds; few fine and medium roots; many fine lenses of light gray (10YR 7/1) loamy fine sand; extremely acid; clear wavy boundary.

B22tg—15 to 57 inches; dark gray (10YR 4/1) clay; many medium distinct yellowish brown (10YR 5/6) and medium prominent red (10R 4/6) mottles; weak coarse prismatic structure parting to strong medium angular blocky; firm, sticky; distinct discontinuous clay films on faces of most peds; few fine and medium roots; very strongly acid; gradual wavy boundary.

B23tg—57 to 71 inches; gray (10YR 5/1) clay; many medium distinct yellowish brown (10YR 5/6), common medium distinct light gray (5Y 7/2), and a few medium distinct dark brown (7.5YR 4/4) mottles; weak medium subangular blocky structure; firm; faint patchy clay films on faces of some peds; very strongly acid; gradual wavy boundary.

B3g—71 to 82 inches; gray (10YR 5/1) sandy clay; many medium distinct yellowish brown (10YR 5/6), common medium distinct light gray (5Y 7/2), and a few medium distinct dark brown (7.5YR 4/4) mottles; weak medium subangular blocky structure; firm; very strongly acid; clear smooth boundary.

The solum ranges from 60 to more than 80 inches thick. It ranges from extremely acid to strongly acid throughout except in the A horizon where limed.

The A1 or Ap horizon has hue of 10YR to 5Y, value of 2 to 5, and chroma of 0 to 2. The A2 horizon has hue of 10YR to 5Y, value of 5 to 7, and chroma of 0 to 2. The A horizon is sandy loam, fine sandy loam, or loam.

The B1 horizon, where present, has hue of 10YR to 5Y, value of 4 or 5, and chroma of 0 to 2. Most pedons have mottles in shades of red, brown, yellow, or gray. Texture is sandy clay loam, loam, or clay loam.

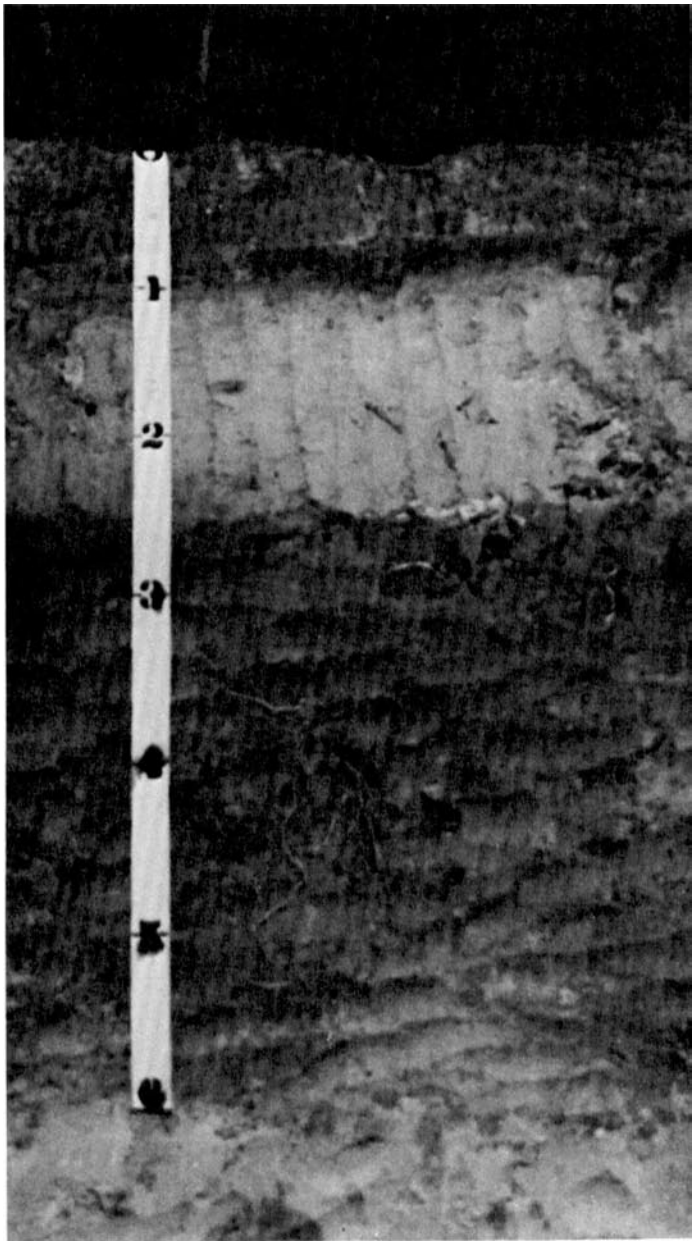


Figure 6.—Typical profile of Coosaw loamy fine sand. Note highly leached area from a depth of 1 foot to 2.5 feet and well-developed subsoil from 2.5 to 4 feet. Clay content decreases with depth to about 6 feet where the soil is underlain by stratified sand and clay.

The B2tg horizon has hue of 10YR to 5Y, value of 4 to 7, and chroma of 0 to 2. Mottles in shades of red, brown, and yellow are common in most pedons. Texture commonly is sandy clay but ranges to clay loam or clay.

The B3g horizon has hue of 10YR to 5Y, value of 5 to 7, and chroma of 0 to 2. Most pedons have mottles in shades of red, brown, yellow, or olive. Texture is commonly sandy clay loam but ranges to sandy clay and fine sandy loam.

Dunbar series

The Dunbar series consists of somewhat poorly drained, moderately slowly permeable soils that formed in thick deposits of clayey sediment. These nearly level soils are on broad, smooth interstream divides. Slopes are 0 to 2 percent. These soils are classified as clayey, kaolinitic, thermic Aeric Paleaquults.

Dunbar soils are on landscapes similar to those occupied by Coxville, Goldsboro, Lynchburg, Paxville, and Rains soils. Coxville and Rains soils are at slightly lower elevations than the Dunbar soils and do not have horizons with dominant chroma of 3 or more between the lower boundary of the A1 or Ap horizon and a depth of 30 inches. Goldsboro soils are at higher elevations and have a coarser textured B2t horizon. Lynchburg soils are at similar elevations, but have a coarser textured B2t horizon. Paxville soils are at lower elevations, have an umbric epipedon, and have a coarser textured B2t horizon.

Typical pedon of Dunbar fine sandy loam about 12 miles northwest of Walterboro; 1,250 feet north of junction of State Highway 64 and U.S. Highway 21; 150 feet east of U.S. Highway 21.

A1—0 to 6 inches; very dark gray (10YR 3/1) fine sandy loam; moderate medium granular structure; friable; many fine and common medium roots; very strongly acid; clear wavy boundary.

A2—6 to 10 inches; light yellowish brown (10YR 6/4) fine sandy loam; common medium distinct yellowish brown (10YR 5/8) and common medium distinct light brownish gray (10YR 6/2) mottles; weak medium subangular blocky structure; very friable; few fine and medium roots; very strongly acid; clear wavy boundary.

B1—10 to 14 inches; yellowish brown (10YR 5/4) sandy clay loam; many medium distinct light brownish gray (10YR 6/2), common medium faint yellowish brown (10YR 5/8), and few fine distinct red mottles; weak medium subangular blocky structure; friable; few fine and medium roots; very strongly acid; clear wavy boundary.

B21tg—14 to 48 inches; light brownish gray (10YR 6/2) sandy clay; common medium distinct strong brown (7.5YR 5/8), common medium distinct yellowish brown (10YR 5/8), and a few medium prominent red (2.5YR 4/8) mottles; moderate medium subangular blocky structure; firm; distinct discontinuous clay films on faces of peds; few fine roots; few fine lenses of light gray fine sand; very strongly acid; gradual wavy boundary.

B22tg—48 to 67 inches; gray (10YR 5/1) sandy clay; many medium distinct yellowish brown (10YR 5/8) and common medium distinct dark brown (7.5YR 4/4) mottles; weak medium subangular blocky structure; firm; faint patchy clay films on faces of some peds; common fine and medium lenses of light gray fine sand; very strongly acid; gradual wavy boundary.

B31g—67 to 78 inches; gray (10YR 5/1) clay; many medium distinct yellowish brown (10YR 5/8), common medium distinct light gray (5Y 7/2), and a few fine distinct dark brown mottles; massive; firm; very strongly acid.

The solum ranges from 60 to more than 80 inches thick. It is extremely acid to strongly acid throughout except in the A horizon where limed.

The A1 or Ap horizon has hue of 10YR to 5Y, value of 3 to 5, and chroma of 1 or 2. The A2 horizon has hue of 10YR to 5Y, value of 4 to 6, and chroma of 1 to 4. The A horizon is sandy loam or fine sandy loam.

The B1 horizon, where present, has hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 3 to 8. Most pedons have mottles in shades of red, brown, yellow, gray, or a combination of these colors. Texture commonly is sandy clay loam but ranges to fine sandy loam, loam, and sandy clay.

The B2t horizon is 30 to 60 inches thick. The upper part of the B2t horizon in soils that do not have a B1 horizon has the same range in color as described for the B1 horizon. The lower part of the B2t horizon, and the upper part of B2t horizon in soils that have a B1 horizon have hue of 10YR to 5Y, value of 4 to 7, and chroma of 1 or 2. There are commonly mottles in shades of red, brown, yellow, or a combination of these colors. The B2t horizon is sandy clay, clay loam, or clay.

The B3g horizon has the same range in color as described for the lower part of the B2t horizon. It is sandy clay loam, clay loam, sandy clay, or clay.

Echaw series

The Echaw series consists of moderately well drained, moderately rapidly or rapidly permeable soils that formed in sandy marine sediment. These nearly level soils are on broad flat areas of the lower Coastal Plain. Slopes are 0 to 2 percent. These soils are classified as sandy, siliceous, thermic Entic Haplohumods.

Echaw soils are near Albany, Chipley, Leon, and Seagate soils. Albany and Seagate soils have argillic horizons. Chipley soils do not have B horizons. Leon soils have a Bh horizon at a depth of less than 30 inches.

Typical pedon of Echaw loamy fine sand 8 miles southwest of Walterboro; 3,300 feet northwest of the junction of secondary roads 114 and 115; 2,000 feet west of secondary road 115.

A11—0 to 3 inches; very dark gray (10YR 3/1) loamy fine sand; weak medium granular structure; very friable; many uncoated sand grains; very strongly acid; clear smooth boundary.

A12—3 to 8 inches; dark grayish brown (10YR 4/2) loamy fine sand; weak medium granular structure; very friable; very strongly acid; gradual smooth boundary.

A21—8 to 27 inches; brownish yellow (10YR 6/6) loamy fine sand; weak medium subangular blocky structure; friable; strongly acid; gradual smooth boundary.

A22—27 to 35 inches; brownish yellow (10YR 6/6) loamy fine sand; many coarse distinct light brownish gray (10YR 6/2) mottles; weak medium subangular blocky structure; friable; strongly acid; clear smooth boundary.

A23—35 to 38 inches; light brownish gray (10YR 6/2) fine sand; single grained; loose; strongly acid; clear smooth boundary.

Bh1—38 to 55 inches; black (10YR 2/1) loamy fine sand; weak fine subangular blocky structure; friable; very strongly acid; gradual smooth boundary.

Bh2—55 to 65 inches; very dark grayish brown (10YR 3/2) loamy fine sand; single grained; loose; strongly acid.

The solum ranges from 45 to more than 60 inches thick. Depth to the Bh horizon ranges from 30 to 50 inches. Reaction ranges from medium to very strongly acid except in the A horizon where limed.

The A1 or Ap horizon has hue of 10YR or 2.5Y, value of 2 to 4, and chroma of 1 or 2. The upper part of the A2 horizon has hue of 7.5YR to 2.5Y, value of 4 to 7, and chroma of 3 to 6. The lower part of the A2 horizon has hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 1 or 2. The A horizon is loamy sand, loamy fine sand, or fine sand.

The Bh horizon has hue of 5YR to 10YR, value of 2 to 4, and chroma of 1 to 3. It is loamy sand, loamy fine sand, fine sand, or sand.

Eddings series

The Eddings series consists of well drained, moderately permeable soils that formed in sandy and loamy sediment. These nearly level and gently sloping soils are on ridges. Slopes are dominantly less than 2 percent, but range up to 6 percent along drainageways. These soils are classified as loamy, siliceous, thermic Grossarenic Paleudults.

Eddings soils are on landscapes similar to those occupied by Chisolm, Bladen, Coosaw, Nemours, and Ogeechee soils. The Chisolm soils are on low ridges and have an A horizon 20 to 40 inches thick. The Bladen and Ogeechee soils are poorly drained and occur in poorly defined drainageways and depressions. The Coosaw soils are in broad, nearly level areas and are somewhat poorly drained. Nemours soils are moderately well drained and have a clayey subsoil.

Typical pedon of Eddings fine sand, 0 to 6 percent slopes, about 14 miles southeast of Walterboro; 3,500 feet northwest of intersections S.C. Highway 64 and U.S. 17 in bahiagrass pasture; 105 feet east of large live oak tree with bottle cap nailed to base of tree at edge of field and 360 feet north of small live oak in field.

Ap—0 to 9 inches; dark grayish brown (10YR 4/2) fine sand; weak fine granular structure; very friable; common fine and medium roots; slightly acid; abrupt smooth boundary.

A21—9 to 25 inches; pale brown (10YR 6/3) fine sand; weak fine granular structure; very friable; many fine and medium roots; slightly acid; gradual smooth boundary.

A22—25 to 40 inches; very pale brown (10YR 7/3) fine sand; common medium distinct light yellowish brown (10YR 6/4) mottles; weak fine granular structure; very friable; few fine and medium roots; few fine pockets of clean sand grains; slightly acid; gradual smooth boundary.

A23—40 to 56 inches; very pale brown (10YR 7/3) fine sand; common medium distinct yellow (10YR 7/6) and few fine distinct brownish yellow mottles; weak fine granular structure; very friable; few brownish yellow concretions; medium acid; gradual wavy boundary.

B1—56 to 63 inches; yellowish brown (10YR 5/4) sandy loam; common medium distinct strong brown (7.5YR 5/6) mottles; weak medium subangular blocky structure; friable; few fine pockets of clean sand grains; medium acid; gradual wavy boundary.

B2t—63 to 72 inches; brownish yellow (10YR 6/8) sandy clay loam; common medium distinct strong brown (7.5YR 5/6) and light gray (10YR 6/1) mottles; weak medium subangular blocky structure; friable; few patchy clay films on faces of some peds; medium acid; gradual wavy boundary.

B3—72 to 85 inches; mottled yellowish brown (10YR 5/6), yellowish red (5YR 5/8), and light gray (10YR 6/1) sandy loam with pockets of sandy clay loam; massive; friable; medium acid.

The thickness of the solum ranges from 65 to more than 80 inches. Reaction is slightly acid to very strongly acid.

The A horizon is 40 to 60 inches thick. The A1 or Ap horizon has hue of 10YR or 2.5Y, value of 3 to 5, and chroma of 2 to 4. The A2 horizon has hue of 10YR or 2.5Y, value of 4 to 7, and chroma of 3 to 8. It is fine sand or loamy sand. Mottles in shades of brown or yellow range from none to common.

The B1 horizon, where present, has hue of 5YR to 10YR, value of 5 to 7, and chroma of 4 to 8. It is sandy loam or fine sandy loam.

The B2t horizon has hue of 5YR to 10YR, value of 5 to 7, and chroma of 4 to 8. The B2t horizon is sandy loam, fine sandy loam, or clay loam. It is sandy clay in the lower part of some pedons. Mottles in shades of gray, yellow, brown, and red range from few to common. The B3 horizon has the same colors as the lower part of the B2t horizon.

Fripp series

The Fripp series consists of excessively drained, rapidly permeable soils that formed in sandy marine sediment and have been reworked by wind and wave action. These undulating to rolling soils are on dunes commonly adjoining beaches and waterways along the Atlantic coast. Slopes are commonly 2 to 6 percent but range from 0 to 6 percent. These soils are classified as thermic, uncoated, Typic Quartzipsamments.

Fripp soils are on landscapes similar to those occupied by Beaches, Bohicket, Capers, Chipley, and Leon soils. Beaches are free of vegetation and are covered twice daily by sea water. Bohicket and Capers soils are covered daily or occasionally by sea water and commonly support a dense cover of marsh grasses. Chipley soils are on nearly level broad ridges and are moderately well drained. Leon soils are in low areas, are poorly drained, and have a Bh horizon. The Leon soils commonly occupy the troughs between the higher Fripp soils.

Typical pedon of Fripp fine sand in an area of Fripp-Leon complex, 0 to 6 percent slopes, about 6.5 miles southeast of Bennetts Point on east end of Pine Island; 200 feet west of the Edisto River.

A1—0 to 5 inches; light brownish gray (10YR 6/2) fine sand; common fine faint light gray (10YR 7/2) fine sand lenses; single grained; loose; many fine and common medium roots; about 5 percent of the grains are black or dark brown; medium acid; clear wavy boundary.

C1—5 to 24 inches; very pale brown (10YR 7/3) fine sand; common fine faint light gray (10YR 7/1) fine sand splotches; single grained; loose; few fine and medium roots; about 5 percent of the sand grains are black or dark brown; medium acid; gradual wavy boundary.

C2—24 to 52 inches; light gray (10YR 7/2) fine sand; single grained; loose; few fine and medium roots; about 5 percent of the grains are black or dark brown; neutral; gradual wavy boundary.

C3—52 to 63 inches; light gray (2.5Y 7/2) fine sand; few fine faint light yellowish brown mottles; single grained; loose; about 5 percent of the grains are black or dark brown; neutral; clear wavy boundary.

C4—63 to 70 inches; light yellowish brown (10YR 6/4) fine sand; common medium faint light brownish gray (10YR 6/2) and few fine distinct strong brown mottles; single grained; loose; about 5 percent of the grains are black or dark brown; neutral; clear smooth boundary.

C5—70 to 80 inches; light gray (5Y 7/1) fine sand; few fine faint light brownish gray mottles; single grained; loose; about 5 percent of the grains are black or dark brown; neutral.

Content of silt and clay is less than 5 percent to a depth of more than 80 inches. Reaction ranges from medium acid to mildly alkaline throughout. Few to many fine dark minerals and a few shell fragments are in some pedons.

The A horizon has hue of 10YR, value of 4 to 7, and chroma of 1 or 2. It is fine sand or sand.

The upper C horizon has hue of 7.5YR to 2.5Y, value of 5 to 8, and chroma of 3 to 8. The lower C horizon has hue of 10YR to 5Y, value of 6 to 8, and chroma of 0 to 8. The C horizon is sand or fine sand. Narrow bands or streaks with slight accumulations of organic materials are present in some pedons. Few fine yellow and brown mottles occur in some pedons below a depth of about 50 inches.

Goldsboro series

The Goldsboro series consists of moderately well drained, moderately permeable soils that formed in thick deposits of loamy sediment. These nearly level soils commonly occur on uplands at or near the higher elevations. Slopes are 0 to 2 percent. These soils are classified as fine-loamy, siliceous, thermic Aquic Paleudults.

Goldsboro soils are on landscapes similar to those occupied by Ocilla, Lynchburg, Norfolk, Paxville, and Rains soils. Ocilla soils have combined surface and subsurface layers 20 to 40 inches thick. Lynchburg and Rains soils have chroma of 2 or less in 60 percent of the matrix between the A1 or Ap horizon and a depth of 30 inches. Norfolk soils are at higher elevations and do not

have mottles of chroma 2 or less within a depth of 30 inches. Paxville soils are at the lower elevations and have an umbric epipedon.

Typical pedon of Goldsboro loamy fine sand about 8.5 miles northwest of Walterboro; 150 feet south of junction of secondary road 33 and S.C. Highway 64; and 50 feet west of secondary road 33.

Ap—0 to 7 inches; grayish brown (10YR 5/2) loamy fine sand; weak medium granular structure; very friable; common fine and few medium roots; medium acid; abrupt smooth boundary.

A2—7 to 13 inches; light yellowish brown (2.5Y 6/4) loamy fine sand; few fine faint yellowish brown mottles; weak medium subangular blocky structure; very friable; strongly acid; clear wavy boundary.

B1—13 to 17 inches; brownish yellow (10YR 6/6) fine sandy loam; few fine faint yellowish brown mottles; weak medium subangular blocky structure; friable; few fine roots; few fine soft fragments of ironstone; very strongly acid; clear wavy boundary.

B21t—17 to 34 inches; yellowish brown (10YR 5/6) sandy clay loam; few fine distinct light gray and a few fine faint strong brown mottles; moderate medium subangular blocky structure; friable; few fine roots; faint patchy clay films on faces of some peds; few dark reddish brown fragments of ironstone 0.5 to 1 inch in diameter; very strongly acid; gradual wavy boundary.

B22t—34 to 48 inches; yellowish brown (10YR 5/4) sandy clay loam; many medium distinct light gray (10YR 6/1), common medium distinct strong brown (7.5YR 5/8), and common medium faint yellowish brown (10YR 5/8) mottles; moderate medium subangular blocky structure; friable; faint patchy clay films on faces of some peds; few dark reddish brown hard fragments of ironstone 0.5 to 1 inch in diameter; strongly acid; gradual wavy boundary.

B23tg—48 to 68 inches; light gray (10YR 6/1) sandy clay loam; many medium prominent red (2.5YR 4/8) and many medium distinct strong brown (7.5YR 5/6) mottles; weak medium subangular blocky structure; friable; few dark reddish brown fragments of ironstone 0.5 to 1 inch in diameter; very strongly acid; gradual wavy boundary.

B31g—68 to 73 inches; light gray (10YR 6/1) sandy clay loam; common medium prominent red (10R 4/6) and common medium distinct yellowish brown (10YR 5/6) mottles; massive, weakly stratified; very strongly acid; gradual wavy boundary.

B32g—73 to 85 inches; mottled light gray (10YR 6/1), red (10R 4/6), and brownish yellow (10YR 6/6) fine sandy loam; massive, stratified; friable; very strongly acid.

The solum ranges from 60 to more than 80 inches thick. It is very strongly acid or strongly acid throughout except in the A horizon where limed.

The A1 or Ap horizon has hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 1 or 2. The A2 horizon has hue of 10YR or 2.5Y, value of 6 or 7, and chroma of 2 to 4. It is loamy sand or loamy fine sand.

The B1 horizon has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 3 to 6. It is sandy loam or fine sandy loam.

The B2t horizon has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 3 to 8 in the upper part. The lower part of the B2t horizon has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 1 or 2, or it is mottled. Mottles in shades of red, brown, yellow, and gray commonly occur throughout the horizon. Texture is dominantly sandy clay loam but ranges to fine sandy loam and sandy loam.

The B3g horizon has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 0 to 2, or it is mottled. Texture is commonly fine sandy loam, sandy loam, or sandy clay loam.

Handsboro series

The Handsboro series consists of very poorly drained, moderately permeable organic soils that formed in herbaceous and woody plant remains and very slowly permeable strata of loamy and clayey material. These soils formed in sulfidic materials in broad, nearly level tidal marshes. They are flooded twice daily with sea water. Slopes are less than 1 percent. These soils are classified as euic, thermic Typic Sulfihemists.

Handsboro soils are near the Bohicket, Capers, and Pungo soils. Bohicket soils are usually at slightly lower elevations than Handsboro soils, are dominantly mineral soils, and have *n* values of 1 or more. Capers soils are at slightly higher elevations and are dominantly mineral soils. Pungo soils are at slightly higher elevations and are usually protected from saline water by roads or dikes.

Typical pedon of Handsboro muck approximately 1,400 feet west of Bennett Island; 5,500 feet east of Ashepoo River; 50 feet south of the south dike.

Oal—0 to 4 inches; very dark grayish brown (10YR 3/2) broken face, yellowish brown (10YR 5/4) pressed or rubbed sapric material; about 9 percent fiber undisturbed, less than 2 percent rubbed using screen test; structureless; about 20 percent mineral; nonsticky; many fine and medium roots; dominantly herbaceous; slightly acid; clear smooth boundary.

Oa2—4 to 28 inches; dark reddish brown (5YR 3/2) broken face; dark brown (7.5YR 3/2) pressed or

rubbed sapric material; about 10 percent fiber undisturbed, less than 2 percent rubbed using screen test; structureless; less than 5 percent mineral; nonsticky; many fine and medium roots; dominantly herbaceous; mildly alkaline; diffused irregular boundary.

Oa3—28 to 40 inches; very dark brown (10YR 2/2) broken face, very dark gray (10YR 3/1) pressed or rubbed sapric material; about 12 percent fiber undisturbed, less than 2 percent rubbed using screen test; structureless; about 20 percent mineral; nonsticky; common fine and medium roots; mildly alkaline; gradual smooth boundary.

IIC1—40 to 42 inches; dark grayish brown (10YR 4/2) silty clay; massive; neutral; common fine roots; clear smooth boundary.

0a4—42 to 54 inches; very dark grayish brown (10YR 3/2) broken face; very dark gray (10YR 3/1) pressed or rubbed sapric material; about 6 percent fiber undisturbed, less than 1 percent rubbed using screen test; structureless; about 25 percent mineral; slightly sticky, nonplastic; common fine roots; mildly alkaline; clear smooth boundary.

IIC2—54 to 80 inches; dark greenish gray (5GY 4/1) clay; massive; very sticky; few fine roots; mildly alkaline.

The thickness of the organic layers ranges from 30 to 80 inches. The organic layers are dominantly sapric materials, but in some pedons layers of hemic and fibric materials occur and in a few they dominate. The combined thickness of the mineral layers, which occur in most pedons, is less than 16 inches. Sulfur content ranges from 0.75 to about 2 percent in the subhorizons within 12 to 40 inches of the surface. Reaction ranges from neutral to moderately alkaline in the natural saturated condition and is extremely acid after the soil is dried.

The A horizon, when present, is 2 to 10 inches thick. It has hue of 10YR or 5Y, value of 2 to 4, and chroma of 1 or 2. It is muck, mucky loam, or mucky silt loam.

The organic horizons, in the combined tiers, are 30 to 80 inches thick. They have hue of 2.5YR to 5Y, value of 2 to 4, and chroma of 1 to 3. The rubbed fiber content ranges from 1 to 16 percent. The mineral content ranges from 10 to 40 percent.

The IIC horizon that underlies the organic layers has hue of 10YR, 5Y, or 5GY; value of 3 to 5; and chroma of 1 or 2. Texture is clay loam or clay.

Haplaquents

Haplaquents consist of wet, loamy soil material. They are in mined and dredged areas where the overlying material has been removed to a depth of 3 to 5 feet.

Haplaquents are associated with Bonneau, Chisolm, Goldsboro, Norfolk, and Ocilla soils. These other soils are all undisturbed.

Reference pedon of Haplaquents, loamy, about 800 feet north of mile marker 49 on I-95 and 100 feet southeast of highway.

1—0 to 12 inches; light brownish gray (10YR 6/2) sandy clay loam; many coarse distinct yellowish brown (10YR 5/8) and common medium fine gray (10YR 6/1) mottles; weak medium subangular blocky structure; friable; strongly acid; gradual smooth boundary.

2—12 to 24 inches; gray (10YR 6/1) sandy clay loam; common medium distinct brownish yellow (10YR 6/8) and common fine distinct strong brown (7.5YR 5/6) mottles; weak medium subangular blocky structure; friable; strongly acid; gradual smooth boundary.

3—24 to 42 inches; gray (10YR 6/1) sandy loam; common medium faint light brownish gray (10YR 6/2) mottles; weak medium subangular blocky structure; very friable; strongly acid; gradual smooth boundary.

4—42 to 60 inches; light brownish gray (10YR 6/2) loamy sand; common medium distinct light yellowish brown (10YR 6/4) and common medium faint gray (10YR 6/1) mottles; structureless; nonplastic; very strongly acid; clear smooth boundary.

5—60 to 80 inches; pale yellow (5Y 7/3) sand; common medium faint light olive gray (5Y 6/2) and few medium distinct yellow (10YR 7/8) mottles; structureless; nonsticky, nonplastic; many uncoated sand grains; very strongly acid.

Hobcaw series

The Hobcaw series consists of very poorly drained, moderately permeable soils that formed in thick deposits of loamy sediment on the lower marine terraces. These nearly level soils are in low depressional areas and along drainageways. Slope is dominantly less than 1 percent, but ranges to as much as 2 percent along drainageways. These soils are classified as fine-loamy, siliceous, thermic Typic Umbraquults.

Hobcaw soils are near the Cape Fear, Coosaw, Ogeechee, Yauhannah, and Yemassee soils. Cape Fear soils have more clay in the Bt horizon than do the Hobcaw soils. Coosaw soils are on low ridges, are somewhat poorly drained, and have combined surface layers more than 20 inches thick. Ogeechee soils have lighter colored surface layers and are poorly drained. Yauhannah soils are on higher ridges and are moderately well drained. Yemassee soils are on low ridges and are somewhat poorly drained.

Typical pedon of Hobcaw fine sandy loam about 7 miles south of Green Pond; 2,700 feet south of junction

of secondary road 162 and secondary road 161; 1,150 feet southeast of secondary road 162; 300 feet north of field border.

A1—0 to 16 inches; black (10YR 2/1) fine sandy loam; weak medium granular structure; very friable; common fine and medium roots; very strongly acid; clear wavy boundary.

B1g—16 to 22 inches; grayish brown (10YR 5/2) fine sandy loam; common medium faint streaks of dark gray fine sandy loam; weak medium subangular blocky structure; friable; common fine and medium roots; common fine splotches of light gray fine sand; very strongly acid; clear smooth boundary.

B21tg—22 to 39 inches; dark gray (10YR 4/1) sandy clay loam; common fine distinct dark reddish brown (5YR 3/3) and common medium faint very dark gray (10YR 3/1) mottles; weak coarse prismatic structure parting to weak medium subangular blocky; firm; faint patchy clay films on faces of some peds; few fine and few medium roots; very strongly acid; gradual wavy boundary.

