United States
Department of
Agriculture

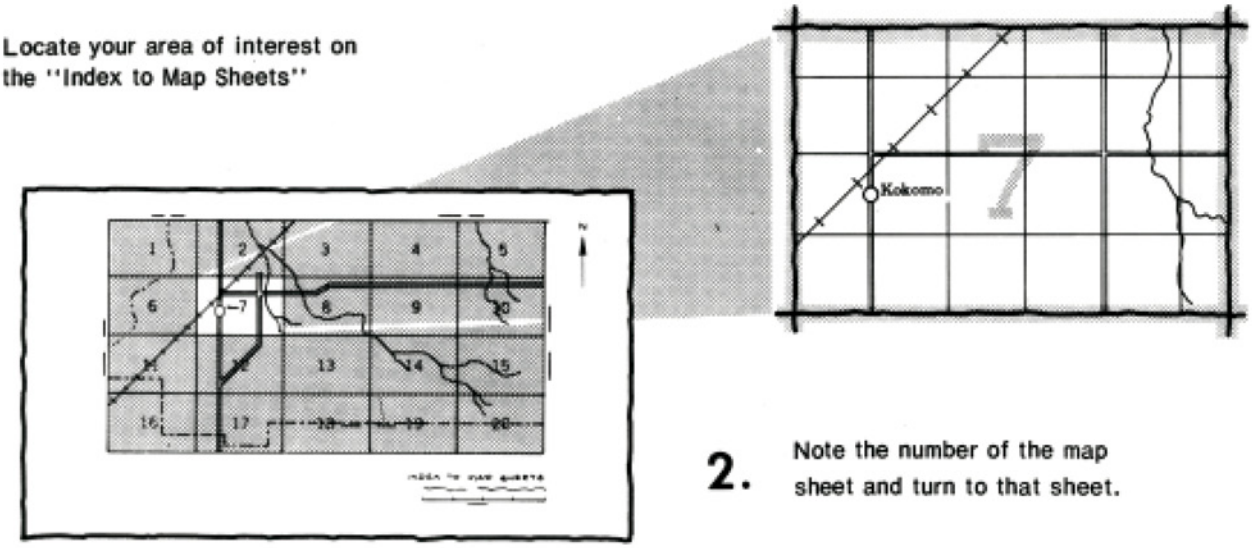
Soil
Conservation
Service

In Cooperation with
University of Georgia
College of Agriculture
Agricultural
Experiment Stations

Soil Survey of Dooly and Macon Counties, Georgia

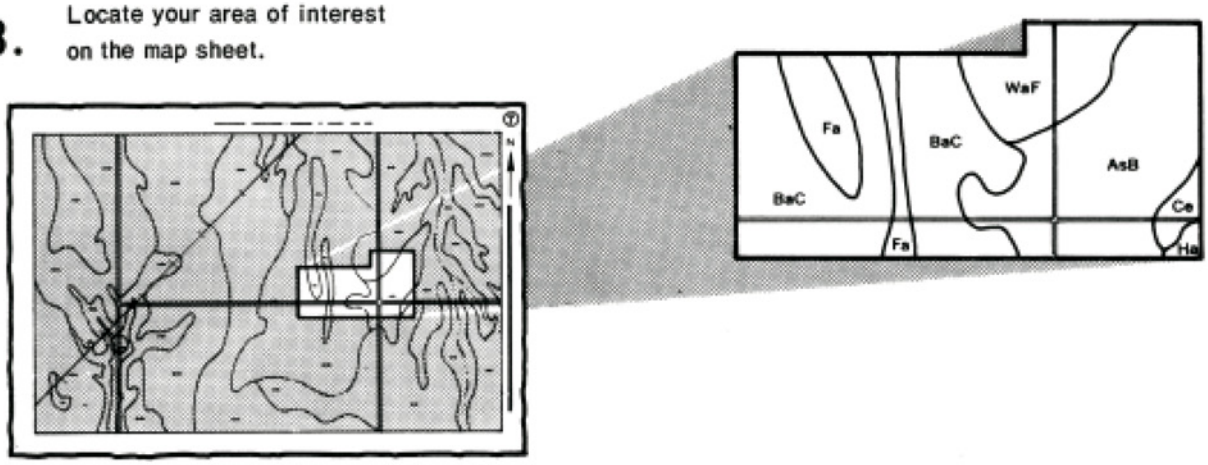
HOW TO USE

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

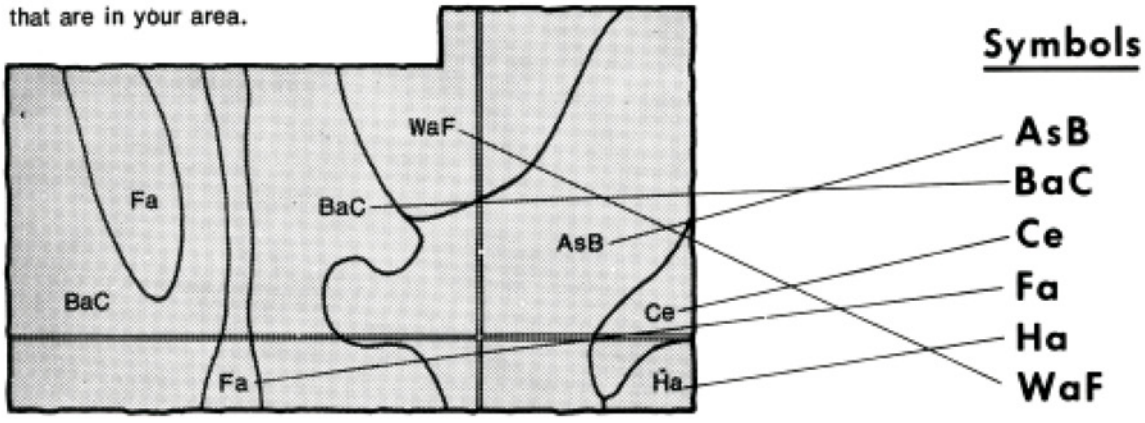


2. Note the number of the map sheet and turn to that sheet.

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

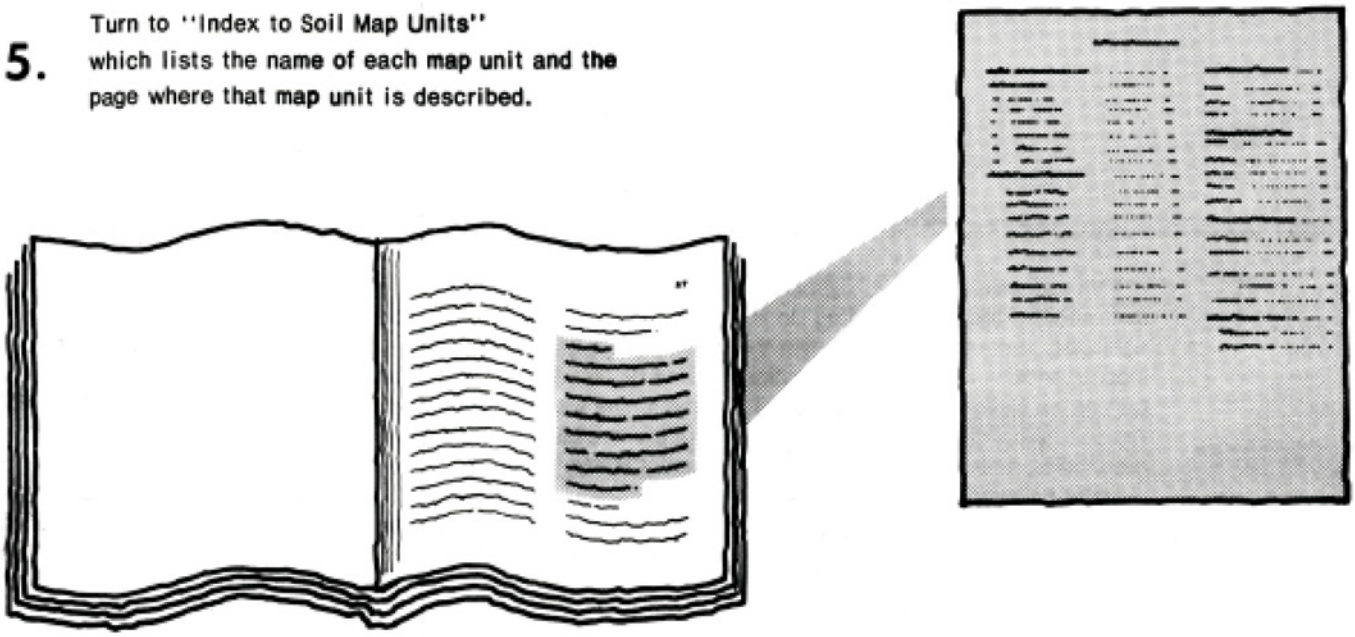


4. List the map unit symbols that are in your area.

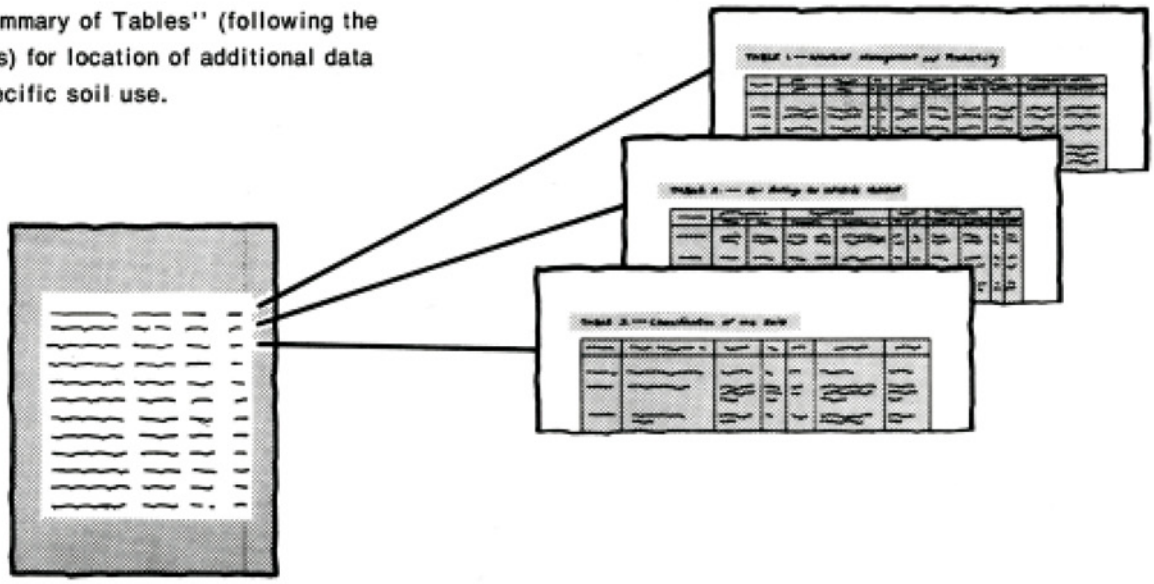


THIS SOIL SURVEY

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



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



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

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

Major fieldwork for this soil survey was performed in the period 1976-79. Soil names and descriptions were approved in 1980. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1980. This survey was made cooperatively by the Soil Conservation Service and the University of Georgia, College of Agriculture, Agricultural Experiment Stations. It is part of the technical assistance furnished to the Ocmulgee Soil and Water Conservation District.

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

Cover: Row crop planted on the contour on Tifton loamy sand, 0 to 5 percent slopes. Terraces supplement the contoured rows in reducing runoff and controlling erosion on this prime farmland.

contents

soil series

Issued December 1983

index to map units

summary of tables

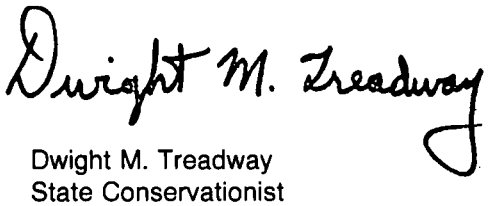
foreword

This soil survey contains information that can be used in land-planning programs in Dooly and Macon Counties. 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.

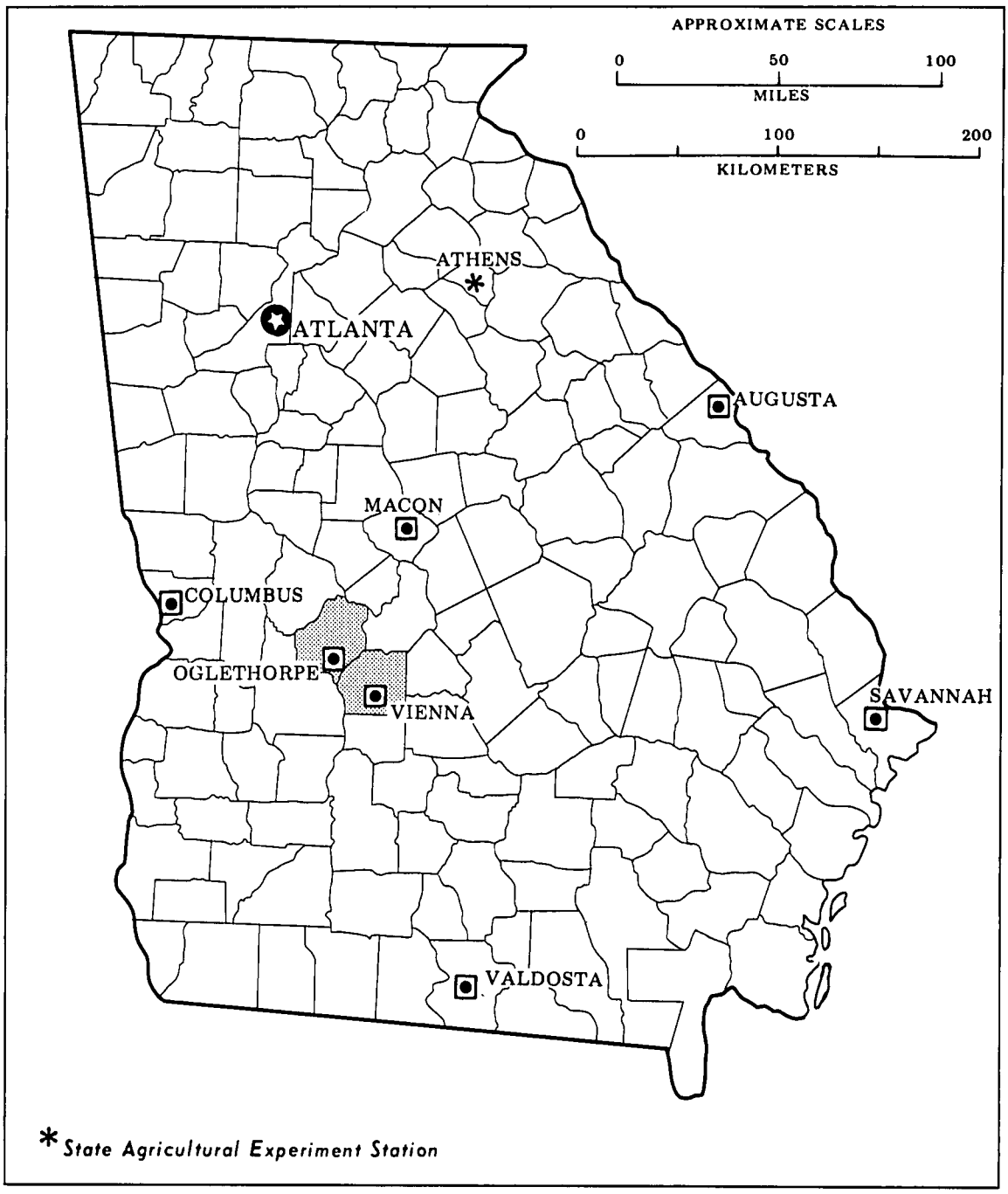
This soil survey is designed for many different users. Farmers, foresters, and agronomists can use it to evaluate the potential of the soil and the management needed for maximum food and fiber production. Planners, community officials, engineers, developers, builders, and home buyers can use the survey 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 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.



Dwight M. Treadway
State Conservationist
Soil Conservation Service



Location of Dooly and Macon Counties in Georgia.

soil survey of
Dooly and Macon Counties, Georgia

By John C. Woods and Ernest H. Smith, Soil Conservation Service

Fieldwork by John C. Woods and Richard A. Johnston,
Soil Conservation Service

United States Department of Agriculture,
Soil Conservation Service, in cooperation with
University of Georgia,
College of Agriculture, Agricultural Experiment Stations

Dooly and Macon Counties are in the south-central part of Georgia. They cover an area of 797.1 square miles, or 510,144 acres. Dooly County has 252,480 acres and Macon County has 257,664 acres. Vienna is the county seat of Dooly County, and Oglethorpe is the county seat of Macon County.

Dooly and Macon Counties are in two major land resource areas. The northwestern part of the survey area is mainly in the Carolina and Georgia Sand Hills and is made up mostly of very gently sloping to moderately steep soils on uplands. The rest of the survey area is in the Southern Coastal Plain and is made up of nearly level to sloping soils on uplands. Nearly level soils on flood plains are along the Flint River and larger creeks. The flood plains are somewhat wider along the river than along the creeks. Most of the soils in the Sand Hills are well drained or excessively drained and have a predominantly sandy surface layer and a predominantly loamy subsoil or sandy underlying layer. Most of the soils in the Southern Coastal Plain are well drained and have a sandy or loamy surface layer and a predominantly loamy or clayey subsoil. The soils on flood plains; on broad, smooth upland areas; or near drainageways are poorly drained to well drained. They have a loamy or sandy surface layer and a predominantly loamy subsoil or underlying layer.

Many of the soils on the upland ridgetops of the Sand Hills are used for cultivated crops and pasture. The soils on hillsides are mainly wooded. Most of these soils are droughty.

Most of the soils on the upland ridgetops of the Southern Coastal Plain are essentially uneroded. Many of the soils on hillsides, however, commonly are eroded. The better drained, nearly level to gently sloping soils that have a loamy or clayey subsoil are well suited to farming and to many nonfarm uses.

The first soil survey of Dooly County was published in 1926 (*6*). This survey updates the first survey and provides additional information. No previous soil survey has been published for Macon County.

general nature of the counties

Carneth E. Goff, Jr., area conservationist, Windal R. Smith, district conservationist, and Moses Gloster, soil conservationist, assisted in preparing this section.

This section contains general information concerning Dooly and Macon Counties. It describes climate; settlement; physiography, relief, and drainage; farming; water supply; water quality; natural resources; and industries, utilities, and transportation.

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 Marshallville in the period 1957 to 1977. 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 47 degrees F, and the average daily minimum temperature is 36 degrees. The lowest temperature on record, which occurred at Marshallville on December 13, 1962, is 1 degree. In summer the average temperature is 79 degrees, and the average daily maximum temperature is 91 degrees. The highest recorded temperature, which occurred on June 21, 1964, is 103 degrees.

Growing degree days are shown in table 3. 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.

Of the total annual precipitation, 27 inches, or 50 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 23 inches. The heaviest 1-day rainfall during the period of record was 5.42 inches at Marshallville on December 6, 1972. Thunderstorms occur on about 60 days each year, and most occur in summer.

Average seasonal snowfall is 1 inch. The greatest snow depth at any one time during the period of record was 15 inches. On an average, seldom is there a day with at least 1 inch of snow, but the number of such days varies greatly from year to year.

The average relative humidity in midafternoon is about 50 percent. Humidity is higher at night, and the average at dawn is about 85 percent. The sun shines 70 percent of the time possible in summer and 55 percent in winter. The prevailing wind is from the west-northwest. Average windspeed is highest, 9 miles per hour, in spring.

Severe local storms, including tornadoes, strike occasionally in or near the area. They are short and cause variable and spotty damage. Every few years in summer or autumn, a tropical depression or remnant of a hurricane which has moved inland causes extremely heavy rains for 1 to 3 days.

settlement

Dooly County was established by an act of the General Assembly of Georgia on May 15, 1821. The land had earlier been acquired from the Creek Indians by treaty. Dooly County was 48th in order of organization of Georgia's 159 counties. At the time Dooly County was organized, it included what is now Crisp County and parts of Lee and Worth Counties. Dooly County was named for Colonel John Dooly, an officer in the Revolutionary War. Vienna, the county seat, was named for the famous Austrian capital on the Danube.

Macon County was established by an act of the General Assembly of Georgia on December 14, 1837, from parts of Houston and Marion Counties. It was 90th in order of organization of Georgia's 159 counties. Macon County was named for Nathaniel Macon of North Carolina, a noted statesman. Oglethorpe, the county seat, was named for the founder of the Colony of Georgia.

physiography, relief, and drainage

Dooly and Macon Counties are in the Southern Coastal Plain and in the Carolina and Georgia Sand Hills Major Land Resource Areas. Elevation ranges from 239 feet near Drayton at the Flint River in the southwestern part of Dooly County to 536 feet near the Taylor county line in the northwestern part of Macon County.

The soils on uplands are mainly well drained. Dooly County and the eastern part of Macon County consist mainly of broad, nearly level soils on convex ridgetops and very gently sloping and gently sloping soils on convex ridgetops and short and convex hillsides. The extreme northwestern part of the survey area consists mainly of very gently sloping and gently sloping soils on ridgetops and sloping or moderately steep soils on hillsides. The landscape is dissected by numerous small drainageways. The slopes on ridgetops commonly are smooth and convex, and the slopes on hillsides commonly are irregular and convex.

The nearly level soils on flood plains are predominantly poorly drained. They are along the Flint River, Turkey Creek, Pennahatchee Creek, Little Pennahatchee Creek, Buck Creek, Whitewater Creek, Beaver Creek, and Hogcrawl Creek and their tributaries. In most of the survey area the flood plains are somewhat narrow, but along the Flint River they are wide. The soils along the major streams and their tributaries are subject to frequent overflow during winter and spring. These soils drain off slowly and remain wet for long periods. If the slightly higher lying and better drained soils on flood plains of the Flint River are protected from flooding and properly managed, they are suited to farming.

The major drainage system for both counties is made up of the Flint River, Turkey Creek, Pennahatchee Creek, Little Pennahatchee Creek, Beaver Creek, and Hogcrawl Creek and their tributaries. The Flint River flows through the middle of Macon County. It forms the western boundary of Dooly County, and, together with its tributaries, drains the western part of the county. Important tributaries are Turkey Creek, Pennahatchee Creek, Little Pennahatchee Creek, and Hogcrawl Creek. Big Creek and Cedar Creek and their tributaries drain the eastern part of Dooly County.

The Flint River and its tributaries drain most of Macon County; however, Big Indian Creek and its tributaries drain the northeastern part. Each of the tributaries of the

major streams has its own small tributaries that branch into the uplands and form a well defined trellis pattern.

farming

The soils in Dooly and Macon Counties have been used mainly for farming since they were settled. Most of the farm income is derived from cultivated crops, mainly cotton, peanuts, corn, soybeans, and small grain. Some truck crops are grown for canning. In the last 15 years, the amount of land used for cotton production in Dooly County has steadily increased to about 50,000 acres; the county is a leading producer of cotton in the State. Dairy and poultry products, beef cattle, and hogs are important sources of farm income. About 48 percent of the two counties is wooded.

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

In 1974, the number of farms in Dooly County was 392, with a total of 176,615 acres. This number of farms was 14 percent of the peak number in 1920. By 1974, acreage in farms had declined to about 70 percent of the total land area. In 1974, the number of farms in Macon County was 344, with a total of 170,820 acres. This number of farms was 18 percent of the peak number in 1930. In 1974, the acreage in farms was about 66 percent of the total land area.

water supply

Dooly and Macon Counties have abundant ground water resources. Water for municipal, industrial, and farm uses is supplied by wells drilled into aquifers. Most of the domestic wells in the counties have a diameter of 3 to 6 inches and are between 125 and 200 feet deep. These deep wells produce an adequate supply of water even during dry periods. Recently, wells that are 8 to 18 inches in diameter and range from 250 to 700 feet deep have been used to supply water for irrigation.

In addition to the ground water resources, water can be obtained from the Flint River and from the many branches, creeks, and springs that flow through the area. Many farm ponds provide water for domestic and recreation uses.

water quality

The Federal Water Pollution Control Act Amendments of 1972 focused national attention on water quality. Section 208 of the Act requires States to develop plans for controlling surface water pollution from non-point sources.

The plan and guidelines developed in Georgia to meet the provisions of Section 208 pinpointed Dooly County as having the greatest potential for harming water quality through non-point source pollution. This fact was determined because of the high proportion of cropland in the county and because peanuts and cotton, the county's main crops, require significant amounts of chemicals in their production. The high volume of chemicals coupled with excessive sheet erosion, averaging a loss of ten tons of soil per acre per year, present a high potential for adverse effects on the water quality.

natural resources

Soil is the most important resource in Dooly and Macon Counties. Well managed soils produce abundant crops for marketing. The raising of livestock and the production of trees are also of important economic value.

The southwestern part of Macon County produces some kaolin. Kaolin is the main ingredient for coating the high quality paper used in some magazines and books. It is also used in the manufacture of rubber, linoleum, oilcloth, paint, fertilizers, insecticides, and many other products.

industries, utilities, and transportation

The soils in Dooly and Macon Counties are used mainly for farming. Most farm products can be marketed locally. The wood cellulose industry, vegetable processing plants, and the kaolin industry employ several hundred people.

Electric power and telephone service are available throughout both counties. Natural gas is supplied to the major towns and cities. Railroads, trucklines, and buses provide shipping and transportation facilities. Air service is available in Macon County. State highways and county roads are throughout the counties and Interstate Highway 75 extends north and south through the middle of Dooly County.

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, woodland managers, engineers, planners, developers and builders, home buyers, and others.

general soil map units

The general soil maps at the back of this publication show broad areas that have a distinctive pattern of soils, relief, and drainage. Each map unit on the general soil maps 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 maps can be used to compare the suitability of large areas for general land uses. Areas of suitable soils can be identified on the maps. Likewise, areas where the soils are not suitable can be identified.

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

The soils in the survey area differ in suitability for major land uses. In this section, the major land uses for each unit are given, the main concerns of management are pointed out, and soil properties that limit use are indicated. Cultivated farm crops are mainly cotton, corn, soybeans, and peanuts. Pasture crops are mainly improved bermudagrass and bahiagrass. Woodland produces either native trees or introduced species. Nonfarm uses include residential, commercial, and industrial developments; and campsites, picnic areas, ballfields, and other places for intensive recreation.

Dooly County

very poorly drained to somewhat poorly drained soils on flood plains

Two units in Dooly County are made up of nearly level, predominantly loamy, very poorly drained to somewhat poorly drained soils on flood plains. Slope ranges from 0 to 2 percent. The very poorly drained and poorly drained soils commonly are in somewhat lower lying positions than the somewhat poorly drained soils. The very poorly drained soils are predominantly grayish throughout. The poorly drained soils have a predominantly brownish surface layer and a gray, mottled subsoil or underlying layers. The somewhat poorly drained soils are mainly brownish except for the middle and lower parts of the soil, which are mottled.

1. Chewacla-Chastain-Humaquepts

Nearly level, somewhat poorly drained to very poorly drained soils that have a loamy surface layer and a loamy or clayey subsoil or mainly loamy underlying layers; on flood plains

The soils in this unit are on the flood plain of the Flint River. The soils in low lying positions are poorly drained or very poorly drained and generally are near the uplands. The soils in higher lying positions are better drained and are nearer to the river. These soils commonly are periodically flooded in winter and spring. Slope is 0 to 2 percent.

This unit makes up about 2 percent of Dooly County. It is about 24 percent Chewacla soils, 18 percent Chastain soils, and 18 percent Humaquepts. The rest is soils of minor extent.

The Chewacla soils are somewhat poorly drained. Typically, the surface layer is dark grayish brown loam about 6 inches thick. The subsoil extends to a depth of 60 inches. The upper part is brown and grayish brown silt loam, the middle part is grayish brown silty clay loam that has light gray and strong brown mottles, and the lower part is mottled grayish brown, light gray, and strong brown silty clay loam. The underlying material to a depth of 70 inches or more is mottled light gray and yellowish brown loamy sand and sandy loam that is stratified.

The Chastain soils are poorly drained. Typically, the surface layer is silt loam about 7 inches thick. The upper part is dark grayish brown, and the lower part is very dark gray. The subsoil to a depth of 48 inches or more is gray silty clay and clay that is mottled yellowish brown.

Humaquepts are very poorly drained and in many places are covered by water much of the year. Typically, Humaquepts are very dark gray silt loam to a depth of 20 inches. This material is slightly sticky and has large amounts of matted roots. The underlying material is black, dark grayish brown, or dark gray silty clay loam or clay to a depth of 40 inches or more.

Of minor extent are the Cahaba, Ocilla, Riverview, and Wahee soils. The well drained Cahaba soils and somewhat poorly drained Ocilla soils are on higher stream terraces. The moderately well drained Riverview soils are on the flood plain with the major soils. The somewhat poorly drained Wahee soils are on stream

terraces. They are in a slightly higher position than the major soils on the flood plain.

The soils in this unit are wooded; however, the better drained areas could be used for cultivated crops or pasture if extensive flood control and drainage measures were installed and maintained. Most areas are well suited to wood production. However, limited use of equipment and seedling mortality are management concerns in most places. Most areas of these soils are poorly suited to farming and to most urban and recreation uses unless they are drained. The hazard of flooding and wetness are the main concerns in use and management. These limitations can be overcome only by extensive flood control and drainage measures.

2. Bibb-Kinston

Nearly level, poorly drained soils that have a loamy surface layer and a loamy subsoil or mainly sandy underlying layers; on flood plains

The soils in this unit are on flood plains of narrow streams and smaller tributaries throughout most of Dooly County. These soils are in low lying positions and commonly are flooded periodically from late in fall to early in summer. Slope is 0 to 2 percent.

This unit makes up about 8 percent of Dooly County. It is about 52 percent Bibb soils and 36 percent Kinston soils. The rest is soils of minor extent.

The Bibb soils have mainly a loamy surface layer and sandy underlying layers. Typically, the surface layer is dark gray loam about 6 inches thick. The underlying layers are stratified sandy loam and loamy sand that extend to a depth of 60 inches or more. These layers are light gray and have dark grayish brown mottles.

The Kinston soils are loamy throughout. Typically, the surface layer is predominantly dark grayish brown fine sandy loam about 10 inches thick. The subsoil is predominantly sandy clay loam that extends to a depth of 45 inches. It is gray throughout and has brown and yellow mottles. The underlying material to a depth of 65 inches or more is gray sandy loam that is stratified.

Of minor extent in this unit are the Herod and Wahee soils and Humaquepts. Herod soils are mainly on the flood plain near Limestone Creek. Wahee soils are on slightly higher stream terraces. Humaquepts are on the flood plain with the major soils.

The soils in this unit are used mostly for woodland. Some small areas are used for pasture. Most areas are well suited to wood production; however, limited use of equipment and seedling mortality are management concerns in most places. The soils in this unit are poorly suited to farming and urban uses. The hazard of flooding and wetness are the chief concerns in use and management.

predominantly well drained soils on uplands and poorly drained soils in depressions

Six units in Dooly County are made up of predominantly well drained soils and poorly drained soils of the Southern Coastal Plain. The predominantly well drained soils are on uplands. The nearly level soils are on ridgetops; the very gently sloping and gently sloping soils are on ridgetops and hillsides; and the sloping and moderately steep soils are on hillsides. The poorly drained soils mainly are in nearly level depressions. Slope ranges from 0 to 20 percent. The upland soils have mainly a brownish, loamy or sandy surface layer and a reddish or brownish, mottled subsoil that is clayey or loamy. The soils in depressions are loamy throughout and have a brownish surface layer and a grayish subsoil.