B22tg—39 to 46 inches; light gray (5Y 7/2) sandy clay loam; common medium distinct dark gray (10YR 4/1), few fine distinct strong brown, and few fine distinct brownish yellow mottles; weak medium subangular blocky structure; friable; few faint patchy clay films on faces of some peds; very strongly acid; gradual wavy boundary.

B3g—46 to 51 inches; grayish brown (10YR 5/2) fine sandy loam with pockets of sandy clay loam; common medium distinct light gray (5Y 7/2), few medium distinct strong brown (7.5YR 5/6), and few medium faint dark gray mottles; massive; friable; few fine lenses of pale brown (10YR 6/3) loamy fine sand; very strongly acid; gradual wavy boundary.

Cg—51 to 70 inches; grayish brown (10YR 5/2) loamy fine sand; common medium distinct brownish yellow (10YR 6/6), common medium distinct brown (10YR 5/3), and common medium faint dark grayish brown (10YR 4/2) mottles; massive; very friable; common fine pockets and lenses of fine sandy loam; few fine flakes of mica; very strongly acid.

The solum ranges from 45 to more than 60 inches thick. It is very strongly acid to slightly acid throughout the profile. A few fine flakes of mica are in the lower part of the B horizon and in the C horizon of some pedons.

The A horizon has a hue of 10YR, value of 2 or 3, and chroma of 1. The A2 horizon, where present, has a hue of 10YR, value of 4 to 7, and chroma of 1 or 2. The A horizon commonly is fine sandy loam but ranges to loam, loamy fine sand, and loamy sand.

The B1g horizon has hue of 10YR or 2.5Y, value of 3 to 6, and chroma of 1 or 2. Few to many fine and medium brown and gray mottles are in this horizon in some pedons. Texture is fine sandy loam or sandy loam.

The B2tg horizon has hue of 10YR to 5Y, value of 3 to 7, and chroma of 1 or 2. Most pedons have mottles in shades of gray, olive, yellow, brown, red, or a combination of these colors. This horizon is commonly sandy clay loam but includes thin layers of sandy clay, clay loam, and fine sandy loam in some pedons.

The B3g horizon has hue of 10YR to 5Y, value of 4 to 6, and chroma of 1 or 2. Most pedons have mottles in shades of gray, yellow, brown, or red, or a combination of these colors. Texture is fine sandy loam or loamy sand.

The Cg horizon has hue of 10YR to 5G, value of 4 to 7, and chroma of 0 to 3. Mottles in shades of gray, brown, yellow, or red are in most pedons. In some pedons the C horizon is mottled in these colors. Texture varies from sand to clay.

Lakeland series

The Lakeland series consists of excessively drained, very rapidly permeable soils that formed in thick deposits of sandy sediment. These nearly level and gently sloping soils are at the higher elevations of the uplands. Slopes are dominantly less than 1 percent but range up to as much as 6 percent along drainageways. These soils are classified as thermic, coated Typic Quartzipsamments.

Lakeland soils are near Albany, Blanton, Chipley, Chisolm, Eddings, and Leon soils. Albany soils are on low ridges, are well drained, and have an argillic horizon between 40 and 60 inches below the surface. Blanton and Eddings soils are slightly lower than the Lakeland soils, are well drained, and have an argillic horizon between 40 and 60 inches below the surface. Chipley soils are slightly lower and are moderately well drained. Chisolm soils are either well drained or moderately well drained and have an argillic horizon between 20 and 40 inches below the surface. Leon soils are on low areas, are poorly drained, and have a Bh horizon within 30 inches of the surface.

Typical pedon of Lakeland fine sand, 0 to 6 percent slopes, 10 miles southeast of Green Pond; 3 miles southeast of junction of secondary roads 161 and 162; 4,100 feet south of secondary road 161 on Wiggins Public Landing Road; 100 feet east of road.

A1—0 to 6 inches; dark grayish brown (10YR 4/2) fine sand; weak fine granular structure; very friable; many fine and common medium roots; medium acid; clear smooth boundary.

C1—6 to 17 inches; yellowish brown (10YR 5/6) fine sand; single grained; loose; common fine and common medium roots; medium acid; gradual wavy boundary.

C2—17 to 52 inches; strong brown (7.5YR 5/6) fine sand; single grained; loose; common fine and few medium roots; medium acid; gradual smooth boundary.

C3—52 to 68 inches; light yellowish brown (10YR 6/4) fine sand; many medium faint very pale brown (10YR 7/4), common medium distinct reddish yellow (7.5YR 6/6), and common fine distinct light gray (2.5Y 7/2) mottles; single grained; loose; medium acid; gradual smooth boundary.
C4—68 to 88 inches; very pale brown (10YR 7/4) fine sand; common medium distinct light gray (2.5Y 7/2) and few fine faint yellow mottles; single grained; loose; few fine black minerals; medium acid; gradual smooth boundary.
C5—88 to 100 inches; very pale brown (10YR 8/3) fine sand; common medium faint light gray (2.5Y 7/2), common medium faint pale yellow (2.5Y 7/4), and few fine distinct yellow mottles; single grained; loose; common fine black minerals; medium acid.

Thickness of the sand exceeds 80 inches. Reaction is very strongly acid to medium acid throughout.

The A horizon has hue of 10YR or 2.5Y, value of 3 to 5, and chroma of 1 to 3. It is fine sand or sand.

The C horizon to a depth of about 50 inches has hue of 5YR through 10YR, value of 6 or 7, and chroma of 3 to 8. Below a depth of about 50 inches, the C horizon has hue of 10YR or 2.5Y, value of 6 to 8, and chroma of 2 to 8. Few to many mottles in shades of gray, yellow, brown, red, or a combination of these colors occur at depths below about 50 inches. Texture is fine sand or sand.

Leon series

The Leon series consists of poorly drained soils with rapid permeability in the A horizon and moderate to moderately rapid permeability in the Bh horizon. These soils formed in deposits of sandy marine sediment. These nearly level soils commonly occur on low flat to concave landscapes of the coastal plain. Slopes are 0 to 2 percent. These soils are classified as sandy, siliceous, thermic Aeric Haplaquods.

Leon soils are on landscapes similar to those occupied by Chipley, Echaw, Lynn Haven, Osier, and Seagate soils. Chipley soils do not have a Bh horizon and are moderately well drained. Echaw soils have a Bh horizon at a depth of more than 30 inches. Lynn Haven soils have a thicker dark A1 horizon than do the Leon soils. Osier soils do not have a Bh horizon. Seagate soils are better drained and have an argillic horizon beneath the Bh horizon.

Typical pedon of Leon sand 8 miles north of Cottageville; 3,200 feet northeast of junction of secondary road 140 and S.C. Highway 61; 100 feet west of unimproved road between S.C. Highway 61; 100 feet west of unimproved road between S.C. Highway 61 and Mizzell Landing on Edisto River 700 feet south of landing.

A1—0 to 6 inches; black (10YR 2/1) sand; single grained; loose; many clean sand grains give a salt-and-pepper appearance; extremely acid; clear smooth boundary.
A2—6 to 19 inches; light brownish gray (10YR 6/2) sand; many coarse faint grayish brown (10YR 5/2) mottles; single grained; loose; very strongly acid; abrupt smooth boundary.
Bh—19 to 28 inches: dark reddish brown (5YR 3/3) sand; single grained; nonsticky, nonplastic; organic coatings on most sand grains; extremely acid; gradual smooth boundary.
A'2—28 to 41 inches; dark grayish brown (10YR 4/2) sand; common coarse faint light brownish gray (10YR 6/2) mottles; single grained; nonsticky, nonplastic; strongly acid; clear smooth boundary.
B'h—41 to 58 inches; dark reddish brown (5YR 3/2) sand; single grained; nonsticky, nonplastic; few clean quartz sand grains; very strongly acid; gradual smooth boundary.
B3—58 to 72 inches; brown (10YR 5/3) sand; single grained; nonsticky, nonplastic; very strongly acid.

The sand or fine sand extends to a depth of more than 80 inches. Reaction ranges from extremely acid to strongly acid except in the A horizon where limed.

The A1 or Ap has hue of 10YR, value of 2 to 4, and chroma of 0 or 1. When dry the surface has a salt-and-pepper appearance. The A2 horizon has hue of 10YR or 2.5YR, value of 5 to 8, and chroma of 0 to 2.

The Bh and B'h horizons have hue of 10YR to 5YR, value of 2 or 3, and chroma of 1 to 3.

The B3 horizon has hue of 10YR or 7.5YR, value of 3 to 5, and chroma of 2 to 4.

Levy series

The Levy series consists of very poorly drained, slowly permeable soils that formed in deposits of clayey sediment. These nearly level soils are on low, ponded backswamp areas and marshes frequently adjacent to and inland of tidal marshes. They are generally flooded with 2 to 10 inches of fresh water, but several months each year they are flooded with about 12 to 24 inches of fresh water. Slopes are 0 to 2 percent. These soils are classified as fine, mixed, acid, thermic Typic Hydraquents.

Levy soils are near the Argent, Bohicket, Cape Fear, Capers, Handsboro, and Pungo soils. Argent and Cape Fear soils are at slightly higher elevations than Levy soils and have *n* values of less than 0.7. Bohicket and Capers soils are flooded by sea water. Handsboro soils are organic and are flooded by sea water. Pungo soils are organic.

Typical pedon of Levy mucky silty clay loam about 3.7 miles southwest of Green Pond; 600 feet south of the

junction of secondary road 535 and secondary road 119; 50 feet south of secondary road 119.

O1—5 to 0 inches; dark gray (10YR 4/1) fibric organic matter consisting of herbaceous leaves, stems, and roots coated with dark gray (10YR 4/1) silty clay loam; pithy live roots make up about 60 percent of the volume; extremely acid; clear smooth boundary.

A1—0 to 7 inches; dark gray (10YR 4/1) mucky silty clay loam; massive; very sticky; flows easily between fingers when squeezed, leaving a residue of live roots and fibric organic material; about 20 percent of volume live roots; about 20 percent by volume organic matter that is dominantly fibric; extremely acid; gradual smooth boundary.

C1g—7 to 48 inches; dark gray (10YR 4/1) silty clay; massive; very sticky; flows easily between fingers when squeezed, leaving a small residue of live roots and fibric organic materials; about 10 percent by volume live roots; about 15 percent by volume organic matter; very strongly acid; clear smooth boundary.

C2g—48 to 60 inches; very dark gray (10YR 3/1) silty clay; massive; very sticky; flows with difficulty between fingers when squeezed, leaving a moderate amount of residue; about 10 percent by volume organic matter that is dominantly fibric; very strongly acid.

These soils have *n* values greater than 0.7 in all mineral layers between the surface and a depth of 40 inches. Reaction ranges from extremely acid to strongly acid throughout the profile.

The O1 and Oi horizons are 2 to 15 inches thick and consist of leaves, grasses, stems, twigs, and roots. The mineral fraction ranges from 2 to 20 percent by volume and is silty clay loam, silty clay, or clay. It has hue of 10YR to 5Y, value of 2 to 4, and chroma of 0 to 3.

The A1 horizon is 6 to 30 inches thick. It has hue of 10YR to 5Y, value of 3 to 6, and chroma of 0 to 3. Texture is mucky silty clay loam, silty clay, or clay.

The Cg horizon to a depth of at least 40 inches below the mineral surface has a hue of 10YR to 5Y, value of 3 to 6, and chroma of 0 to 2. Texture is clay or silty clay. In some pedons, at depths of more than 40 inches below the mineral surface, there are organic layers, sandy layers, loamy layers, or the more common clayey layers. Some of these layers, especially at greater depths, have *n* values that are less than 0.7. Fragments of wood, logs, and stumps are present in some pedons.

Lynchburg series

The Lynchburg series consists of somewhat poorly drained, moderately permeable soils that formed in thick deposits of loamy sediment. These nearly level soils commonly occur on uplands at intermediate elevations. Slopes are 0 to 2 percent. These soils are classified as fine-loamy, siliceous, thermic Aeric Paleaquults.

Lynchburg soils are near Goldsboro, Norfolk, Ocilla, Paxville, and Rains soils. Goldsboro and Norfolk soils are at higher elevations than Lynchburg soils and have dominant chroma of 3 or more between the base of the Ap or A1 horizon and a depth of 30 inches. Ocilla soils are at similar elevations and have a sandy A horizon that is more than 20 inches thick. Paxville and Rains soils are at lower elevations and have dominant chroma of 2 or less throughout the B horizon. In addition, Paxville soils have an umbric epipedon.

Typical pedon of Lynchburg loamy fine sand about 3,000 feet southwest of railroad crossing of U.S. Highway 21 in Ruffin; 450 feet southwest of junction of secondary road 272 and U.S. Highway 21; 100 feet north of U.S. Highway 21.

Ap—0 to 6 inches; dark gray (10YR 4/1) loamy fine sand; weak medium granular structure; very friable; common fine roots, few medium roots; very strongly acid; clear smooth boundary.

A2—6 to 10 inches; yellowish brown (10YR 5/4) loamy fine sand, common medium distinct dark gray (10YR 4/1) pockets of loamy fine sand from above horizon; weak medium subangular blocky structure; very friable; common fine roots; few fine pores; very strongly acid; clear smooth boundary.

B21t—10 to 17 inches; yellowish brown (10YR 5/4) sandy clay loam; common medium distinct light brownish gray (10YR 6/2) and few medium prominent red (10R 4/8) mottles; weak medium subangular blocky structure; friable; common fine roots; few fine pores; faint patchy clay films on faces of some peds; very strongly acid; clear wavy boundary.

B22tg—17 to 62 inches; gray (10YR 6/1) sandy clay loam; many medium yellowish brown (10YR 5/6) and common medium prominent red (2.5YR 4/6) mottles; weak medium subangular blocky structure; friable; few fine roots; few fine pores; faint patchy clay films on faces of some peds; very strongly acid; gradual smooth boundary.

B31g—62 to 74 inches; gray (10YR 6/1) sandy clay loam; common medium distinct strong brown (7.5YR 5/6), common medium distinct yellowish brown (10YR 5/6), and common fine distinct pale olive (5Y 6/3) mottles; weak coarse subangular blocky structure; friable; few faint patchy clay films on faces of some peds; few medium pockets of strong brown fine sandy loam; very strongly acid; gradual smooth boundary.

B32g—74 to 84 inches; gray (10YR 6/1) sandy clay loam; many fine distinct pale olive (5Y 6/3), common medium distinct yellowish brown (10YR 5/6), and few medium distinct strong brown (7.5YR 4/6) mottles; massive; friable; common pockets of sandy loam and sandy clay; very strongly acid.

The solum ranges from 60 to more than 80 inches thick. It ranges from extremely acid to strongly acid throughout except in the A horizon where limed.

The Ap or A1 horizon has hue of 10YR or 2.5Y, value of 2 to 4, and chroma of 0 to 2. The A2 horizon has hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 2 to 4. The A horizon is loamy sand or loamy fine sand.

The B1 horizon, where present, has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 3 or 4. It is sandy loam or fine sandy loam.

The upper part of the B2t horizon, in pedons without a B1 horizon, has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 3 to 6. At a depth of about 20 inches or more the hue is 10YR or 2.5Y, value is 4 to 7, and chroma is 1 or 2. Mottles in shades of red, brown, yellow, or a combination of these colors are in most pedons. The B2t horizon is commonly sandy clay loam but ranges to sandy loam or fine sandy loam in some pedons.

The B3 horizon has colors similar to those in the lower part of the B2 horizon. It is commonly sandy clay loam with strata of sandy loam or sandy clay.

Lynn Haven series

The Lynn Haven series consists of poorly drained, moderately permeable sandy soils that formed in sandy marine sediment. These nearly level soils occur in draws, slight depressions, and drainageways. These soils are classified as sandy, siliceous, thermic Typic Haplaquods.

Lynn Haven soils are near Osier, Plummer, Pickney, and Seagate soils. None of these soils, except the Seagate soils, have a Bh horizon. Seagate soils are better drained and have an argillic horizon beneath the Bh horizon.

Typical pedon of Lynn Haven fine sand approximately 2 miles north of Walterboro; 4,050 feet east of U.S. Highway 15; and 6,000 feet west of main entrance into industrial area.

A1—0 to 9 inches; black (10YR 2/1) fine sand; weak fine granular structure; friable; many fine and medium roots; strongly acid; clear wavy boundary.

A2—9 to 18 inches; gray (10YR 6/1) fine sand; common medium distinct very dark brown (10YR 2/2) mottles; single grained; loose; common fine and medium roots; many uncoated sand grains; strongly acid; abrupt wavy boundary.

B21h—18 to 30 inches; very dark brown (10YR 2/2) fine sand; weak fine granular structure; weakly cemented; friable; few fine and medium roots; sand grains coated with organic matter; strongly acid; gradual wavy boundary.

B22h—30 to 50 inches; black (10YR 2/1) fine sand; weak fine granular structure; weakly cemented; friable; few fine roots; sand grains coated with organic matter; strongly acid; gradual wavy boundary.

B23h&Cg—50 to 70 inches; very dark brown (10YR 2/2) fine sand (approximately 70 percent) and dark grayish brown (10YR 4/2) mottles (about 30 percent); single grained; loose; strongly acid.

The fine sand extends to a depth of more than 80 inches. Reaction is extremely acid to strongly acid throughout except in the Ap or A1 horizon where limed.

The A1 or Ap horizon has hue of 10YR, value of 2 or 3, and chroma of 0 or 1. The A2 horizon, where present, has hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 1 or 2. Some pedons may have mottles of higher chroma.

The Bh horizon has hue of 5YR to 10YR, value of 2 or 3, and chroma of 1 to 4. Pockets of grayish sand occur in some pedons.

The C horizon is gray or brown. It has hue of 10YR or 2.5Y, value of 4 to 7, and chroma of 1 to 3. Mottles in shades of brown, yellow, and red are present in some pedons.

Murad series

The Murad series consists of moderately well drained to somewhat poorly drained soils that formed in deposits of sandy and loamy marine sediment. They are rapidly permeable in the sandy surface and subsurface horizons and moderately permeable in the subsoil. Slopes are 0 to 2 percent. These soils are classified as loamy, siliceous, thermic Grossarenic Paleudults.

Murad soils are on landscapes similar to those occupied by Eddings, Chisolm, Coosaw, and Williman soils. Eddings and Chisolm soils do not have mottles with chroma 2 or less within the top 10 inches of the Bt horizon. Chisolm, Coosaw, and Williman soils have a B2t horizon 20 to 40 inches below the surface. Williman soils have a dominant chroma of 2 or less between the lower boundary of the Ap or A1 horizon and a depth of 30 inches.

Typical pedon of Murad loamy fine sand 6 miles south of Green Pond; 5.2 miles south of junction of secondary road 26 and U.S. Highway 17; 4,000 feet west of secondary road 26.

A1—0 to 7 inches, dark grayish brown (10YR 4/2) loamy fine sand; weak fine granular structure; very friable; medium acid; clear smooth boundary.

A21—7 to 12 inches; brown (10YR 5/3) loamy fine sand; weak fine granular structure; very friable; very strongly acid; clear smooth boundary.
A22—12 to 23 inches; brownish yellow (10YR 6/6) loamy fine sand; weak fine granular structure; very friable; very strongly acid; gradual smooth boundary.
A23— 23 to 32 inches; yellow (10YR 7/6) loamy fine sand; common medium faint light gray (5Y 7/2) mottles; weak fine granular structure; very friable; very strongly acid; clear smooth boundary.
A24—32 to 47 inches; light gray (10YR 7/1) loamy fine sand; common medium distinct brownish yellow (10YR 6/6) and common medium distinct strong brown (7.5YR 5/8) mottles; single grain; loose; very strongly acid; clear smooth boundary.
B21t—47 to 59 inches; yellowish brown (10YR 5/8) sandy clay loam; common coarse prominent red (2.5YR 5/8) and common medium distinct gray (10YR 6/1) mottles; weak medium subangular blocky structure; friable; patchy clay films on ped faces; very strongly acid; gradual smooth boundary.
B22tg—59 to 78 inches; gray (10YR 6/1) sandy clay loam; common coarse prominent red (2.5YR 5/8) and common coarse distinct strong brown (7.5YR 5/8) mottles; weak medium subangular blocky structure; friable; patchy clay film on peds; very strongly acid.

Solum thickness ranges from 60 to more than 80 inches. Reaction is very strongly acid to slightly acid in the A horizon and is very strongly acid or strongly acid in the B horizon.

The Ap or A1 horizon has hue of 10YR, value of 2 to 5, and chroma of 1 or 2. The A2 horizon has hue of 10YR to 2.5Y, value of 4 to 8, and chroma of 1 to 8. The A horizon is loamy fine sand, loamy sand, or fine sand.

The upper part of the B horizon has hue of 7.5YR to 2.5Y, value of 5 to 7, and chroma of 4 to 8. Mottles in shades of gray, brown, yellow, and red are present in most pedons. The lower part of the B horizon has hue of 10YR to 2.5Y, value of 5 to 7, and chroma of 0 to 2. There are mottles in shades of red, yellow, and brown. The B horizon is sandy loam, fine sandy loam, sandy clay loam, or sandy clay.

Nemours series

The Nemours series consists of moderately well drained, slowly permeable soils that formed in clayey marine sediment. These are nearly level and gently sloping soils on uplands. Slopes are 0 to 6 percent. These soils are classified as clayey, mixed, thermic Aquic Hapudults.

Nemours soils are near Argent, Bladen, and Wahee soils. Argent and Bladen soils are in low areas and are poorly drained. Wahee soils are on low ridges and are somewhat poorly drained.

Typical pedon of Nemours fine sandy loam, 0 to 2 percent slopes, about 6.3 miles southeast of Green Pond; 4.9 miles south of Seaboard Coast Line Railroad crossing of Ashepoo Plantation entrance road at Ashepoo; 15 feet on west side of plantation road.

A1—0 to 9 inches; dark grayish brown (10YR 4/2) fine sandy loam; weak medium granular structure; very friable; many medium and fine roots; strongly acid; clear wavy boundary.
B21t—9 to 20 inches; yellowish red (5YR 4/6) clay; many medium distinct red (2.5YR 4/6) and common medium distinct yellowish brown (10YR 5/4) mottles; moderate medium subangular blocky structure; friable; thin patchy clay films on faces of peds; common fine roots; very strongly acid; clear smooth boundary.
B22t—20 to 26 inches; red (2.5YR 4/6) clay; common medium distinct yellowish brown (10YR 5/4), few medium distinct yellowish red (5YR 5/6), and few fine distinct gray (10YR 6/1) mottles; strong medium subangular blocky structure; firm; thin patchy clay films on faces of peds; few fine roots; very strongly acid; clear smooth boundary.
B23tg—26 to 32 inches; red (2.5YR 4/6) clay; many medium prominent light brownish gray (10YR 6/2), few medium distinct strong brown (7.5YR 5/6), and few fine distinct red (2.5YR 5/6) mottles; strong medium subangular blocky structure; firm; thin continuous clay films on faces of some peds; few fine flakes of mica; very strongly acid; clear smooth boundary.
B24tg—32 to 41 inches; light gray (5Y 7/1) sandy clay; many medium distinct red (2.5YR 4/6), few fine distinct strong brown (7.5YR 5/6), and few fine distinct brownish yellow (10YR 6/6) mottles; moderate medium subangular blocky structure; firm; thin patchy clay films on faces of peds; few fine flakes of mica; very strongly acid; gradual wavy boundary.
B31g—41 to 49 inches; gray (10YR 6/1) sandy clay loam; common medium distinct pale yellow (2.5Y 7/4) and common fine distinct red (2.5YR 5/6) mottles; weak medium subangular blocky structure; friable; few medium pockets of clay; few fine flakes of mica; very strongly acid; abrupt smooth boundary.
B32g—49 to 60 inches; gray (10YR 6/1) sandy clay loam; common medium distinct pale yellow (2.5Y 7/4) and few fine distinct yellowish red (5YR 5/6) mottles; weak medium subangular blocky structure; friable; few fine pockets of clay; few fine flakes of mica; very strongly acid.

Solum thickness ranges from 55 to more than 80 inches. Reaction is strongly acid to slightly acid in the A horizon and extremely acid to strongly acid in the B horizon.

The A1 or Ap horizon has hue of 10YR or 2.5Y, value of 3 to 6, and chroma of 1 or 2. The A2 horizon, where present, has hue of 10YR, value of 5 to 7, and chroma of 3 or 4. The A horizon is fine sandy loam, sandy loam, loamy fine sand, or loamy sand.

The upper part of the B2t horizon has hue of 2.5YR or 5YR, value of 4 or 5, and chroma of 6 or 8. The lower part of the B2t horizon is similar to the upper B2 horizon and is mottled in shades of gray or shades of red, brown, yellow, and gray. The B2t horizon is sandy clay or clay.

The B3 horizon is similar in color to the lower part of B2t horizon. It is sandy clay, sandy clay loam, or sandy loam.

Norfolk series

The Norfolk series consists of well drained, moderately permeable soils that formed in thick deposits of loamy marine sediment. These nearly level to gently sloping soils are on flats and side slopes of the Coastal Plain uplands. Slopes are 0 to 6 percent. These soils are classified as fine-loamy, siliceous, thermic Typic Paleudults.

Norfolk soils are on landscapes similar to those occupied by Bonneau, Goldsboro, Lynchburg, Ocilla, and Rains soils. Bonneau and Ocilla soils have a sandy A horizon more than 20 inches thick. The Ocilla soil is somewhat poorly drained. Goldsboro, Lynchburg, and Rains are at lower elevations and are more poorly drained than the Norfolk soils.

Typical pedon of Norfolk loamy fine sand, 0 to 2 percent slopes, about 1.2 miles east of junction of U.S. Highway 21 and secondary road 85; 850 feet south of secondary road 85.

Ap—0 to 9 inches; grayish brown (10YR 5/2) loamy fine sand; weak fine granular structure; very friable; slightly acid; abrupt smooth boundary.

A2—9 to 14 inches; very pale brown (10YR 7/4) loamy fine sand; few medium faint yellow (10YR 7/6) and a few fine faint light gray mottles; weak medium subangular blocky structure; very friable; slightly acid; clear smooth boundary.

B1—14 to 17 inches; yellowish brown (10YR 5/6) sandy loam; weak medium granular structure; very friable; strongly acid; clear smooth boundary.

B21t—17 to 44 inches; strong brown (7.5YR 5/6) sandy clay loam; few medium prominent red (2.5YR 5/8) mottles; weak medium subangular blocky structure; slightly firm; strongly acid; gradual smooth boundary.

B22t—44 to 68 inches; strong brown (7.5YR 5/8) sandy clay loam; common coarse distinct gray (10YR 6/1) and few coarse prominent red (2.5YR 5/8) mottles; weak medium subangular blocky structure; firm; strongly acid; gradual smooth boundary.

B3—68 to 85 inches; red (2.5YR 4/8) sandy clay loam with sandy loam lenses; common coarse distinct yellow (10YR 7/6), many coarse distinct light gray (10YR 7/2), and common medium faint light red (2.5YR 6/6) mottles; massive; friable; strongly acid.

Solum thickness ranges from 60 to more than 80 inches. Reaction ranges from very strongly acid to strongly acid, except in the A horizon where limed.

The Ap or A1 horizon has hue of 10YR or 2.5Y, value of 3 to 5, and chroma of 1 to 3. The A2 horizon has a hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 3 to 6. The A horizon is loamy sand, loamy fine sand, sandy loam, or fine sandy loam.

The B1 horizon, where present, has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 4 to 8. It is fine sandy loam or sandy loam.

The upper part of the B2t horizon has hue of 7.5YR to 2.5Y, value of 5 or 6, and chroma of 4 to 8. The lower B2t horizon has hue of 5YR and 2.5YR, value of 5 to 7, and chroma of 3 to 6. The B2t horizon is commonly sandy clay loam, but ranges to sandy loam and sandy clay.

The B3 horizon has hue of 2.5YR to 10YR, value of 4 to 7, and chroma 2 to 8. It is sandy clay loam or sandy loam.

Ocilla series

The Ocilla series consists of nearly level, somewhat poorly drained, moderately permeable soils. They are formed in sandy and loamy sediment. These nearly level soils are in broad flat areas. Slopes are 0 to 2 percent. These soils are classified as loamy, siliceous, thermic Aquic Arenic Paleudults.

Ocilla soils are on landscapes similar to those occupied by Bonneau, Chipley, Echaw, Goldsboro, Lynchburg, Norfolk, Rains, and Seagate soils. Bonneau soils do not have mottles of chroma 2 or less within 30 inches of the surface or within the upper 5 inches of the Bt horizon. Chipley and Echaw soils are sandy throughout the profile. Goldsboro, Lynchburg, Norfolk, and Rains soils do not have a sandy A horizon as thick as 20 inches. Seagate soils have a Bh horizon. Bonneau, Goldsboro, and Norfolk soils are at higher elevations than the Ocilla soils; Lynchburg and Seagate soils are at the same elevations.

Typical pedon of Ocilla loamy sand approximately 2 miles northeast of Walterboro; 400 feet north of junction of secondary highways 132 and 124; in field 50 feet from edge of fence off east side of secondary highway 124.

Ap—0 to 9 inches; dark gray (10YR 4/1) loamy sand; weak medium granular structure; very friable; many fine and medium roots; strongly acid; clear smooth boundary.

A21—9 to 18 inches; pale brown (10YR 6/3) loamy sand; weak medium granular structure; very friable; common fine and medium roots; strongly acid; gradual wavy boundary.

A22—18 to 25 inches; light yellowish brown (10YR 6/4) loamy sand; common medium distinct brownish yellow (10YR 6/6) and few fine distinct light gray (10YR 7/2) mottles; weak medium granular structure; very friable; few fine and medium roots; strongly acid; gradual wavy boundary.