3. Faceville-Orangeburg-Greenville

Predominantly nearly level to sloping soils that are well drained and have a loamy or sandy surface layer and a clayey or loamy subsoil; on uplands

The nearly level and very gently sloping soils in this unit are on broad, smooth, convex ridgetops. The gently sloping to moderately steep soils commonly are along the entrenched drainageways and form short irregular hillsides. These soils mainly are in an area that extends from the western part of Vienna through Lilly, Byronville, and Dooling. A small area is near Pinehurst and another area is in the northeastern part of the county. Slopes are predominantly 0 to 5 percent but range to 20 percent.

This unit makes up about 24 percent of Dooly County. It is about 45 percent Faceville soils, 26 percent Orangeburg soils, and 7 percent Greenville soils. The rest is soils of minor extent.

The Faceville soils have a loamy surface layer and a predominantly red, clayey subsoil. Typically, the surface layer is brown sandy loam about 6 inches thick. The subsoil is predominantly sandy clay that extends to a depth of 65 inches or more. The upper part is yellowish red, and the rest of the subsoil is red except for the lower part, which has brownish yellow mottles.

The Orangeburg soils have a sandy surface layer and a predominantly red, loamy subsoil. Typically, the surface layer is dark grayish brown loamy sand about 10 inches thick. The subsoil is predominantly sandy clay loam that extends to a depth of 65 inches or more. The upper part is yellowish red, and the rest is red.

The Greenville soils have a loamy surface layer and a predominantly dark red, clayey subsoil. Typically, the surface layer is dark reddish brown sandy loam about 8 inches thick. The subsoil extends to a depth of 72 inches or more. The upper few inches is dark reddish brown sandy clay loam, and the rest is dark red sandy clay.

Of minor extent in this unit are the Bibb, Dothan, Fuquay, Grady, Kinston, and Ochlockonee soils. The poorly drained Bibb and Kinston soils are in long, narrow, winding drainageways. The well drained Dothan and Fuquay soils occupy a position on the landscape similar to the major soils. The poorly drained Grady soils are in depressions. The well drained Ochlockonee soils are in draws and small depressions, and on narrow flood plains.

The soils in this unit are used mainly for cultivated crops and pasture, but some areas are wooded. They are well suited to these uses. Hogs and beef cattle are the main livestock. Soils on slopes that have no plant cover need to be protected from erosion. These soils are well suited to most urban use and recreational development. Irregularly shaped, sloping to moderately steep areas need to be specially considered when planning use and management.

4. Dothan-Tifton

Nearly level to gently sloping, well drained soils that predominantly have a sandy surface layer and a loamy subsoil; on uplands

The soils in this unit are on broad, smooth ridgetops and on short, irregular hillsides. These soils are in the middle and northern parts of Dooly County. Slope ranges from 0 to 8 percent.

This unit makes up about 34 percent of Dooly County. It is about 42 percent Dothan soils and 34 percent Tifton soils. The rest is soils of minor extent.

The Dothan soils have less than 5 percent nodules of ironstone in the surface layer and in the upper part of the subsoil. Typically, the surface layer is dark grayish brown loamy sand about 9 inches thick. The subsurface layer is brown loamy sand that extends to a depth of 13 inches. The subsoil is predominantly sandy clay loam that extends to a depth of 65 inches or more. It is yellowish brown throughout except for the lower part, which has red, strong brown, and light gray mottles. Plinthite is below a depth of 30 inches and makes up 5 to 10 percent of the soil.

The Tifton soils have 5 percent or more nodules of ironstone in the surface layer and in the upper part of the subsoil. Typically, the surface layer is dark grayish brown loamy sand about 8 inches thick. The subsoil is dominantly sandy clay loam that extends to a depth of 65 inches or more. The upper part is yellowish brown; the middle part is yellowish brown and has red mottles; and the lower part is mottled red, yellowish brown, and gray. Plinthite is below a depth of about 38 inches and makes up 10 to 15 percent of the lower part of the subsoil.

Of minor extent in this unit are the Bibb, Fuquay, Grady, Kinston, and Nankin soils. The poorly drained Bibb and Kinston soils are in drainageways. The Fuquay soils occupy a position on the landscape similar to the major soils. The poorly drained Grady soils are in depressions and are seasonally ponded. The Nankin soils commonly are on irregular hillsides near the gently sloping major soils.

The soils in this unit are used mainly for cultivated crops. A few areas are in pasture or woodland. The soils are well suited to these uses. Hogs and beef cattle are the main livestock. Soils on slopes that have no plant cover need to be protected from erosion. These soils are well suited to most urban use and recreational development. Irregularly shaped, gently sloping areas need to be specially considered when planning use and management.

5. Tifton-Dothan-Rains

Nearly level and very gently sloping, well drained soils that have a sandy surface layer and a loamy subsoil, on uplands; and nearly level, poorly drained, loamy soils, mainly in depressions

The well drained soils in this unit are on smooth and convex ridgetops and hillsides, and the poorly drained soils are in depressions and on broad, smooth areas. Most streams originate within the unit; only the large streams have their sources in other places. These soils are in the southern part of Dooly County. Slope ranges from 0 to 5 percent.

This unit makes up about 10 percent of Dooly County. It is about 50 percent Tifton soils, 18 percent Dothan soils, and 17 percent Rains soils. The rest is soils of minor extent.

The Tifton soils are on uplands and have 5 percent or more nodules of ironstone in the surface layer and in the upper part of the subsoil. Typically, the surface layer is dark grayish brown loamy sand about 8 inches thick. The subsoil is dominantly sandy clay loam that extends to a depth of 65 inches or more. The upper part is yellowish brown; the middle part is yellowish brown and has red mottles; and the lower part is mottled red, yellowish brown, and gray. Plinthite is below a depth of about 38 inches and makes up about 10 to 15 percent of the lower part of the subsoil.

The Dothan soils are on uplands and have less than 5 percent nodules of ironstone in the surface layer and in the upper part of the subsoil. Typically, the surface layer is dark grayish brown loamy sand about 9 inches thick. The subsurface layer is brown loamy sand that extends to a depth of 13 inches. The subsoil is predominantly sandy clay loam that extends to a depth of 65 inches or more. It is yellowish brown throughout except for the lower part, which has red, strong brown, and light gray mottles. Plinthite is below a depth of 30 inches and makes up 5 to 10 percent of the soil.

The Rains soils are in depressions and on broad, smooth areas. Typically, the surface layer is very dark grayish brown sandy loam about 8 inches thick. The subsurface layer is gray sandy loam about 7 inches thick. The subsoil is predominantly sandy clay loam that extends to a depth of 65 inches or more. It is gray throughout except for the lower part, which has yellowish brown, red, and strong brown mottles.

Of minor extent in this unit are the Ardilla, Clarendon, Fuquay, and Grady soils. The somewhat poorly drained Ardilla soils and moderately well drained Clarendon soils are on smooth, low lying, upland areas that are somewhat higher than the nearby depressions. The well drained Fuquay soils are on ridgetops and hillsides. The poorly drained Grady soils are in depressions.

The soils on uplands in this unit are used mainly for cultivated crops, pecans, and truck crops. Pasture and forest products are also important crops. The soils are well suited to these uses. Hogs and beef cattle are the main livestock. The main concern in management on the uplands is controlling erosion. In the wooded, depressional areas, the main concern in management is overcoming wetness. The seasonal high water table severely limits most uses of these soils. Except for the Rains soils, the soils in this unit are well suited to most urban use and recreational development. The Rains soils, which are poorly drained, are poorly suited. Unless outlets are available for drainage, overcoming this limitation on the Rains soils is difficult.

6. Nankin-Cowarts-Susquehanna

Very gently sloping to sloping, well drained and somewhat poorly drained soils that have a loamy surface layer and a clayey or loamy subsoil; on uplands

The soils in this unit are on an undulating landscape. The soils on the narrow ridgetops are smooth and convex, and the soils on the hillsides commonly are short and irregular and have rills and occasional gullies. The soil pattern of occurrence is complex. This unit is only in the southeastern part of Dooly County. Slope ranges from 2 to 12 percent.

This unit makes up about 9 percent of Dooly County. It is about 47 percent Nankin soils, 33 percent Cowarts soils, and 9 percent Susquehanna soils. The rest is soils of minor extent.

The Nankin soils are well drained and have a clayey subsoil. Typically, the surface layer is brown sandy clay loam about 5 inches thick. The subsoil extends to a depth of 50 inches. The upper part is strong brown sandy clay loam; the middle part is strong brown sandy clay that has yellowish brown and light gray mottles; and the lower part is mottled strong brown, light gray, and red sandy clay loam. The underlying material to a depth of 60 inches or more is mottled strong brown, light gray, and red sandy loam.

The Cowarts soils are well drained and have a loamy subsoil. Typically, the surface layer is dark grayish brown sandy loam about 8 inches thick. The subsurface layer is light yellowish brown sandy loam to a depth of 15 inches. The subsoil is predominantly sandy clay loam that extends to a depth of 38 inches. It is yellowish brown throughout except for the lower part, which has strong brown and yellowish red mottles. The underlying material to a depth of 60 inches or more is mottled yellowish red, yellowish brown, light gray, and red sandy clay loam. A few nodules of ironstone are on the surface and throughout most of the soil.

The Susquehanna soils are somewhat poorly drained and have a clayey subsoil. They are more clayey than other soils in the unit. Typically, the surface layer is dark gray sandy loam about 5 inches thick. The subsurface layer is brown clay loam about 5 inches thick. The subsoil is clay that extends to a depth of 65 inches or more. The upper part is yellowish red and has red and gray mottles, and the lower part is mottled gray, red, and brown.

Of minor extent in this unit are the Ardilla, Bibb, Clarendon, and Kinston soils. The poorly drained Bibb and Kinston soils are on flood plains. The somewhat poorly drained Ardilla soils and moderately well drained Clarendon soils are on smooth, low lying, upland areas.

The soils in this unit are used mainly for woodland, but some areas are in small cultivated fields and pasture. Most of the soils are only moderately suited to most uses because of unfavorable soil conditions. The soils do not lend themselves well to the use of modern agricultural equipment because of the undulating landscape and complex soil pattern. The main concern in management is controlling erosion. The moderately slow to very slow permeability of the soils and the large amount of clay in most of the subsoils are the main limitations for most nonfarm uses.

7. Ardilla-Clarendon-Rains

Nearly level, moderately well drained or somewhat poorly drained soils that have a sandy or loamy surface layer and a loamy subsoil, on low lying uplands; and nearly level, poorly drained, loamy soils, mainly in depressions

The moderately well drained and somewhat poorly drained soils in this unit are on low lying uplands, and the poorly drained soils are in slight depressions in the lowest part of the landscape. These soils mainly are in the south-central part of Dooly County. Slope is 0 to 2 percent.

This unit makes up about 8 percent of Dooly County. It is about 38 percent Ardilla soils, 35 percent Clarendon soils, and 15 percent Rains soils. The rest is soils of minor extent.

The Ardilla soils are somewhat poorly drained. Typically, the surface layer is very dark gray loamy sand about 8 inches thick. The subsurface layer is pale brown sandy loam about 4 inches thick. The subsoil extends to a depth of 60 inches or more. The upper part is light yellowish brown sandy loam and sandy clay loam; the middle part is mottled gray, brown, and red sandy clay loam; and the lower part is gray sandy clay that has strong brown and red mottles. The subsoil is firm, brittle, and compact below a depth of about 35 inches.

The Clarendon soils are moderately well drained. Typically, the surface layer is dark gray sandy loam about 9 inches thick. The subsoil is predominantly sandy clay loam that extends to a depth of 60 inches or more. The upper part is yellowish brown; the middle part is yellowish brown and has brown, red, and gray mottles; and the lower part is mottled brown, red, and gray. Plinthite is below a depth of about 33 inches and makes up 5 to 20 percent of the soil. Nodules of ironstone are in the surface layer and upper part of the subsoil.

The Rains soils are poorly drained. Typically, the surface layer is very dark grayish brown sandy loam about 8 inches thick. The subsurface layer is gray sandy loam about 7 inches thick. The subsoil is predominantly sandy clay loam that extends to a depth of 65 inches or more. It is gray throughout except for the lower part, which also has yellowish brown, red, and strong brown mottles.

Of minor extent in this unit are the Dothan and Tifton soils. The well drained Dothan and Tifton soils are on higher lying uplands.

The upland soils in this unit are used mainly for pasture, cultivated crops, and woodland. The soils are well suited to these uses, but drainage is needed to obtain high yields. The soils in depressions are mainly wooded. In these areas, overcoming wetness is the main concern in management. The seasonal high water table severely limits most uses. These soils are mainly poorly suited to urban use and recreational development because of wetness.

8. Eustis-Lucy-Dothan

Nearly level to sloping, somewhat excessively drained and well drained soils that have a sandy surface layer and a sandy or loamy subsoil; on broad, terracelike uplands

The soils in this unit are in two broad areas on an old terracelike landscape in the western part of Dooly County. The soils are on the high lying areas and are near the Flint River, but they are not dissected by drainage systems. The soils occupy similar positions on the landscape. Slope ranges from 0 to 12 percent.

This unit makes up about 5 percent of Dooly County. It is about 25 percent Eustis soils, 23 percent Lucy soils, and 22 percent Dothan soils. The rest is soils of minor extent.

The Eustis soils are somewhat excessively drained and are sandy throughout. Typically, the surface layer is dark brown loamy sand about 7 inches thick. The subsurface layer is predominantly brown loamy sand that extends to a depth of 26 inches. The subsoil is loamy sand that extends to a depth of 68 inches or more. The upper and middle parts are yellowish red, and the lower part is strong brown.

The Lucy soils are well drained and have a sandy surface layer, a thick subsurface layer, and a loamy subsoil. Typically, the surface layer is dark grayish brown loamy sand about 8 inches thick. The subsurface layer is strong brown loamy sand that extends to a depth of 28 inches. The subsoil extends to a depth of 65 inches or more. The upper few inches is yellowish red sandy loam, and the rest is red sandy clay loam.

The Dothan soils are well drained and have a sandy surface layer, a thin subsurface layer, and a loamy subsoil. Typically, the surface layer is dark grayish brown loamy sand about 8 inches thick. The subsurface layer is grayish brown loamy sand that extends to a depth of 14 inches. The subsoil is predominantly sandy clay loam that extends to a depth of 60 inches or more. The upper and middle parts are yellowish brown, and the lower part is mottled yellowish brown, strong brown, light gray, and dark red. Plinthite is below a depth of 35 inches and makes up about 15 percent of the soil.

Of minor extent in this unit are the Lakeland, Ocilla, Orangeburg, and Rains soils. The excessively drained Lakeland soils, somewhat poorly drained Ocilla soils, well drained Orangeburg soils, and poorly drained Rains soils share the landscape with the major soils.

The soils in this unit are used mainly for cultivated crops, but some areas are wooded or idle. Most of the soils are moderately suited or well suited to these uses. Many of the soils are somewhat droughty and need supplemental water for good yields if they are used for cultivated crops. These soils are well suited to urban use. However, seepage commonly is a concern for most sanitary facilities. Most of these soils are only moderately suited to recreational development because they are too sandy.

Macon County

poorly drained, somewhat poorly drained, and well drained soils predominantly on flood plains

Two map units in Macon County are made up of nearly level, predominantly loamy, poorly drained, somewhat poorly drained, and well drained soils on flood plains. Slopes range from 0 to 2 percent. The poorly drained soils commonly are in lower lying positions than the somewhat poorly drained and well drained soils. The poorly drained soils have a predominantly brownish surface layer and a gray, mottled subsoil or underlying layers. The somewhat poorly drained soils are brownish except for the middle and lower parts of the subsoil, which are mottled. The well drained soils are brownish throughout.

1. Chewacla-Chastain-Riverview

Nearly level, somewhat poorly drained, poorly drained, and well drained soils that have a loamy surface layer and a loamy or clayey subsoil; on flood plains

The soils in this unit are on the flood plain of the Flint River. The soils in low lying positions are poorly drained and generally are near the uplands; the soils in higher lying positions are nearer to the river and are better drained. These soils commonly are periodically flooded in winter and spring. Slope is 0 to 2 percent.

This unit makes up about 8 percent of Macon County. It is about 35 percent Chewacla soils, 26 percent Chastain soils, and 17 percent Riverview soils. The rest is soils of minor extent.

The Chewacla soils are somewhat poorly drained. Typically, the surface layer is dark grayish brown loam about 6 inches thick. The subsoil extends to a depth of 60 inches. The upper part is brown and grayish brown

silt loam; the middle part is grayish brown silty clay loam and has light gray and strong brown mottles; the lower part is mottled grayish brown, light gray, and strong brown silty clay loam. The underlying material to a depth of 70 inches or more is mottled light gray and yellowish brown loamy sand and sandy loam that is stratified.

The Chastain soils are poorly drained. Typically, the surface layer is silt loam about 7 inches thick. The upper part is dark grayish brown, and the lower part is dark gray. The subsoil to a depth of 48 inches or more is gray silty clay and clay that is mottled yellowish brown.

The Riverview soils are well drained. Typically, the surface layer is dark brown loam about 6 inches thick. The subsoil extends to a depth of 38 inches. The upper part is brown silt loam, the middle part is yellowish brown sandy clay loam, and the lower part is strong brown fine sandy loam. The underlying material to a depth of 60 inches or more is strong brown loamy sand that is mottled very pale brown, yellowish brown, and light gray.

Of minor extent in this unit are the Bibb soils and Humaquepts. The poorly drained Bibb soils are in small drainageways on the outer part of the flood plain. The very poorly drained Humaquepts are in low areas at the base of hills and in depressions on the flood plain.

The soils in this unit are wooded; however, the better drained areas could be used for cultivated crops or pasture if extensive flood control and drainage measures were installed and maintained. Most areas are well suited to wood production. However, limited use of equipment and seedling mortality are management concerns in most places. Most areas of these soils are only moderately suited to farming, and they are poorly suited to most urban and recreation uses unless they are drained. The hazard of flooding and wetness are the main concerns in use and management. These limitations could be overcome only by extensive flood control and drainage measures.

2. Bibb-Kinston-Rains

Nearly level, poorly drained soils that have a loamy surface layer and a loamy subsoil or mainly sandy underlying layers; on flood plains and in depressions

Most soils in this unit are on flood plains of narrow streams and small tributaries throughout most of Macon County. These soils are in low lying positions, and most of the soils are flooded periodically from late in fall to early in summer. Slope is 0 to 2 percent.

This unit makes up about 8 percent of Macon County. It is about 35 percent Bibb soils, 24 percent Kinston soils, and 14 percent Rains soils. The rest is soils of minor extent.

The Bibb soils are on flood plains and have mainly a loamy surface layer and sandy underlying layers. Typically, the surface layer is dark gray loam about 6 inches thick. The underlying layers are stratified sandy loam and loamy sand that extend to a depth of 60 inches or more. These layers are light gray and have dark grayish brown mottles.

The Kinston soils are on flood plains and are loamy throughout. Typically, the surface layer is predominantly dark grayish brown fine sandy loam about 10 inches thick. The subsoil is predominantly sandy clay loam that extends to a depth of 45 inches. It is gray throughout and has brown and yellow mottles. The underlying material to a depth of 65 inches or more is gray sandy loam that is stratified.

The Rains soils are in depressions and have a loamy subsoil. Typically, the surface layer is very dark grayish brown sandy loam about 8 inches thick. The subsurface layer is gray sandy loam about 7 inches thick. The subsoil is predominantly sandy clay loam and extends to a depth of 65 inches or more. It is gray throughout except for the lower part, which has yellowish brown, red, and strong brown mottles.

Of minor extent in this unit are the Ardilla, Grady, and Ochlockonee soils. The somewhat poorly drained Ardilla soils are on smooth, low lying uplands. The poorly drained Grady soils are in depressions and are seasonally ponded. The well drained Ochlockonee soils are in draws, depressions, and drainageways.

The soils in this unit are mainly wooded. A few areas are used for pasture. Most areas are well suited to wood production; however, limited use of equipment and seedling mortality are management concerns in most places. The soils in this unit are poorly suited to farming and urban uses. The hazard of flooding and wetness are the chief concerns in use and management.

predominantly well drained soils on uplands

Five units in Macon County are made up of predominantly well drained soils of the Southern Coastal Plain and the Sand Hills. The nearly level soils are on ridgetops; the very gently sloping and gently sloping soils are on ridgetops and hillsides; the sloping and moderately steep soils are mainly on hillsides. Slopes range from 0 to 20 percent. The soils have mainly a brownish, loamy or sandy surface layer and a predominantly reddish or brownish, mottled subsoil that is loamy or clayey.

3. Orangeburg-Faceville-Greenville

Predominantly nearly level to sloping soils that are well drained and that have a sandy or loamy surface layer and a clayey or loamy subsoil; on uplands

The nearly level and very gently sloping soils in this unit are on broad, smooth, convex ridgetops. The gently sloping to steep soils commonly are on short, irregular hillsides. These soils mainly are in the eastern part of Macon County. Slopes are predominantly 0 to 5 percent but range to 20 percent.

This unit makes up about 31 percent of Macon County. It is about 41 percent Orangeburg soils, 28 percent Faceville soils, and 14 percent Greenville soils. The rest is soils of minor extent.

The Orangeburg soils have a sandy surface layer and a predominantly red, loamy subsoil. Typically, the surface layer is dark grayish brown loamy sand about 10 inches thick. The subsoil is predominantly sandy clay loam that extends to a depth of 65 inches or more. The upper part is yellowish red, and the rest of the subsoil is red.

The Faceville soils have a loamy surface layer and a predominantly red, clayey subsoil. Typically, the surface layer is brown sandy loam about 6 inches thick. The subsoil is predominantly sandy clay that extends to a depth of 65 inches or more. The upper part is yellowish red, and the rest of the subsoil is red except for the lower part, which has brownish yellow mottles.

The Greenville soils have a loamy surface layer and a predominantly dark red, clayey subsoil. Typically, the surface layer is dark reddish brown sandy loam about 8 inches thick. The subsoil extends to a depth of 72 inches or more. The upper few inches are dark reddish brown sandy clay loam, and the rest of the subsoil is dark red sandy clay.

Of minor extent in this unit are the Americus, Lucy, and Red Bay soils. The Americus soils are somewhat excessively drained and commonly are on higher lying uplands. The well drained Lucy and Red Bay soils occupy positions on the landscape similar to the major soils.

The soils in this unit are used mainly for cultivated crops and pasture, but some areas are wooded. They are well suited to these uses. Hogs and beef cattle are the main livestock. Soils on slopes that have no plant cover need to be protected from erosion. These soils are well suited to most urban use and recreational development. Irregularly shaped, sloping to moderately steep areas need to be specially considered when planning use and management.

4. Dothan-Tifton

Nearly level to gently sloping, well drained soils that predominantly have a sandy surface layer and a loamy subsoil; on uplands

The soils in this unit are on broad, smooth ridgetops and on short, irregular hillsides. These soils are throughout Macon County. Slope ranges from 0 to 8 percent.

This unit makes up about 17 percent of Macon County. It is about 74 percent Dothan soils and 8 percent Tifton soils. The rest is soils of minor extent.

The Dothan soils have less than 5 percent nodules of ironstone in the surface layer and in the upper part of the subsoil. Typically, the surface layer is dark grayish brown loamy sand about 9 inches thick. The subsurface layer is brown loamy sand that extends to a depth of 13 inches. The subsoil is predominantly sandy clay loam that extends to a depth of 65 inches or more. It is yellowish brown throughout except for the lower part, which has red, strong brown, and light gray mottles. Plinthite is below a depth of 30 inches and makes up 5 to 10 percent of the soil.

The Tifton soils have 5 percent or more nodules of ironstone in the surface layer and in the upper part of the subsoil. Typically, the surface layer is dark grayish brown loamy sand about 8 inches thick. The subsoil is dominantly sandy clay loam that extends to a depth of 65 inches or more. The upper part is yellowish brown; the middle part is yellowish brown and has red mottles; and the lower part is mottled red, yellowish brown, and gray. Plinthite is below a depth of about 38 inches and makes up 10 to 15 percent of the lower part of the subsoil.

Of minor extent in this unit are the Bibb, Clarendon, Cowarts, Fuquay, and Grady soils. The poorly drained Bibb soils are in drainageways. The moderately well drained Clarendon soils are in broad, slightly depressed areas. The Cowarts and Fuquay soils occupy positions on the landscape similar to the major soils. The Grady soils are in depressions and are seasonally ponded.

The soils in this unit are used mainly for cultivated crops. A few areas are in pasture or woodland. The soils are well suited to these uses. Hogs and beef cattle are the main livestock. Soils on slopes that have no plant cover need to be protected from erosion. These soils are well suited to most urban use and recreational development. Irregularly shaped, gently sloping areas need to be specially considered when planning use and management.

5. Lucy-Fuquay-Lakeland

Nearly level to moderately steep, well drained and excessively drained soils that have a sandy surface layer and a loamy subsoil or sandy underlying layers; on uplands

The nearly level and very gently sloping soils in this unit are on broad, smooth, convex ridgetops, and the gently sloping to strongly sloping soils mainly are on smooth, convex hillsides. In places, the soils are dissected by small stream channels and drainageways. These soils mainly are in the western part of Macon County. Slope ranges from 0 to 15 percent.

This unit makes up about 20 percent of Macon County. It is about 30 percent Lucy soils, 28 percent Fuquay soils, and 25 percent Lakeland soils. The rest is soils of minor extent.

The Lucy soils are well drained and have a reddish, loamy subsoil. Typically, the surface layer is dark grayish brown loamy sand about 8 inches thick. The subsurface layer is strong brown loamy sand that extends to a depth of 28 inches. The subsoil extends to a depth of 65 inches or more. The upper few inches are yellowish red sandy loam, and the rest of the subsoil is red sandy clay loam.

The Fuquay soils are well drained and have a brownish, loamy subsoil that contains plinthite. Typically, the surface layer is dark grayish brown loamy sand about

8 inches thick. The subsurface layer is light yellowish brown loamy sand that extends to a depth of 22 inches. The subsoil is predominantly sandy clay loam that extends to a depth of 65 inches or more. The upper part is yellowish brown, and the lower part is mottled yellowish brown, red, and strong brown.

The Lakeland soils are excessively drained and sandy throughout. Typically, the surface layer is brown sand about 4 inches thick. The underlying layers are sand to a depth of 80 inches or more. The upper layer is brown, and the middle and lower layers are yellowish brown.

Of minor extent in this unit are the Cowarts, Dothan, and Vaucluse soils. The well drained Cowarts, Dothan, and Vaucluse soils occupy positions on the landscape similar to the major soils.

The soils in this unit are used mainly for cultivated crops, pasture, and woodland. Most of the soils are only moderately suited to these uses. The soils are somewhat droughty and need supplemental water for good yields if they are used for cultivated crops. The soils are well suited to urban use. However, seepage commonly is a concern for most sanitary facilities. These soils are mostly only moderately suited to recreational development because they are too sandy.

6. Vaucluse-Lakeland-Cowarts

Very gently sloping to steep, well drained and excessively drained soils that have a sandy or loamy surface layer and a loamy subsoil that is mainly cemented and brittle or sandy underlying layers that are loose; on uplands

The very gently sloping soils in this unit are on smooth, convex ridgetops, and the gently sloping to steep soils mainly are on irregular, convex hillsides. In places, the soils are dissected by a few large stream channels and many small drainageways. These soils are in the western part of Macon County. Slope ranges from 2 to 20 percent.

This unit makes up about 14 percent of Macon County. It is about 49 percent Vaucluse soils, 16 percent Lakeland soils, and 9 percent Cowarts soils. The rest is soils of minor extent.

The Vaucluse soils are well drained and have a loamy subsoil that is mainly cemented and brittle. Typically, the surface layer is dark grayish brown loamy sand about 8 inches thick. The subsoil is sandy clay loam that extends to a depth of 60 inches. It is cemented and brittle below a depth of 20 inches. The upper part is yellowish red, the middle part is red, and the lower part is red and has yellowish brown and light gray mottles.

The Lakeland soils are excessively drained and sandy throughout. Typically, the surface layer is brown sand about 4 inches thick. The underlying layers are sand to a depth of 80 inches or more. The upper layer is brown, and the middle and lower layers are yellowish brown.

The Cowarts soils are well drained and have a loamy subsoil. Typically, the surface layer is dark grayish brown sandy loam about 8 inches thick. The subsurface layer is light yellowish brown sandy loam to a depth of about 15 inches. The subsoil is predominantly sandy clay loam and extends to a depth of 38 inches. It is yellowish brown throughout except for the lower part, which has strong brown and yellowish red mottles. The underlying material to a depth of 60 inches or more is mottled yellowish red, yellowish brown, light gray, and red sandy clay loam. A few nodules of ironstone are on the surface and throughout most of the soil.

Of minor extent in this unit are the Bibb, Fuquay, Lucy, and Ochlockonee soils. The poorly drained Bibb soils are in drainageways. The well drained Fuquay and Lucy soils occupy positions on the landscape similar to the major soils. The well drained Ochlockonee soils are in draws, small depressions, and on narrow flood plains.

The soils in this unit are mainly wooded, but a few areas are used for cultivated crops and pasture. Most areas are only moderately suited to wood production and are poorly suited to farming. The very gently sloping and gently sloping soils are well suited to urban use. However, in most places, slow permeability is a limitation for septic tank absorption fields; and, in the sandier parts of the unit, seepage is a limitation. Most of the soils are somewhat limited for recreational development because of slow permeability. The sloping to moderately steep soils are limited for most uses because of slope.

7. Susquehanna-Oktibbeha

Very gently sloping to sloping, somewhat poorly drained and moderately well drained soils that have a loamy surface layer and a clayey subsoil that is underlain in places by marly clay or chalk; on uplands

The very gently sloping soils in this unit are on smooth to undulating, convex ridgetops, and the gently sloping and sloping soils mainly are on short, irregular hillsides. In places, the soils are dissected by small stream channels and drainageways. The soils are mainly in the eastern part of Macon County. Slope ranges from 2 to 12 percent.

This unit makes up about 2 percent of the County. It is about 38 percent Susquehanna soils and 26 percent Oktibbeha soils. The rest is soils of minor extent.

The Susquehanna soils are somewhat poorly drained. Typically, the surface layer is dark gray sandy loam about 5 inches thick. The subsurface layer is brown clay loam about 5 inches thick. The subsoil is clay that extends to a depth of 65 inches or more. The upper part is yellowish red and has red and gray mottles, and the lower part is mottled gray, red, and brown.

The Oktibbeha soils are moderately well drained. Typically, the surface layer is brown loam about 6 inches thick. The subsoil is clay that extends to a depth of 40 inches. The upper few inches are reddish brown, and the rest of the subsoil is red and has gray mottles. The underlying material to a depth of 60 inches or more is

pale yellow clay that has light gray and white mottles and nodules of soft, white calcium carbonate.