B1—25 to 44 inches; light yellowish brown (10YR 6/4) sandy loam; common medium distinct brownish yellow (10YR 6/8) and few fine distinct light gray (10YR 7/1) mottles; weak medium subangular blocky structure; friable; few fine and medium roots; strongly acid; gradual wavy boundary.

B2t—44 to 58 inches; brownish yellow (10YR 6/6) sandy clay loam; common medium distinct light gray (10YR 7/1) and light yellowish brown (10YR 6/4) mottles; weak medium subangular blocky structure; friable; few medium roots; strongly acid; gradual wavy boundary.

B31—58 to 68 inches; light yellowish brown (10YR 6/4) sandy clay loam; common medium distinct light gray (10YR 7/2) and brownish yellow (10YR 6/6) and few fine distinct brown (7.5YR 4/2), weak red (2.5YR 4/2), and red (2.5YR 4/8) mottles; weak medium subangular blocky structure; friable; strongly acid; gradual wavy boundary.

B32g—68 to 85 inches; light gray (10YR 7/2) sandy loam with pockets of sandy clay loam; common medium distinct brownish yellow (10YR 6/6) and few medium distinct red (2.5YR 4/8) mottles; massive; strongly acid.

Solum thickness ranges from 60 to more than 80 inches. Reaction is very strongly acid or strongly acid throughout except in the A horizon where limed.

The Ap or A1 horizon has hue of 10YR, value of 3 or 4, and chroma of 2 or less. The A2 horizon has hue of 10YR or 2.5YR, value of 5 or 6, and chroma of 2 or 3. The A horizon is loamy sand, loamy fine sand, or fine sand.

The B1 horizon has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 4 to 8. Mottles are in shades of brown or yellow. Texture is sandy loam or sandy clay loam.

The upper part of the B2 horizon has hue of 10YR or 7.5YR, value of 5 to 7, and chroma 3 to 8. The lower part has hue of 10YR or 2.5Y, value of 6 or 7, and chroma of 1 or 2. The B2 horizon is sandy clay loam with pockets of sandy loam in some pedons.

The B3 horizon, where present, has hue of 10YR or 2.5Y. The underlying material is sandy loam or loamy sand.

Ogeechee series

The Ogeechee series consists of poorly drained, moderately permeable soils that formed in loamy deposits of marine sediment. These nearly level soils are in broad flat areas. Slopes are 0 to 2 percent. These soils are classified as fine-loamy, siliceous, thermic Typic Ochraquults.

Ogeechee soils are on landscapes similar to those occupied by Yemassee, Coosaw, Hobcaw, and Williman soils. Yemassee soils have chroma of more than 2 between the lower boundary of the Ap or A1 horizon and a depth of 30 inches. Coosaw and Williman soils have a sandy A horizon 20 to 40 inches thick. Hobcaw soils have an umbric surface layer.

Typical pedon of Ogeechee loamy fine sand 7 miles southeast of Green Pond; 6.5 miles south of the junction of secondary road 26 and U.S. Highway 17; 8,600 feet west of secondary road 26.

A1—0 to 6 inches; very dark gray (10YR 3/1) loamy fine sand; weak medium granular structure; very friable; many fine clean sand grains; very strongly acid; gradual wavy boundary.

A2—6 to 16 inches; gray (10YR 6/1) loamy fine sand; common medium faint light gray (10YR 7/2) and few coarse distinct brownish yellow (10YR 6/6) mottles; weak medium subangular blocky structure; very friable; many pores; very strongly acid; clear smooth boundary.

B21tg—16 to 31 inches; gray (10YR 5/1) sandy clay loam; common medium prominent red (2.5YR 4/6) and common medium distinct yellowish brown (10YR 5/6) mottles; moderate medium subangular blocky structure; firm; very strongly acid; gradual smooth boundary.

B22tg—31 to 58 inches; gray (5Y 5/1) sandy clay loam, many coarse distinct very pale brown (10YR 7/3) and common coarse prominent strong brown (7.5YR 5/8) mottles; moderate medium subangular blocky structure; firm; very strongly acid; gradual smooth boundary.

B3g—58 to 76 inches; light gray (5Y 7/2) sandy loam with lumps of sandy clay loam; common medium prominent strong brown (7.5YR 5/8) and common medium faint pale olive (5Y 6/3) mottles; massive; friable; very strongly acid.

Solum thickness is more than 60 inches. Reaction is very strongly acid or strongly acid throughout except in the A horizon where limed.

The A1 or Ap horizon has hue of 10YR, value of 3 or 4, and chroma of 1 or 2. The A2 horizon has hue of 10YR, value of 4 to 6, and chroma of 1 or 2. It is loamy fine sand, loamy sand, or fine sandy loam.

The B2t horizon has hue of 10YR or 2.5Y, value of 4 to 6, chroma of 1 or 2. There are few to many mottles in shades of gray, yellow, brown, and red in most pedons.

Texture is sandy clay loam in the upper B2t horizon and sandy clay or clay in the lower B2t horizon.

The B3g horizon is mottled in shades of gray, olive, yellow, and brown. It is fine sandy loam or sandy loam.

Okeetee series

The Okeetee series consists of somewhat poorly drained, slowly permeable soils that formed in clayey sediment. These nearly level soils are on low ridges. Slopes are 0 to 2 percent. These soils are classified as fine, mixed, thermic Aeric Ochraqualfs.

Okeetee soils are near Argent, Bladen, Santee, and Wahee soils. Argent, Bladen, and Santee soils are at lower elevations than Okeetee soils and are poorly or very poorly drained. Wahee soils have a base saturation of less than 35 percent at 50 inches below the top of the argillic horizon.

Typical pedon of Okeetee fine sandy loam about 15 miles southeast of Walterboro; 3 miles west of the intersection of S.C. 64 and U.S. 17, 2,700 feet north of U.S. 17.

A1—0 to 5 inches; dark gray (10YR 4/1) fine sandy loam; weak medium granular structure; very friable; many fine and medium roots; very strongly acid; clear wavy boundary.

A2—5 to 8 inches; light brownish gray (2.5Y 7/2) fine sandy loam; common medium faint light yellowish brown (2.5Y 6/4) and grayish brown (10YR 5/2) mottles; weak medium subangular blocky structure; very friable; many fine and medium roots; strongly acid; clear wavy boundary.

B1—8 to 12 inches; pale brown (10YR 6/3) clay loam; many medium distinct strong brown (7.5YR 5/6) and common medium faint light brownish gray (10YR 6/2) mottles; weak medium subangular blocky structure; friable, sticky and slightly plastic; patchy clay films on faces of peds; common fine roots; strongly acid; clear wavy boundary.

B21tg—12 to 23 inches; light brownish gray (10YR 6/2) clay; many coarse distinct yellowish brown (10YR 5/4) and common medium distinct strong brown (7.5YR 5/8) mottles; moderate medium subangular blocky structure; very firm, very sticky and very plastic; distinct clay films on faces of peds; few fine roots; strongly acid; gradual wavy boundary.

B22tg—23 to 48 inches; light brownish gray (10YR 6/2) clay; common medium distinct yellowish brown (10YR 5/6) and gray (10YR 6/1) and few fine distinct yellowish red (5YR 5/8) mottles; moderate medium subangular blocky structure; very firm, very sticky and very plastic; thin patchy clay films on faces of peds; few fine roots; slightly acid; gradual wavy boundary.

B3g—48 to 75 inches; light brownish gray (2.5Y 6/2) sandy clay loam; common medium distinct yellowish brown (10YR 5/6) and yellowish red (5YR 5/8) mottles; massive; friable; many fine hard limestone fragments; moderately alkaline.

Solum thickness is more than 70 inches. Reaction ranges from very strongly acid to mildly alkaline. Base saturation of the B horizon is more than 35 percent at a depth of 50 inches below the top of the argillic horizon.

The Ap or A1 horizon has value of 3 to 5 and chroma of 1 or 2. The A2 horizon, where present, has hue of 10YR to 5Y, value of 5 to 7, and chroma of 2. Texture is sandy loam or fine sandy loam. Mottles of light yellowish brown or grayish brown range from none to common.

The B1 horizon has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 3 to 8. Mottles in shades of gray, yellow, brown, and red range from few to common.

The upper part of the B2tg horizon has hue of 10YR, value of 6, and chroma of 2 or 3. The lower part has hue of 10YR or 2.5Y, value of 6, and chroma of 1 or 2. Mottles in shades of gray, yellow, brown, and red range from common to many. Texture is clay or sandy clay.

The B3g horizon has hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 2. Mottles are common in shades of gray, yellow, brown, and red. Texture is sandy clay loam or sandy loam.

Osier series

The Osier series consists of poorly drained, rapidly permeable soils that formed in thick sandy sediment. These nearly level soils are in depressional areas on lowlands adjacent to streams. Slope is dominantly less than 1 percent, but ranges up to 2 percent along drainageways. These soils are classified as siliceous, thermic Typic Psammaqfuents.

Osier soils are near Albany, Chipley, Plummer, Pickney, and Scranton soils. Albany and Plummer soils have a loamy argillic horizon. Chipley soils are moderately well drained. Scranton soils are somewhat poorly drained and have a dark surface layer 6 to 10 inches thick. Pickney soils are at the lowest elevations and have an umbric epipedon.

Typical pedon of Osier loamy sand approximately 11.5 miles north of Walterboro; 2 miles south of Springtown; 3,500 feet south of the junction of secondary road 134 and secondary road 50, 1 mile west of secondary road 50; 60 feet south of private road on edge of powerline right-of-way.

Ap—0 to 6 inches; very dark gray (10YR 3/1) loamy sand; weak fine granular structure; very friable; many fine and many coarse roots; very strongly acid; clear wavy boundary.

C1g—6 to 20 inches; light brownish gray (10YR 6/2) sand; common medium distinct brown (10YR 5/3) and dark brown (10YR 4/3) mottles; weak fine granular structure; very friable; few fine pockets of brown loamy sand; very strongly acid; clear wavy boundary.
C2g—20 to 42 inches; white (10YR 8/1) sand; single grained; loose; few fine roots; very strongly acid; gradual wavy boundary.
C3g—42 to 65 inches; white (10YR 8/2) sand; few fine distinct dark gray mottles; single grained; loose; few fine roots; very strongly acid; gradual wavy boundary.
C4g—65 to 75 inches; light brownish gray (10YR 6/2) sand; few medium distinct dark gray mottles; single grained; loose; very strongly acid.

The sand extends to a depth of more than 80 inches. Reaction is very strongly acid to medium acid throughout.

The A horizon has hue of 10YR or 2.5Y, value of 3 to 5, and chroma of 1 or 2. It is loamy sand or fine sand.

The C horizon has hue of 10YR or 2.5Y, value of 3 through 8, and chroma of 1 or 2. Mottles range from none to common in shades of brown, yellow, or gray. The texture is sand.

Paxville series

The Paxville series consists of very poorly drained, moderately permeable soils that formed in loamy sediment. These nearly level soils are in low areas, depressions, and poorly defined drainageways. Slopes are less than 2 percent. These soils are classified as fine-loamy, siliceous, thermic Typic Umbraquults.

Paxville soils are near Goldsboro, Lynchburg, Norfolk, and Rains soils. Goldsboro soils are on intermediate ridges, are moderately well drained, and have chroma of 3 or higher in the B2t horizon. Lynchburg soils are on low ridges, are somewhat poorly drained, and have an ochric epipedon. Norfolk soils are on the higher ridges and are well drained. Rains soils are in low areas and depressions, are poorly drained, and have an ochric epipedon.

Typical pedon of Paxville fine sandy loam approximately 7.5 miles west of Walterboro; 2,300 feet northeast of Tabor Church; 1,200 feet east of air conditioning shop; in wooded area.

A1—0 to 13 inches; black (10YR 2/1) fine sandy loam; weak medium subangular blocky structure; friable; nonsticky; many fine roots; many fine pores; very strongly acid; clear smooth boundary.
A2—13 to 18 inches; very dark gray (10YR 3/1) fine sandy loam; weak medium subangular blocky structure; friable, nonsticky; common fine roots; very strongly acid; clear wavy boundary.
B2tg—18 to 60 inches; dark gray (10YR 4/1) sandy clay loam; few fine faint dark grayish brown mottles; weak medium subangular blocky structure; firm, slightly sticky and slightly plastic, most sand grains coated and bridged with clay; common fine roots; very strongly acid; gradual smooth boundary.
B31g—60 to 72 inches; gray (10YR 5/1) sandy loam; many fine faint grayish brown (10YR 5/2) mottles; massive; friable, nonsticky; pockets of loamy sand material with clean sand grains; very strongly acid; gradual smooth boundary.
B32g—72 to 85 inches; dark gray (10YR 4/1) sandy loam; common fine faint light brownish gray (10YR 6/2) mottles; massive; friable, nonsticky; few clean sand grains; very strongly acid.

The solum ranges from 45 to more than 60 inches thick. It is very strongly acid or strongly acid throughout except in the A horizon where limed.

The A horizon has hue of 10YR, value of 2 or 3, and chroma of 1 or 2. It is fine sandy loam, loam, or loamy fine sand.

The B2t horizon has hue of 10YR or 2.5Y, value of 3 to 5, and chroma of 0 or 1. There are few to common mottles of higher chromas in some pedons. Texture is sandy clay loam.

The B3g horizon has hue of 10YR to 5Y, value of 3 to 6, and chroma of 1 to 3. It is sandy loam or loamy sand.

The C horizon has hue of 10YR to 5Y, value of 4 to 6, and chroma of 1 to 3. It is loamy sand or sand.

Pelham series

The Pelham series consists of poorly drained, moderately permeable soils that formed in thick deposits of loamy sediment on marine terraces. These nearly level soils are in nearly level broad flats, depressions, and drainageways. Slopes are 0 to 2 percent. These soils are classified as loamy, siliceous, thermic Arenic Paleaquults.

Pelham soils are on landscapes similar to those occupied by Albany, Lynchburg, Ocilla, and Rains soils. Albany, Lynchburg, and Ocilla soils are somewhat poorly drained and occupy intermediate elevations. Rains soils occupy positions similar to those occupied by the Pelham soils and have an A horizon less than 20 inches thick.

Typical pedon of Pelham loamy sand 9 miles west of Walterboro; 50 feet south of junction of S.C. Highway 63 and secondary road 191; 20 feet west of secondary road 191.

A1—0 to 6 inches; very dark gray (10YR 3/1) loamy sand; weak medium granular structure; very friable; many fine and common medium roots; very strongly acid; clear wavy boundary.

A21—6 to 15 inches; dark grayish brown (10YR 4/2) fine sand; common medium distinct gray (10YR 5/1) mottles; single grained; loose; few fine roots; very strongly acid; clear wavy boundary.

A22—15 to 30 inches; light brownish gray (10YR 6/2) fine sand; common medium distinct light yellowish brown (10YR 6/4) and yellow (10YR 7/6) mottles; single grained; loose; few fine roots; very strongly acid; clear wavy boundary.

B1—30 to 35 inches; dark gray (10YR 4/1) sandy loam; common medium distinct dark yellowish brown (10YR 4/6) and yellowish brown (10YR 5/6) and few fine distinct light gray mottles; weak medium subangular blocky structure; very friable; few fine roots; very strongly acid; clear wavy boundary.

B21tg—35 to 50 inches; grayish brown (10YR 5/2) sandy clay loam; common medium distinct yellowish brown (10YR 5/6) mottles; weak medium subangular blocky structure; friable; many fine pockets of white sand; few fine roots; very strongly acid; clear wavy boundary.

B22tg—50 to 65 inches; gray (10YR 5/1) sandy clay loam with pockets of sandy clay; common medium distinct brownish yellow (10YR 6/8) and few fine distinct yellow mottles; weak subangular blocky structure; friable; few lenses of white sand; few fine roots; very strongly acid; clear wavy boundary.

B23tg—65 to 85 inches; light gray (10YR 7/1) sandy clay loam with pockets of sandy clay; common medium distinct yellowish brown (10YR 5/6) and dark gray (10YR 4/1) mottles; weak medium subangular blocky structure; friable; few fine roots; strongly acid.

Solum thickness ranges from 60 to more than 80 inches. Reaction is strongly acid or very strongly acid throughout except in the A horizon where limed.

The A1 or Ap horizon has hue of 10YR to 5Y, value of 2 to 4, and chroma of 1. The A2 horizon has hue of 10YR to 5Y, value of 4 to 7, and chroma of 1 or 2. The A horizon is loamy sand or sand.

The B1 horizon, where present, has hue of 10YR to 5Y, value of 5 to 7, and chroma of 1 or 2. It is sandy loam.

The B2t horizon has hue of 10YR to 5Y, value of 5 to 7, and chroma of 0 to 2. There are few to many fine to coarse yellow or brown mottles throughout this horizon. Texture is commonly sandy clay loam but ranges to sandy clay in the lower part of some pedons.

Pickney series

The Pickney series consists of very poorly drained, rapidly permeable soils that formed in thick deposits of sandy sediment. These nearly level, sandy soils are in drainageways and depressional areas. Slopes are 0 to 2 percent. These soils are classified as sandy, siliceous, thermic Cumulic Humaquepts.

Pickney soils are near Albany, Blanton, Chipley, Echaw, Lakeland, Osier, and Plummer soils. Albany, Blanton, Chipley, Echaw, and Lakeland soils are on uplands and are better drained than the Pickney soils. In addition, Albany, Blanton, and Plummer soils have an argillic horizon. Osier soils are poorly drained and have a dark A1 or Ap horizon that is less than 7 inches thick.

Typical pedon of Pickney loamy sand about 2.8 miles northwest of Walterboro; 3,050 feet west of junction of State Highway 64 and Interstate Highway 95; 150 feet south of State Highway 64.

A11—0 to 12 inches; black (10YR 2/1) loamy sand; weak fine granular structure; very friable; common fine and common medium roots; few fine uncoated sand grains; very strongly acid; clear wavy boundary.

A12—12 to 31 inches; very dark gray (10YR 3/1) loamy sand; weak fine granular structure; very friable; common fine and common medium roots; few fine lenses of grayish brown fine sand; few fine uncoated sand grains; very strongly acid; gradual wavy boundary.

C1g—31 to 44 inches; dark gray (10YR 4/1) loamy sand; common medium faint very dark gray (10YR 3/1) and common medium faint dark grayish brown (10YR 4/2) mottles; weak fine granular structure; very friable; few fine and few medium roots; few thin strata and pockets of sandy loam; common fine splotches of grayish brown fine sand; very strongly acid; clear wavy boundary.

C2g—44 to 56 inches; light gray (10YR 7/2) sand; common medium distinct dark grayish brown (10YR 4/2) mottles; single grained; loose; few fine roots; common fine uncoated sand grains; common fine pockets of loamy fine sand; strongly acid; clear smooth boundary.

C3g—56 to 68 inches; light gray (10YR 7/1) sand; common medium faint grayish brown (10YR 5/2) and few fine distinct dark gray mottles; single grained; loose; most sand grains uncoated; strongly acid; clear smooth boundary.

C4g—68 to 82 inches; light brownish gray (10YR 6/2) sand; common medium faint gray (10YR 5/1) mottles; single grained; loose; most sand grains uncoated; strongly acid.

The sand extends to a depth of 60 inches or more. The soil is extremely acid to strongly acid in the A horizon and very strongly acid to medium acid in the C horizon.

The A horizon has hue of 10YR or 2.5Y, value of 2 or 3, and chroma of 0 to 2. Texture is loamy sand or loamy fine sand.

The Cg horizon has hue of 10YR to 5Y, value of 3 to 7, and chroma of 0 to 2. Texture is sand, fine sand, loamy sand, or loamy fine sand.

Plummer series

The Plummer series consists of nearly level, poorly drained soils along poorly defined drainageways of the Coastal Plain. They formed in sandy and loamy fluvial sediment. Slopes are 0 to 2 percent. These soils are classified as loamy, siliceous, thermic Grossarenic Paleaquults.

Plummer soils are on landscapes similar to those occupied by Rains, Lynn Haven, Osier, Pelham, Rutlege, and Seagate. Rains soils have a thinner A horizon than do the Plummer soils. Lynn Haven and Seagate soils have a Bh horizon. Osier and Rutlege soils are wetter and have no Bt horizon. Pelham soils are poorly drained and have an argillic horizon between depths of 40 and 60 inches.

Typical pedon of Plummer loamy sand 9.5 miles west of Walterboro; 200 feet south of the junction of S.C. Highway 63 and secondary road 190; 20 feet east of secondary road 190.

A1—0 to 7 inches; very dark gray (10YR 3/1) loamy sand; weak medium granular structure; very friable; many fine and medium roots; very strongly acid; clear wavy boundary.

A21—7 to 20 inches; dark gray (10YR 4/1) loamy sand; weak fine granular structure; very friable; common fine roots; very strongly acid; gradual wavy boundary.

A22—20 to 57 inches; light brownish gray (10YR 6/2) loamy sand; weak fine granular structure; very friable; few pockets of sandy loam in lower part; strongly acid; gradual wavy boundary.

B2tg—57 to 65 inches; gray (10YR 5/1) sandy clay loam; common medium distinct dark gray (10YR 4/1) and red (2.5YR 4/6) mottles; weak medium subangular blocky structure; friable; very strongly acid; gradual wavy boundary.

B3g—65 to 85 inches; dark gray (10YR 4/1) sandy loam; weak medium subangular blocky structure; friable; very strongly acid.

Solum thickness is 72 inches or more. The soil is extremely acid or strongly acid throughout.

The A1 horizon has hue of 10YR to 5Y, value of 2 to 4, and chroma of 1 or 2. The A2 horizon has hue of 2.5Y or 5Y, value of 5 to 8, and chroma of 1 or 2. The A horizon is sand, fine sand, or loamy sand.

The B2t horizon has hue of 10YR to 5Y, value of 5 to 7, and chroma of 1 or 2. It is sandy loam or sandy clay loam. Some pedons have pockets of loamy sand or sandy clay in the Bt horizon.

The B3 horizon has hue of 10YR, value of 4 to 7, and chroma of 1 or 2.

Pungo series

The Pungo series consists of very poorly drained, well decomposed organic soils that contain mainly herbaceous materials. These low nearly level areas are generally less than 5 feet above mean sea level. Slopes are less than 1 percent. These soils are classified as dysic, thermic Typic Medisaprists.

Pungo soils are near Bohicket, Capers, Hobcaw, Handsboro, Levy, and Santee soils. Bohicket soils are at slightly lower elevations than the Pungo soils and are covered twice daily by salt water to a depth of 6 to 48 inches. Capers soils formed in silty and clayey marine sediment and are flooded by salt water at least twice per month. Hobcaw soils are mineral soils that occur along drainageways. Handsboro soils are organic soils that are flooded by salt water. Levy soils have *n* values greater than 0.7 in all mineral layers between the surface and a depth of 40 inches. Santee soils are very poorly drained, clayey mineral soils.

Typical pedon of Pungo muck 7.2 miles south of Jacksonboro; 6,600 feet northwest of junction of abandoned railroad track and Edisto River; 6,000 feet west of river and 3,000 feet north of railroad track.

Oa1—0 to 4 inches; black (10YR 2/1), black (10YR 2/1) rubbed; about 25 percent fibers; about 2 percent rubbed; massive; slightly sticky; many fine and medium roots; sodium pyrophosphate extract dark brown (10YR 4/3); estimated mineral content 20 percent; extremely acid; gradual smooth boundary.

Oa2—4 to 12 inches; dark reddish brown (5YR 2/2), dark reddish brown (5YR 2/2) rubbed; nonsticky; common fine and medium roots; sodium pyrophosphate extract light yellowish brown (10YR 6/4); few medium woody fragments; estimated mineral content 15 percent; extremely acid; gradual smooth boundary.

Oa3—12 to 48 inches; dark reddish brown (5YR 2/2), dark reddish brown (5YR 2/2) rubbed; about 20 percent fibers, about 4 percent rubbed; massive; slightly sticky; few fine and medium roots; sodium pyrophosphate extract light yellowish brown (10YR 6/4); common coarse woody fragments; estimated mineral content 20 percent; extremely acid; gradual smooth boundary.

Oa4—48 to 72 inches; dark reddish brown (5YR 2/2), black (5YR 2/1) rubbed; about 15 percent fibers, less than 2 percent rubbed; massive; slightly sticky; sodium pyrophosphate extract light yellowish brown (10YR 6/4); estimated mineral content 20 percent; extremely acid.

The organic layers extend to a depth of 51 to more than 90 inches. They are extremely acid throughout.

The surface tier has a hue of 5YR to 10YR, value of 2, and chroma of 1 or 2.

The subsurface tier and the bottom tier has a hue of 2.5YR to 5Y, value of 2 or 3, and chroma of 1 or 2. Where the mineral content is more than about 5 percent the color of the mineral soil masks the color of the organic soil.

Rains series

The Rains series consists of poorly drained, moderately permeable soils that formed in thick deposits of loamy sediment. These nearly level soils are in broad low areas, slight depressions, and shallow drainageways. Slopes are 0 to 2 percent. These soils are classified as fine-loamy, siliceous, thermic Typic Paleaquults.

Rains soils are on landscapes similar to those occupied by Coxville, Goldsboro, Lynchburg, Norfolk, and Paxville soils. Coxville soils are at the same elevations as the Rains soils but have a Bt horizon that is clayey. Goldsboro and Norfolk soils are at higher elevations and have dominant chroma of 3 or more between the lower boundary of the A1 or Ap horizon and a depth of 30 inches. Lynchburg soils are at slightly higher elevations and are somewhat poorly drained. Paxville soils are at slightly lower elevations and have an umbric epipedon.

Typical pedon of Rains sandy loam approximately 7 miles northwest of Walterboro; 500 feet north of the junction of secondary roads 64 and 346; 60 feet east of secondary road 64.

A1—0 to 5 inches; very dark gray (10YR 3/1) sandy loam; weak medium granular structure; very friable; many fine and common medium roots; very strongly acid; clear smooth boundary.

A2—5 to 10 inches; light brownish gray (10YR 6/2) sandy loam; few fine faint pale brown and few fine faint gray mottles; weak fine subangular blocky structure; very friable; common fine roots; very strongly acid; clear wavy boundary.

B21tg—10 to 33 inches; gray (10YR 5/1) sandy clay loam; common medium distinct yellowish brown (10YR 5/6) and few fine distinct strong brown mottles; weak medium subangular blocky structure; friable; faint patchy clay films on faces of some peds; few fine roots; very strongly acid; gradual wavy boundary.

B22tg—33 to 66 inches; gray (10YR 5/1) sandy clay loam; common coarse distinct yellowish brown (10YR 5/6) and common medium prominent red (10R 4/8) mottles; weak medium subangular blocky structure; friable; faint patchy clay films on faces of some peds; very strongly acid; gradual wavy boundary.

B23tg—66 to 74 inches; gray (10YR 5/1) sandy clay loam; common medium distinct brownish yellow (10YR 6/6), common medium prominent red (10R 4/8), and few medium distinct reddish brown (5YR 5/4) mottles; weak medium subangular blocky structure; firm; few fine splotches of light gray fine sand; very strongly acid; gradual wavy boundary.

B3g—74 to 90 inches; gray (10YR 5/1) sandy clay loam; common medium distinct brownish yellow (10YR 6/6), few medium distinct reddish brown (5YR 5/4), and few fine prominent red mottles; massive; firm; very strongly acid.

Solum thickness is more than 60 inches. The soil is very strongly acid or strongly acid throughout, except in the A horizon where limed.

The A1 or Ap horizon has hue of 10YR or 2.5Y, value of 2 to 4, and chroma of 0 to 2. The A2 horizon has hue of 10YR to 5Y, value of 4 to 6, and chroma of 0 to 2. The A horizon is dominantly sandy loam, but ranges to loamy sand, loamy fine sand, or fine sandy loam in some places.

The B1 horizon, where present, has hue of 10YR to 5Y, value of 4 to 7, and chroma of 0 to 2. Texture is sandy loam or fine sandy loam.

The B2tg horizon has hue of 10YR to 5Y, value of 4 to 7, and chroma of 0 to 2. Most pedons have mottles in shades of yellow, brown, or red, or a combination of these colors. Texture is sandy clay loam or clay loam.

The B3g horizon has hue of 10YR to 5Y, value of 4 to 7, and chroma of 0 to 1. Most pedons have mottles in shades of olive, yellow, brown, or red, or a combination of these colors. Texture is sandy loam, sandy clay loam, or sandy clay.

Santee series

The Santee series consists of very poorly drained, slowly permeable soils that formed in clayey sediment. These nearly level soils are in broad depressional areas and drainageways. Slopes are dominantly less than 1 percent. These soils are classified as fine, mixed, thermic Typic Argiaquolls.

Santee soils are on landscapes similar to those occupied by Hobcaw, Argent, Bladen, Nemours, and Wahee soils. Hobcaw soils are at the same elevations, but have a coarser textured B2t horizon. Argent, Bladen, Nemours, and Wahee soils are at higher elevations and do not have a mollic epipedon.

Typical pedon of Santee loam about 6.5 miles northwest of Jacksonboro; 1.5 miles south of intersection of secondary road 45 and secondary road 40; 2,950 feet west of secondary road 40; 30 feet north of unimproved road from the edge of road drainage pipe.

A1—0 to 9 inches; very dark gray (10YR 3/1) loam; weak medium granular structure; friable; many fine

and medium roots; slightly acid; clear smooth boundary.

B21tg—9 to 15 inches; very dark gray (10YR 3/1) clay loam; few fine distinct light olive brown mottles; weak medium subangular blocky structure; firm, slightly sticky and plastic; many fine and medium roots; patchy clay films on the faces of some peds; slightly acid; clear smooth boundary.

B22tg—15 to 23 inches; very dark gray (10YR 3/1) clay; few fine distinct yellowish brown mottles; moderate medium subangular blocky structure; slightly sticky and plastic; many fine and medium roots; patchy clay films on faces of most peds; slightly acid; gradual smooth boundary.

B23tg—23 to 35 inches; dark gray (5Y 4/1) clay; common medium distinct light olive brown (2.5Y 5/4) and few medium distinct gray (10YR 5/1) mottles; moderate medium subangular blocky structure; slightly sticky and plastic; common fine roots; patchy clay films on faces of peds; slightly acid; gradual smooth boundary.

B24tg—35 to 50 inches; gray (5Y 5/1) clay; common medium distinct olive (5Y 5/6) and light olive brown (2.5Y 5/6) mottles; moderate medium subangular blocky structure; slightly sticky and plastic; few fine roots; patchy clay films on faces of peds; slightly acid; gradual smooth boundary.

B25tg—50 to 59 inches; greenish gray (5BG 5/1) clay, common medium distinct olive gray (5Y 5/2), light olive brown (2.5Y 5/4), and olive yellow (5Y 6/6) mottles; moderate medium subangular blocky structure; sticky and plastic; patchy clay films on faces of peds; slightly acid; gradual smooth boundary.

B31tg—59 to 65 inches; greenish gray (5BG 5/1) clay; common medium distinct yellowish brown (10YR 5/8) and few fine faint light gray mottles; weak medium subangular blocky structure; neutral; clear wavy boundary.

B32g—65 to 75 inches; gray (5Y 5/1) sandy clay loam with pockets of sand, common medium distinct greenish gray (5BG 5/1) and light olive brown (2.5Y 5/6) mottles; weak medium subangular blocky structure; neutral.

The thickness of the solum ranges from 55 to more than 70 inches. The soil ranges from strongly acid to mildly alkaline.

The A horizon has hue of 10YR, value of 2 or 3, and chroma of 0 or 1. Texture is dominantly loam, but ranges to clay loam or fine sandy loam.

The B2tg horizon has hue of 10YR to 5Y, value of 2 to 7, and chroma of 1 or 2. Few to many fine or medium brown or gray mottles are in the B2tg horizon. Texture is clay loam, sandy clay or clay.

The B3g horizon has hue of 10YR to 5BG, value of 4 to 7, and chroma of 1 or 2. It is fine sandy loam, sandy clay loam, sandy clay, or clay.

Scranton series

The Scranton series consists of somewhat poorly drained, nearly level soils that formed in thick deposits of sandy sediment. These nearly level soils are on nearly level flats and in slight depressions. Slopes are 0 to 2 percent. These soils are classified as siliceous, thermic Humaqueptic Psammaquents.

Scranton soils are on landscapes similar to those occupied by Chipley, Albany, Echaw, Osier, Rutlege, and Plummer soils. Albany soils have an argillic horizon below a depth of 40 inches. Chipley soils are moderately well drained. Echaw soils have a Bh horizon between depths of 30 and 50 inches. Osier and Rutlege soils are poorly and very poorly drained sands. Plummer soils are poorly drained and have a Bt horizon below a depth of 40 inches.

Typical pedon of Scranton loamy sand approximately 7 miles west of Walterboro; 1.5 miles south of junction of secondary road 114 and secondary road 172; 2,400 feet west of secondary road 172; 50 feet off west side of woods road.

A1—0 to 7 inches; black (10YR 2/1) loamy sand; weak fine granular structure; very friable; many fine and medium roots; very strongly acid; clear smooth boundary.

C1g—7 to 11 inches; dark grayish brown (10YR 4/2) fine sand; single grained; very friable; common fine and medium roots; very strongly acid; gradual smooth boundary.

C2g—11 to 16 inches; light brownish gray (10YR 6/2) fine sand; common medium distinct yellowish brown (10YR 5/6) mottles; single grained; loose; common fine and medium roots; very strongly acid; gradual smooth boundary.

C3g—16 to 26 inches; light brownish gray (2.5Y 6/2) fine sand; single grained; loose; few fine and medium roots; very strongly acid; gradual smooth boundary.

C4g—26 to 55 inches; light brownish gray (10YR 6/2) fine sand; single grained; loose; few fine and medium roots; very strongly acid; gradual smooth boundary.

C5g—55 to 85 inches; grayish brown (10YR 5/2) fine sand; single grained; loose; few fine roots; very strongly acid.

The sand extends from 60 to more than 85 inches deep. The soil is very strongly acid or strongly acid throughout except in the A horizon where limed.

The A1 or Ap horizon has hue of 10YR or 2.5Y, value of 2 or 3, and chroma of 0 to 2.

The Cg horizon has hue of 10YR to 2.5Y, value of 4 or 5, and chroma of 1 or 2 in the upper part. The lower part

has hue of 10YR or 2.5Y, value 5 to 8, and chroma of 1 or 2. The Cg horizon is loamy sand or fine sand.

Seagate series

The Seagate series consists of somewhat poorly drained soils with rapid permeability in the sandy horizons and moderate permeability in the loamy B horizon. They formed in marine deposits of sandy and loamy sediment. Slopes are 0 to 2 percent. These soils are classified as sandy over loamy, siliceous, thermic Typic Haplohumods.

Seagate soils are near Albany, Echaw, Leon, and Ocilla soils. Albany and Ocilla soils do not have a Bh horizon. Echaw and Leon soils do not have a Bt horizon.

Typical pedon of Seagate fine sand about 11.5 miles west of Walterboro; 3 miles south of Sniders Crossroads; 1,200 feet west of U.S. Highway 21; 20 feet west of woods road and fireline boundary.

A1—0 to 8 inches; gray (10YR 5/1) fine sand; single grained; very friable; many clean sand grains; very strongly acid; gradual smooth boundary.

A2—8 to 14 inches; gray (10YR 6/1) fine sand; single grained; loose; many clean sand grains; very strongly acid; abrupt smooth boundary.

Bh—14 to 20 inches; dark reddish brown (5YR 2/2) loamy fine sand; few medium faint dark reddish brown (5YR 3/2) mottles; massive; weakly cemented, friable; sand grains coated with organic matter; few clean sand grains; very strongly acid; gradual smooth boundary.

A'2—20 to 29 inches; light yellowish brown (10YR 6/4) loamy fine sand; common coarse faint yellow (10YR 7/6) and common medium distinct strong brown (7.5YR 5/8) mottles; weak medium granular structure; few pockets of sandy loam; medium acid; gradual smooth boundary.

B'1—29 to 32 inches; brownish yellow (10YR 6/6) sandy clay loam; common medium distinct light gray (10YR 7/2), common medium distinct strong brown (7.5YR 5/8) and few medium prominent red (2.5YR 5/8) mottles; weak medium subangular blocky structure; friable; common coarse yellowish red nodules; strongly acid; gradual smooth boundary.

B'2tg—32 to 46 inches; gray (10YR 6/1) sandy clay loam; common coarse distinct strong brown (7.5YR 5/6) and common medium prominent red (2.5YR 5/8) mottles; weak medium subangular blocky structure; friable; strongly acid; gradual smooth boundary.

B'31g—46 to 70 inches; light gray (10YR 7/1) and yellowish brown (10YR 5/6) sandy clay loam with a few medium prominent red (10R 4/6) mottles; massive; friable; few clean sand grains; strongly acid; gradual smooth boundary.

B'32g—70 to 85 inches; light gray (10YR 7/2) sandy clay loam; common coarse distinct brownish yellow (10YR 6/6) and few fine prominent red (10R 4/6) mottles; massive; friable; strongly acid.

The thickness of the solum is more than 80 inches. Reaction is extremely acid to medium acid throughout.

The A1 or Ap horizon has hue of 10YR or 2.5Y, value of 3 to 5, and chroma of 1 or 2. The A2 horizon has hue of 10YR or 2.5Y, value of 6 to 8, and chroma of 1 or 2. The A horizon is fine sand or sand. Clean sand grains are few to many.

The Bh horizon has hue of 5YR to 10YR, value of 2 or 3, and chroma of 1 to 3. It is sand, fine sand, or loamy fine sand. Clean sand grains are few to common.

The A'2 horizon has hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 1 to 4 with mottles in shades of brown and yellow. It is loamy fine sand, fine sand, and sand.

The upper part of the B' horizon has hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 2 to 8. The lower part of the B' horizon has hue of 10YR to 5Y, value of 5 to 7, and chroma of 1 or 2. Mottles in shades of yellow, brown, and red range from none to common in this horizon. The B'2tg and B'3g horizons are sandy clay loam or clay loam.

Torhunta series

The Torhunta series consists of very poorly drained, moderately rapidly permeable soils that formed in coarse to medium textured sediment. These soils are on flood plains, in depressions, and in broad drainageways. Slopes are 0 to 2 percent. These soils are classified as coarse-loamy, siliceous, acid, thermic Typic Humaquepts.

Torhunta soils are on landscapes similar to those occupied by Paxville, Pickney, Lynchburg, Rains, and Norfolk soils. Paxville soils have a finer textured Bg horizon than the Torhunta soils. Pickney soils are sandy throughout. Lynchburg soils are at higher elevations and are somewhat poorly drained. Rains soils do not have an umbric epipedon, have a finer textured B2tg horizon, and are poorly drained. Norfolk soils are at higher elevations, are well drained, and are fine-loamy.

Typical pedon of Torhunta fine sandy loam in an area of Torhunta-Osier association, about 13.5 miles northwest of Walterboro; 8,000 feet west of the crossroads of U.S. Highway 21 and State Highway 64, 250 feet north of State Highway 64.

A1—0 to 11 inches; very dark gray (10YR 3/1) fine sandy loam; weak medium granular structure; very friable; many fine roots, common medium roots; about 20 percent organic matter; extremely acid; clear smooth boundary.

B21g—11 to 25 inches; grayish brown (10YR 5/2) fine sandy loam; few fine distinct dark brown mottles; weak medium subangular blocky structure; friable, slightly sticky; few fine roots; very strongly acid; gradual wavy boundary.
B22g—25 to 45 inches; gray (10YR 5/1) fine sandy loam; common medium faint dark grayish brown (10YR 4/2) mottles; weak medium subangular blocky structure; friable, slightly sticky; few fine roots; slightly acid; gradual wavy boundary.
B3g—45 to 57 inches; gray (5Y 5/1) fine sandy loam; common medium faint light brownish gray (10YR 6/2) mottles; massive; friable, slightly sticky; common pockets of loamy fine sand; neutral; clear wavy boundary.
IIC—57 to 80 inches; light gray (10YR 7/2) fine sand; common medium distinct grayish brown (10YR 5/2) mottles; single grained; loose; neutral.

Solum thickness ranges from 24 to 60 inches. Organic matter content of the A horizon ranges from 2 to 20 percent. Some pedons have a few inches of fibric material in the A horizon. The surface layer and the upper part of the control section range from extremely acid to strongly acid. The lower part of the control section and the underlying horizons range from medium acid to neutral.

The A horizon has hue of 10YR or 2.5Y, value of 2 or 3, and chroma of 1 or 2. It is loam, fine sandy loam, sandy loam, or loamy fine sand.

The Bg horizon has hue of 10YR to 5Y, value of 4 to 6, and chroma of 0 to 2. The Bg horizon is loam, fine sandy loam, or sandy loam.

The IIC horizon has hue of 10YR to 5Y, value of 4 to 7, and chroma of 0 to 2. The IIC horizon is commonly fine sand, but ranges to loamy fine sand, loamy sand, and sand. Thin layers, lenses, and pockets of finer textured material occur in some pedons.

In Colleton County, these soils are a taxadjunct to the Torhunta series because they have a higher pH in the lower part of the profile than is defined in the range for the series. This difference does not significantly alter their behavior.

Wadmalaw Variant

The Wadmalaw Variant consists of poorly drained, moderately slowly permeable soils with ironstone pebbles and cobbles in some horizons at depths between about 9 and 70 inches. These soils formed in loamy and clayey sediment. They are in broad, nearly level low areas. Slopes are 0 to 2 percent. These soils are classified as loamy-skeletal, siliceous, thermic Umbric Ochraqualfs.

Wadmalaw Variant soils are near the Argent, Nemours, Santee, and Wahee soils. Argent soils, which are also poorly drained, commonly are lower in the landscape than Wadmalaw Variant soils and do not have ironstone pebbles and cobbles. Nemours soils are moderately well drained, are at higher elevations, and do not have ironstone pebbles and cobbles. Santee soils are at the lowest elevations, have a mollic epipedon, are very poorly drained, and do not have ironstone pebbles and cobbles. Wahee soils are at slightly higher elevations than the Wadmalaw Variant soils, are somewhat poorly drained, and do not have ironstone pebbles and cobbles.

Typical pedon of Wadmalaw Variant loamy sand 6 miles southeast of Cottageville; 5.6 miles northeast of junction of unimproved Parkers Ferry Road and secondary road 40; 3,900 feet north of Parkers Ferry Road on woods road; 100 feet east of road.

A1—0 to 7 inches; very dark grayish brown (10YR 3/2) loamy sand; weak fine granular structure; very friable; many fine roots; very strongly acid; clear smooth boundary.
A2—7 to 9 inches; grayish brown (10YR 5/2) loamy sand, few fine pale brown (10YR 6/3) mottles; weak fine granular structure; very friable; 5 percent by volume small and medium ironstone fragments; strongly acid; clear smooth boundary.
B11—9 to 19 inches; grayish brown (10YR 5/2) sandy loam; weak fine subangular blocky structure; very friable; 10 percent by volume ironstone pebbles; strongly acid; clear wavy boundary.
B12—19 to 31 inches; grayish brown (10YR 5/2) sandy loam; weak medium subangular blocky structure; very friable; 15 percent by volume ironstone pebbles; strongly acid; clear wavy boundary.
B21t—31 to 35 inches; grayish brown (10YR 5/2) cobbly sandy clay loam; common fine faint pale brown (10YR 6/3) mottles; weak medium subangular blocky structure; friable; faint patchy clay films on faces of some peds; 15 percent by volume ironstone pebbles and 25 percent by volume ironstone cobbles; strongly acid; clear wavy boundary.
B22tg—35 to 42 inches; light gray (10YR 6/1) cobbly sandy clay; few fine prominent strong brown (7.5YR 5/6) mottles; weak medium subangular blocky structure; firm, slightly sticky; faint patchy clay film on faces of peds; 20 percent by volume ironstone pebbles and 40 percent by volume ironstone cobbles; common coarse uncoated sand grains; strongly acid; clear smooth boundary.
B23tg—42 to 70 inches; light brownish gray (2.5Y 6/2) sandy clay; few medium distinct yellowish brown (10YR 5/6) and few medium faint light yellowish brown (2.5Y 6/4) mottles; weak medium subangular blocky structure; firm, slightly sticky; faint patchy clay film on faces of peds; 10 percent by volume ironstone pebbles; strongly acid; clear smooth boundary.

B3g—70 to 80 inches; gray (10YR 6/1) sandy clay loam; few fine distinct yellow (5Y 7/6) mottles; weak medium subangular blocky structure; medium acid.

Solum thickness is 60 inches or more. Reaction is strongly acid to slightly acid in the A horizon and strongly acid to neutral in the B horizon. Combined content of pebbles and cobbles ranges from about 5 to 60 percent in some of the underlying horizons.

The A1 or Ap horizon has hue of 10YR, value of 2 or 3, and chroma of 1 or 2. Surface layers less than 7 inches thick have chromas of less than 4 when mixed to a depth of 7 inches. The A2 horizon, where present, has hue of 10YR, value of 3 to 7, and chroma of 1 or 2. In some areas the A2 horizon has mottles in shades of red, brown, yellow, gray, or a combination of these colors. The A horizon is loamy sand, loamy fine sand, sandy loam, or fine sandy loam.

The B1 horizon has hue of 10YR, value of 3 to 6, and chroma of 1 or 2. Mottles in shades of brown, yellow, and gray are throughout the horizon in most pedons. The B1 horizon is sandy loam or fine sandy loam. Ironstone pebbles range from 5 to 20 percent by volume.

The B2tg horizon has hue of 10YR, value of 4 to 7, and chroma of 1 or 2. Mottles in shades of red, brown, yellow, olive, and gray are throughout the horizon. Content of ironstone pebbles ranges up to 25 percent and content of ironstone cobbles ranges up to 50 percent by volume. The B2tg horizon is sandy clay loam, cobbly sandy clay loam, sandy clay, or cobbly sandy clay.

The B3g horizon, where present, has value of 5 to 7 and chroma of 1 or 2. Mottles in shades of red, brown, yellow, olive, and gray are throughout the horizon. There are a few ironstone pebbles in some pedons. The B3g horizon is sandy loam, fine sandy loam, or sandy clay loam.

Wahee series

The Wahee series consists of somewhat poorly drained, slowly permeable soils that formed in thick deposits of clayey sediment. These level or nearly level soils commonly occur on broad upland flats. Slopes are 0 to 2 percent. These soils are classified as clayey, mixed, thermic Aeric Ochraquults.

Wahee soils are near Bladen, Cape Fear, and Nemours soils. Bladen and Cape Fear soils have dominant chroma throughout of 2 or less, and are at lower elevations. In addition, Cape Fear soils have an umbric epipedon. Nemours soils have dominant chroma of 3 or more between the base of the Ap or A1 horizon and a depth of 30 inches and are at higher elevations.

Typical pedon of Wahee fine sandy loam 10.5 miles south of Walterboro; 1.3 miles west of junction of secondary roads 66 and 115; 250 feet north of secondary road 66 on unimproved road; 112 feet east of unimproved road.

Ap—0 to 6 inches; dark gray (10YR 4/1) fine sandy loam; weak fine granular structure; very friable; many roots; medium acid; clear wavy boundary.

A2—6 to 12 inches; light yellowish brown (2.5Y 6/4) fine sandy loam; common medium distinct brownish yellow (10YR 6/6) and common medium distinct light brownish gray (2.5Y 6/2) mottles; weak fine subangular blocky structure; very friable; few fine and few medium roots; medium acid; clear wavy boundary.

B21t—12 to 17 inches; brownish yellow (10YR 6/6) sandy clay loam; common medium distinct yellowish red (5YR 5/6) and common medium distinct light brownish gray (2.5Y 6/2) mottles; weak medium subangular blocky structure; friable; few fine roots; faces of many peds coated with light gray (2.5Y 7/2) fine sand; very strongly acid; clear wavy boundary.

B22tg—17 to 39 inches, gray (10YR 5/1) clay; common medium prominent red (10R 4/6) and few fine distinct strong brown mottles; weak coarse prismatic structure parting to moderate medium subangular blocky; firm, sticky and slightly plastic; few fine roots; upper vertical faces of peds coated with light gray (10YR 7/2) fine sand; continuous distinct clay films on faces of peds not coated with fine sand; very strongly acid; gradual wavy boundary.

B23t—39 to 54 inches, pale olive (5Y 6/3) clay loam; common medium distinct olive gray (5Y 5/2), common medium faint gray (10YR 5/1), few fine prominent red, and few fine distinct yellowish brown mottles; weak medium platy structure parting to weak medium subangular blocky; friable, slightly sticky; discontinuous clay films on faces of some peds; very strongly acid; gradual wavy boundary.

B24t—54 to 80 inches; pale olive (5Y 6/3) clay loam; common medium faint gray (10YR 5/1) mottles; weak coarse subangular blocky structure; friable, slightly sticky; patchy faint clay films on faces of peds; very strongly acid.

Solum thickness ranges from 50 to 80 inches. It is very strongly acid or strongly acid throughout except in the A horizon where limed.

The Ap or A1 horizon has hue of 10YR, value of 3 to 5, and chroma of 1 or 2. The A2 horizon has hue of 10YR to 5Y, value of 5 to 7, and chroma of 2 to 4. The A horizon is fine sandy loam or sandy loam.

The B1 horizon, where present, has hue of 10YR, value of 5 or 6, and chroma of 3 to 8. Most pedons have mottles in shades of red, brown, yellow, gray, or a combination of these colors. Texture is sandy clay loam.

The upper part of the B2t horizon has hue of 10YR to 5Y, value of 5 or 6, and chroma of 3 to 7. There are mottles in shades of red, brown, yellow, and gray in most pedons. The middle and lower part of the B2t horizon has hue of 10YR to 5Y, value of 4 to 7, and chroma of 1 or 2. Mottles in shades of red, brown, yellow, olive, or a

combination of these colors are throughout the horizon. Texture is clay, sandy clay, or clay loam.

Williman series

The Williman series consists of poorly drained, moderately permeable soils that formed in thick deposits of loamy sediment. These nearly level soils are in broad low areas, in depressions, and along drainageways at elevations below about 25 feet above sea level. Slopes are commonly less than 1 percent but range from 0 to 2 percent. These soils are classified as loamy, siliceous, thermic Arenic Ochraquults.

Williman soils are near Bladen, Coosaw, Hobcaw, and Murad soils. Bladen soils are at slightly lower elevations, have an argillic horizon less than 20 inches below the surface, and are more than 35 percent clay in the control section. Coosaw soils are at higher elevations and have dominant chroma of 3 or more between the lower boundary of the Ap or A1 horizon and a depth of 30 inches. Hobcaw soils are at the lower elevations, have an argillic horizon within 20 inches of the surface, and have an umbric epipedon. Murad soils are at intermediate elevations and have an argillic horizon starting at more than 40 inches below the surface.

Typical pedon Williman loamy fine sand about 1.9 miles south of Green Pond; 3,700 feet south of junction of S.C. Highway 303 and U.S. Highway 17, 150 feet southeast of U.S. Highway 17 on unimproved road; 50 feet east of unimproved road.

A1—0 to 5 inches; black (10YR 2/1) loamy fine sand; moderate medium granular structure; very friable; many fine and common medium roots; very strongly acid; clear wavy boundary.

A21—5 to 15 inches; dark gray (10YR 4/1) loamy fine sand; common medium faint very dark gray (10YR 3/1) and common medium faint grayish brown (10YR 5/2) mottles; weak medium subangular blocky structure; very friable; common fine and few medium roots; very strongly acid; clear wavy boundary.

A22—15 to 22 inches; grayish brown (10YR 5/2) loamy fine sand; common medium distinct dark gray (10YR 4/1) and common medium distinct very dark gray (10YR 3/1) mottles and streaks commonly along old root channels; weak medium subangular blocky structure; very friable; few fine roots; very strongly acid; clear wavy boundary.

B1g—22 to 26 inches; dark grayish brown (10YR 4/2) fine sandy loam; common medium faint dark gray (10YR 4/1) and common medium faint grayish brown (10YR 5/2) mottles; weak medium subangular blocky structure; very friable; few fine roots; very strongly acid; clear wavy boundary.

B2tg—26 to 44 inches; grayish brown (10YR 5/2) sandy clay loam; many medium faint dark gray (10YR 4/1) and common fine distinct dark brown (7.5YR 4/4) mottles; weak medium subangular blocky structure; friable; faint patchy clay films on faces of some peds; few fine roots; common large pockets of light brownish gray (10YR 6/2) fine sandy loam and loamy fine sand dominantly in the lower part; very strongly acid; clear wavy boundary.

B3g—44 to 67 inches; gray (5Y 6/1) sandy clay loam; common medium prominent yellowish red (5YR 4/6), common medium distinct brown (10YR 5/3), and few medium distinct yellowish brown (10YR 5/6) mottles; massive; friable; few fine roots; few fine flakes of mica; common fine pockets and lenses of loamy fine sand; strongly acid.

The solum ranges from 55 to more than 80 inches thick. It is extremely acid to strongly acid except in the A horizon where limed.

The Ap or A1 horizon has hue of 10YR to 5Y, value of 2 to 4, and chroma of 0 or 1. The A2 horizon has hue of 10YR to 5Y, value of 4 to 7, and chroma of 1 to 4. The A horizon is loamy fine sand, loamy sand, or fine sand.

The B1 horizon has hue of 10YR to 5Y, value of 5 or 6, and chroma of 1 or 2. It is commonly mottled in shades of brown, yellow, or gray, or a combination of these colors. Texture is fine sandy loam or sandy loam.

The B2t horizon has hue of 10YR to 5Y, value of 5 to 7, and chroma of 1 or 2. Some pedons with hue of 2.5Y or 5Y have chroma of 3 or 4. In most pedons there are mottles in shades of red, brown, yellow, or gray, or a combination of these colors. Texture is sandy clay loam.

The B3g horizon has hue of 10YR or 5Y, value of 5 to 7, and chroma of 0 to 2. Mottles are common in shades of red, brown, yellow, or gray, or a combination of these colors. Texture is fine sandy loam or sandy clay loam.

Yauhannah series

The Yauhannah series consists of moderately well drained, moderately permeable soils that formed in deposits of loamy sediment below an elevation of 42 feet above sea level. Slopes are 0 to 2 percent. These soils are classified as fine-loamy, siliceous, thermic Aquic Hapludults.

Yauhannah soils are on landscapes similar to those occupied by Yemassee, Coosaw, and Nemours. Yemassee soils are somewhat poorly drained. Coosaw soils are arenic. Nemours soils are more than 45 percent clay in the B2t horizon.

Typical pedon of Yauhannah fine sandy loam about 14.8 miles southeast of Green Pond; 50 feet west of end of pavement of secondary road 26 at Bennetts Point; 160 feet north of secondary road 26.

Ap—0 to 6 inches; dark grayish brown (10YR 4/2) fine sandy loam; weak medium granular structure; very friable; many fine and medium and few coarse roots; medium acid; clear smooth boundary.

A2—6 to 13 inches; very pale brown (10YR 7/3) fine sandy loam; few fine distinct grayish brown (10YR 5/2) mottles; weak medium subangular blocky structures; very friable; common fine and medium roots; medium acid; clear wavy boundary.

B21t—13 to 18 inches; yellowish brown (10YR 5/8) sandy clay loam; common medium faint strong brown (7.5YR 5/6) and few medium distinct yellowish red (5YR 5/8) mottles; weak medium subangular blocky structure; friable; patchy clay films on faces of some peds; common fine roots; few fine pores; few fine lenses of very pale brown (10YR 7/3) fine sand on faces of some peds and in old root channels; strongly acid; clear wavy boundary.

B22t—18 to 28 inches; reddish yellow (7.5YR 6/6) sandy clay loam; many coarse distinct red (2.5YR 5/8) and common medium faint yellowish red (5YR 5/6) mottles; moderate medium subangular blocky structure; slightly firm; patchy distinct clay films on faces of some peds; few fine roots; common fine lenses of very pale brown (10YR 7/3) fine sand; strongly acid; gradual wavy boundary.

B23t—28 to 47 inches; strong brown (7.5YR 5/6) sand clay loam; many medium distinct red (2.5YR 5/8), common medium distinct brownish yellow (10YR 6/6), and common fine distinct light brownish gray (10YR 6/2) mottles; moderate medium subangular blocky structure; slightly firm; patchy distinct clay films on faces of some peds; few fine roots; common lenses of very pale brown (10YR 8/3) fine sand; few fine flakes of mica; very strongly acid; gradual wavy boundary.

B3—47 to 65 inches; brownish yellow (10YR 6/6) sandy clay loam; many medium distinct light brownish gray (2.5Y 6/2) and common medium distinct strong brown (7.5YR 5/6) mottles; weak medium subangular blocky structure; friable; few fine roots; few fine flakes of mica; very strongly acid; gradual wavy boundary.

Cg—65 to 98 inches; light brownish gray (2.5Y 6/2) fine sandy loam; many medium faint pale yellow (2.5Y 7/4) and common medium distinct strong brown (7.5YR 5/6) mottles; massive; friable; common fine lenses of white (10YR 8/2) fine sand; few medium pockets of sandy clay loam; few fine flakes of mica; very strongly acid.

The solum ranges from 40 to more than 60 inches thick. It is very strongly acid to medium acid throughout except in the A horizon where limed.

The A1 or Ap horizon has hue of 10YR or 2.5Y, value of 3 to 6, and chroma of 1 to 3. The A2 horizon, where present, has hue of 10YR or 2.5Y, value of 4 to 7, and chroma of 3 or 4. The A horizon is loamy sand, loamy fine sand, or fine sandy loam.

The B1 horizon, where present, has hue of 7.5YR to 2.5Y, value of 5 or 6, chroma of 4 to 6. It is fine sandy loam or sandy loam.

The B2t horizon has hue of 7.5YR to 2.5Y, value of 4 to 6, and chroma of 4 to 8. It has mottles in shades of red and brown in the upper part and in shades of red, brown, yellow, and gray in the lower part. It is sandy clay loam or clay loam.

The B3 horizon has hue of 7.5YR to 2.5Y, value of 4 to 7, and chroma of 1 to 6 with mottles in shades of brown, yellow, or gray. It is fine sandy loam, sandy loam, or sandy clay loam.

The C horizon has hue of 10YR to 2.5Y, value of 4 to 7, and chroma of 1 to 6 with mottles in shades of brown, yellow, or gray. It is fine sandy loam, loamy fine sand, loamy sand, fine sand, or sand.

Yemassee series

The Yemassee series consists of somewhat poorly drained, moderately permeable soils that formed in loamy marine sediment at elevations of less than about 42 feet. Slopes are 0 to 2 percent. These soils are classified as fine-loamy, siliceous, thermic Aeric Ochraquults.

Yemassee soils are on landscapes similar to those occupied by Coosaw, Nemours, and Williman soils. Coosaw soils have a sandy A horizon 20 to 40 inches thick. Nemours soils are more than 45 percent clay in the B2t horizon and are moderately well drained. Williman soils are poorly drained and arenic.

Typical pedon of Yemassee loamy fine sand about 3.7 miles south of Cottageville; 4,200 feet north of junction of secondary road 45 and secondary road 40; 80 feet east of secondary road 40.

A1—0 to 6 inches; very dark gray (10YR 3/1) loamy fine sand; weak medium granular structure; very friable; many fine roots, common medium roots; very strongly acid; clear smooth boundary.