Of minor extent in this unit are the Faceville, Greenville, and Sumter soils. The well drained Faceville and Greenville soils commonly are on the smoother parts of the landscape. The well drained Sumter soils commonly occupy a position on the landscape similar to the major soils.

The soils in this unit are used mostly for woodland, but some areas have been cleared and are used for cultivated crops and pasture. These soils are moderately suited to woodland. Limited use of equipment and seedling mortality are management concerns in most areas. The soils are poorly suited to cultivated crops, hay, and pasture because of the very firm and very sticky, clayey subsoil and the severe hazard of erosion. They are poorly suited to most urban use because of very slow permeability and the high shrink-swell potential in the subsoil. Most of the soils in this unit are only moderately suited to most recreational development because of very slow permeability.

broad land use considerations

Considerable acreage in the survey area is being used as cropland and pasture. The general soil map can be used for broad planning, but it cannot be used to locate the site for a specific structure. In general, the soils in the survey area that are well suited to cultivated crops also are well suited to urban development. The data about specific soils can be helpful in planning future land use patterns. Interpretations made from the general soil map for broad land use planning are specific for each county. The following broad land use considerations, however, apply to the entire survey area.

About 47 percent of the survey area is used for woodland. The soils are moderately suited or well suited to the production of trees.

About 50 percent of the survey area is used for cultivated crops and pasture. Some of the soils are poorly suited to farming. They include the steeper soils on hillsides in the Vaucluse-Lakeland-Cowarts unit. Soils in the Eustis-Lucy-Dothan unit and the Lucy-Fuquay-Lakeland unit are on smoother ridgetops and hillsides, but they are not well suited to farming because of low fertility and low available water capacity. Most of the soils in the Chewacla-Chastain-Riverview unit, the Chewacla-Chastain-Humaquepts unit, the Bibb-Kinston-Rains unit, and the Bibb-Kinston unit are too wet for farm use. Protection from flooding and drainage are needed before they can be used for cultivated crops.

In general, about three-fourths of the survey area is moderately suited or well suited to urban use. However, the soils on hillsides in the Faceville-Orangeburg-Greenville unit, the Orangeburg-Faceville-Greenville unit, and the Vaucluse-Lakeland-Cowarts unit are poorly suited. In addition, the nearly level soils on flood plains and low lying uplands and the depressional areas in the Chewacla-Chastain-Humaquepts unit, the Bibb-Kinston unit, the Chewacla-Chastain-Riverview unit, the Bibb-Kinston-Rains unit, and the Ardilla-Clarendon-Rains unit are poorly suited to urban use. The soils that have high shrink-swell potential in the Susquehanna-Oktibbeha unit are also poorly suited to urban use.

Most of the soils on ridgetops in the Faceville-Orangeburg-Greenville unit, the Dothan-Tifton unit, the Tifton-Dothan-Rains unit, the Nankin-Cowarts-Susquehanna unit, the Eustis-Lucy-Dothan unit, the Orangeburg-Faceville-Greenville unit, the Lucy-Fuquay-Lakeland unit, and the Vaucluse-Lakeland-Cowarts unit are moderately suited or well suited to parks and recreation areas. In these areas, hardwood and pine forests are common. In the Chewacla-Chastain-Humaquepts unit, the Chewacla-Chastain-Riverview unit, the Bibb-Kinston unit, and the Bibb-Kinston-Rains unit, undrained areas and areas ponded by beaver are well suited to nature study. All of these soils provide suitable habitat for many kinds of 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. A soil is well suited if it has properties that are favorable. A soil is moderately suited if it has properties that require special planning and management to obtain satisfactory performance. A soil is poorly suited if it has properties that are unfavorable. More information on each map unit, or soil, is given under "Use and management of the soils."

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

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

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

Soils of one series can differ in texture of the surface layer or of the underlying material. They also can differ in slope, stoniness, wetness, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases.* Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Tifton loamy sand, 2 to 5 percent slopes, is one of several phases in the Tifton series.

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

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

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

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

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

AmB—Americus loamy sand, 0 to 5 percent slopes. This somewhat excessively drained, nearly level and very gently sloping soil is on broad, upland ridgetops of the Southern Coastal Plain. Slopes are smooth and convex. Areas range from 20 to 100 acres.

Typically, the surface layer is dark brown loamy sand about 8 inches thick. The subsoil is dark red and extends to a depth of 72 inches or more. The upper part is loamy sand, and the lower part is sandy loam.

This soil is low in natural fertility and content of organic matter. It is strongly acid or very strongly acid throughout except for the surface layer in limed areas. Permeability is moderately rapid or rapid, and available water capacity is low. Tilth is good. This soil can be worked throughout a wide range of moisture content. The root zone is deep and easily penetrated by plant roots.

Included with this soil in mapping are small areas of Lucy and Red Bay soils.

This Americus soil is poorly suited to cultivated crops because of low available water capacity and low fertility. However, yields for the crops commonly grown can substantially be increased if the soil is irrigated.

Loblolly and slash pine are only moderately suited to this soil. Limited use of equipment and seedling mortality are management concerns.

This soil is well suited to most urban use. However, seepage is a limitation for most sanitary facilities, and the pollution of shallow water supplies is a hazard. Because it is too sandy, this soil is only moderately suited to recreational development.

This soil is in capability subclass IIIs and woodland suitability group 3s.

AmC—Americus loamy sand, 5 to 8 percent slopes. This somewhat excessively drained, gently sloping soil is on narrow ridgetops and on hillsides on uplands of the Southern Coastal Plain. Slopes are mostly smooth and convex. Areas range from 20 to 40 acres.

Typically, the surface layer is dark reddish brown loamy sand about 6 inches thick. The subsoil extends to a depth of 60 inches or more. The upper and middle parts are dark red loamy sand, and the lower part is dark red sandy loam.

This soil is low in natural fertility and content of organic matter. It is strongly acid or very strongly acid throughout except for the surface layer in limed areas. Permeability is moderately rapid or rapid, and available water capacity is low. Tilth is good. This soil can be worked throughout a wide range of moisture content. The root zone is deep and easily penetrated by plant roots.

Included with this soil in mapping are small areas of Lucy and Red Bay soils.

This Americus soil is poorly suited to cultivated crops because of low available water capacity and low fertility. Crop residue returned to the soil helps to overcome these limitations.

Loblolly pine and slash pine are only moderately suited to this soil. Limited use of equipment and seedling mortality are management concerns.

This soil is only moderately suited to most urban use because of slope. In addition, seepage is a limitation for most sanitary facilities. Because it is too sandy, this soil is only moderately suited to recreational development.

This soil is in capability subclass IVs and woodland suitability group 3s.

ArA—Ardilla loamy sand, 0 to 2 percent slopes. This somewhat poorly drained, nearly level soil is on smooth, low lying upland areas of the Southern Coastal Plain. Areas range from 5 to 28 acres.

Typically, the surface layer is very dark gray loamy sand about 8 inches thick. The subsurface layer is pale brown sandy loam about 4 inches thick. The subsoil extends to a depth of 60 inches or more. The upper part is light yellowish brown sandy loam and sandy clay loam; the middle part is mottled gray, brown, and red sandy clay loam; and the lower part is gray sandy clay that has strong brown and red mottles. The subsoil is firm, brittle, and compact below a depth of about 35 inches.

This soil is low in natural fertility and content of organic matter. It is very strongly acid or strongly acid throughout except for the surface layer in limed areas. Permeability is moderate in the upper part of the subsoil and moderately slow in the lower part. Available water capacity is medium. Tilth is good. Although the root zone is deep, a water table commonly is at a depth of 1 foot to 2 feet from late in fall to mid spring and somewhat limits the root growth of many plants.

Included with this soil in mapping are small areas of Clarendon and Rains soils.

This Ardilla soil is well suited to row crops, small grain, hay, and pasture. However, it is somewhat restricted because of wetness. Drainage commonly helps to overcome this limitation.

Longleaf pine, slash pine, and yellow-poplar are well suited to this soil. The use of conventional equipment commonly is restricted from late in fall to mid spring because of wetness. However, operations can be successfully performed during the drier seasons.

This soil is poorly suited for most urban use and recreational development because of wetness. This limitation commonly can be reduced if the soil is drained.

This soil is in capability subclass IIw and woodland suitability group 2w.

BK—Bibb and Kinston soils. This map unit consists of poorly drained, nearly level soils on flood plains in the Southern Coastal Plain. These soils commonly are flooded for brief periods from late in fall to early in summer. Bibb and Kinston soils are in an irregular pattern on the landscape. Individual areas of each soil are large enough to map separately, but because of present and predicted use, they were mapped as one unit. Most mapped areas are made up of both soils, but a few areas have only one of the soils. Areas range from 50 to 2,000 acres. Slope is 0 to 2 percent.

About 50 percent of the map unit is Bibb soils. Typically, the surface layer is dark gray loam about 6 inches thick. The underlying layers are stratified sandy loam and loamy sand that extend to a depth of 60 inches or more. These layers are light gray and have dark grayish brown mottles.

The Bibb soils are low in natural fertility and medium in content of organic matter. They are strongly acid or very strongly acid throughout. Permeability is moderate, and available water capacity is medium. Although the root zone is deep, the water table commonly is at a depth of 0.5 foot to 1.5 feet in winter and spring.

About 35 percent of the map unit is Kinston soils. Typically, the surface layer is predominantly dark grayish brown fine sandy loam about 10 inches thick. The subsoil is predominantly sandy clay loam that extends to a depth of 45 inches. It is gray throughout and is mottled

yellow and brown. The underlying material is stratified, gray sandy loam to a depth of 65 inches or more.

The Kinston soils are low in natural fertility and medium in content of organic matter. They are strongly acid or very strongly acid throughout. Permeability is moderate, and available water capacity is medium. Although the root zone is deep, the water table commonly is at a depth of less than 1 foot from late in fall to early in summer.

Included with these soils in mapping are a few intermingled areas of Rains soils. Also included are areas of similar soils that are clayey.

These Bibb and Kinston soils are mostly wooded. Loblolly pine, sweetgum, and yellow-poplar are well suited to this soil. Wetness and flooding are limitations to use of equipment in managing and harvesting the tree crop. However, operations commonly can be performed during the drier seasons. Seedling mortality is a management concern, but in many places, this hazard can be overcome if the soils are drained.

These soils are poorly suited to cultivated crops and recreational development because of wetness and the hazard of flooding. These limitations also severely restrict urban use. They can be overcome only by extensive flood control and drainage measures.

The soils in this association are in capability subclass Vw. The Bibb soils are in woodland suitability group 2w, and the Kinston soils are in woodland suitability group 1w.

CaA—Cahaba sandy loam, 0 to 2 percent slopes. This well drained, nearly level soil is on stream terraces near the Flint River. It is flooded on rare occasions. Areas range from 5 to 85 acres.

Typically, the surface layer is very dark grayish brown sandy loam 8 inches thick. The subsurface layer is yellowish brown sandy loam to a depth of 12 inches. The subsoil extends to a depth of 45 inches. The upper part is yellowish red sandy loam, the middle part is red sandy clay loam, and the lower part is yellowish red sandy loam. The underlying material is reddish yellow loamy sand to a depth of 60 inches or more.

This soil is low in natural fertility and content of organic matter. It is very strongly acid to medium acid throughout except for the surface layer in limed areas. Permeability is moderate, and available water capacity is medium. Tilth is good. The root zone is deep.

Included with this soil in mapping are small areas of Wahee soils.

This Cahaba soil is well suited to row crops and pasture. Good tilth is easily maintained by returning crop residue to the soil. Conservation tillage and using cover crops that include grasses and legumes in the cropping system help to increase the content of organic matter.

Loblolly pine and slash pine are well suited to this soil. There are no significant limitations for woodland use and management.

This soil is poorly suited to most sanitary facilities because of the hazard of flooding. This limitation also severely restricts most urban use. The soil is well suited to most recreational facilities.

This soil is in capability class I and woodland suitability group 2o.

CC—Chewacla-Chastain-Riverview association. This map unit consists of nearly level soils on flood plains. The soils are in a regular repeating pattern and are made up of somewhat poorly drained Chewacla soils that are adjacent to the poorly drained Chastain soils in depressions and sloughs and the well drained Riverview soils near stream channels. These soils formed in loamy or clayey sediment from uplands of the Southern Piedmont. Areas are mostly long and wide and range from 500 to more than 1,000 acres. Slope is 0 to 2 percent.

The somewhat poorly drained Chewacla soils make up about 40 percent of the map unit. Typically, the surface layer is dark grayish brown loam about 6 inches thick. The subsoil extends to a depth of 60 inches. The upper part is brown and grayish brown silt loam; the middle part is grayish brown silty clay loam that has light gray and strong brown mottles; and the lower part is mottled grayish brown, light gray, and strong brown silty clay loam. The underlying material to a depth of 70 inches or more is mottled, light gray and yellowish brown, stratified loamy sand and sandy loam.

The Chewacla soils are low in natural fertility and content of organic matter. They are strongly acid or very strongly acid throughout except for the surface layer in limed areas. Permeability is moderate, and available water capacity is high. Tilth is good. The root zone is deep. The water table commonly is at a depth of 0.5 foot to 1.5 feet from late in fall to midspring, and brief flooding during these months is common.

The poorly drained Chastain soils make up about 30 percent of the map unit. Typically, the surface layer is silt loam about 7 inches thick. The upper part is dark grayish brown, and the lower part is very dark gray. The subsoil to a depth of 48 inches or more is gray silty clay and clay that is mottled in yellowish brown.

The Chastain soils are low in natural fertility and content of organic matter. They are strongly acid or very strongly acid throughout except for the surface layer in limed areas. Permeability is slow, and available water capacity is high. Tilth is good. The root zone is deep. The water table commonly is at a depth of less than 1 foot from late in fall to late in spring, and flooding for very long periods is likely.

The well drained Riverview soils make up about 20 percent of the map unit. Typically, the surface layer is dark brown loam about 6 inches thick. The subsoil extends to a depth of 38 inches. The upper part is brown silt loam, the middle part is yellowish brown sandy clay loam, and the lower part is strong brown fine sandy

loam. The underlying material to a depth of 60 inches or more is strong brown loamy sand that is mottled in very pale brown, yellowish brown, and light gray.

The Riverview soils are medium in natural fertility and content of organic matter. They are strongly acid or very strongly acid except for the surface layer in limed areas. Permeability is moderate, and available water capacity is medium. Tilth is good. The root zone is deep. The water table commonly is at a depth of 3 to 5 feet in winter and early in spring, and brief flooding during these months is likely.

Included with these soils in mapping are areas of poorly drained Bibb and Kinston soils in drainageways on the outer part of the flood plain.

These Chewacla-Chastain-Riverview soils are only moderately suited to cultivated crops because flooding is likely during the planting season. However, if the soils are drained, protected from flooding, and properly managed, they are well suited to crops.

Slash pine, loblolly pine, yellow-poplar, and sweetgum are well suited to the soils in this unit. Wetness and flooding limit the use of equipment in managing and harvesting the tree crop. However, operations can be successfully performed during the drier seasons. Drainage is needed in most of the lower lying areas to reduce seedling mortality.

These soils are poorly suited to recreational development because of wetness and the hazard of flooding. These limitations also severely restrict urban use. They can only be overcome by extensive flood control and drainage measures.

The Chewacla soils are in capability subclass IVw and woodland suitability group 1w; the Chastain soils are in capability subclass VIw and woodland suitability group 2w; the Riverview soils are in capability subclass IIw and woodland suitability group 1w.

CnA—Clarendon sandy loam. This moderately well drained, nearly level soil is mainly on broad, slightly depressed upland areas of the Southern Coastal Plain. Areas range from 20 to 80 acres. Slope is 0 to 2 percent.