A2—6 to 10 inches; light brownish gray (10YR 6/2) loamy fine sand; few fine distinct yellow (10YR 7/6) mottles; weak medium granular structure; very friable; common fine and common medium roots; very strongly acid; clear wavy boundary.

B1—10 to 15 inches; brownish yellow (10YR 6/8) fine sandy loam; many medium distinct light brownish gray (10YR 6/2) mottles; weak medium subangular blocky structure; friable; few fine and few medium roots; very strongly acid; clear wavy boundary.

B21tg—15 to 25 inches; gray (10YR 6/1) sandy clay loam; common medium distinct brownish yellow (10YR 6/8) and few fine distinct yellowish red (5YR

5/8) mottles; moderate medium subangular blocky structure; friable; faint clay films on old root channels and on faces of some peds; few fine and few medium roots; very strongly acid; gradual wavy boundary.

B22tg—25 to 35 inches; gray (10YR 6/1) sandy clay loam; many fine distinct yellowish red (5YR 5/8) and common medium distinct yellowish brown (10YR 5/8) mottles; moderate medium subangular blocky structure; friable; faint clay films on old root channels and on faces of some peds; few fine and few medium roots; very strongly acid; gradual wavy boundary.

B23tg—35 to 54 inches; gray (10YR 6/1) sandy clay loam; common medium distinct strong brown (7.5YR 5/8) and common medium distinct yellowish brown (10YR 5/8) mottles; weak medium subangular blocky structure; friable; faint clay films on old root channels and on faces of some peds; few fine and few medium roots; very strongly acid; gradual wavy boundary.

B3g—54 to 65 inches; gray (10YR 6/1) sandy clay loam; common medium distinct light yellowish brown (10YR 6/4) and common medium distinct yellowish brown (10YR 5/8) mottles; massive; friable; common fine pockets and strata of light gray fine sand; very strongly acid; gradual wavy boundary.

Cg—65 to 80 inches; gray (10YR 6/1) fine sandy loam with pockets of sandy clay loam; many coarse distinct brownish yellow (10YR 6/8) mottles; massive; very friable; common fine pockets and strata of light gray fine sand; strongly acid.

The solum ranges from 40 to more than 70 inches thick. It is extremely acid to strongly acid except in the A horizon where limed.

The A1 or Ap horizon has hue of 10YR or 2.5Y, value of 3 to 5, and chroma of 1 or 2. The A2 horizon, where present, has hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 2 to 4. The A horizon is fine sandy loam or loamy fine sand.

The B1 horizon, where present, has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 3 to 8, commonly with mottles in shades of gray, yellow, brown, or red. It is fine sandy loam or sandy loam.

The upper part of the B2t horizon in pedons without a B1 horizon has the same colors as given for the B1 horizon. The B2t horizon of most pedons with a B1 horizon and the lower part of the B2t horizon of most pedons without a B1 horizon has hue of 10YR to 5Y, value of 5 to 7, and chroma of 1 or 2. Mottles in shades of yellow, brown, or red are common in most pedons. The B2t horizon commonly is sandy clay loam but ranges to clay loam or fine sandy loam in some pedons.

The B3 horizon has hue of 10YR to 5Y, value of 5 or 6, chroma 1 or 2, commonly with mottles in shades of olive, yellow, brown, or red. It is commonly fine sandy loam but ranges to sandy clay loam or sandy clay. Some pedons have strata or pockets of contrasting materials.

The C horizon has colors similar to the B3 horizon, or it is coarsely mottled. Texture is variable ranging from sandy to clayey material. Some pedons are stratified or have pockets of contrasting materials.

formation of the soils

This section describes the factors of soil formation as they relate to the soils in the county and explains the processes of soil formation.

factors of soil formation

Soil is a collection of natural bodies on the earth's surface. It contains living matter and supports or is capable of supporting plants. It is the product of five important factors of soil formation: parent material, climate, living organisms (plants and animals), topography, and time.

Climate and living organisms are the active factors in soil formation. Their effect on the parent material is modified by the topography and the length of time the parent material has been in place. The relative importance of each factor differs, however, from one place to another. In some places one factor dominates in the formation and determines most of the properties of the soil, but usually it is the interaction of all five factors that determines the kind of soil formed.

Although soil formation is complex, some understanding of the soil-forming processes can be gained by considering each of the five factors separately. It should be remembered, however, that each of the five factors is affected by and also affects each of the other factors.

parent material

Parent material is the unconsolidated mass from which a soil is formed. It has much to do with the mineral and chemical composition of the soil. In Colleton County the parent material of most of the soils is marine or fluvial deposits. Most soils, including all of those within the county, have developed in materials distinctly removed from their origin. These deposits differ widely in their content of sand, silt, and clay.

All of the soils in the county were deposited or formed during the Pleistocene, or glacial, epoch. During this period the ocean moved over the area, perhaps several times. As the ocean retreated it left formations and terraces indicating former shorelines and soils of different ages. The terraces in Colleton County, in sequence from the sea, are the Recent, Pamlico, Talbot, Penholoway, Wicomico, and Sunderland Terraces (*10*).

The Recent Terrace is at or near sea level and is flooded daily, or occasionally, by sea water. It shows little evidence of soil development. Bohicket, Capers, and Handsboro soils are the dominant soils that formed in this material.

The Pamlico Terrace ranges from sea level to about 25 feet above sea level. This terrace makes up most of the county south of an imaginary line from Hendersonville to Cottageville. The soils on this terrace are younger than most of the soils at the higher elevations. The clayey soils have mixed mineralogy. Among the clayey soils on this terrace are the Argent, Cape Fear, Nemours, Okeetee, and Wahee soils. Other loamy soils with siliceous mineralogy include Chisolm, Coosaw, Eddings, Hobcaw, Ogeechee, Yauhannah, and Yemassee soils.

The Talbot Terrace ranges from 25 to 42 feet above sea level. This terrace occupies a very small part of the county. Several small areas are in the vicinity of Green Pond and a relatively large area is along the Edisto River from Cottageville north to the vicinity of Givans. The soils on this terrace are generally similar to those on the Pamlico Terrace.

The Penholoway Terrace ranges from 42 to 70 feet above sea level. In Colleton County this terrace is a narrow band that parallels the shoreline and passes through the town of Walterboro. Additional small areas are along the Edisto, Little Salkehatchie, and Big Salkehatchie Rivers. The soils on this terrace, being older and more weathered, have dominantly siliceous or kaolinitic mineralogy. The more common ones are the Chipley, Blanton, and Echaw soils.

The Wicomico Terrace ranges from about 70 to 100 feet above sea level. Like the other marine terraces, it parallels the shoreline and extends from the vicinity of Walterboro northwest to the vicinity of Ashton and Smoaks. Soils on this terrace are more highly developed than those on the lower terraces, and they have either siliceous or kaolinitic mineralogy. Some of the more common soils in this area include Goldsboro, Lynchburg, Norfolk, and Rains soils.

The Sunderland Terrace ranges from about 100 to 170 feet above sea level. In Colleton County most of this terrace is along the boundary with Bamberg County southeast to the vicinity of Ashton and Smoaks. The soils in this area are somewhat similar to those on the adjacent Wicomico Terrace.

Alluvial materials consisting of sand, silt, and clay have been deposited on the flood plain of the Edisto, Little

Salkehatchie, and Big Salkehatchie Rivers. These fairly young soils show limited evidence of soil development.

climate

The climate of Colleton County has been important in the formation of soils. It is temperate, and rainfall is fairly well distributed throughout the year. The sea islands commonly have winter temperatures 3 to 5 degrees warmer than the more inland areas and have 30 to 40 additional frost-free days each year.

Climate, particularly precipitation and temperature, affects the physical, chemical, and biological relationships in the soil. Water dissolves minerals, aids chemical and biological activity, and transports the dissolved mineral and organic material throughout the soil profile. Large amounts of rainwater promote leaching of the soluble bases and promote the translocation of the less soluble and fine textured soil material downward through the soil profile. The amount of water that percolates through the soil depends on the amount of rainfall, the length of the frost-free season, the topography, and the permeability of the soil material.

Weathering of the parent material is accelerated by moist conditions and warm temperature. The growth and activity of living organisms is also increased by a warm, humid climate.

The high rainfall, warm temperatures, and long frost-free growing season have had a marked effect on the characteristics of the soils that have developed in Colleton County.

living organisms

The number and kinds of plants and animals that live in and on the soil are determined mainly by the climate and, to lesser extents, the parent material, topography, and age of the soil.

Bacteria, fungi, and other micro-organisms are indispensable in soil formation. They hasten the weathering of minerals and the decomposing of organic matter. Larger plants alter the soil microclimate, furnish organic matter, and transfer chemical elements from the subsoil to the surface layer.

Most of the fungi, bacteria, and other micro-organisms in the soils of the county are in the upper few inches of the soil. The activity of earthworms and other small invertebrates is chiefly in the A horizon and upper part of the B horizon. These organisms slowly but continuously mix the soil material. Bacteria and fungi decompose organic matter and release nutrients for plant use.

Animals play a secondary role in soil formation, but their influence is very great. By eating plants they perform one step in returning plant material to the soil.

In Colleton County the native vegetation in the better drained areas is chiefly loblolly pine, longleaf pine, oak; and hickory. In the wetter areas it is mainly sweetgum, black gum, yellow-poplar, maple, tupelo, ash, and cypress. Large trees affect soil formation by bringing nutrients up from varying depths and by providing large openings to be filled by material from above as large roots decay.

topography

Topography, or lay of the land, influences soil formation because it affects moisture, vegetation, temperature, and erosion. Because of this, several different kinds of soil may form from similar parent material. Most of the soils in Colleton County are nearly level and have shallow depressions and drainageways and low ridges with gentle slopes. About 6 percent of the county is flooded daily or occasionally by saline water. These flooded areas and some of the other soils in low areas show little development.

time

The length of time required for a soil to develop depends largely on the intensity of the other soil-forming factors. The soils of Colleton County range from immature, or young, to mature. On the higher areas of the uplands, most of the soils have well-developed horizons that are easily recognized. Where the parent material is very sandy or flooded, little horizonation has taken place. Most alluvial soils, deposited along streams, frequently have not been in place long enough for distinct horizon development.

morphology of soils

If a vertical cut is dug into a soil, several layers or horizons are evident. This differentation of horizons is the result of many soil-forming processes. These include the accumulation of organic matter, the leaching of soluble salts, the reduction and translocation of iron, the formation of soil structure, the physical weathering caused by freezing and thawing, and the chemical weathering of primary minerals or rocks.

Some of these processes are continually taking place in all soils, but the number of active processes and the degree of their activity vary from one soil to another.

Most soils have three major horizons called A, B, and C. These major horizons can be further subdivided by the use of subscripts and letters to indicate changes within one horizon. An example would be the B2t horizon, which is a layer within the B horizon that contains translocated clay from the A horizon.

The A horizon is the surface layer and has the largest accumulation of organic matter. Where it is undisturbed, it is called the A1 horizon. Where the soil has been cleared and plowed, it is called the Ap horizon. The Hobcaw and Paxville soils are examples of soils that have a distinctive, dark A1 or Ap horizon.

The A horizon is also the zone of maximum leaching, or eluviation, of clay and iron in the profile. Where considerable leaching has taken place, an A2 horizon is formed generally below the A1 horizon. Normally, the A2

horizon is the lightest colored horizon in the soil. It is well expressed in such soils as the Bonneau and Ocilla soils.

The B horizon is below the A horizon and is commonly called the subsoil. It is the horizon of maximum accumulation, or illuviation, of the clay, iron, aluminum, or other compounds that have been leached from the A horizon. Norfolk, Nemours, and Wahee soils are among the soils that have a well expressed B horizon. Some soils such as Chipley and Pickney soils have not formed a B horizon, and the C horizon lies immediately under the A horizon. The C horizon is made up of materials that have been little altered by the soil-forming processes, but they may be modified by weathering.

Well drained and moderately well drained soils in Colleton County have a yellowish brown or reddish subsoil. These colors are mainly thin coatings of iron oxides on the sand, silt, and clay particles. A soil is considered well drained if it is free of gray mottles (those with a chroma of 2 or less) to a depth of at least 30 inches below the surface. Among the well drained soils are the Norfolk and Alpin soils. Moderately well drained soils are wet for short periods and are generally free of gray mottles to a depth of about 15 to 20 inches. Goldsboro and Nemours soils are examples of moderately well drained soils.

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glossary

Alluvium. Material, such as sand, silt, or clay, deposited on land by streams.

Association, soil. A group of soils geographically associated in a characteristic repeating pattern and defined and delineated as a single map unit.

Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as—

	Inches
Very low	0 to 3
Low	3 to 6
Moderate	6 to 9
High	9 to 12
Very high	More than 12

Base saturation. The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, K), expressed as a percentage of the total cation-exchange capacity.

Bisequum. Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay film. A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.

Coarse fragments. If round, mineral or rock particles 2 millimeters to 25 centimeters (10 inches) in diameter; if flat, mineral or rock particles (flagstone) 15.2 to 38.1 centimeters (6 to 15 inches) long.

Coarse textured soil. Sand or loamy sand.

Complex, soil. A map unit of two or more kinds of soil in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils are somewhat similar in all areas.

Compressible (in tables). Excessive decrease in volume of soft soil under load.

Concretions. Grains, pellets, or nodules of various sizes, shapes, and colors consisting of concentrated compounds or cemented soil grains. The composition of most concretions is unlike that of the surrounding soil. Calcium carbonate and iron oxide are common compounds in concretions.

Consistence, soil. The feel of the soil and the ease with which a lump can be crushed by the fingers. Terms commonly used to describe consistence are—

Loose.—Noncoherent when dry or moist; does not hold together in a mass.

Friable.—When moist, crushes easily under gentle pressure between thumb and forefinger and can be pressed together into a lump.

Firm.—When moist, crushes under moderate pressure between thumb and forefinger, but resistance is distinctly noticeable.

Plastic.—When wet, readily deformed by moderate pressure but can be pressed into a lump; will form a "wire" when rolled between thumb and forefinger.

Sticky.—When wet, adheres to other material and tends to stretch somewhat and pull apart rather than to pull free from other material.

Hard.—When dry, moderately resistant to pressure; can be broken with difficulty between thumb and forefinger.

Soft.—When dry, breaks into powder or individual grains under very slight pressure.

Cemented.—Hard; little affected by moistening.

Contour stripcropping. Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

Control section. The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

Corrosive. High risk of corrosion to uncoated steel or deterioration of concrete.

Cover crop. A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

Cutbanks cave (in tables). The walls of excavations tend to cave in or slough.

Deferred grazing. Postponing grazing or arresting grazing for a prescribed period.

Drainage class (natural). Refers to the frequency and duration of periods of saturation or partial saturation during soil formation, as opposed to altered drainage, which is commonly the result of artificial drainage or irrigation but may be caused by the sudden deepening of channels or the blocking of drainage outlets. Seven classes of natural soil drainage are recognized:

Excessively drained.—Water is removed from the soil very rapidly. Excessively drained soils are commonly very coarse textured, rocky, or shallow. Some are steep. All are free of the mottling related to wetness.

Somewhat excessively drained.—Water is removed from the soil rapidly. Many somewhat excessively drained soils are sandy and rapidly pervious. Some are shallow. Some are so steep that much of the water they receive is lost as runoff. All are free of the mottling related to wetness.

Well drained.—Water is removed from the soil readily, but not rapidly. It is available to plants throughout most of the growing season, and wetness does not inhibit growth of roots for significant periods during most growing seasons. Well drained soils are commonly medium textured. They are mainly free of mottling.

Moderately well drained.—Water is removed from the soil somewhat slowly during some periods. Moderately well drained soils are wet for only a short time during the growing season, but periodically they are wet long enough that most mesophytic crops are affected. They commonly have a slowly pervious layer within or directly below the solum, or periodically receive high rainfall, or both.

Somewhat poorly drained.—Water is removed slowly enough that the soil is wet for significant periods during the growing season. Wetness markedly restricts the growth of mesophytic crops unless artificial drainage is provided. Somewhat poorly drained soils commonly have a slowly pervious layer, a high water table, additional water from seepage, nearly continuous rainfall, or a combination of these.

Poorly drained.—Water is removed so slowly that the soil is saturated periodically during the growing season or remains wet for long periods. Free water is commonly at or near the surface for long enough during the growing season that most mesophytic crops cannot be grown unless the soil is artificially drained. The soil is not continuously saturated in layers directly below plow depth. Poor drainage results from a high water table, a slowly pervious layer within the profile, seepage, nearly continuous rainfall, or a combination of these.

Very poorly drained.—Water is removed from the soil so slowly that free water remains at or on the surface during most of the growing season. Unless the soil is artificially drained, most mesophytic crops cannot be grown. Very poorly drained soils are commonly level or depressed and are frequently ponded. Yet, where rainfall is high and nearly continuous, they can have moderate or high slope gradients.

Drainage, surface. Runoff, or surface flow of water, from an area.

Erosion. The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of the activities of man or other animals or of a catastrophe in nature, for example, fire, that exposes the surface.

Excess fines (in tables). Excess silt and clay in the soil. The soil does not provide a source of gravel or sand for construction purposes.

Fertility, soil. The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

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.

Fine textured soil. Sandy clay, silty clay, and clay.

Flood plain. A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

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.

Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors and mottles.

Ground water (geology). Water filling all the unblocked pores of underlying material below the water table.

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 and the more decomposed sapric material.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the *Soil Survey Manual*. The major horizons of mineral soil are as follows:

O horizon.—An organic layer of fresh and decaying plant residue at the surface of a mineral soil.

A horizon.—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

B horizon.—The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these. The combined A and B horizons are generally called the solum, or true soil. If a soil does not have a B horizon, the A horizon alone is the solum.

C horizon.—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the A or B horizon. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, the Roman numeral II precedes the letter C.

R layer.—Consolidated rock beneath the soil. The rock commonly underlies a C horizon, but can be directly below an A or a B horizon.

Humus. The well decomposed, more or less stable part of the organic matter in mineral soils.

Illuviation. The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Infiltration. The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

Irrigation. Application of water to soils to assist in production of crops.

Leaching. The removal of soluble material from soil or other material by percolating water.

Liquid limit. The moisture content at which the soil passes from a plastic to a liquid state.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Low strength. The soil is not strong enough to support loads.

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.

Morphology, soil. The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mottling, soil. Irregular spots of different colors that vary in number and size. Mottling generally indicates poor aeration and impeded drainage. Descriptive terms are as follows: abundance—*few, common,* and *many*; size—*fine, medium,* and *coarse*; and contrast—*faint, distinct,* and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium*, from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse*, more than 15 millimeters (about 0.6 inch).

Muck. Dark, finely divided, well decomposed organic soil material. (See Sapric soil material.)

Neutral soil. A soil having a pH value between 6.6 and 7.3. (See Reaction, soil.)

Organic matter. Plant and animal residue in the soil in various stages of decomposition.

Parent material. The unconsolidated organic and mineral material in which soil forms.

Peat. Unconsolidated material, largely undecomposed organic matter, that has accumulated under excess moisture. (See Fibric soil material.)

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 affecting the specified use.

Permeability. The quality of the soil that enables water to move downward through the profile. Permeability is measured as the number of inches per hour that water moves downward through the saturated soil. Terms describing permeability are:

Very slow	less than 0.06 inch
Slow	0.06 to 0.20 inch
Moderately slow	0.2 to 0.6 inch
Moderate	0.6 inch to 2.0 inches
Moderately rapid	2.0 to 6.0 inches
Rapid	6.0 to 20 inches
Very rapid	more than 20 inches

Phase, soil. A subdivision of a soil series based on features that affect its use and management. For example, slope, stoniness, and thickness.

Piping (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Ponding. Standing water on soils in closed depressions. The water can be removed only by percolation or evapotranspiration.

Poorly graded. Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

Poor outlets (in tables). Refers to areas where surface or subsurface drainage outlets are difficult or expensive to install.

Productivity, soil. The capability of a soil for producing a specified plant or sequence of plants under specific management.

Profile, soil. A vertical section of the soil extending through all its horizons and into the parent material.

Reaction, soil. A measure of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degree of acidity or alkalinity is expressed as—

	pH
Extremely acid	Below 4.5
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Medium acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Mildly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

Regolith. The unconsolidated mantle of weathered rock and soil material on the earth's surface; the loose earth material above the solid rock.

Relief. The elevations or inequalities of a land surface, considered collectively.

Root zone. The part of the soil that can be penetrated by plant roots.

Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Sand. As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Sapric soil material (muck). The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.

Salty water (in tables.) Water that is too salty for consumption by livestock.

Seepage (in tables). The movement of water through the soil. Seepage adversely affects the specified use.

Series, soil. A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer or of the underlying material. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Shrink-swell. The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Site index. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75 feet.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance.

Slow intake (in tables). The slow movement of water into the soil.

Slow refill (in tables). The slow filling of ponds, resulting from restricted permeability in the soil.

Soil. A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief over periods of time.

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the underlying material. The living roots and plant and animal activities are largely confined to the solum.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grained* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Substratum. The part of the soil below the solum.

Subsurface layer. Technically, the A2 horizon. Generally refers to a leached horizon lighter in color and lower in content of organic matter than the overlying surface layer.

Surface layer. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the "plow layer," or the "Ap horizon."

Terrace (geologic). An old alluvial plain, ordinarily flat or undulating, bordering a river, a lake, or the sea.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Topsoil. The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Upland (geology). Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

Variant, soil. A soil having properties sufficiently different from those of other known soils to justify a new series name, but occurring in such a limited geographic area that creation of a new series is not justified.

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.

tables

TABLE 1.--TEMPERATURE AND PRECIPITATION

[Based on data recorded in the period 1951-73 at Walterboro, S.C.]

Month	Temperature						Precipitation				
	Average daily maximum	Average daily minimum	Average	2 years in 10 will have-- Maximum temperature higher than--	2 years in 10 will have-- Minimum temperature lower than--	Average number of growing degree days[1]	Average	2 years in 10 will have-- Less than--	2 years in 10 will have-- More than--	Average number of days with 0.10 inch or more	Average snowfall
	°F	°F	°F	°F	°F		In	In	In		In
January----	59.7	34.7	47.2	80	13	94	3.40	1.71	4.87	6	.0
February---	62.5	37.0	49.8	81	16	127	3.98	1.98	5.71	7	1.1
March------	69.4	42.9	56.2	87	23	237	4.24	1.74	6.35	7	.1
April------	77.8	50.9	64.4	92	30	432	2.99	1.44	4.32	5	.0
May--------	84.5	58.3	71.4	98	39	663	4.35	2.19	6.23	6	.0
June-------	88.9	65.1	77.0	100	49	810	6.08	3.12	8.66	8	.0
July-------	91.1	68.7	80.0	100	57	930	7.69	3.46	11.31	10	.0
August-----	90.4	68.5	79.5	99	58	915	5.90	3.49	8.04	8	.0
September--	85.6	63.4	74.5	96	46	735	5.14	2.27	7.59	7	.0
October----	77.8	52.2	65.0	91	29	465	3.12	.29	5.15	4	.0
November---	69.2	41.8	55.5	85	20	191	2.12	.87	3.16	4	.0
December---	61.9	36.3	49.2	79	14	136	3.15	1.68	4.44	5	.0
Yearly:											
Average--	76.6	51.7	64.1	---	---	---	---	---	---	---	---
Extreme--	---	---	---	102	9	---	---	---	---	---	---
Total----	---	---	---	---	---	5,735	52.16	41.54	62.23	77	1.2

[1]A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (50° F).

TABLE 2.--FREEZE DATES IN SPRING AND FALL

[Based on data recorded in the period 1951-73 at Walterboro, S.C.]

Probability	Temperature		
	24° F or lower	28° F or lower	32° F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	March 23	April 4	April 20
2 years in 10 later than--	March 14	March 28	April 14
5 years in 10 later than--	February 26	March 14	April 3
First freezing temperature in fall:			
1 year in 10 earlier than--	November 7	October 29	October 19
2 years in 10 earlier than--	November 13	November 2	October 24
5 years in 10 earlier than--	November 25	November 10	November 2

TABLE 3.--GROWING SEASON LENGTH

[Based on data recorded in the period 1951-73 at Walterboro, S.C.]

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	240	214	189
8 years in 10	250	223	197
5 years in 10	271	240	212
2 years in 10	292	258	227
1 year in 10	302	266	235

TABLE 4.--ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS

Map symbol	Soil name	Acres	Percent
7	Beaches	205	*
9B	Fripp-Leon Complex, 0 to 6 percent slopes	585	0.1
10	Albany loamy sand, 0 to 2 percent slopes	10,599	1.6
11	Argent loam	35,896	5.3
13	Bladen fine sandy loam	32,458	4.8
14B	Blanton loamy fine sand, 0 to 6 percent slopes	9,144	1.4
15	Bohicket association	17,601	2.6
16A	Bonneau fine sand, 0 to 2 percent slopes	15,579	2.3
16B	Bonneau fine sand, 2 to 6 percent slopes	5,057	0.8
18B	Alpin fine sand, 0 to 6 percent slopes	6,637	1.0
19	Cape Fear loam	11,674	1.7
20	Capers association	14,606	2.2
21	Chipley fine sand, 0 to 2 percent slopes	11,638	1.7
22	Chisolm loamy fine sand, 0 to 2 percent slopes	2,707	0.4
24	Coosaw loamy fine sand	20,245	3.0
25	Coxville fine sandy loam	7,503	1.1
27	Hobcaw fine sandy loam	13,932	2.1
28	Dunbar fine sandy loam	452	0.1
30	Echaw loamy fine sand	12,611	1.9
31B	Eddings fine sand, 0 to 6 percent slopes	2,884	0.4
35	Wadmalaw Variant loamy sand	784	0.1
36	Goldsboro loamy fine sand	43,742	6.5
37	Handsboro muck	7,137	1.1
38	Pungo muck	17,025	2.5
40	Leon sand	3,880	0.6
41	Lynchburg loamy fine sand	55,219	8.2
42	Lynn Haven fine sand	1,397	0.2
43A	Nemours fine sandy loam, 0 to 2 percent slopes	11,325	1.7
43B	Nemours fine sandy loam, 2 to 6 percent slopes	1,434	0.2
44A	Norfolk loamy fine sand, 0 to 2 percent slopes	5,983	0.9
44B	Norfolk loamy fine sand, 2 to 6 percent slopes	1,847	0.3
45	Ocilla loamy sand	29,968	4.5
46	Ogeechee loamy fine sand	19,458	2.9
47	Okeetee fine sandy loam	877	0.1
49	Osier loamy sand	4,013	0.6
50	Paxville fine sandy loam	22,391	3.3
51	Pelham loamy sand	31,552	4.7
52	Pickney loamy sand	10,830	1.6
53	Plummer loamy sand	6,783	1.0
55	Rains sandy loam	49,514	7.4
57	Santee loam	21,325	3.2
58	Scranton loamy sand	1,236	0.2
59	Seagate fine sand	8,526	1.3
62	Yauhannah fine sandy loam	7,942	1.2
64	Wahee fine sandy loam	19,329	2.9
65B	Lakeland fine sand, 0 to 6 percent slopes	2,148	0.3
66	Williman loamy fine sand	8,482	1.3
68	Yemassee loamy fine sand	11,268	1.7
69	Murad loamy fine sand	1,683	0.3
70	Levy mucky silty clay loam	7,228	1.1
71	Haplaquents, loamy	1,580	0.2
73	Torhunta-Osier association	18,103	2.7
	Water	4,978	0.7
	Total	671,000	100.0

* Less than 0.1 percent.

TABLE 5.--YIELDS PER ACRE OF CROPS AND PASTURE

[Yields are those that can be expected under a high level of management. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil]

Soil name and map symbol	Corn	Soybeans	Tobacco	Wheat	Bahiagrass	Improved bermudagrass
	Bu	Bu	Lb	Bu	AUM*	AUM*
7**. Beaches						
9B---------- Fripp-Leon	---	---	---	---	---	---
10---------- Albany	65	25	2,100	---	6.5	7.0
11---------- Argent	110	45	---	---	9.0	---
13---------- Bladen	105	35	---	---	6.0	---
14B---------- Blanton	60	25	2,000	---	6.5	8.0
15**---------- Bohicket	---	---	---	---	---	---
16A, 16B---------- Bonneau	85	30	2,600	---	8.0	8.5
18B---------- Alpin	---	---	1,500	---	7.0	8.0
19---------- Cape Fear	140	45	---	---	---	---
20**---------- Capers	---	---	---	---	---	---
21---------- Chipley	50	20	2,000	---	7.5	8.0
22---------- Chisolm	100	30	---	---	8.0	10.0
24---------- Coosaw	90	35	---	---	8.0	10.0
25---------- Coxville	110	40	---	50	---	---
27---------- Hobcaw	110	40	---	---	10.0	---
28---------- Dunbar	115	45	2,600	55	---	---
30---------- Echaw	70	30	---	---	7.5	7.5
31B---------- Eddings	70	30	---	---	7.5	8.0
35---------- Wadmalaw Variant	100	30	---	---	10.0	---
36---------- Goldsboro	125	45	3,000	60	---	---

See footnote at end of table.