Typically, the surface layer is dark gray sandy loam about 9 inches thick. The subsoil is predominantly sandy clay loam that extends to a depth of 60 inches or more. The upper part is yellowish brown; the middle part is yellowish brown and has brown, red, and gray mottles; and the lower part is mottled in brown, red, and gray. Plinthite is below a depth of about 33 inches and makes up 5 to 20 percent of the soil. Nodules of ironstone are in the surface layer and upper part of the subsoil.

This soil is low in natural fertility and content of organic matter. It is strongly acid or very strongly acid throughout except for the surface layer in limed areas. Permeability is moderate in the upper part of the subsoil and moderately slow in the lower part. Available water capacity is medium. Tilth is good. The soil can be worked throughout a wide range of moisture content. Although the root zone is deep, the water table, which commonly is at a depth of 1.5 to 2.5 feet in winter and early in spring, somewhat limits the growth of some plants.

Included with this soil in mapping are a few small areas of Ardilla, Dothan, and Rains soils.

This Clarendon soil is well suited to row crops, small grain, hay, and pasture; however, it is somewhat limited because of wetness. In most places, drainage is needed for high yields.

Loblolly pine and slash pine are well suited to this soil. Wetness is the main limitation to use of equipment in managing and harvesting the tree crop. However, operations can be successfully performed during drier seasons.

This soil is only moderately suited to most urban use and recreational development because of wetness. Commonly, this limitation can be reduced if the soil is drained.

This soil is in capability subclass IIw and woodland suitability group 2w.

CoB—Cowarts sandy loam, 2 to 5 percent slopes. This well drained, very gently sloping soil is on ridgetops on uplands of the Southern Coastal Plain. Slopes are smooth and convex. Areas range from 10 to 60 acres.

Typically, the surface layer is dark grayish brown sandy loam about 8 inches thick. The subsurface layer is light yellowish brown sandy loam to a depth of 15 inches. The subsoil is predominantly sandy clay loam that extends to a depth of 38 inches. It is yellowish brown throughout except for the lower part, which has strong brown and yellowish red mottles. The underlying material to a depth of 60 inches or more is mottled yellowish red, yellowish brown, light gray, and red sandy clay loam. A few nodules of ironstone are on the surface and throughout most of the soil.

This soil is low in natural fertility and content of organic matter. It is strongly acid or very strongly acid throughout except for the surface layer in limed areas. Permeability is moderate in the subsoil and moderately slow or slow in the underlying material. Available water capacity is medium. Tilth is good. This soil can be worked throughout a wide range of moisture content. Root penetration is somewhat limited below a depth of 38 inches because of the firm underlying layer.

Included with this soil in mapping are a few small areas of Clarendon, Dothan, and Tifton soils.

This Cowarts soil is only moderately suited to row crops, small grain, hay, and pasture because of the firm, compact substratum. Good tilth is easily maintained by returning crop residue to the soil. Erosion is a moderate hazard if cultivated crops are grown. Conservation tillage, using cover crops that include grasses and legumes in the cropping system, terracing, and contouring help to reduce runoff and control erosion.

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

This soil is well suited to most urban use. However, slow permeability in the underlying material limits use for septic tank absorption fields. In most places, this limitation can be overcome by special design and proper installation. Because of slow permeability in the substratum, the Cowarts soil is only moderately suited to most recreational development.

This soil is in capability subclass IIe and woodland suitability group 2o.

CrC2—Cowarts sandy loam, 5 to 8 percent slopes, eroded. This well drained, gently sloping soil is on narrow ridgetops and short hillsides of uplands in the Southern Coastal Plain. The surface layer is a mixture of the original surface soil and the upper part of the subsoil. In most places, slopes are short and irregular and commonly have rills, galled spots, and an occasional gully. Areas range from 5 to 60 acres.

Typically, the surface layer is brown sandy loam about 6 inches thick. The subsoil is mainly sandy clay loam that extends to a depth of 25 inches. It is yellowish brown throughout except for the lower part, which has strong brown and yellowish red and red mottles. The underlying material to a depth of 60 inches or more is mottled yellowish red, yellowish brown, light gray, and red sandy clay loam. A few nodules of ironstone are on the surface and throughout the surface layer.

This soil is low in natural fertility and content of organic matter. It is strongly acid or very strongly acid throughout except for the surface layer in limed areas. Permeability is moderate in the subsoil and moderately slow or slow in the underlying material. Available water capacity is medium. Tilth is fair. This soil can be worked throughout a wide range of moisture content. Root penetration is somewhat limited below a depth of about 25 inches because of the firm underlying layer.

Included with this soil in mapping are small areas of eroded soils that are similar to Cowarts soils but have a sandy clay loam surface layer. Also included are small intermingled areas of Dothan and Vaucluse soils.

This Cowarts soil is poorly suited to row crops and small grain because of the irregular, somewhat gullied landscape. However, it is moderately suited to hay and pasture. Erosion is a severe hazard if cultivated crops are grown. Conservation tillage and using cover crops that include grasses and legumes in the cropping system help to reduce runoff and control erosion.

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

This soil is well suited to most urban use. However, slow permeability in the underlying material limits the use of this soil for septic tank absorption fields. In most places, this limitation can be overcome by special design and proper installation. Because of slow permeability in the underlying material, the Cowarts soil is only moderately suited to recreational development.

This soil is in capability subclass IVe and woodland suitability group 2o.

DoA—Dothan loamy sand, 0 to 2 percent slopes. This well drained, nearly level soil is on broad ridgetops and on uplands of the Southern Coastal Plain. Areas range from 20 to 100 acres.

Typically, the surface layer is dark grayish brown loamy sand about 8 inches thick. The subsurface layer is grayish brown loamy sand that extends to a depth of 14 inches. The subsoil is predominantly sandy clay loam that extends to a depth of 60 inches or more. The upper and middle parts are yellowish brown, and the lower part is mottled yellowish brown, strong brown, light gray, and dark red. Plinthite is below a depth of 35 inches and makes up about 15 percent of the soil.

This soil is low in natural fertility and content of organic matter. It is strongly acid or very strongly acid throughout except for the surface layer in limed areas. Permeability is moderate in the upper part of the subsoil and moderately slow in the lower part. Available water capacity is medium. Tilth is good. The soil can be worked throughout a wide range of moisture content. The root zone is deep and easily penetrated by plant roots.

Included with this soil in mapping are a few intermingled areas of Clarendon, Fuquay, and Tifton soils.

This Dothan soil is well suited to row crops, small grain, hay, and pasture. During dry seasons, this soil responds to irrigation, and high yields can be obtained. Conservation tillage and using cover crops that include grasses and legumes in the cropping system help to increase the content of organic matter and conserve moisture.

Slash pine and loblolly pine are well suited to this soil. There are no significant limitations for woodland use or management.

This soil is well suited to most urban uses and recreational development. However, moderately slow permeability in the lower part of the subsoil limits the use of this soil for septic tank absorption fields. Commonly, this limitation can be overcome by special design and proper installation.

This soil is in capability class I and woodland suitability group 2o.

DoB—Dothan loamy sand, 2 to 5 percent slopes. This well drained, very gently sloping soil is on ridgetops and hillsides on uplands of the Southern Coastal Plain. Slopes commonly are smooth and convex. Areas range from 5 to 90 acres.

Typically, the surface layer is dark grayish brown loamy sand about 9 inches thick. The subsurface layer is

brown loamy sand that extends to a depth of 13 inches. The subsoil is predominantly sandy clay loam that extends to a depth of 65 inches or more. It is yellowish brown throughout except for the lower part, which has red, strong brown, and light gray mottles. Plinthite is below a depth of 30 inches and makes up 5 to 10 percent of the soil.

This soil is low in natural fertility and content of organic matter. It is strongly acid or very strongly acid throughout except for the surface layer in limed areas. Permeability is moderate in the upper part of the subsoil and moderately slow in the lower part. Available water capacity is medium. Tilth is good. The soil can be worked throughout a wide range of moisture content. The root zone is deep and easily penetrated by plant roots.

Included with this soil in mapping are a few areas of Cowarts, Fuquay, and Tifton soils.

This Dothan soil is well suited to row crops, small grain, hay, and pasture (fig. 1). During dry seasons, this soil responds to irrigation, and high yields can be obtained. Good tilth is easily maintained by returning crop residue to the soil. Erosion is a moderate hazard if cultivated crops are grown. Conservation tillage, using cover crops that include grasses and legumes in the cropping system, terracing, and contouring help to reduce runoff and control erosion.

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

This soil is well suited to most urban use and recreational development. However, moderately slow permeability in the lower part of the subsoil limits the use of this soil for septic tank absorption fields. Commonly, this limitation can be overcome by special design and proper installation.

This soil is in capability subclass IIe and woodland suitability group 2o.

DoC—Dothan loamy sand, 5 to 8 percent slopes. This well drained, gently sloping soil is on short hillsides of uplands of the Southern Coastal Plain. Slopes are irregular and convex. Areas range from 10 to 20 acres.

Typically, the surface layer is dark grayish brown loamy sand about 7 inches thick. The subsoil is dominantly sandy clay loam that extends to a depth of 66 inches or more. The upper part is yellowish brown; the middle part is yellowish brown and has yellowish red and strong brown mottles; and the lower part is mottled yellowish brown, red, gray, and strong brown. Plinthite is below a depth of about 32 inches and makes up 10 to 15 percent of the soil.

This soil is low in natural fertility and content of organic matter. It is strongly acid or very strongly acid throughout except for the surface layer in limed areas. Permeability is moderate in the upper part of the subsoil and moderately slow in the lower part. Available water capacity is medium. Tilth is good. This soil can be worked throughout a wide range of moisture content. The root zone is deep and easily penetrated by plant roots.

Included with this soil in mapping are a few small areas of Cowarts, Fuquay, and Tifton soils.

This Dothan soil is well suited to row crops, small grain, hay, and pasture. Good tilth can be maintained by returning crop residue to the soil. Erosion is a severe hazard if cultivated crops are grown. Conservation tillage, using cover crops that include grasses and legumes in the cropping system, terracing, and contouring help to reduce runoff and control erosion.

Slash pine and loblolly pine are well suited to this soil. There are no significant limitations for woodland use or management.

This soil is well suited to most urban use and recreational development. However, moderately slow permeability in the lower part of the subsoil limits the use of this soil for septic tank absorption fields. Commonly, this limitation can be overcome by special design and proper installation.

This soil is in capability subclass IIIe and woodland suitability group 2o.

EuA—Eustis loamy sand, 0 to 2 percent slopes. This somewhat excessively drained, nearly level soil is on broad, upland ridgetops of the Southern Coastal Plain. Areas range from 20 to 100 acres.

Typically, the soil is loamy sand throughout. The surface layer is dark brown and about 7 inches thick. The subsurface layer is predominantly brown and extends to a depth of 26 inches. The subsoil extends to a depth of 68 inches or more. The upper and middle parts are yellowish red, and the lower part is strong brown.

This soil is low in natural fertility and content of organic matter. It is strongly acid or very strongly acid throughout except for the surface layer in limed areas. Permeability is moderately rapid or rapid, and available water capacity is low. Tilth is good. The soil can be worked throughout a wide range of moisture content. The root zone is deep and easily penetrated by plant roots.

Included with this soil in mapping are small areas of Americus, Lucy, and Orangeburg soils.

This Eustis soil is poorly suited to cultivated crops because of low fertility and low available water capacity. However, yields for the crops commonly grown can substantially be increased if the soil is irrigated.

Loblolly pine and slash pine are only moderately suited to this soil. Limited use of equipment and seedling mortality are management concerns.

This soil is well suited to most urban use. However, seepage is a limitation for most sanitary facilities. Because it is too sandy, this soil is only moderately suited to recreational development.

Figure 1.—Improved bermudagrass on Dothan loamy sand, 2 to 5 percent slopes. This soil is prime farmland and is well suited to hay and pasture.

This soil is in capability subclass IIIs and woodland suitability group 3s.

EuB—Eustis loamy sand, 2 to 5 percent slopes. This somewhat excessively drained, very gently sloping soil is on ridgetops and hillsides on uplands of the Southern Coastal Plain. Slopes are smooth and convex. Areas range from 20 to 80 acres.

Typically, the soil is loamy sand throughout. The surface layer is dark grayish brown and about 6 inches thick. The subsurface layer is brown and extends to a depth of 28 inches. The subsoil extends to a depth of 65 inches or more. The upper and middle parts are yellowish red, and the lower part is strong brown.

This soil is low in natural fertility and content of organic matter. It is strongly acid or very strongly acid throughout except for the surface layer in limed areas. Permeability is moderately rapid or rapid, and available water capacity is low. Tilth is good. The soil can be worked throughout a wide range of moisture content. The root zone is deep and easily penetrated by plant roots.

Included with this soil in mapping are small areas of Americus, Lucy, and Orangeburg soils.

This Eustis soil is poorly suited to cultivated crops because of low fertility and low available water capacity. However, yields for the crops commonly grown can substantially be increased if the soil is irrigated. The hazard of gully erosion is greater on this soil than on Eustis loamy sand, 0 to 2 percent slopes.

Loblolly pine and slash pine are only moderately suited to this soil. Limited use of equipment and seedling mortality are management concerns.

This soil is well suited to most urban use. However, seepage is a limitation for most sanitary facilities. Because it is too sandy, this soil is only moderately suited to recreational development.

This soil is in capability subclass IIIs and woodland suitability group 3s.

FeA—Faceville sandy loam, 0 to 2 percent slopes. This well drained, nearly level soil is on broad ridgetops on uplands of the Southern Coastal Plain. Areas range from 10 to 80 acres.

Typically, the surface layer is brown sandy loam about 7 inches thick. The subsoil extends to a depth of 65 inches or more. The upper few inches is yellowish red sandy clay loam, and the rest of the subsoil is red sandy clay.

This soil is low in natural fertility and content of organic matter. It is very strongly acid or strongly acid throughout except for the surface layer in limed areas. Permeability is moderate, and available water capacity is medium. Tilth is good. This soil can be worked throughout a wide range of moisture content. The root zone is deep and easily penetrated by plant roots.

Included with this soil in mapping are a few intermingled areas of Greenville, Orangeburg, and Red Bay soils. Also included is a soil that is similar to Faceville soil but has brown and yellow mottles at a depth of 25 to 30 inches.

This Faceville soil is well suited to row crops, small grain, hay, and pasture. During dry seasons, it responds favorably to irrigation, and high yields can be obtained. Good tilth is easily maintained by returning crop residue to the soil. Conservation tillage and using cover crops that include grasses and legumes in the cropping system help to conserve moisture and maintain the content of organic matter.

Loblolly pine and slash pine are moderately suited to this soil. There are no significant limitations for woodland use or management.

This soil is well suited to most urban use and recreational development. The clayey subsoil is a limitation for a few uses.

This soil is in capability class I and woodland suitability group 3o.

FeB—Faceville sandy loam, 2 to 5 percent slopes. This well drained, very gently sloping soil is on ridgetops and hillsides on uplands of the Southern Coastal Plain. Slopes commonly are smooth and convex. Areas range from 10 to 30 acres.

Typically, the surface layer is brown sandy loam about 6 inches thick. The subsoil is predominantly sandy clay that extends to a depth of 65 inches or more. The upper part is yellowish red, and the rest of the subsoil is red except for the lower part, which has brownish yellow mottles.

This soil is low in natural fertility and content of organic matter. It is strongly acid or very strongly acid throughout except for the surface layer in limed areas. Permeability is moderate, and available water capacity is medium. Tilth is good. This soil can be worked throughout a wide range of moisture content. The root zone is deep and easily penetrated by plant roots.