TABLE 5.--YIELDS PER ACRE OF CROPS AND PASTURE--Continued

Soil name and map symbol	Corn	Soybeans	Tobacco	Wheat	Bahiagrass	Improved bermudagrass
	Bu	Bu	Lb	Bu	AUM*	AUM*
37--Handsboro	---	---	---	---	---	---
38--Pungo	---	---	---	---	---	---
40--Leon	50	---	---	---	7.5	---
41--Lynchburg	115	45	2,800	---	10.0	---
42--Lynn Haven	70	---	---	---	7.5	---
43A--Nemours	100	40	---	---	9.5	10.0
43B--Nemours	90	35	---	---	9.0	11.0
44A--Norfolk	110	40	3,000	60	---	---
44B--Norfolk	100	35	2,900	55	---	---
45--Ocilla	75	35	2,600	---	7.5	8.5
46--Ogeechee	100	45	---	---	9.0	---
47--Okeetee	100	35	---	---	8.5	8.5
49--Osier	70	---	---	---	7.0	---
50--Paxville	110	40	---	---	12.0	---
51--Pelham	75	30	---	---	6.0	---
52--Pickney	---	---	---	---	---	---
53--Plummer	70	25	---	---	5.0	6.0
55--Rains	110	40	2,300	---	10.0	---
57--Santee	---	---	---	---	---	---
58--Scranton	85	30	---	---	10.0	10.0
59--Seagate	75	30	1,800	---	---	---
62--Yauhannah	125	45	---	---	9.0	11.0
64--Wahee	110	45	---	---	8.0	---

See footnote at end of table.

TABLE 5.--YIELDS PER ACRE OF CROPS AND PASTURE--Continued

Soil name and map symbol	Corn	Soybeans	Tobacco	Wheat	Bahiagrass	Improved bermudagrass
	Bu	Bu	Lb	Bu	AUM*	AUM*
65B---------- Lakeland	55	20	1,700	---	7.0	7.0
66---------- Williman	95	35	---	---	10.0	---
68---------- Yemassee	120	45	---	---	11.0	12.0
69---------- Murad	75	35	---	---	8.0	8.5
70---------- Levy	---	---	---	---	---	---
71**. Haplaquents						
73**:						
Torhunta----------	---	---	---	---	---	---
Osier----------	70	---	---	---	7.0	---

* Animal-unit-month: The amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for 30 days.

** See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 6.--CAPABILITY CLASSES AND SUBCLASSES

[Miscellaneous areas are excluded. Absence of an entry indicates no acreage]

Class	Total acreage	Major management concerns (Subclass)			
		Erosion (e)	Wetness (w)	Soil problem (s)	Climate (c)
		Acres	Acres	Acres	Acres
I	5,983	---	---	---	---
II	156,572	3,281	129,948	23,343	---
III	334,845	---	298,568	36,277	---
IV	63,227	---	54,442	8,785	---
V	---	---	---	---	---
VI	39,428	---	39,428	---	---
VII	24,838	---	24,253	585	---
VIII	39,344	---	39,344	---	---

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY

[Only the soils suitable for production of commercial trees are listed. Absence of an entry indicates that information was not available]

Soil name and map symbol	Ordination symbol	Management concerns				Potential productivity		Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Common trees	Site index	
9B*:								
Fripp	4s	Slight	Moderate	Moderate	Slight	Slash pine	70	Slash pine, longleaf pine, loblolly pine.
						Longleaf pine	60	
						Loblolly pine	70	
						Live oak	---	
Leon	4w	Slight	Moderate	Moderate	Moderate	Slash pine	70	Slash pine.
						Longleaf pine	65	
10 Albany	2w	Slight	Moderate	Moderate	Slight	Loblolly pine	95	Loblolly pine, slash pine.
						Slash pine	85	
						Longleaf pine	80	
11 Argent	1w	Slight	Severe	Moderate	Slight	Loblolly pine	96	Loblolly pine, slash pine, sweetgum, American sycamore, longleaf pine.
						Slash pine	96	
						Sweetgum	96	
						Water oak	96	
						Water tupelo	---	
						Longleaf pine	85	
13 Bladen	2w	Slight	Severe	Severe	---	Loblolly pine	94	Loblolly pine, slash pine, American sycamore, water oak, Nuttall oak.
						Slash pine	91	
						Sweetgum	90	
14B Blanton	3s	Slight	Moderate	Moderate	Slight	Slash pine	80	Slash pine.
						Loblolly pine	80	
						Longleaf pine	70	
16A, 16B Bonneau	2s	Slight	Moderate	Moderate	Slight	Loblolly pine	95	Loblolly pine, longleaf pine.
						Longleaf pine	75	
18B Alpin	3s	Slight	Moderate	Moderate	Slight	Loblolly pine	85	Slash pine, loblolly pine.
						Slash pine	80	
						Longleaf pine	70	
19 Cape Fear	1w	Slight	Severe	Severe	---	Sweetgum	---	Loblolly pine, water tupelo, American sycamore, sweetgum, slash pine.
						Loblolly pine	100	
						Water oak	---	
						Water tupelo	---	
						Baldcypress	---	
21 Chipley	2s	Slight	Moderate	Slight	Slight	Slash pine	90	Slash pine, loblolly pine.
						Loblolly pine	90	
						Longleaf pine	80	
22 Chisolm	2s	Slight	Moderate	Moderate	Slight	Loblolly pine	90	Slash pine, longleaf pine.
						Slash pine	90	
						Longleaf pine	78	
24 Coosaw	3w	Slight	Moderate	Moderate	Slight	Slash pine	80	Slash pine, loblolly pine.
						Loblolly pine	79	
						Longleaf pine	68	
25 Coxville	2w	Slight	Severe	Severe	---	Loblolly pine	90	Loblolly pine, slash pine, sweetgum, American sycamore.
						Slash pine	90	
						Longleaf pine	71	
						Sweetgum	90	
						Water oak	90	
						Willow oak	---	
						Water tupelo	---	

See footnote at end of table.

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Ordination symbol	Management concerns				Potential productivity		Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Common trees	Site index	
27---------- Hobcaw	1w	Slight	Severe	Severe	Slight	Loblolly pine--------- Slash pine---------- Pond pine---------- Water tupelo--------- Willow oak----------	96 93 77 --- ---	Slash pine, loblolly pine, American sycamore, water tupelo, sweetgum.
28---------- Dunbar	2w	Slight	Moderate	Moderate	---------	Loblolly pine--------- Slash pine---------- Longleaf pine--------- Water oak---------- Water tupelo--------- Yellow-poplar--------- Sweetgum----------	90 85 70 --- --- --- 90	Loblolly pine, slash pine, sweetgum, yellow-poplar.
30---------- Echaw	3s	Slight	Moderate	Slight	Slight	Longleaf pine--------- Loblolly pine--------- Slash pine----------	68 85 80	Longleaf pine, loblolly pine, slash pine, shortleaf pine.
31B---------- Eddings	3s	Slight	Moderate	Moderate	Slight	Loblolly pine--------- Slash pine---------- Longleaf pine---------	80 80 70	Slash pine, longleaf pine.
35---------- Wadmalaw Variant	1w	Slight	Severe	Severe	Slight	Loblolly pine--------- Sweetgum---------- Water tupelo---------	100 95 75	Loblolly pine, slash pine, sweetgum, water tupelo.
36---------- Goldsboro	2w	Slight	Moderate	Slight	---------	Loblolly pine--------- Slash pine---------- Longleaf pine--------- Sweetgum---------- Southern red oak----- White oak----------	90 93 77 90 --- ---	Loblolly pine, slash pine, yellow-poplar, American sycamore, sweetgum.
38---------- Pungo	5w	Slight	Severe	Severe	---------	Pond pine---------- Baldcypress---------- Water tupelo---------	55 --- ---	Loblolly pine, slash pine.
40---------- Leon	4w	Slight	Moderate	Moderate	Moderate	Slash pine---------- Longleaf pine---------	70 65	Slash pine.
41---------- Lynchburg	2w	Slight	Moderate	Slight	Slight	Slash pine---------- Loblolly pine--------- Longleaf pine--------- Yellow-poplar--------- Sweetgum---------- Southern red oak----- White oak---------- Blackgum----------	91 86 74 92 90 --- --- ---	Slash pine, loblolly pine, American sycamore, sweetgum.
42---------- Lynn Haven	3w	Slight	Moderate	Moderate	Slight	Slash pine---------- Loblolly pine--------- Longleaf pine--------- Pond pine----------	90 80 70 70	Slash pine, loblolly pine.
43A, 43B---------- Nemours	3w	Slight	Moderate	Slight	Slight	Loblolly pine--------- Slash pine---------- Longleaf pine--------- Water oak----------	80 80 70 80	Loblolly pine, slash pine.
44A, 44B---------- Norfolk	2o	Slight	Slight	Slight	---------	Loblolly pine--------- Longleaf pine--------- Slash pine----------	86 68 86	Slash pine, loblolly pine.
45---------- Ocilla	3w	Slight	Moderate	Moderate	---------	Loblolly pine--------- Slash pine---------- Longleaf pine---------	85 90 77	Loblolly pine, slash pine.

See footnote at end of table.

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Ordination symbol	Management concerns				Potential productivity		Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Common trees	Site index	
46---- Ogeechee	2w	Slight	Severe	Moderate	Slight	Loblolly pine----	90	Loblolly pine, slash pine, sweetgum.
						Slash pine----	90	
						Pond pine----	70	
47---- Okeetee	2w	Slight	Moderate	Moderate	Slight	Loblolly pine----	90	Loblolly pine, slash pine, longleaf pine, shortleaf pine, sweetgum, American sycamore, yellow-poplar.
						Slash pine----	90	
						Longleaf pine----	75	
						Sweetgum----	90	
						Water tupelo----	---	
						White oak----	---	
						Southern red oak----	---	
						Water oak----	---	
49---- Osier	3w	Slight	Severe	Severe	Slight	Slash pine----	85	Slash pine, loblolly pine.
						Loblolly pine----	87	
						Longleaf pine----	69	
50---- Paxville	1w	Slight	Severe	Severe	Slight	Loblolly pine----	96	Loblolly pine, slash pine, American sycamore, water tupelo.
						Slash pine----	92	
						Pond pine----	77	
						Water oak----	90	
						Water tupelo----	---	
						Baldcypress----	---	
51---- Pelham	2w	Slight	Severe	Severe	----	Slash pine----	90	Slash pine, loblolly pine.
						Loblolly pine----	90	
						Longleaf pine----	80	
						Sweetgum----	80	
						Blackgum----	80	
						Water oak----	80	
52---- Pickney	1w	Slight	Severe	Severe	Moderate	Baldcypress----	---	Baldcypress, water tupelo, sweetgum, loblolly pine, longleaf pine, yellow-poplar.
						Water tupelo----	---	
						Sweetgum----	---	
						Water oak----	---	
						Water tupelo----	---	
						Loblolly pine----	100	
						Longleaf pine----	70	
						Pond pine----	---	
						Yellow-poplar----	---	
53---- Plummer	2w	Slight	Severe	Severe	----	Slash pine----	88	Loblolly pine, slash pine.
						Loblolly pine----	91	
						Longleaf pine----	70	
55---- Rains	2w	Slight	Severe	Severe	----	Loblolly pine----	94	Loblolly pine, slash pine, sweetgum, American sycamore.
						Slash pine----	91	
						Sweetgum----	90	
57---- Santee	1w	Slight	Severe	Severe	----	Loblolly pine----	105	Loblolly pine, sweetgum, water tupelo, American sycamore.
						Sweetgum----	100	
						Water tupelo----	80	
						Willow oak----	90	
58---- Scranton	3w	Slight	Moderate	Slight	Slight	Longleaf pine----	70	Loblolly pine, slash pine.
						Slash pine----	84	
						Loblolly pine----	80	
59---- Seagate	3w	Slight	Moderate	Moderate	----	Slash pine----	80	Slash pine, loblolly pine.
						Loblolly pine----	80	
						Longleaf pine----	70	
62---- Yauhannah	2w	Slight	Moderate	Slight	Slight	Loblolly pine----	90	Loblolly pine, slash pine, yellow-poplar, sweetgum, American sycamore.
						Slash pine----	90	
						Sweetgum----	90	
						Southern red oak----	80	
						White oak----	80	
						Yellow-poplar----	100	

See footnote at end of table.

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Ordination symbol	Management concerns				Potential productivity		Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Common trees	Site index	
64---------- Wahee	2w	Slight	Moderate	Moderate	Slight	Loblolly pine------- Slash pine---------- Sweetgum----------	86 86 90	Loblolly pine, slash pine, sweetgum, American sycamore, water oak.
65B---------- Lakeland	3s	Slight	Moderate	Moderate	Slight	Slash pine---------- Loblolly pine------- Longleaf pine-------	80 80 70	Slash pine, loblolly pine.
66---------- Williman	2w	Slight	Severe	Severe	Slight	Slash pine---------- Loblolly pine------- Longleaf pine------- Sweetgum---------- Blackgum---------- Water oak----------	90 90 74 --- --- ---	Slash pine, loblolly pine.
68---------- Yemassee	2w	Slight	Moderate	Slight	Slight	Loblolly pine------- Slash pine---------- Sweetgum---------- Southern red oak---- White oak---------- Yellow-poplar-------	90 88 95 --- --- 100	Slash pine, loblolly pine, American sycamore, yellow-poplar.
69---------- Murad	3w	Slight	Moderate	Moderate	--------	Slash pine---------- Loblolly pine------- Longleaf pine-------	80 80 67	Slash pine, loblolly pine.
70---------- Levy	3w	Slight	Severe	Severe	Slight	Water tupelo-------- Sweetgum---------- Red maple---------- Baldcypress---------	--- --- --- ---	Baldcypress, water tupelo.
73*: Torhunta----------	2w	Slight	Severe	Severe	--------	Loblolly pine------- Slash pine---------- Sweetgum---------- Water tupelo--------	90 86 90 ---	Loblolly pine, sweetgum, slash pine, American sycamore, Shumard oak.
Osier----------	3w	Slight	Severe	Severe	Slight	Slash pine---------- Loblolly pine------- Longleaf pine-------	85 87 69	Slash pine, loblolly pine.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 8.--RECREATIONAL DEVELOPMENT

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not rated]

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
7*. Beaches					
9B*: Fripp	Severe: flooding, too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: droughty.
Leon	Severe: wetness, too sandy.	Severe: wetness, too sandy.	Severe: too sandy, wetness.	Severe: wetness, too sandy.	Severe: wetness, droughty.
10--- Albany	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.	Severe: droughty.
11--- Argent	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
13--- Bladen	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
14B--- Blanton	Slight---	Slight---	Moderate: slope.	Slight---	Moderate: droughty.
15*--- Bohicket	Severe: flooding, ponding, percs slowly.	Severe: ponding, too clayey, excess salt.	Severe: too clayey, ponding, flooding.	Severe: ponding, too clayey.	Severe: excess salt, excess sulfur, ponding.
16A, 16B--- Bonneau	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: droughty.
18B--- Alpin	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: droughty, too sandy.
19--- Cape Fear	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
20*--- Capers	Severe: flooding, ponding, percs slowly.	Severe: ponding, too clayey, excess salt.	Severe: too clayey, ponding, flooding.	Severe: ponding, too clayey.	Severe: excess salt, excess sulfur, ponding.
21--- Chipley	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: droughty.
22--- Chisolm	Moderate: too sandy.	Moderate: too sandy.	Moderate: too sandy.	Moderate: too sandy.	Moderate: droughty.
24--- Coosaw	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness, droughty.
25--- Coxville	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
27--- Hobcaw	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
28--- Dunbar	Severe: wetness.	Moderate: wetness, percs slowly.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.

See footnote at end of table.

TABLE 8.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
30--Echaw	Moderate: too sandy.	Moderate: too sandy.	Moderate: too sandy.	Moderate: too sandy.	Moderate: droughty.
31B--Eddings	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: droughty.
35--Wadmalaw Variant	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
36--Goldsboro	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.	Slight	Slight.
37--Handsboro	Severe: flooding, ponding, excess salt.	Severe: ponding, excess salt.	Severe: ponding, flooding, excess salt.	Severe: ponding.	Severe: excess salt, excess sulfur, ponding.
38--Pungo	Severe: flooding, wetness, excess humus.	Severe: wetness, excess humus, too acid.	Severe: excess humus, wetness.	Severe: wetness, excess humus.	Severe: wetness, excess humus.
40--Leon	Severe: wetness, too sandy.	Severe: wetness, too sandy.	Severe: too sandy, wetness.	Severe: wetness, too sandy.	Severe: wetness, droughty.
41--Lynchburg	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
42--Lynn Haven	Severe: wetness, too sandy.	Severe: wetness, too sandy.	Severe: too sandy, wetness.	Severe: wetness, too sandy.	Severe: wetness, droughty.
43A--Nemours	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Moderate: wetness.	Moderate: wetness.
43B--Nemours	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Moderate: slope, wetness, percs slowly.	Moderate: wetness.	Moderate: wetness.
44A--Norfolk	Slight	Slight	Slight	Slight	Slight.
44B--Norfolk	Slight	Slight	Moderate: slope.	Slight	Slight.
45--Ocilla	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness, droughty.
46--Ogeechee	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
47--Okeetee	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
49--Osier	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: droughty, ponding.
50--Paxville	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.

See footnote at end of table.

TABLE 8.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
51--- Pelham	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
52--- Pickney	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
53--- Plummer	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: droughty, ponding.
55--- Rains	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
57--- Santee	Severe: flooding, ponding.	Severe: ponding.	Severe: ponding, flooding.	Severe: ponding.	Severe: ponding, flooding.
58--- Scranton	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
59--- Seagate	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: droughty.
62--- Yauhannah	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness, droughty.
64--- Wahee	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
65B--- Lakeland	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: droughty.
66--- Williman	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
68--- Yemassee	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.
69--- Murad	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness, droughty.
70--- Levy	Severe: flooding, ponding.	Severe: ponding.	Severe: ponding, flooding.	Severe: ponding.	Severe: ponding, flooding.
71*. Haplaquents					
73*: Torhunta---	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.	Severe: wetness, flooding.
Osier---	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: droughty, ponding.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 9.--WILDLIFE HABITAT

[See text for definitions of "good," "fair," "poor," and "very poor." Absence of an entry indicates that the soil was not rated]

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
7*. Beaches										
9B*: Fripp	Very poor.	Very poor.	Poor	Poor	Poor	Very poor.	Very poor.	Very poor.	Poor	Very poor.
Leon	Poor	Fair	Good	Poor	Fair	Fair	Poor	Fair	Fair	Poor.
10 Albany	Fair	Fair	Fair	Fair	Fair	Fair	Poor	Fair	Fair	Poor.
11 Argent	Fair	Fair	Good	Good	Good	Good	Good	Fair	Good	Good.
13 Bladen	Fair	Good	Good	Good	Good	Fair	Good	Good	Good	Fair.
14B Blanton	Poor	Fair	Fair	Poor	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
15* Bohicket	Very poor.	Very poor.	Very poor.	Very poor.	Very poor.	Good	Good	Very poor.	Very poor.	Good.
16A, 16B Bonneau	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
18B Alpin	Poor	Fair	Fair	Poor	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
19 Cape Fear	Fair	Good	Good	Good	Good	Poor	Fair	Good	Good	Poor.
20* Capers	---	---	---	---	---	Good	Good	---	---	Good.
21 Chipley	Poor	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
22 Chisolm	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
24 Coosaw	Poor	Fair	Good	Poor	Good	Poor	Poor	Fair	Good	Poor.
25 Coxville	Good	Good	Good	Good	Good	Poor	Fair	Good	Good	Poor.
27 Hobcaw	Poor	Poor	Poor	Good	Good	Good	Fair	Poor	Fair	Fair.
28 Dunbar	Good	Good	Good	Good	Good	Poor	Fair	Good	Good	Poor.
30 Echaw	Poor	Fair	Good	Fair	Fair	Poor	Very poor.	Fair	Fair	Very poor.
31B Eddings	Fair	Fair	Fair	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
35 Wadmalaw Variant	Fair	Fair	Fair	Good	Good	Fair	Fair	Fair	Good	Fair.

See footnote at end of table.

TABLE 9.--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
36--Goldsboro	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
37--Handsboro	Very poor.	Very poor.	Very poor.	Very poor.	Very poor.	Poor	Very poor.	Very poor.	Very poor.	Poor.
38--Pungo	Very poor.	Very poor.	Poor	Poor	Poor	Good	Good	Poor	Poor	Good.
40--Leon	Poor	Fair	Good	Poor	Fair	Fair	Poor	Fair	Fair	Poor.
41--Lynchburg	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
42--Lynn Haven	Poor	Fair	Fair	Poor	Fair	Fair	Fair	Poor	Fair	Fair.
43A, 43B--Nemours	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
44A, 44B--Norfolk	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
45--Ocilla	Fair	Fair	Good	Fair	Good	Fair	Fair	Fair	Good	Fair.
46--Ogeechee	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
47--Okeetee	Poor	Fair	Good	Good	Good	Good	Good	Fair	Good	Good.
49--Osier	Very poor.	Poor	Fair	Fair	Fair	Fair	Good	Poor	Fair	Fair.
50--Paxville	Fair	Fair	Fair	Good	Good	Good	Good	Fair	Good	Good.
51--Pelham	Poor	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair.
52--Pickney	Very poor.	Very poor.	Very poor.	Poor	Poor	Good	Good	Very poor.	Poor	Good.
53--Plummer	Poor	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair.
55--Rains	Fair	Fair	Fair	Good	Good	Good	Good	Fair	Good	Good.
57--Santee	Poor	Poor	Fair	Fair	Fair	Good	Good	Poor	Fair	Good.
58--Scranton	Fair	Fair	Good	Fair	Fair	Poor	Poor	Fair	Fair	Poor.
59--Seagate	Poor	Poor	Fair	Poor	Poor	Poor	Poor	Poor	Poor	Poor.
62--Yauhannah	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
64--Wahee	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.

See footnote at end of table.

TABLE 9.--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
65B---------- Lakeland	Poor	Fair	Fair	Poor	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
66---------- Williman	Fair	Fair	Fair	Good	Good	Fair	Fair	Fair	Good	Fair.
68---------- Yemassee	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
69---------- Murad	Fair	Fair	Fair	Fair	Fair	Poor	Poor	Fair	Good	Poor.
70---------- Levy	Very poor.	Very poor.	Very poor.	Poor	Very poor.	Good	Good	Very poor.	Very poor.	Good.
71*. Haplaquents										
73*: Torhunta----------	Very poor.	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good.
Osier----------	Very poor.	Poor	Fair	Fair	Fair	Fair	Good	Poor	Fair	Fair.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 10.--BUILDING SITE DEVELOPMENT

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not rated]

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
7*. Beaches						
9B*: Fripp	Severe: cutbanks cave.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Moderate: flooding.	Severe: droughty.
Leon	Severe: cutbanks cave, wetness.	Severe: wetness, flooding.	Severe: wetness, flooding.	Severe: wetness, flooding.	Severe: wetness, flooding.	Severe: wetness, droughty.
10--- Albany	Severe: cutbanks cave, wetness.	Moderate: wetness.	Severe: wetness.	Severe: wetness.	Moderate: wetness.	Severe: droughty.
11--- Argent	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: low strength, wetness.	Severe: wetness.
13--- Bladen	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: low strength, wetness.	Severe: wetness.
14B--- Blanton	Severe: cutbanks cave.	Slight---	Moderate: wetness.	Slight---	Slight---	Moderate: droughty.
15*--- Bohicket	Severe: ponding.	Severe: flooding, ponding, shrink-swell.	Severe: flooding, ponding, shrink-swell.	Severe: flooding, ponding, shrink-swell.	Severe: low strength, ponding, flooding.	Severe: excess salt, excess sulfur, ponding.
16A--- Bonneau	Moderate: wetness.	Slight---	Moderate: wetness.	Slight---	Slight---	Moderate: droughty.
16B--- Bonneau	Moderate: wetness.	Slight---	Moderate: wetness.	Moderate: slope.	Slight---	Moderate: droughty.
18B--- Alpin	Severe: cutbanks cave.	Slight---	Slight---	Slight---	Slight---	---
19--- Cape Fear	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: low strength, wetness.	Severe: wetness.
20*--- Capers	Severe: ponding.	Severe: flooding, ponding, shrink-swell.	Severe: flooding, ponding, shrink-swell.	Severe: flooding, ponding, shrink-swell.	Severe: low strength, ponding, flooding.	Severe: excess salt, excess sulfur, ponding.
21--- Chipley	Severe: cutbanks cave, wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.	Severe: droughty.
22--- Chisolm	Severe: cutbanks cave.	Slight---	Moderate: wetness.	Slight---	Slight---	Moderate: droughty.
24--- Coosaw	Severe: cutbanks cave, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness, droughty.
25--- Coxville	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: low strength, wetness.	Severe: wetness.
27--- Hobcaw	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.

See footnote at end of table.

TABLE 10.--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
28--- Dunbar	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: low strength.	Moderate: wetness.
30--- Echaw	Severe: cutbanks cave.	Slight---	Moderate: wetness.	Slight---	Slight---	Moderate: droughty.
31B--- Eddings	Severe: cutbanks cave.	Slight---	Moderate: wetness.	Slight---	Slight---	Moderate: droughty.
35--- Wadmalaw Variant	Severe: small stones, ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
36--- Goldsboro	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.	Slight.
37--- Handsboro	Severe: excess humus, ponding.	Severe: flooding, ponding, low strength.	Severe: flooding, ponding, low strength.	Severe: flooding, ponding, low strength.	Severe: ponding, flooding.	Severe: excess salt, excess sulfur, ponding.
38--- Pungo	Severe: excess humus, wetness.	Severe: flooding, low strength, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness, low strength.	Severe: wetness, low strength.	Severe: wetness, excess humus.
40--- Leon	Severe: cutbanks cave, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness, droughty.
41--- Lynchburg	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
42--- Lynn Haven	Severe: cutbanks cave, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness, droughty.
43A--- Nemours	Severe: wetness.	Moderate: wetness, shrink-swell.	Severe: wetness.	Moderate: wetness, shrink-swell.	Severe: low strength.	Moderate: wetness.
43B--- Nemours	Severe: wetness.	Moderate: wetness, shrink-swell.	Severe: wetness.	Moderate: wetness, shrink-swell, slope.	Severe: low strength.	Moderate: wetness.
44A--- Norfolk	Moderate: wetness.	Slight---	Moderate: wetness.	Slight---	Slight---	Slight.
44B--- Norfolk	Moderate: wetness.	Slight---	Moderate: wetness.	Moderate: slope.	Slight---	Slight.
45--- Ocilla	Severe: cutbanks cave, wetness.	Moderate: wetness.	Severe: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness, droughty.
46--- Ogeechee	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
47--- Okeetee	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: low strength, wetness.	Severe: wetness.
49--- Osier	Severe: cutbanks cave, ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: droughty, ponding.

See footnote at end of table.

TABLE 10.--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
50---------- Paxville	Severe: cutbanks cave, ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
51---------- Pelham	Severe: cutbanks cave, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
52---------- Pickney	Severe: cutbanks cave, ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
53---------- Plummer	Severe: cutbanks cave, wetness.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: droughty, wetness.
55---------- Rains	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
57---------- Santee	Severe: ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: low strength, ponding, flooding.	Severe: ponding, flooding.
58---------- Scranton	Severe: cutbanks cave, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
59---------- Seagate	Severe: cutbanks cave, wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.	Severe: droughty.
62---------- Yauhannah	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness, droughty.
64---------- Wahee	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: low strength, wetness.	Severe: wetness.
65B---------- Lakeland	Severe: cutbanks cave.	Slight---------	Slight---------	Slight---------	Slight---------	Moderate: droughty.
66---------- Williman	Severe: cutbanks cave, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
68---------- Yemassee	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.
69---------- Murad	Severe: cutbanks cave, wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness, droughty.
70---------- Levy	Severe: ponding.	Severe: flooding, ponding, shrink-swell.	Severe: flooding, ponding, shrink-swell.	Severe: flooding, ponding, shrink-swell.	Severe: low strength, ponding, flooding.	Severe: ponding, flooding.
71*. Haplaquents						
73*: Torhunta---------	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.	Severe: wetness, flooding.

See footnote at end of table.

TABLE 10.--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
73*: Osier	Severe: cutbanks cave, ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: droughty, ponding.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 11.--SANITARY FACILITIES

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," "good," "fair," and other terms. Absence of an entry indicates that the soil was not rated]

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
7*. Beaches					
9B*: Fripp	Severe: poor filter.	Severe: seepage, flooding.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
Leon	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: seepage, wetness, too sandy.	Severe: seepage, wetness.	Poor: seepage, too sandy, wetness.
10--- Albany	Severe: wetness.	Severe: seepage, wetness.	Severe: wetness.	Severe: seepage, wetness.	Poor: wetness.
11--- Argent	Severe: percs slowly, wetness.	Severe: wetness.	Severe: too clayey, wetness.	Severe: wetness.	Poor: too clayey, hard to pack, wetness.
13--- Bladen	Severe: wetness, percs slowly.	Slight---	Severe: wetness, too clayey.	Severe: wetness.	Poor: too clayey, hard to pack, wetness.
14B--- Blanton	Severe: poor filter.	Severe: seepage.	Moderate: too sandy.	Severe: seepage.	Fair: too sandy.
15*--- Bohicket	Severe: flooding, ponding, percs slowly.	Severe: flooding, ponding.	Severe: flooding, ponding, too clayey.	Severe: flooding, ponding.	Poor: too clayey, hard to pack, ponding.
16A, 16B--- Bonneau	Moderate: wetness.	Severe: seepage.	Severe: wetness.	Moderate: wetness.	Good.
18B--- Alpin	Slight---	Severe: seepage.	Severe: seepage, too sandy.	Severe: seepage.	Poor: too sandy, seepage.
19--- Cape Fear	Severe: wetness, percs slowly.	Severe: seepage, wetness.	Severe: wetness, too clayey.	Severe: seepage, wetness.	Poor: too clayey, hard to pack, wetness.
20*--- Capers	Severe: flooding, ponding, percs slowly.	Severe: flooding, ponding.	Severe: flooding, ponding, too clayey.	Severe: flooding, ponding.	Poor: too clayey, hard to pack, ponding.
21--- Chipley	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: seepage, wetness, too sandy.	Severe: seepage, wetness.	Poor: too sandy, seepage.
22--- Chisolm	Moderate: wetness.	Severe: seepage.	Severe: seepage, wetness.	Severe: seepage.	Good.