Included with this soil in mapping are a few small areas of a soil that has yellow, red, and brown mottles at a depth of 25 to 30 inches. Also included are a few intermingled areas of Greenville, Red Bay, and Orangeburg soils.

This Faceville soil is well suited to row crops, small grain, hay, and pasture. During dry seasons, this soil responds favorably to irrigation, and high yields can be obtained. Good tilth is easily maintained by returning crop residue to the soil. Erosion is a moderate hazard if cultivated crops are grown. Conservation tillage, using cover crops that include grasses and legumes in the cropping system, terracing, and contouring help to reduce runoff and control erosion.

Slash pine and loblolly pine are moderately suited to this soil. There are no significant limitations for woodland use or management.

This soil is well suited to most urban use and recreational development. The clayey subsoil is a limitation for a few uses.

This soil is in capability subclass IIe and woodland suitability group 3o.

FsC2—Faceville sandy clay loam, 5 to 8 percent slopes, eroded. This well drained, gently sloping soil is on hillsides on uplands of the Southern Coastal Plain. The surface layer is a mixture of part of the original surface soil and the upper part of the subsoil. It commonly has rills, galled spots, shallow gullies, and an occasional deep gully. Slopes are convex. Areas range from 5 to 50 acres.

Typically, the surface layer is strong brown sandy clay loam about 4 inches thick. The subsoil is dominantly sandy clay that extends to a depth of 65 inches or more. The upper part is yellowish red, and the rest of the subsoil is red except for the lower part, which has brownish mottles.

This soil is low in natural fertility and content of organic matter. It is strongly acid or very strongly acid throughout except for the surface layer in limed areas. Permeability is moderate, and available water capacity is medium. Tilth is poor because of the sandy clay loam

surface layer. The root zone is deep and easily penetrated by plant roots.

Included with this soil in mapping are a few small areas of a soil that has yellow, red, and brown mottles at a depth of 20 to 30 inches. Also included are small intermingled areas of Greenville soils.

This Faceville soil is only moderately suited to row crops and small grain because of slope and the somewhat gullied condition. It is well suited to hay and pasture. Tilth can be improved by returning crop residue to the soil and by using sod crops in the rotation. Erosion is a moderate hazard if cultivated crops are grown. Conservation tillage, using cover crops that include grasses and legumes in the cropping system, terracing, and contouring help to reduce runoff and control erosion.

Slash pine and loblolly pine are moderately suited to this soil. There are no significant limitations for woodland use or management.

This soil is well suited to most urban use and recreational development. The clayey subsoil is a limitation for a few uses.

This soil is in capability subclass IVe and woodland suitability group 3o.

FsD2—Faceville sandy clay loam, 8 to 12 percent slopes, eroded. This well drained, sloping soil is on hillsides on uplands of the Southern Coastal Plain. The surface layer is a mixture of the original surface soil and the upper part of the subsoil. Slopes are convex and commonly contain rills or galled spots, shallow gullies, and an occasional deep gully. Areas range from 10 to 50 acres.

Typically, the surface layer is strong brown sandy clay loam 4 inches thick. The subsoil is dominantly sandy clay that extends to a depth of 60 inches or more. The upper part is yellowish red, and the rest of the subsoil is red except for the lower part, which has brownish yellow mottles.

This soil is low in natural fertility and content of organic matter. It is strongly acid or very strongly acid throughout except for the surface layer in limed areas. Permeability is moderate, and available water capacity is medium. Tilth is poor because of the sandy clay loam surface layer. The root zone is deep and easily penetrated by plant roots.

Included with this soil in mapping are a few intermingled areas of Greenville and Orangeburg soils. Also included are a few small areas of soils that have a sandy loam surface layer and soils that are mottled yellow, red, and brown at a depth of 24 to 30 inches.

This Faceville soil is poorly suited to row crops, small grain, hay, and pasture because of slope, poor tilth, and the somewhat gullied condition. Erosion is a severe hazard if cultivated crops are grown.

Loblolly pine and slash pine are moderately suited to this soil. There are no significant limitations for woodland uses or management.

This soil is only moderately suited to most urban use and recreational development because of slope. The clayey subsoil is a limitation for a few uses.

This soil is in capability subclass VIe and woodland suitability group 3o.

FuB—Fuquay loamy sand, 0 to 5 percent slopes. This well drained, nearly level and very gently sloping soil is on broad ridgetops and hillsides on uplands of the Southern Coastal Plain. Slopes are mostly smooth and convex. Areas range from 5 to 80 acres.

Typically, the surface layer is dark grayish brown loamy sand about 8 inches thick. The subsurface layer is light yellowish brown loamy sand that extends to a depth of 22 inches. The subsoil is predominantly sandy clay loam that extends to a depth of 65 inches or more. The upper part is yellowish brown, and the lower part is mottled yellowish brown, strong brown, and red. Plinthite is below a depth of about 50 inches and makes up 10 percent of the soil. A few nodules of ironstone are in the soil to a depth of 36 inches.

This soil is low in natural fertility and content of organic matter. It is strongly acid or very strongly acid throughout except for the surface layer in limed areas. Permeability is moderate in the upper part of the subsoil and slow in the lower part. Available water capacity is low. Tilth is good. This soil can be worked throughout a wide range of moisture content. The root zone is deep and easily penetrated by plant roots.

Included with this soil in mapping are a few small areas of Dothan and Tifton soils. Some areas of a soil are included that have more nodules of ironstone than is common for the Fuquay soils. Also included are small areas of a soil that is less than 5 percent plinthite within a depth of 60 inches.

This Fuquay soil is only moderately suited to row crops, small grain, hay, and pasture because of low available water capacity. Returning crop residue to the soil helps to overcome this limitation. During dry seasons, this soil responds to irrigation, and high yields can be obtained.

Slash pine and longleaf pine are only moderately suited to this soil. Limited use of equipment and seedling mortality are management concerns.

This soil is well suited to most urban use. However, slow permeability in the lower part of the subsoil limits the use of this soil for septic tank absorption fields. Commonly, this limitation can be overcome by special design and proper installation. Because it is too sandy, this soil is only moderately suited to recreational development.

This soil is in capability subclass IIs and woodland suitability group 3s.

FuC—Fuquay loamy sand, 5 to 8 percent slopes. This well drained, gently sloping soil is on hillsides on uplands of the Southern Coastal Plain. Slopes are smooth and convex. Areas range from 10 to 100 acres.

Typically, the surface layer is dark grayish brown loamy sand about 8 inches thick. The subsurface layer is pale brown loamy sand that extends to a depth of 25 inches. The subsoil extends to a depth of 60 inches or more. The upper part is yellowish brown sandy loam, the middle part is yellowish brown sandy clay loam, and the lower part is yellowish brown sandy clay loam that has red and strong brown mottles. Plinthite is below a depth of about 48 inches and makes up 5 to 12 percent of the soil. A few nodules of ironstone are in the surface layer and upper part of the subsoil.

This soil is low in natural fertility and content of organic matter. It is strongly acid or very strongly acid throughout except for the surface layer in limed areas. Permeability is moderate in the upper part of the subsoil and slow in the lower part. Available water capacity is low. Tilth is good. The root zone is deep and easily penetrated by plant roots.

Included with this soil in mapping are a few small areas of Dothan, Lucy, and Troup soils. Also included are small areas of a soil that is less than 5 percent plinthite within 60 inches of the surface.

This Fuquay soil is only moderately suited to row crops, small grain, hay, and pasture because of the low available water capacity. Returning crop residue to the soil helps to overcome this limitation.

Slash pine and longleaf pine are only moderately suited to this soil. Limited use of equipment and seedling mortality are management concerns.

This soil is well suited to most urban use. However, slow permeability in the lower part of the subsoil limits the use of this soil for septic tank absorption fields. Commonly, this limitation can be overcome by special design and proper installation. Because it is too sandy, this soil is only moderately suited to most recreational development.

This soil is in capability subclass IIIs and woodland suitability group 3s.

Gr—Grady sandy loam. This poorly drained, nearly level soil is in saucer-shaped depressions on uplands of the Southern Coastal Plain. It commonly is ponded from early in winter to early in summer. Slope is 0 to 2 percent. Areas range from 3 to 400 acres.

Typically, the surface layer is black sandy loam about 6 inches thick. The subsurface layer is light gray sandy loam about 4 inches thick. The subsoil is predominantly sandy clay to a depth of 62 inches or more. It is gray throughout and has yellowish brown and brownish yellow mottles.

This soil is low in natural fertility and medium in content of organic matter. It is very strongly acid or strongly acid throughout except for the surface layer in limed areas. Permeability is slow, and available water capacity is medium. Tilth is good. This soil commonly is saturated or ponded from early in winter to early in summer and the growth of plants, other than those that are water-tolerant, is limited.

Included with this soil in mapping are small areas of Ardilla, Clarendon, and Rains soils. Also included are areas of a soil that is similar to Grady soil but has a clay loam surface layer.

This Grady soil is poorly suited to row crops because it is subject to ponding. It is moderately suited to pasture.

Baldcypress, blackgum, and water oak are common trees. Ponding is the main limitation to equipment use and to seedling survival for other than the common water-tolerant trees. However, if this soil is drained, loblolly pine and slash pine are well suited. Poor drainage also significantly reduces the limitations to use of equipment.

This soil is poorly suited to urban use and recreational development because it is subject to ponding. This limitation is difficult to overcome.

This soil is in capability subclass Vw and woodland suitability group 4w.

GsA—Greenville sandy loam, 0 to 2 percent slopes. This well drained, nearly level soil is on broad ridgetops on uplands of the Southern Coastal Plain. Areas range from 10 to 125 acres.

Typically, the surface layer is dark reddish brown sandy loam about 7 inches thick. The subsoil extends to a depth of 70 inches or more. The upper part is dark reddish brown sandy clay loam, and the lower part is dark red sandy clay.

This soil is low in natural fertility and content of organic matter. It is medium acid to very strongly acid throughout except for the surface layer in limed areas. Permeability is moderate, and available water capacity is medium. Tilth is good. This soil can be worked throughout a wide range of moisture content. The root zone is deep and easily penetrated by plant roots.

Included with this soil in mapping are a few intermingled areas of Faceville, Orangeburg, and Red Bay soils. Also included are a few small areas of a soil that is similar to Greenville soil but has a sandy clay loam surface layer.

This Greenville soil is well suited to row crops, small grain, hay, and pasture (fig. 2). During dry seasons, this soil responds favorably to irrigation, and high yields can be obtained. Good tilth is easily maintained by returning crop residue to the soil. Conservation tillage and using cover crops that include grasses and legumes in the cropping system help to conserve moisture and maintain the content of organic matter.

Loblolly pine and slash pine are moderately suited to this soil. There are no significant limitations for woodland use or management.

Figure 2.—Soybeans on Greenville sandy loam, 0 to 2 percent slopes. This soil is prime farmland and is well suited to the commonly grown crops.

This soil is well suited to most urban use and recreational development. The clayey subsoil is a limitation for a few uses.

This soil is in capability class I and woodland suitability group 3o.

GsB—Greenville sandy loam, 2 to 5 percent slopes. This well drained, very gently sloping soil is on broad ridgetops on uplands of the Southern Coastal Plain. Slopes are smooth and convex. Areas range from 10 to 125 acres.

Typically, the surface layer is dark reddish brown sandy loam about 8 inches thick. The subsoil extends to a depth of 72 inches or more. The upper few inches is dark reddish brown sandy clay loam, and the rest is dark red sandy clay.

This soil is low in natural fertility and content of organic matter. It is medium acid to very strongly acid throughout except for the surface layer in limed areas. Permeability is moderate, and available water capacity is medium. Tilth is good. This soil can be worked throughout a wide range of moisture content. The root zone is deep and easily penetrated by plant roots.

Included with this soil in mapping are a few intermingled areas of Faceville, Orangeburg, and Red Bay soils. Also included are a few areas of a soil that is similar to Greenville soil but has a sandy clay loam surface layer.

This Greenville soil is well suited to row crops, small grain, hay, and pasture. During dry seasons, this soil responds favorably to irrigation, and high yields can be obtained. Good tilth is easily maintained by returning crop residue to the soil. Erosion is a moderate hazard if cultivated crops are grown. Conservation tillage, using cover crops that include grasses and legumes in the cropping system, terracing, and contouring help to reduce runoff and control erosion.

Loblolly pine and slash pine are moderately suited to this soil. There are no significant limitations for woodland use or management.

This soil is well suited to most urban use and recreational development. The clayey subsoil is a limitation for a few uses.

This soil is in capability subclass IIe and woodland suitability group 3o.

GtC2—Greenville sandy clay loam, 5 to 8 percent slopes, eroded. This well drained, gently sloping soil is on hillsides on uplands of the Southern Coastal Plain. The surface layer is a mixture of the original surface soil and the upper part of the subsoil. This soil commonly has rills, galled spots, shallow gullies, and an occasional deep gully. Slopes are convex. Areas range from 10 to 30 acres.

Typically, the surface layer is dark reddish brown sandy clay loam about 4 inches thick. The subsoil extends to a depth of 60 inches or more. The upper few inches is dark reddish brown sandy clay loam, and the rest of the subsoil is dark red sandy clay.

This soil is low in natural fertility and content of organic matter. It is medium acid to very strongly acid except for the surface layer in limed areas. Permeability is moderate, and available water capacity is medium. Tilth is poor because of the sandy clay loam surface layer. The root zone is deep and easily penetrated by plant roots.

Included with this soil in mapping are a few intermingled areas of Faceville soils. Also included are a few small areas of a soil that has a sandy loam surface layer.

This Greenville soil is poorly suited to row crops and small grain because of slope, poor tilth, and the somewhat gullied condition. However, it is moderately suited to hay and pasture. Tilth can be improved by returning crop residue to the soil and by rotations of grass crops. Erosion is a severe hazard if cultivated crops are grown. Conservation tillage, using cover crops that include grasses and legumes in the cropping system, terracing, and contouring help to reduce runoff and control erosion.

Loblolly pine and slash pine are moderately suited to this soil. There are no significant limitations for woodland uses or management.

This soil is well suited to most urban uses and recreational development. The clayey subsoil is a limitation for a few uses.

This soil is in capability subclass IVe and woodland suitability group 3o.

GtD2—Greenville sandy clay loam, 8 to 12 percent slopes, eroded. This well drained, sloping soil is on short hillsides on uplands of the Southern Coastal Plain. The surface layer is a mixture of the original surface soil and the upper part of the subsoil. This soil commonly has rills or galled spots, shallow gullies, and an occasional deep gully. Slopes are convex. Areas range from 10 to 50 acres.

Typically, the surface layer is dark reddish brown sandy clay loam about 4 inches thick. The subsoil extends to a depth of 60 inches or more. The upper few inches is dark red sandy clay loam, and the rest of the subsoil is dark red sandy clay.

This soil is low in natural fertility and content of organic matter. It is medium acid to very strongly acid except for the surface layer in limed areas. Permeability is moderate, and available water capacity is medium. Tilth is poor because of the sandy clay loam surface layer. The root zone is deep and easily penetrated by plant roots.

Included with this soil in mapping are a few intermingled areas of Faceville soils. Also included are a few small areas of a soil that is similar to Greenville soil but has a sandy loam surface layer.

This Greenville soil is poorly suited to row crops and small grain because of slope, poor tilth, and the somewhat gullied condition. It is well suited to hay and pasture. Erosion is a severe hazard if cultivated crops are grown.

Loblolly pine and slash pine are moderately suited to this soil. There are no significant limitations for woodland use or management.

This soil is only moderately suited to most urban use and recreational development because of slope. The clayey subsoil is a limitation for a few uses.

This soil is in capability subclass VIe and woodland suitability group 3o.