See footnote at end of table.

TABLE 11.--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
24--Coosaw	Severe: wetness.	Severe: seepage, wetness.	Severe: wetness.	Severe: seepage, wetness.	Poor: wetness.
25--Coxville	Severe: wetness, percs slowly.	Slight	Severe: wetness, too clayey.	Severe: wetness.	Poor: wetness.
27--Hobcaw	Severe: ponding.	Severe: seepage, ponding.	Severe: ponding.	Severe: ponding, seepage.	Poor: ponding.
28--Dunbar	Severe: wetness, percs slowly.	Slight	Severe: wetness, too clayey.	Severe: wetness.	Poor: wetness.
30--Echaw	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: seepage, wetness, too sandy.	Severe: seepage, wetness.	Poor: too sandy.
31B--Eddings	Moderate: wetness.	Severe: seepage.	Severe: wetness, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
35--Wadmalaw Variant	Severe: percs slowly, ponding.	Moderate: small stones, ponding.	Severe: small stones, ponding.	Severe: ponding.	Poor: small stones, ponding.
36--Goldsboro	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Fair: wetness.
37--Handsboro	Severe: flooding, ponding.	Severe: flooding, excess humus, ponding.	Severe: flooding, ponding, excess humus.	Severe: flooding, ponding.	Poor: ponding, excess humus, excess salt.
38--Pungo	Severe: percs slowly, wetness.	Severe: seepage, flooding, excess humus.	Severe: wetness, seepage, excess humus.	Severe: wetness, seepage.	Poor: wetness, excess humus.
40--Leon	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: seepage, wetness, too sandy.	Severe: seepage, wetness.	Poor: seepage, too sandy, wetness.
41--Lynchburg	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
42--Lynn Haven	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: seepage, wetness, too sandy.	Severe: seepage, wetness.	Poor: seepage, too sandy, wetness.
43A, 43B--Nemours	Severe: wetness, percs slowly.	Severe: wetness.	Severe: seepage, wetness, too clayey.	Severe: wetness.	Poor: too clayey, hard to pack.
44A, 44B--Norfolk	Moderate: wetness.	Moderate: seepage.	Slight	Slight	Slight.
45--Ocilla	Severe: wetness.	Severe: seepage, wetness.	Severe: wetness.	Severe: seepage, wetness.	Fair: wetness.

See footnote at end of table.

TABLE 11.--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
46--Ogeechee	Severe: wetness.	Severe: wetness.	Severe: wetness. too clayey.	Severe: wetness.	Poor: too clayey, wetness.
47--Okeetee	Severe: percs slowly, wetness.	Severe: wetness.	Severe: wetness, too clayey.	Severe: wetness.	Poor: wetness, too clayey, hard to pack.
49--Osier	Severe: poor filter, ponding.	Severe: seepage, ponding.	Severe: seepage, ponding.	Severe: seepage, ponding.	Poor: seepage, too sandy, ponding.
50--Paxville	Severe: ponding, poor filter.	Severe: seepage, ponding.	Severe: seepage, ponding.	Severe: seepage, ponding.	Poor: ponding.
51--Pelham	Severe: wetness.	Severe: seepage, wetness.	Severe: wetness.	Severe: seepage, wetness.	Poor: wetness.
52--Pickney	Severe: poor filter, ponding.	Severe: seepage, ponding.	Severe: seepage, ponding.	Severe: seepage, ponding.	Poor: seepage, ponding.
53--Plummer	Severe: ponding.	Severe: seepage, ponding.	Severe: ponding.	Severe: seepage, ponding.	Poor: seepage, ponding.
55--Rains	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
57--Santee	Severe: flooding, ponding, percs slowly.	Severe: flooding, ponding.	Severe: flooding, ponding, too clayey.	Severe: flooding, ponding.	Poor: too clayey, hard to pack, ponding.
58--Scranton	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: seepage, wetness, too sandy.	Severe: seepage, wetness.	Poor: seepage, too sandy, wetness.
59--Seagate	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: wetness.	Severe: seepage, wetness.	Fair: wetness, too clayey.
62--Yauhannah	Severe: wetness.	Severe: seepage, wetness.	Severe: seepage, wetness.	Severe: wetness.	Fair: wetness.
64--Wahee	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness, too clayey.	Severe: wetness.	Poor: too clayey, hard to pack, wetness.
65B--Lakeland	Severe: poor filter.	Severe: seepage.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
66--Williman	Severe: wetness.	Severe: seepage, wetness.	Severe: wetness.	Severe: seepage, wetness.	Poor: wetness.

See footnote at end of table.

TABLE 11.--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
68---------- Yemassee	Severe: wetness.	Severe: seepage, wetness.	Severe: wetness.	Severe: seepage, wetness.	Poor: wetness.
69---------- Murad	Severe: wetness.	Severe: seepage, wetness.	Severe: wetness.	Severe: seepage, wetness.	Poor: seepage.
70---------- Levy	Severe: flooding, ponding, percs slowly.	Severe: flooding, ponding.	Severe: flooding, ponding, too clayey.	Severe: flooding, ponding.	Poor: too clayey, hard to pack, ponding.
71*. Haplaquents					
73*: Torhunta----------	Severe: wetness, poor filter, flooding.	Severe: wetness, seepage, flooding.	Severe: seepage, wetness, flooding.	Severe: seepage, wetness, flooding.	Poor: wetness.
Osier----------	Severe: poor filter, ponding.	Severe: seepage, ponding.	Severe: seepage, ponding.	Severe: seepage, ponding.	Poor: seepage, too sandy, ponding.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 12.--CONSTRUCTION MATERIALS

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "good," "fair," "poor," "probable," and "improbable." Absence of an entry indicates that the soil was not rated]

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
7*. Beaches				
9B*: Fripp	Good	Probable	Improbable: too sandy.	Poor: too sandy.
Leon	Poor: wetness.	Probable	Improbable: too sandy.	Poor: too sandy, wetness.
10--- Albany	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: too sandy.
11--- Argent	Poor: wetness, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness, thin layer.
13--- Bladen	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, wetness.
14B--- Blanton	Good	Probable	Improbable: too sandy.	Fair: too sandy.
15*--- Bohicket	Poor: low strength, wetness, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, excess salt, wetness.
16A, 16B--- Bonneau	Good	Improbable: excess fines.	Improbable: excess fines.	Poor: too sandy.
18B--- Alpin	Good	Probable	Improbable: too sandy.	Poor: too sandy.
19--- Cape Fear	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, wetness.
20*--- Capers	Poor: low strength, wetness, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, excess salt, wetness.
21--- Chipley	Fair: wetness.	Probable	Improbable: too sandy.	Poor: too sandy.
22--- Chisolm	Good	Probable	Improbable: too sandy.	Fair: too sandy.
24--- Coosaw	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: too sandy.
25--- Coxville	Poor: wetness, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, wetness.
27--- Hobcaw	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
28--- Dunbar	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.

See footnote at end of table.

TABLE 12.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
30--Echaw	Fair: wetness.	Probable	Improbable: too sandy.	Fair: too sandy.
31B--Eddings	Good	Improbable: thin layer.	Improbable: too sandy.	Poor: too sandy.
35--Wadmalaw Variant	Poor: wetness.	Unsuited	Poor	Poor: small stones, wetness.
36--Goldsboro	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	
37--Handsboro	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: excess salt, wetness.
38--Pungo	Poor: wetness, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: excess humus, wetness.
40--Leon	Poor: wetness.	Probable	Improbable: too sandy.	Poor: too sandy, wetness.
41--Lynchburg	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
42--Lynn Haven	Poor: wetness.	Probable	Improbable: too sandy.	Poor: too sandy, wetness.
43A, 43B--Nemours	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
44A, 44B--Norfolk	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: too sandy.
45--Ocilla	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: too sandy.
46--Ogeechee	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
47--Okeetee	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, wetness.
49--Osier	Poor: wetness.	Probable	Improbable: too sandy.	Poor: wetness.
50--Paxville	Poor: wetness.	Probable	Improbable: too sandy.	Poor: wetness.
51--Pelham	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
52--Pickney	Poor: wetness.	Probable	Improbable: too sandy.	Poor: wetness.
53--Plummer	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
55--Rains	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.

See footnote at end of table.

TABLE 12.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
57--- Santee	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, wetness.
58--- Scranton	Poor: wetness.	Probable---	Improbable: too sandy.	Poor: wetness.
59--- Seagate	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too sandy.
62--- Yauhannah	Fair: wetness.	Probable---	Improbable: too sandy.	Fair: too sandy.
64--- Wahee	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, wetness.
65B--- Lakeland	Good---	Probable---	Improbable: too sandy.	Poor: too sandy.
66--- Williman	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
68--- Yemassee	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
69--- Murad	Fair: wetness.	Improbable: thin layer.	Improbable: too sandy.	Fair: too sandy.
70--- Levy	Poor: low strength, wetness, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
71*. Haplaquents				
73*: Torhunta---	Poor: wetness.	Probable---	Improbable: too sandy.	Poor: wetness.
Osier---	Poor: wetness.	Probable---	Improbable: too sandy.	Poor: wetness.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 13.--WATER MANAGEMENT

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not evaluated]

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Grassed waterways
7*. Beaches						
9B*: Fripp	Severe: seepage.	Severe: seepage, piping.	Severe: no water.	Deep to water	Droughty, fast intake, slope.	Droughty.
Leon	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: cutbanks cave.	Cutbanks cave	Wetness, droughty, fast intake.	Wetness, droughty.
10--- Albany	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: cutbanks cave.	Cutbanks cave	Wetness, droughty, fast intake.	Wetness, droughty.
11--- Argent	Slight	Severe: wetness, hard to pack.	Severe: slow refill.	Percs slowly	Wetness, percs slowly.	Wetness, percs slowly.
13--- Bladen	Slight	Severe: wetness.	Severe: slow refill.	Percs slowly	Wetness, percs slowly.	Wetness, percs slowly.
14B--- Blanton	Severe: seepage.	Severe: seepage, piping.	Severe: no water.	Deep to water	Droughty, fast intake, soil blowing.	Droughty.
15*--- Bohicket	Slight	Severe: hard to pack, ponding, excess salt.	Severe: slow refill, salty water.	Ponding, percs slowly, flooding.	Ponding, slow intake, percs slowly.	Wetness, excess salt, percs slowly.
16A--- Bonneau	Moderate: seepage.	Slight	Severe: cutbanks cave.	Deep to water	Droughty, fast intake, soil blowing.	Droughty.
16B--- Bonneau	Moderate: seepage, slope.	Slight	Severe: cutbanks cave.	Deep to water	Droughty, fast intake, slope.	Droughty.
18B--- Alpin	Severe: seepage.	Severe: seepage, piping.	Severe: no water.	Deep to water	Droughty, soil blowing.	Droughty.
19--- Cape Fear	Slight	Severe: hard to pack, wetness.	Slight	Percs slowly	Wetness, percs slowly.	Wetness, percs slowly.
20*--- Capers	Slight	Severe: hard to pack, ponding, excess salt.	Severe: slow refill, salty water.	Ponding, percs slowly, flooding.	Ponding, flooding, excess salt.	Wetness, excess salt, percs slowly.
21--- Chipley	Severe: seepage.	Severe: seepage.	Severe: cutbanks cave.	Cutbanks cave	Wetness, droughty, fast intake.	Droughty.
22--- Chisolm	Severe: seepage.	Severe: seepage, piping.	Severe: cutbanks cave.	Deep to water	Droughty, fast intake, soil blowing.	Droughty.
24--- Coosaw	Severe: seepage.	Severe: piping, wetness.	Severe: cutbanks cave.	Cutbanks cave	Wetness, droughty, fast intake.	Wetness, droughty.

See footnote at end of table.

TABLE 13.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Grassed waterways
25---- Coxville	Slight	Severe: wetness.	Severe: slow refill.	Favorable	Wetness	Wetness.
27---- Hobcaw	Moderate: seepage.	Severe: piping, ponding.	Moderate: slow refill.	Ponding	Ponding, soil blowing.	Wetness.
28---- Dunbar	Slight	Severe: wetness.	Severe: slow refill.	Favorable	Wetness	Wetness.
30---- Echaw	Severe: seepage.	Severe: seepage, piping.	Severe: cutbanks cave.	Cutbanks cave	Wetness, droughty, fast intake.	Droughty.
31B---- Eddings	Severe: seepage.	Severe: seepage, piping.	Severe: cutbanks cave.	Deep to water, slope, cutbanks cave.	Droughty, fast intake, slope.	Droughty.
35---- Wadmalaw Variant	Moderate: seepage.	Moderate: piping.	Severe: deep to water, slow refill.	Favorable	Wetness	Not needed.
36---- Goldsboro	Moderate: seepage.	Moderate: wetness.	Moderate: deep to water.	Favorable		Favorable.
37---- Handsboro	Slight	Severe: excess humus, ponding, excess salt.	Severe: salty water.	Ponding, flooding, excess salt.	Ponding, flooding, excess salt.	Wetness, excess salt.
38---- Pungo	Severe: seepage.	Severe: excess humus, wetness.	Slight	Subsides	Wetness	Wetness.
40---- Leon	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: cutbanks cave.	Cutbanks cave	Wetness, droughty, fast intake.	Wetness, droughty.
41---- Lynchburg	Moderate: seepage.	Severe: piping, wetness.	Moderate: slow refill.	Favorable	Wetness, fast intake.	Wetness.
42---- Lynn Haven	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: cutbanks cave.	Cutbanks cave	Wetness, droughty, fast intake.	Wetness, droughty.
43A---- Nemours	Moderate: seepage.	Severe: hard to pack, wetness.	Severe: slow refill.	Percs slowly	Wetness, soil blowing.	Percs slowly.
43B---- Nemours	Moderate: seepage.	Severe: hard to pack, wetness.	Severe: slow refill.	Percs slowly, slope.	Wetness, soil blowing.	Percs slowly.
44A---- Norfolk	Moderate: seepage.	Slight	Severe: deep to water.	Deep to water	Fast intake	Favorable.
44B---- Norfolk	Moderate: seepage.	Slight	Severe: deep to water.	Deep to water	Slope	Favorable.
45---- Ocilla	Severe: seepage.	Severe: piping, wetness.	Severe: cutbanks cave.	Favorable	Wetness, droughty, fast intake.	Droughty.
46---- Ogeechee	Moderate: seepage.	Severe: wetness.	Severe: slow refill.	Favorable	Wetness, droughty, fast intake.	Wetness, droughty.

See footnote at end of table.

TABLE 13.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Grassed waterways
47--Okeetee	Slight	Severe: wetness.	Severe: slow refill.	Percs slowly	Wetness, percs slowly.	Percs slowly, wetness.
49--Osier	Severe: seepage.	Severe: seepage, piping, ponding.	Severe: cutbanks cave.	Ponding, cutbanks cave.	Ponding, droughty.	Wetness, droughty.
50--Paxville	Moderate: seepage.	Severe: piping, ponding.	Severe: cutbanks cave.	Ponding	Ponding, soil blowing.	Wetness.
51--Pelham	Severe: seepage.	Severe: piping, wetness.	Severe: cutbanks cave.	Favorable	Wetness, droughty.	Wetness, droughty.
52--Pickney	Severe: seepage.	Severe: seepage, piping, ponding.	Severe: cutbanks cave.	Cutbanks cave, ponding.	Ponding, droughty, fast intake.	Wetness, droughty.
53--Plummer	Severe: seepage.	Severe: seepage, piping, ponding.	Severe: cutbanks cave.	Cutbanks cave, ponding.	Ponding, droughty.	Wetness, droughty.
55--Rains	Moderate: seepage.	Severe: piping, wetness.	Moderate: slow refill.	Favorable	Wetness, soil blowing.	Wetness.
57--Santee	Slight	Severe: ponding.	Severe: slow refill.	Ponding, percs slowly, flooding.		Wetness, percs slowly.
58--Scranton	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: cutbanks cave.	Cutbanks cave	Wetness, droughty, fast intake.	Wetness, droughty.
59--Seagate	Severe: seepage.	Severe: wetness.	Severe: cutbanks cave.	Cutbanks cave	Wetness, fast intake, droughty.	Droughty.
62--Yauhannah	Moderate: seepage.	Severe: piping, wetness.	Severe: cutbanks cave.	Favorable	Wetness, fast intake, droughty.	Droughty.
64--Wahee	Slight	Severe: wetness.	Severe: slow refill.	Percs slowly	Wetness, soil blowing, percs slowly.	Wetness, percs slowly.
65B--Lakeland	Severe: seepage.	Severe: seepage.	Severe: no water.	Deep to water	Droughty, fast intake, soil blowing.	Droughty.
66--Williman	Severe: seepage.	Severe: piping, wetness.	Severe: cutbanks cave.	Cutbanks cave	Wetness, droughty, fast intake.	Wetness, droughty.
68--Yemassee	Moderate: seepage.	Severe: piping, wetness.	Severe: cutbanks cave.	Cutbanks cave	Wetness, fast intake, soil blowing.	Wetness.
69--Murad	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: cutbanks cave.	Cutbanks cave	Wetness, droughty, fast intake.	Droughty.

See footnote at end of table.

TABLE 13.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Grassed waterways
70---------- Levy	Slight---------	Severe: hard to pack, ponding.	Severe: slow refill.	Ponding, percs slowly, flooding.	Ponding, percs slowly.	Wetness, percs slowly.
71*. Haplaquents						
73*: Torhunta---------	Severe: seepage.	Severe: piping, wetness.	Severe: cutbanks cave.	Cutbanks cave, flooding.	Wetness, flooding.	Wetness.
Osier----------	Severe: seepage.	Severe: seepage, piping, ponding.	Severe: cutbanks cave.	Ponding, cutbanks cave.	Ponding, droughty.	Wetness, droughty.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 14.--ENGINEERING INDEX PROPERTIES

[The symbol < means less than; > means more than. Absence of an entry indicates that data were not estimated]

Soil name and map symbol	Depth	USDA texture	Classification		Fragments > 3 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
7*. Beaches											
9B*:											
Fripp	0-5	Fine sand	SP, SP-SM	A-3	0	100	98-100	85-99	0-5	---	NP
	5-80	Fine sand, sand	SP, SP-SM	A-3	0	100	98-100	85-99	0-5	---	NP
Leon	0-19	Sand	SP, SP-SM	A-3, A-2-4	0	100	100	80-100	2-12	---	NP
	19-72	Sand, fine sand	SP, SP-SM, SM	A-3, A-2-4	0	100	100	80-100	3-20	---	NP
10 Albany	0-57	Loamy sand	SM	A-2	0	100	100	75-90	12-23	---	NP
	57-84	Sandy clay loam, sandy loam, fine sandy loam.	SC, SM, SM-SC	A-2, A-4, A-6	0	97-100	95-100	70-100	25-50	<40	NP-17
11 Argent	0-5	Loam	CL, CL-ML	A-4, A-6, A-7	0	100	98-100	90-100	51-80	20-43	5-20
	5-57	Clay, sandy clay, silty clay.	CL, CH	A-6, A-7	0	100	98-100	90-100	55-98	30-60	11-40
	57-91	Sandy clay loam, clay loam, silty clay loam.	CL, CL-ML, SC, SM-SC	A-4, A-6, A-7	0	100	98-100	90-100	40-80	22-49	6-28
13 Bladen	0-13	Fine sandy loam	SM	A-2, A-4	0	100	97-100	60-85	20-50	---	NP
	13-58	Clay, sandy clay	CL, CH	A-7	0	100	99-100	75-100	55-85	45-67	23-45
	58-64	Clay, sandy clay, clay loam.	CL, CH, SC	A-4, A-6, A-7	0	100	89-99	75-95	45-75	25-60	8-35
14B Blanton	0-45	Loamy fine sand	SM	A-2-4	0	100	100	85-100	13-25	---	NP
	45-70	Sandy clay loam, sandy loam, fine sandy loam.	SC, SM-SC, SM	A-4, A-2-4, A-2-6, A-6	0	100	100	69-95	25-50	<37	3-20
15* Bohicket	0-9	Clay	CH	A-7	0	100	99-100	90-100	80-100	60-100	30-60
	9-85	Silty clay, clay, sandy clay.	CH, MH	A-7	0	100	99-100	80-100	70-95	50-100	16-60
16A Bonneau	0-25	Fine sand	SM, SP-SM	A-2, A-3	0	100	100	60-80	8-20	---	NP
	25-77	Sandy loam, sandy clay loam, fine sandy loam.	SC, SM-SC	A-2, A-6, A-4	0	100	100	60-90	30-50	21-37	4-14
16B Bonneau	0-25	Fine sand	SM, SP-SM	A-2, A-3	0	100	100	60-80	8-20	---	NP
	25-75	Sandy loam, sandy clay loam, fine sandy loam.	SC, SM-SC	A-2, A-6, A-4	0	100	100	60-90	30-50	21-37	4-14
18B Alpin	0-45	Fine sand	SP-SM, SM	A-3, A-2-4	0	95-100	90-100	60-100	5-20	---	NP
Alpin	45-85	Fine sand, sand	SP-SM	A-3, A-2-4	0	95-100	90-100	60-100	5-12	---	NP
19 Cape Fear	0-3	Loam	ML, CL-ML, CL	A-4, A-6	0	100	95-100	85-100	60-90	20-40	3-15
	3-36	Clay loam, clay, silty clay.	ML, CL, MH, CH	A-7	0	100	95-100	90-100	60-85	41-65	15-35
	36-84	Variable	---	---	---	---	---	---	---	---	---
20* Capers	0-16	Clay	MH	A-7-5	0	100	100	80-100	70-100	50-81	15-40
	16-85	Clay, silty clay	MH	A-7-5	0	100	100	85-100	75-100	52-80	6-40

See footnote at end of table.

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 3 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
21---------- Chipley	0-6	Fine sand--------	SP-SM	A-3, A-2-4	0	100	100	80-100	6-12	---	NP
	6-94	Sand, fine sand	SP-SM	A-3, A-2-4	0	100	100	80-100	6-12	---	NP
22---------- Chisolm	0-23	Loamy fine sand	SM, SP-SM	A-2	0	100	98-100	75-98	10-25	---	NP
	23-30	Sandy clay loam	SM-SC, SC, CL, CL-ML	A-4, A-6	0	100	98-100	75-98	36-55	20-35	4-15
	30-72	Sandy loam, fine sandy loam, sandy clay loam.	SM, SM-SC, SC	A-2, A-4, A-6	0	100	98-100	65-98	25-50	15-35	2-15
	72-99	Fine sandy loam, loamy sand, sand.	SM, SP-SM	A-2	0	100	98-100	60-98	10-20	<30	NP-7
24---------- Coosaw	0-32	Loamy fine sand	SM	A-2	0	100	100	90-100	15-30	---	NP
	32-72	Sandy clay loam, fine sandy loam, sandy loam.	SM, SC, SM-SC	A-2, A-4, A-6	0	100	95-100	80-100	25-50	15-35	2-15
	72-99	Fine sandy loam, loamy fine sand, sand.	SM, SM-SC, SP-SM	A-2-4, A-4	0	100	95-100	80-100	10-40	<30	NP-7
25---------- Coxville	0-10	Fine sandy loam	SM, ML, CL-ML, CL	A-4, A-6, A-7	0	100	100	85-97	46-75	20-46	3-15
	10-82	Clay loam, sandy clay, clay.	CL, CH	A-6, A-7	0	100	100	85-98	50-85	30-55	12-35
27---------- Hobcaw	0-16	Fine sandy loam	SM, ML	A-2, A-4	0	100	100	70-95	30-65	<35	NP-7
	16-51	Sandy clay loam, clay loam, fine sandy loam.	SM-SC, SC, CL-ML, CL	A-4, A-6, A-7	0	100	100	75-98	36-70	18-45	4-22
	51-70	Variable---------	---	---	---	---	---	---	---	---	---
28---------- Dunbar	0-10	Fine sandy loam	SM, SM-SC	A-2, A-4	0	100	100	50-95	20-50	<30	NP-7
	10-78	Sandy clay, clay loam, clay.	CL, CH	A-6, A-7	0	100	100	85-95	50-70	36-60	18-35
30---------- Echaw	0-8	Loamy fine sand	SM	A-2	0	100	100	65-80	15-35	---	NP
	8-38	Loamy sand, fine sand, sand.	SM	A-2, A-3	0	100	100	50-75	5-30	---	NP
	38-61	Fine sand, loamy sand, sand.	SM, SP-SM	A-2, A-3	0	100	100	50-70	5-20	---	NP
31B---------- Eddings	0-56	Fine sand--------	SM, SP-SM	A-2	0	100	98-100	60-98	10-25	---	NP
	56-72	Sandy loam, fine sandy loam, sandy clay loam.	SM, SM-SC, SC	A-2, A-4, A-6	0	100	98-100	75-98	25-50	<40	NP-15
	72-85	Fine sandy loam, sandy clay loam, sandy clay.	SC, CL, SM-SC, CL-ML	A-4, A-6, A-7	0	100	98-100	75-98	36-65	25-50	5-25
35---------- Wadmalaw Variant	0-9	Loamy sand-------	SM, SM-SC	A-2, A-4	0	95-98	90-95	85-95	10-20	<25	NP-7
	9-31	Sandy loam, fine sandy loam.	SM, SM-SC, ML	A-2, A-4	0	95-98	80-98	75-80	25-50	<30	NP-7
	31-42	Cobbly sandy clay loam, cobbly sandy clay.	SC, CL	A-6, A-7	47	65-80	55-65	50-60	30-60	20-45	4-25
	42-80	Sandy clay loam, sandy clay.	SC, CL	A-6, A-7	0	80-95	80-90	75-85	30-60	20-45	4-25

See footnote at end of table.

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Fragments > 3 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
36---------- Goldsboro	0-13	Loamy fine sand.	SM, SM-SC, SC	A-2, A-4, A-6	0	90-100	75-100	50-95	15-45	<25	NP-14
	13-85	Sandy clay loam, sandy loam.	SM-SC, SC, CL-ML, CL	A-2, A-4, A-6	0	98-100	95-100	60-95	25-55	16-37	4-18
37---------- Handsboro	0-40	Sapric material	PT	A-8	---	---	---	---	---	---	---
	40-80	Stratified sapric material to loam.	PT	---	---	---	---	---	---	---	---
38---------- Pungo	0-72	Muck----------	PT	A-8	---	---	---	---	---	---	---
40---------- Leon	0-19	Sand----------	SP, SP-SM	A-3, A-2-4	0	100	100	80-100	2-12	---	NP
	19-72	Sand, fine sand	SP, SP-SM, SM	A-3, A-2-4	0	100	100	80-100	3-20	---	NP
41---------- Lynchburg	0-10	Loamy fine sand	SM, SP-SM	A-2	0	92-100	90-100	60-100	12-35	<25	NP-4
	10-84	Sandy clay loam, sandy loam, clay loam.	SM-SC, SC, CL, CL-ML	A-2, A-4, A-6	0	92-100	90-100	70-100	25-67	15-40	4-18
42---------- Lynn Haven	0-18	Fine sand--------	SP, SP-SM	A-3, A-2-4	0	100	100	80-100	2-12	---	NP
	18-50	Sand, fine sand	SM, SP-SM	A-3, A-2-4	0	100	100	80-100	5-20	---	NP
	50-70	Sand, fine sand	SP, SP-SM	A-3, A-2-4	0	100	100	80-100	2-12	---	NP
43A, 43B--------- Nemours	0-9	Fine sandy loam	SM, SC, SM-SC	A-2, A-4	0	100	95-100	80-98	30-50	<30	NP-10
	9-32	Clay, sandy clay	CL, CH, MH, ML	A-7	0	100	98-100	80-100	60-95	36-60	15-30
	32-60	Sandy clay, sandy clay loam, sandy loam.	SM, ML, CL	A-4, A-6, A-7	0	100	95-100	80-95	40-65	28-48	7-21
44A, 44B--------- Norfolk	0-17	Loamy fine sand	SM	A-2	0	95-100	92-100	50-91	13-30	<20	NP
	17-44	Sandy loam, sandy clay loam, clay loam.	SC, SM-SC, CL, CL-ML	A-2, A-4, A-6	0	95-100	91-100	70-96	30-55	20-38	4-15
	44-85	Sandy clay loam, clay loam, sandy clay.	SC, SM-SC, CL, CL-ML	A-4, A-6, A-7-6	0	100	98-100	65-98	36-72	20-45	4-22
45---------- Ocilla	0-25	Loamy sand-------	SM, SP-SM	A-2, A-3	0	100	95-100	75-100	8-35	---	NP
	25-85	Sandy loam, sandy clay loam.	SM, CL, SC	A-2, A-4, A-6	0	100	95-100	80-100	30-55	<40	NP-18
46---------- Ogeechee	0-16	Loamy fine sand	SM	A-2, A-1	0	100	95-100	48-70	10-25	---	NP
	16-58	Sandy clay loam, clay loam.	SC, CL	A-6	0	100	95-100	65-85	40-55	32-40	16-23
	58-76	Sandy clay loam, sandy loam.	SC	A-6, A-2	0	100	90-100	50-65	25-45	30-40	15-25
47---------- Okeetee	0-8	Fine sandy loam	SM, ML	A-2, A-4	0	100	98-100	90-98	30-60	<30	NP-7
	8-48	Clay, sandy clay	CH, CL	A-7	0	100	98-100	90-100	55-85	41-55	20-30
	48-75	Clay, sandy clay, sandy clay loam.	CH, CL	A-4, A-6, A-7	0	100	98-100	90-100	51-80	25-55	8-30

See footnote at end of table.

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Fragments > 3 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
49----------	0-6	Loamy sand-------	SP-SM	A-2, A-3	0	100	98-100	60-85	5-12	---	NP
Osier	6-75	Sand, loamy sand, loamy fine sand.	SP-SM, SM	A-2, A-3	0	100	95-100	65-90	5-20	---	NP
50----------	0-18	Fine sandy loam	SM, ML	A-2, A-4	0	100	100	80-98	30-60	<35	NP-7
Paxville	18-60	Sandy clay loam, sandy loam, loam.	CL-ML, CL, SM-SC, SC	A-2, A-4, A-6	0	100	98-100	60-98	30-60	25-40	5-15
	60-85	Sandy loam, loamy sand, fine sandy loam.	SM, SP-SM, SP	A-2, A-3	0	100	98-100	60-98	5-35	<30	NP-4
51----------	0-30	Loamy sand-------	SM	A-2	0	100	95-100	75-90	15-30	---	NP
Pelham	30-85	Sandy clay loam, sandy loam.	SM, SC, SM-SC	A-2, A-4, A-6	0	100	95-100	65-90	30-50	15-30	2-12
52----------	0-31	Loamy fine sand	SM, SP-SM	A-2	0	100	100	50-90	10-25	---	NP
Pickney	31-82	Loamy fine sand, loamy sand, fine sand.	SP, SP-SM, SM	A-2, A-3	0	100	100	50-90	3-25	---	NP
53----------	0-57	Loamy sand-------	SM, SP-SM	A-2-4, A-3	0	100	100	75-96	5-26	---	NP
Plummer	57-85	Sandy loam, sandy clay loam, fine sandy loam.	SM, SC, SM-SC	A-2-4, A-2-6	0	100	97-100	76-96	26-35	<31	NP-14
55----------	0-10	Sandy loam-------	SM, ML	A-2, A-4	0	100	95-100	50-85	25-56	<35	NP-10
Rains	10-90	Sandy clay loam, clay loam.	SC, SM-SC, CL, CL-ML	A-2, A-4, A-6	0	100	95-100	55-98	30-70	18-40	4-20
57----------	0-9	Loam-------------	SM, SC, SM-SC	A-2, A-4	0	100	100	80-95	30-50	<30	NP-10
Santee	9-65	Sandy clay, clay loam, clay.	CL, CH	A-6, A-7	0	100	100	90-100	75-95	30-60	12-35
	65-75	Variable---------	---	---	---	---	---	---	---	---	---
58----------	0-7	Loamy sand-------	SM, SP-SM	A-2, A-4	0	100	100	55-92	12-40	---	NP
Scranton	7-85	Loamy sand, sand, fine sand.	SP-SM, SM	A-2, A-3	0	100	100	50-90	5-25	---	NP
59----------	0-14	Fine sand--------	SM, SP-SM	A-2, A-3	0	100	100	90-100	5-20	---	NP
Seagate	14-20	Fine sand, loamy fine sand, sand.	SM, SP-SM	A-2	0	100	100	90-100	10-25	---	NP
	20-29	Fine sand, sand	SM, SP-SM	A-2, A-3	0	100	100	90-100	5-20	---	NP
	29-85	Sandy loam, sandy clay loam.	SM, SM-SC	A-2, A-4	0	100	100	85-100	20-45	<30	NP-7
62----------	0-13	Fine sandy loam	SM	A-2	0	100	100	75-100	15-35	<25	NP-4
Yauhannah	13-65	Sandy clay loam, clay loam, sandy loam.	SC, CL, SM-SC, CL-ML	A-2, A-4, A-6	0	100	100	75-100	25-55	16-35	4-16
	65-98	Sandy loam, loamy fine sand, fine sand.	SM, SM-SC, SP-SM	A-2, A-4	0	100	100	75-100	10-45	<28	NP-6

See footnote at end of table.

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 3 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
64----------	0-12	Fine sandy loam	SM, SM-SC	A-2, A-4	0	100	95-100	50-98	30-50	<28	NP-7
Wahee	12-80	Clay, clay loam, silty clay.	CL, CH	A-7, A-6	0	100	100	85-100	51-90	38-70	18-42
65B----------	0-99	Sand, fine sand	SP, SP-SM	A-3, A-2-4	0	90-100	90-100	50-100	1-12	---	NP
Lakeland											
66----------	0-22	Loamy fine sand	SM	A-2	0	100	100	50-90	15-40	<25	NP-3
Williman	22-67	Sandy loam, fine sandy loam, sandy clay loam.	SM-SC, CL-ML, SC, CL	A-2, A-4, A-6	0	100	92-100	75-98	30-65	15-35	3-15
68----------	0-10	Loamy fine sand	SM	A-2	0	100	100	75-100	15-35	<25	NP-4
Yemassee	10-65	Sandy clay loam, clay loam, fine sandy loam.	CL, SC, CL-ML, SM-SC	A-2, A-4, A-6	0	100	100	75-100	30-70	16-38	4-18
	65-80	Sandy clay loam, fine sandy loam, sandy clay.	SC, SM, CL-ML, SM-SC	A-2, A-4, A-6	0	100	100	75-100	25-55	<35	NP-15
69----------	0-47	Loamy fine sand	SM, SP-SM	A-2	0	100	98-100	60-98	10-25	---	NP
Murad	47-78	Sandy loam, fine sandy loam, sandy clay loam.	SM, SM-SC, SC	A-2, A-4, A-6	0	100	98-100	75-98	25-50	<40	NP-15
70----------	0-7	Mucky silty clay loam.	CL, CH, ML, MH	A-6, A-7, A-4	0	100	100	98-100	85-100	30-65	8-30
Levy	7-60	Silty clay, clay, silty clay loam.	CL, CH, ML, MH	A-6, A-7	0	100	100	98-100	85-100	35-65	15-35
71*. Haplaquents											
73*:											
Torhunta--------	0-11	Fine sandy loam	SM	A-2, A-4	0	100	95-100	70-85	20-49	<25	NP-4
	11-57	Sandy loam, fine sandy loam.	SM, SM-SC	A-2, A-4	0	100	95-100	70-85	20-40	<25	NP-7
	57-80	Loamy sand, sand, sandy loam.	SM, SP-SM	A-2, A-3	0	100	95-100	65-85	5-25	<25	NP-4
Osier----------	0-6	Loamy sand-------	SP-SM	A-2, A-3	0	100	98-100	60-85	5-12	---	NP
	6-75	Sand, loamy sand, loamy fine sand.	SP-SM, SM	A-2, A-3	0	100	95-100	65-90	5-20	---	NP

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 15.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS

[The symbol < means less than; > means more than. Entries under "Erosion factors--T" apply to the entire profile. Absence of an entry indicates that data were not available or were not estimated]

Soil name and map symbol	Depth	Clay	Permeability	Available water capacity	Reaction	Shrink-swell potential	Erosion factors	
							K	T
	In	Pct	In/hr	In/in	pH			
7*. Beaches								
9B*:								
Fripp	0-5	<5	6.0-20	0.02-0.08	5.1-7.8	Low	0.10	5
	5-80	<5	6.0-20	0.02-0.06	5.6-7.8	Low	0.10	
Leon	0-19	1-6	6.0-20	0.02-0.05	3.6-5.5	Low	0.10	5
	19-72	2-8	0.6-6.0	0.05-0.10	3.6-5.5	Low	0.20	
10	0-57	5-10	6.0-20	0.02-0.04	3.6-6.5	Low	0.10	5
Albany	57-84	15-35	0.6-2.0	0.10-0.16	4.5-6.0	Low	0.24	
11	0-5	15-35	0.6-2.0	0.15-0.20	3.6-6.0	Low	0.24	5
Argent	5-57	35-60	0.06-0.2	0.14-0.18	3.6-6.0	Moderate	0.32	
	57-91	20-40	0.06-0.6	0.12-0.16	5.6-8.4	Moderate	0.32	
13	0-13	10-20	0.6-2.0	0.10-0.13	3.6-5.5	Low	0.24	5
Bladen	13-58	35-55	0.06-0.2	0.12-0.16	3.6-5.5	Moderate	----	
	58-64	35-70	0.06-0.2	0.12-0.16	3.6-5.5	Moderate	----	
14B	0-45	5-13	6.0-20	0.05-0.10	4.5-6.0	Very low	0.17	5
Blanton	45-70	12-30	0.6-2.0	0.10-0.15	4.5-5.5	Low	0.32	
15*	0-9	30-60	0.06-0.2	0.14-0.18	6.1-8.4	High	0.28	5
Bohicket	9-85	35-60	<0.06	0.12-0.16	6.1-8.4	High	0.24	
16A	0-25	2-8	6.0-20	0.04-0.08	4.5-6.0	Low	0.15	5
Bonneau	25-77	18-35	0.6-2.0	0.10-0.15	4.5-5.5	Low	0.20	
16B	0-25	2-8	6.0-20	0.04-0.08	4.5-6.0	Low	0.15	5
Bonneau	25-75	18-35	0.6-2.0	0.10-0.15	4.5-5.5	Low	0.20	
18B	0-45	3-12	>20	0.05-0.10	4.5-6.0	Very low	0.10	5
Alpin	45-85	3-7	>20	0.03-0.07	4.5-6.0	Very low	0.10	
19	0-3	5-15	0.6-6.0	0.15-0.22	4.5-6.5	Low	0.15	5
Cape Fear	3-36	35-60	0.06-0.2	0.12-0.22	4.5-6.0	Moderate	0.32	
	36-84	5-30	---	---	---	---	----	
20*	0-16	35-50	0.06-0.2	0.01-0.03	6.6-7.8	High	0.28	5
Capers	16-85	40-70	<0.06	0.01-0.03	6.6-8.4	High	----	
21	0-6	1-5	6.0-20	0.05-0.10	3.6-6.0	Very low	0.10	5
Chipley	6-94	1-7	6.0-20	0.03-0.08	4.5-6.5	Very low	0.17	
22	0-23	5-12	6.0-20	0.04-0.10	4.5-6.0	Low	0.15	5
Chisolm	23-30	18-35	0.6-2.0	0.10-0.15	4.5-6.0	Low	0.15	
	30-72	15-35	0.6-6.0	0.08-0.15	4.5-6.0	Low	0.15	
	72-99	2-20	6.0-20	0.03-0.08	4.5-5.5	Low	0.15	
24	0-32	5-12	6.0-20	0.06-0.11	4.5-6.0	Low	0.15	5
Coosaw	32-72	18-35	0.6-2.0	0.08-0.16	4.5-5.5	Low	0.24	
	72-99	2-20	2.0-6.0	0.04-0.12	4.5-5.5	Low	0.10	
25	0-10	5-27	0.6-2.0	0.12-0.17	4.5-6.0	Low	0.24	5
Coxville	10-82	35-60	0.2-0.6	0.14-0.18	3.6-5.5	Moderate	0.32	

See footnote at end of table.

TABLE 15.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth	Clay	Permeability	Available water capacity	Reaction	Shrink-swell potential	Erosion factors	
							K	T
	In	Pct	In/hr	In/in	pH			
27----------	0-16	5-20	2.0-6.0	0.10-0.16	4.5-6.5	Low----------	0.17	5
Hobcaw	16-51	18-35	0.6-2.0	0.12-0.18	4.5-6.5	Low----------	0.24	
	51-70	---	---	---	---	----------	----	
28----------	0-10	5-27	2.0-6.0	0.10-0.15	4.5-5.5	Low----------	0.32	5
Dunbar	10-78	35-60	0.2-0.6	0.13-0.18	3.6-5.5	Moderate-----	0.32	
30----------	0-8	5-10	2.0-20	0.05-0.10	4.5-6.0	Low----------	0.10	5
Echaw	8-38	2-10	6.0-20	0.05-0.10	4.5-6.0	Low----------	0.10	
	38-65	2-10	2.0-20	0.03-0.08	4.5-6.0	Low----------	0.10	
31B----------	0-56	1-10	6.0-20	0.05-0.11	4.5-6.5	Low----------	0.10	5
Eddings	56-72	15-25	0.6-2.0	0.10-0.17	4.5-6.5	Low----------	0.15	
	72-85	15-40	0.6-2.0	0.11-0.18	4.5-5.5	Low----------	0.10	
35----------	0-9	5-10	2.0-6.0	0.08-0.11	4.5-6.5	Low----------	0.15	5
Wadmalaw Variant	9-31	10-18	0.6-2.0	0.10-0.14	5.1-6.5	Low----------	0.24	
	31-42	22-40	0.2-0.6	0.12-0.16	5.1-7.0	Low----------	0.17	
	42-80	22-40	0.2-0.6	0.14-0.18	5.6-7.5	Low----------	0.20	
36----------	0-13	5-15	2.0-6.0	0.08-0.12	4.5-6.0	Low----------	0.20	5
Goldsboro	13-85	18-30	0.6-2.0	0.11-0.15	4.5-5.5	Low----------	0.24	
37----------	0-40	---	0.6-2.0	0.01-0.03	6.6-8.4	----------	----	---
Handsboro	40-80	---	<0.06	0.01-0.03	6.6-8.4	----------	----	
38----------	0-72	---	0.2-6.0	0.20-0.26	<4.5	Low----------	----	---
Pungo								
40----------	0-19	1-6	6.0-20	0.02-0.05	3.6-5.5	Low----------	0.10	5
Leon	19-72	2-8	0.6-6.0	0.05-0.10	3.6-5.5	Low----------	0.20	
41----------	0-10	2-10	6.0-20	0.07-0.10	3.6-5.5	Low----------	0.15	5
Lynchburg	10-84	18-35	0.6-2.0	0.12-0.16	3.6-5.5	Low----------	0.20	
42----------	0-18	1-4	6.0-20	0.02-0.05	3.6-5.5	Low----------	0.10	5
Lynn Haven	18-50	2-8	0.6-6.0	0.05-0.10	3.6-5.5	Low----------	0.20	
	50-70	2-5	>20	0.01-0.05	3.6-5.5	Low----------	0.15	
43A, 43B----------	0-9	8-20	0.6-6.0	0.10-0.14	4.5-6.5	Low----------	0.20	5
Nemours	9-32	45-70	0.06-0.2	0.12-0.16	3.6-5.5	Moderate-----	0.28	
	32-60	15-40	0.2-2.0	0.12-0.15	3.6-5.5	Low----------	0.28	
44A, 44B----------	0-17	2-8	6.0-20	0.06-0.11	4.5-6.0	Low----------	0.20	5
Norfolk	17-44	18-35	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.24	
	44-85	20-40	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.24	
45----------	0-25	4-10	2.0-20	0.05-0.08	4.5-5.5	Low----------	0.10	5
Ocilla	25-85	15-35	0.6-2.0	0.09-0.12	4.5-5.5	Low----------	0.24	
46----------	0-16	5-10	2.0-6.0	0.03-0.05	4.5-5.5	Low----------	0.10	5
Ogeechee	16-58	20-35	0.6-2.0	0.08-0.14	4.5-5.5	Low----------	0.15	
	58-76	15-30	0.6-2.0	0.10-0.14	4.5-5.5	Low----------	0.15	
47----------	0-8	5-20	2.0-6.0	0.12-0.15	4.5-6.5	Low----------	0.24	5
Okeetee	8-48	35-60	0.06-0.2	0.10-0.15	5.1-6.5	Moderate-----	0.32	
	48-75	25-45	0.06-0.6	0.10-0.15	5.1-8.4	Moderate-----	0.24	
49----------	0-6	5-10	6.0-20	0.03-0.10	4.5-6.0	Low----------	0.10	5
Osier	6-75	5-10	6.0-20	0.03-0.10	4.5-6.0	Low----------	0.10	

See footnote at end of table.

TABLE 15.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth	Clay	Permeability	Available water capacity	Reaction	Shrink-swell potential	Erosion factors	
							K	T
	In	Pct	In/hr	In/in	pH			
50----------	0-18	8-25	2.0-6.0	0.12-0.16	4.5-6.5	Low----------	0.20	5
Paxville	18-60	18-35	0.6-2.0	0.12-0.18	4.5-5.5	Low----------	0.15	
	60-85	8-18	6.0-20	0.05-0.10	4.5-5.5	Low----------	0.10	
51----------	0-30	5-10	6.0-20	0.05-0.08	4.5-5.5	Very low-----	0.10	5
Pelham	30-85	15-30	0.6-2.0	0.10-0.13	4.5-5.5	Low----------	0.24	
52----------	0-31	2-10	6.0-20	0.07-0.12	3.6-5.5	Low----------	0.10	5
Pickney	31-82	1-10	6.0-20	0.03-0.11	4.5-6.0	Low----------	0.10	
53----------	0-57	2-7	2.0-6.0	0.03-0.08	3.6-5.5	Very low-----	0.10	5
Plummer	57-85	15-30	0.6-2.0	0.10-0.13	3.6-5.5	Very low-----	0.15	
55----------	0-10	5-20	2.0-6.0	0.08-0.12	4.5-6.5	Low----------	0.20	5
Rains	10-90	18-35	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.24	
57----------	0-9	10-20	2.0-6.0	0.10-0.15	5.1-7.3	Low----------	0.24	5
Santee	9-65	35-60	0.06-0.2	0.14-0.18	5.6-7.8	Moderate-----	0.32	
	65-75	---	---	---	---	----------	----	
58----------	0-7	5-12	6.0-20	0.07-0.11	4.5-6.5	Low----------	0.15	5
Scranton	7-85	3-12	6.0-20	0.05-0.11	4.5-5.5	Low----------	0.10	
59----------	0-14	0-3	6.0-20.0	0.03-0.06	3.6-6.0	Low----------	0.10	5
Seagate	14-20	3-10	6.0-20.0	0.05-0.12	3.6-6.0	Low----------	0.15	
	20-29	1-5	2.0-6.0	0.03-0.06	3.6-6.0	Low----------	0.10	
	29-85	10-35	0.6-2.0	0.12-0.20	3.6-6.0	Low----------	0.28	
62----------	0-13	5-15	6.0-20	0.06-0.11	4.5-6.5	Low----------	0.17	5
Yauhannah	13-65	18-35	0.6-2.0	0.11-0.16	4.5-6.0	Low----------	0.24	
	65-98	5-15	2.0-20	0.06-0.12	4.5-6.0	Low----------	0.17	
64----------	0-12	5-20	0.6-2.0	0.10-0.15	4.5-6.0	Low----------	0.24	5
Wahee	12-80	35-55	0.06-0.2	0.12-0.20	3.6-5.5	Moderate-----	0.28	
65B----------	0-99	2-6	>20	0.03-0.08	4.5-6.0	Low----------	0.17	
Lakeland								
66----------	0-22	2-12	2.0-6.0	0.05-0.11	3.6-6.5	Low----------	0.15	5
Williman	22-67	18-35	0.6-2.0	0.10-0.16	3.6-5.5	Low----------	0.15	
68----------	0-10	5-15	6.0-20	0.06-0.11	3.6-6.0	Low----------	0.15	5
Yemassee	10-65	18-35	0.6-2.0	0.11-0.18	3.6-5.5	Low----------	0.20	
	65-80	12-40	0.6-2.0	0.11-0.17	3.6-5.5	Low----------	0.20	
69----------	0-47	2-12	6.0-20	0.05-0.11	4.5-6.5	Low----------	0.15	5
Murad	47-78	10-25	0.6-2.0	0.10-0.17	4.5-6.5	Low----------	0.20	
70----------	0-7	27-40	0.06-0.2	0.20-0.25	3.6-5.5	Low----------	0.20	5
Levy	7-60	35-60	0.06-0.2	0.16-0.22	3.6-5.5	High---------	0.32	
71*.								
Haplaquents								
73*:								
Torhunta--------	0-11	5-18	2.0-6.0	0.10-0.15	3.6-5.5	Low----------	0.15	5
	11-57	5-18	2.0-6.0	0.10-0.15	3.6-5.5	Low----------	0.15	
	57-80	2-18	6.0-20	<0.05	3.6-6.5	Low----------	0.10	
Osier----------	0-6	5-10	6.0-20	0.03-0.10	4.5-6.0	Low----------	0.10	5
	6-75	5-10	6.0-20	0.03-0.10	4.5-6.0	Low----------	0.10	

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 16.--SOIL AND WATER FEATURES

[See text for definition of terms. The symbol < means less than; > means more than. Absence of an entry indicates that the feature is not a concern or that data were not estimated]

Soil name and map symbol	Hydrologic group	Flooding			High water table			Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Uncoated steel	Concrete
					Ft				
7*. Beaches									
9B*: Fripp	A	Rare	---	---	>6.0	---	---	Low	Low.
Leon	B/D	Rare	---	---	0-1.0	Apparent	Nov-Feb	High	High.
10. Albany	C	None	---	---	1.0-2.5	Apparent	Dec-Mar	High	High.
11. Argent	D	None	---	---	0-1.0	Apparent	Nov-Apr	High	High.
13. Bladen	D	None	---	---	0-1.0	Apparent	Dec-May	High	High.
14B. Blanton	A	None	---	---	5.0-6.0	Perched	Jan-Apr	High	High.
15*. Bohicket	D	Frequent	Very brief	Jan-Dec	+3-0	Apparent	Jan-Dec	High	High.
16A, 16B. Bonneau	A	None	---	---	3.5-5.0	Apparent	Dec-Mar	Low	High.
18B. Alpin	A	None	---	---	>6.0	---	---	Low	High.
19. Cape Fear	D	None	---	---	0-1.5	Apparent	Dec-Apr	High	High.
20*. Capers	D	Frequent	Very brief	Jan-Dec	+1-1.0	Apparent	Jan-Dec	High	High.
21. Chipley	C	None	---	---	2.0-3.0	Apparent	Dec-Apr	Low	High.
22. Chisolm	A	None	---	---	3.5-5.0	Apparent	Jan-Mar	Low	High.
24. Coosaw	D	None	---	---	1.0-2.0	Apparent	Dec-Mar	Moderate	High.
25. Coxville	D	None	---	---	0-1.5	Apparent	Nov-Apr	High	High.
27. Hobcaw	D	None	---	---	+1-1.0	Apparent	Nov-Apr	High	High.
28. Dunbar	D	None	---	---	1.0-2.5	Apparent	Nov-May	High	High.
30. Echaw	B	None	---	---	2.5-5.0	Apparent	Nov-Apr	Low	High.
31B. Eddings	B	None	---	---	3.5-4.5	Apparent	Jan-Feb	Moderate	High.
35. Wadmalaw Variant	D	None	---	---	+1-1.0	Apparent	Dec-Mar	High	High.

See footnote at end of table.

TABLE 16.--SOIL AND WATER FEATURES--Continued

Soil name and map symbol	Hydrologic group	Flooding			High water table			Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Uncoated steel	Concrete
					Ft				
36---------- Goldsboro	B	None--------	---	---	2.0-3.0	Apparent	Dec-Apr	Moderate	High.
37---------- Handsboro	D	Frequent----	Very long	Jan-Dec	+3-0.5	Apparent	Jan-Dec	High-----	High.
38---------- Pungo	D	Rare--------	---	---	0-1.0	Apparent	Dec-May	High-----	High.
40---------- Leon	B/D	None--------	---	---	0-1.0	Apparent	Nov-Feb	High-----	High.
41---------- Lynchburg	C	None--------	---	---	0.5-1.5	Apparent	Nov-Apr	High-----	High.
42---------- Lynn Haven	B/D	None--------	---	---	0-1.0	Apparent	Nov-Apr	High-----	High.
43A, 43B---------- Nemours	C	None--------	---	---	1.5-2.5	Apparent	Dec-Mar	High-----	High.
44A, 44B---------- Norfolk	B	None--------	---	---	4.0-6.0	Apparent	Jan-Mar	Moderate	High.
45---------- Ocilla	C	None--------	---	---	1.0-2.5	Apparent	Dec-Apr	High-----	Moderate.
46---------- Ogeechee	B/D	None--------	---	---	0-0.5	Apparent	Dec-May	High-----	High.
47---------- Okeetee	D	None--------	---	---	0.5-1.0	Apparent	Nov-Apr	High-----	High.
49---------- Osier	A/D	None--------	---	---	+1-1.0	Apparent	Nov-Mar	High-----	High.
50---------- Paxville	B/D	None--------	---	---	+1-1.0	Apparent	Nov-Apr	High-----	High.
51---------- Pelham	B/D	None--------	---	---	0.5-1.5	Apparent	Jan-Apr	High-----	High.
52---------- Pickney	A/D	None--------	---	---	+1-1.0	Apparent	Nov-Apr	High-----	High.
53---------- Plummer	B/D	None--------	---	---	+2-1.5	Apparent	Dec-Jul	Moderate	High.
55---------- Rains	B/D	None--------	---	---	0-1.0	Apparent	Nov-Apr	High-----	High.
57---------- Santee	D	Frequent----	Long------	Dec-Mar	+1-1.0	Apparent	Nov-Apr	High-----	Moderate.
58---------- Scranton	A/D	None--------	---	---	0.5-1.5	Apparent	Nov-Apr	Low------	High.
59---------- Seagate	A/D	None--------	---	---	1.5-2.5	Apparent	Nov-Apr	High-----	High.
62---------- Yauhannah	B	None--------	---	---	1.5-2.5	Apparent	Dec-Mar	Moderate	High.
64---------- Wahee	D	None--------	---	---	0.5-1.5	Apparent	Dec-Mar	High-----	High.

See footnote at end of table.

TABLE 16.--SOIL AND WATER FEATURES--Continued

Soil name and map symbol	Hydrologic group	Flooding			High water table			Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Uncoated steel	Concrete
					Ft				
65B---------- Lakeland	A	None--------	---	---	>6.0	---	---	Low-------	Moderate.
66---------- Williman	B/D	None--------	---	---	0-1.0	Apparent	Dec-Apr	High------	High.
68---------- Yemassee	C	None--------	---	---	1.0-1.5	Apparent	Dec-Mar	High------	High.
69---------- Murad	C	None--------	---	---	1.5-3.0	Apparent	Jan-Mar	Moderate	High.
70---------- Levy	D	Frequent-----	Very long	Jan-Dec	+2-+1	Apparent	Jan-Dec	High------	High.
71*. Haplaquents									
73*: Torhunta---------	C	Frequent-----	Brief------	Nov-Apr	0.5-1.5	Apparent	Dec-May	High------	High.
Osier----------	A/D	None--------	---	---	+1-1.0	Apparent	Nov-Mar	High------	High.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 17.--CLASSIFICATION OF THE SOILS

Soil name	Family or higher taxonomic class
Albany	Loamy, siliceous, thermic Grossarenic Paleudults
Alpin	Thermic, coated Typic Quartzipsamments
Argent	Fine, mixed, thermic Typic Ochraqualfs
Bladen	Clayey, mixed, thermic Typic Albaquults
Blanton	Loamy, siliceous, thermic Grossarenic Paleudults
Bohicket	Fine, mixed, nonacid, thermic Typic Sulfaquents
Bonneau	Loamy, siliceous, thermic Arenic Paleudults
Cape Fear	Clayey, mixed, thermic Typic Umbraquults
Capers	Fine, mixed, nonacid, thermic Typic Sulfaquents
Chipley	Thermic, coated Aquic Quartzipsamments
Chisolm	Loamy, siliceous, thermic Arenic Hapludults
Coosaw	Loamy, siliceous, thermic Arenic Hapludults
Coxville	Clayey, kaolinitic, thermic Typic Paleaquults
Dunbar	Clayey, kaolinitic, thermic Aeric Paleaquults
Echaw	Sandy, siliceous, thermic Entic Haplohumods
Eddings	Loamy, siliceous, thermic Grossarenic Paleudults
Fripp	Thermic, uncoated Typic Quartzipsamments
Goldsboro	Fine-loamy, siliceous, thermic Aquic Paleudults
Handsboro	Euic, thermic Typic Sulfihemists
Hobcaw	Fine-loamy, siliceous, thermic Typic Umbraquults
Lakeland	Thermic, coated Typic Quartzipsamments
Leon	Sandy, siliceous, thermic Aeric Haplaquods
Levy	Fine, mixed, acid, thermic Typic Hydraquents
Lynchburg	Fine-loamy, siliceous, thermic Aeric Paleaquults
Lynn Haven	Sandy, siliceous, thermic Typic Haplaquods
Murad	Loamy, siliceous, thermic Grossarenic Paleudults
Nemours	Clayey, mixed, thermic Aquic Hapludults
Norfolk	Fine-loamy, siliceous, thermic Typic Paleudults
Ocilla	Loamy, siliceous, thermic Aquic Arenic Paleudults
Ogeechee	Fine-loamy, siliceous, thermic Typic Ochraquults
Okeetee	Fine, mixed, thermic Aeric Ochraqualfs
Osier	Siliceous, thermic Typic Psammaquents
Paxville	Fine-loamy, siliceous, thermic Typic Umbraquults
Pelham	Loamy, siliceous, thermic Arenic Paleaquults
Pickney	Sandy, siliceous, thermic Cumulic Humaquepts
Plummer	Loamy, siliceous, thermic Grossarenic Paleaquults
Pungo	Dysic, thermic Typic Medisaprists
Rains	Fine-loamy, siliceous, thermic Typic Paleaquults
Santee	Fine, mixed, thermic Typic Argiaquolls
Scranton	Siliceous, thermic Humaqueptic Psammaquents
Seagate	Sandy over loamy, siliceous, thermic Typic Haplohumods
*Torhunta	Coarse-loamy, siliceous, acid, thermic Typic Humaquepts
Wadmalaw Variant	Fine-loamy, siliceous, thermic Umbric Ochraqualfs
Wahee	Clayey, mixed, thermic Aeric Ochraquults
Williman	Fine-loamy, siliceous, thermic Typic Ochraquults
Yauhannah	Fine-loamy, siliceous, thermic Aquic Hapludults
Yemassee	Fine-loamy, siliceous, thermic Aeric Ochraquults

*This soil is a taxadjunct to the series. See text for description of those characteristics of the soil that are outside the range of the series.

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