He—Herod loam. This poorly drained, nearly level soil is on the flood plain of Limestone Creek in the southwestern part of Dooly County. This soil is frequently flooded for brief periods commonly from late in fall to mid spring. Slope is 0 to 2 percent. The area of this soil is 515 acres.

Typically, the surface layer is dark grayish brown loam about 9 inches thick. The subsurface layer is light brownish gray loam to a depth of 15 inches. It is underlain by stratified sandy clay loam and sandy loam that is predominantly gray and has strong brown, grayish brown, and light yellowish brown mottles.

Included with this soil in mapping are small areas of Bibb and Kinston soils.

This Herod soil is low in natural fertility and content of organic matter. It is medium acid or strongly acid in the surface layer and medium acid to neutral in the stratified layers below. Permeability is moderate, and available water capacity is medium. The water table commonly is at a depth of 0.5 foot to 1.5 feet from early in winter to early in spring.

This soil is wooded. Loblolly pine, slash pine, and sweetgum are well suited to this soil. Wetness is the main limitation to equipment use in managing and harvesting the wood crop. However, logging can be successfully performed during the drier seasons. Drainage is needed to overcome the high seedling mortality.

This soil is poorly suited to farming because of wetness and the hazard of flooding. These limitations also severely restrict urban use. They can be overcome only by extensive flood control and drainage measures.

This soil is in capability subclass Vw and woodland suitability group 1w.

HU—Humaquepts, loamy. These very poorly drained, nearly level soils are in low areas at the base of hills and in depressions on flood plains of the Flint River and some of its tributaries. Areas are irregular in shape and range from about 60 to 400 acres. These soils are frequently flooded for long periods throughout the year. In most areas, Humaquepts, loamy, are ponded from a depth of 1 foot to a depth of 5 feet.

Typically, Humaquepts, loamy, are very dark gray silt loam to a depth of 20 inches. This material is slightly sticky and has a large amount of matted roots. It is underlain by black, dark grayish brown, or dark gray silty clay loam or clay to a depth of 40 inches or more.

These soils are mainly wooded with sweetbay, sweetgum, yellow-poplar, willow, and blackgum trees. The understory consists of many water-tolerant shrubs and aquatic plants.

Humaquepts, loamy, are poorly suited to common uses in which flooding, wetness, and low strength are limitations. These limitations can be overcome only by extensive flood control and drainage measures.

These soils are well suited to wetland plants and to the development of shallow water areas for wetland wildlife. Ducks, alligators, and crayfish are common wildlife that inhabit these areas.

These soils are in capability subclass VIIIw.

LaB—Lakeland sand, 0 to 8 percent slopes. This excessively drained, nearly level to gently sloping soil is on ridgetops and hillsides on uplands of the Sand Hills. Slopes are smooth and convex. Areas range from 20 to 200 acres.

Typically, the surface layer is brown sand about 4 inches thick. The underlying material is sand to a depth of 80 inches or more. The upper layer is brown, and the middle and lower layers are yellowish brown.

This soil is low in natural fertility and content of organic matter. It is strongly acid or very strongly acid throughout except for the surface layer in limed areas. Permeability is very rapid, and the available water capacity is low. Tilth is good. The root zone is deep and easily penetrated by plant roots.

Included with this soil in mapping are a few small, intermingled areas of Fuquay, Lucy, Troup, and Vaucluse soils.

This Lakeland soil is poorly suited to row crops, small grain, hay, and pasture because of low fertility and low available water capacity. However, yields on the less sloping part of this unit can be substantially increased if the soil is irrigated.

Loblolly pine, slash pine, and longleaf pine are moderately suited to this soil. Limited use of equipment and seedling mortality are management concerns.

This soil is well suited to most urban use. However, seepage is a limitation for most sanitary facilities. Because it is too sandy, this soil is poorly suited to recreational development.

This soil is in capability subclass IVs and woodland suitability group 4s.

LaD—Lakeland sand, 8 to 15 percent slopes. This excessively drained, sloping and moderately steep soil is on hillsides on uplands of the Sand Hills. Slopes are irregular and convex. Areas range from 20 to 300 acres.

Typically, the surface layer is dark grayish brown sand about 4 inches thick. The underlying material is sand to a depth of 80 inches or more. The upper and middle layers are yellowish brown, and the lower layer is yellow.

This soil is low in natural fertility and content of organic matter. It is strongly acid or very strongly acid throughout except for the surface layer in limed areas. Permeability is very rapid, and available water capacity is low. Tilth is good. The root zone is deep and easily penetrated by plant roots.

Included with this soil in mapping are a few small areas of Fuquay, Lucy, and Vaucluse soils. Also included are a few small areas of a soil that has a higher content of clay between a depth of 60 to 80 inches than is common in Lakeland soils.

This Lakeland soil is poorly suited to row crops, small grain, hay, and pasture because of slope, low fertility, and low available water capacity.

Loblolly pine, longleaf pine, and slash pine are moderately suited to this soil. Limited use of equipment and seedling mortality are management concerns.

This soil is only moderately suited to most urban use because of slope. Also, seepage is a limitation to most sanitary facilities. Because it is too sandy, this soil is poorly suited to recreational development.

This soil is in capability subclass VIs and woodland suitability group 4s.

LuB—Lucy loamy sand, 0 to 5 percent slopes. This well drained, nearly level and very gently sloping soil is on broad ridgetops and hillsides on uplands of the Southern Coastal Plain. Slopes are smooth and convex. Areas range from 10 to 75 acres.

Typically, the surface layer is dark grayish brown loamy sand about 8 inches thick. The subsurface layer is strong brown loamy sand to a depth of 28 inches. The subsoil extends to a depth of 65 inches or more. The upper few inches is yellowish red sandy loam, and the rest of the subsoil is red sandy clay loam.

This soil is low in natural fertility and content of organic matter. It is strongly acid or very strongly acid throughout except for the surface layer in limed areas. Permeability is moderate, and available water capacity is low. Tilth is good. This soil can be worked throughout a wide range of moisture content. The root zone is deep and easily penetrated by plant roots.

Included with this soil in mapping are a few intermingled areas of Eustis and Orangeburg soils.

This Lucy soil is only moderately suited to row crops, small grain, hay, and pasture because of low available water capacity and low fertility. Returning crop residue to the soil helps to overcome these limitations. During dry seasons, this soil responds favorably to irrigation, and high yields can be obtained.

Loblolly pine and slash pine are moderately suited to this soil. Limited use of equipment and seedling mortality are management concerns.

This soil is well suited to most urban use. However, seepage is a limitation for some sanitary facilities. Because it is too sandy, this soil is only moderately suited to recreational development.

This soil is in capability subclass IIs and woodland suitability group 3s.

LuC—Lucy loamy sand, 5 to 12 percent slopes. This well drained, gently sloping and sloping soil is on hillsides and narrow ridgetops on uplands of the Southern Coastal Plain. Slopes commonly are smooth and convex. Areas range from 10 to 20 acres.

Typically, the surface layer is brown loamy sand about 8 inches thick. The subsurface layer is strong brown loamy sand to a depth of 31 inches. The subsoil is dominantly sandy clay loam that extends to a depth of 60 inches or more. The upper few inches is yellowish red sandy loam, and the rest of the subsoil is red sandy clay loam.

This soil is low in natural fertility and content of organic matter. It is strongly acid or very strongly acid throughout except for the surface layer in limed areas. Permeability is moderate, and available water capacity is low. Tilth is good. This soil can be worked throughout a wide range of moisture content. The root zone is deep and easily penetrated by plant roots.

Included with this soil in mapping are a few small areas of Eustis, Orangeburg, and Troup soils.

This Lucy soil is poorly suited to row crops, small grain, hay, and pasture because of slope, low available water capacity, and low fertility.

Loblolly pine and slash pine are moderately suited to this soil. Limited use of equipment and seedling mortality are management concerns.

This soil is only moderately suited to most urban use and recreational development because of slope. In addition, seepage is a limitation for some sanitary facilities. Because it is sandy, this soil is limited for recreational development.

This soil is in capability subclass IVs and woodland suitability group 3s.

NaB—Nankin sandy loam, 2 to 5 percent slopes. This well drained, very gently sloping soil is on narrow ridgetops on uplands of the Southern Coastal Plain. Slopes are smooth and convex. Areas range from 10 to 30 acres.

Typically, the surface layer is grayish brown sandy loam about 7 inches thick. The subsoil extends to a depth of 44 inches. The upper part is strong brown sandy clay loam; the middle part is yellowish red sandy clay that has strong brown, brownish yellow, and red mottles; and the lower part is mottled red, brownish yellow, and light gray sandy clay loam. The underlying material is mottled strong brown, brownish yellow, and light gray sandy loam to a depth of 60 inches or more.

This soil is low in natural fertility and content of organic matter. It is strongly acid or very strongly acid throughout except for the surface layer in limed areas. Permeability is moderately slow, and available water capacity is medium. Tilth is good. This soil can be worked throughout a wide range of moisture content. Root penetration is somewhat restricted because the subsoil is firm.

Included with this soil in mapping are small areas of Cowarts, Dothan, Faceville, and Tifton soils. Also included are areas of a soil that has a reddish, loamy subsoil and soils that have numerous nodules of ironstone in the surface layer and in the upper part of the subsoil.

This Nankin soil is only moderately suited to row crops, small grain, hay, and pasture because root penetration is somewhat restricted in the subsoil. Good tilth is maintained by returning crop residue to the soil. Erosion is a moderate hazard if cultivated crops are grown. Conservation tillage, using cover crops that include grasses and legumes in the cropping system, terracing, and contouring help to reduce runoff and control erosion.

Slash pine and loblolly pine are moderately suited to this soil. There are no significant limitations for woodland use or management.

This soil is well suited to most urban use. However, moderately slow permeability in the subsoil limits the use of the soil for septic tank absorption fields. Commonly,

this limitation can be overcome by special design and proper installation. Because this soil has moderately slow permeability, it is only moderately suited to recreational development.

This soil is in capability subclass IIe and woodland suitability group 3o.

NeC2—Nankin sandy clay loam, 5 to 8 percent slopes, eroded. This well drained, gently sloping soil is on hillsides on uplands of the Southern Coastal Plain. The surface layer is a mixture of part of the original surface soil and the upper part of the subsoil. Slopes are choppy and irregular. This soil commonly has rills, galled spots, shallow gullies, and an occasional deep gully. Areas range from 10 to 30 acres.

Typically, the surface layer is brown sandy clay loam about 5 inches thick. The subsoil extends to a depth of 50 inches. The upper part is strong brown sandy clay loam; the middle part is strong brown sandy clay and has yellowish brown and light gray mottles; and the lower part is mottled strong brown, light gray, and red sandy clay loam. The underlying material is mottled strong brown, light gray, and red sandy loam to a depth of 60 inches or more.

This soil is low in natural fertility and content of organic matter. It is strongly acid or very strongly acid throughout except for the surface layer in limed areas. Permeability is moderately slow, and available water capacity is medium. Tilth is poor because of the sandy clay loam surface layer. The root penetration is somewhat restricted because the subsoil is firm.

Included with this soil in mapping are small areas of Cowarts, Faceville, and Tifton soils. Also included are areas of soils that are similar to Nankin soils but have slopes of as much as 12 percent.

This Nankin soil is poorly suited to row crops and small grain because of the restricted root penetration in the subsoil, the slope, and the somewhat gullied surface condition. However, it is moderately suited to hay and pasture. Tilth can be improved by returning crop residue to the soil. Erosion is a severe hazard if cultivated crops are grown.

Conservation tillage, using cover crops that include grasses and legumes in the cropping system, terracing, and contouring help to reduce runoff and control erosion.

Slash pine and loblolly pine are moderately suited to this soil. There are no significant limitations for woodland use or management.

This soil is well suited to most urban use. However, moderately slow permeability in the subsoil limits the use of this soil for septic tank absorption fields. Commonly, this limitation can be overcome by special design and proper installation. Because the soil has moderately slow permeability, it is only moderately suited to recreational development.

This soil is in capability subclass IVe and woodland suitability group 3o.

Oc—Ochlockonee sandy loam. This well drained, nearly level soil is in draws and small depressions, and on narrow flood plains. It is occasionally flooded for very brief periods in winter and spring. At other times, the depth to the water table is 3 or 4 feet. Areas range from 10 to 40 acres.

Typically, the surface layer is dark brown sandy loam about 7 inches thick. Below this are layers of brown and dark brown loamy sand, coarse sandy loam, and sandy loam to a depth of 60 inches or more.

This soil is medium in natural fertility and low in content of organic matter. It is strongly acid or very strongly acid throughout except for the surface layer in limed areas. Permeability is moderately rapid, and available water capacity is medium. Tilth is good. This soil can be worked throughout a wide range of moisture content. The root zone is deep and easily penetrated by plant roots.

Included with this soil in mapping are small areas of Bibb and Rains soils. Also included are areas of alluvial soils that have a reddish brown, loamy surface layer underlain by red sandy clay or sandy clay loam.

This Ochlockonee soil is well suited to row crops, small grain, hay, and pasture. During dry seasons, this soil responds well to irrigation, and high yields can be obtained. Some areas are used as a vegetative waterway to carry water from diversions and terrace outlets. Good tilth is easily maintained by returning crop residue to the soil.

Loblolly pine, slash pine, and yellow-poplar are well suited to this soil. The soil has no significant limitations for woodland use or management.

This soil is poorly suited to most urban use and recreational development because of brief, shallow flooding from early in winter to mid spring.

This soil is in capability subclass IIw and woodland suitability group 1o.

Od—Ocilla loamy sand. This deep, somewhat poorly drained, nearly level soil is on low lying areas on uplands of the Southern Coastal Plain. Slope is 0 to 2 percent. Areas range from 5 to 50 acres.

Typically, the surface layer is dark grayish brown loamy sand about 6 inches thick. The subsurface layer is loamy sand to a depth of 30 inches. The upper part is pale brown, and the lower part is pale brown and has yellowish brown and light gray mottles. The subsoil dominantly is sandy clay loam that extends to a depth of 65 inches or more. The upper part is light yellowish brown and has light gray and yellowish brown mottles; the middle part is brownish yellow and has light gray and yellowish brown mottles; and the lower part is mottled strong brown, light gray, and yellowish brown.

This soil is low in natural fertility and content of organic matter. It is strongly acid or very strongly acid throughout except for the surface layer in limed areas. Permeability is moderate, and available water capacity is

low. Tilth is good. This soil can be worked throughout a wide range of moisture content. Although the root zone is deep, the water table, which commonly is at a depth of 1 foot to 2.5 feet from early in winter to mid spring, limits root penetration.

Included with this soil in mapping are a few small areas of Rains soils. Also included are areas of wet soils of less than 3 acres. These areas are indicated by a wet spot symbol on the detailed soil map.

This Ocilla soil is moderately suited to row crops and truck crops. Unless drained, the soil is limited because of wetness.

Slash pine and loblolly pine are moderately suited to this soil. Wetness is the main limitation to use of equipment in managing and harvesting the tree crop. However, operations can be successfully performed during the drier seasons. In addition, drainage measures are needed to overcome seedling mortality.

This soil is moderately suited to most urban use and recreational development because of wetness. This limitation commonly can be reduced if the soil is drained.

This soil is in capability subclass IIIw and woodland suitability group 3w.

OkB—Oktibbeha loam, 2 to 5 percent slopes. This moderately well drained, very gently sloping soil is on ridgetops and hillsides on uplands of the Black Lands. Slopes are smooth and convex. Areas range from 10 to 60 acres.

Typically, the surface layer is dark grayish brown loam about 6 inches thick. The subsoil is clay that extends to a depth of 35 inches. The upper part is yellowish red, the middle part is red, and the lower part is red and has gray mottles. The underlying material to a depth of 60 inches or more is pale yellow clay that has gray and white mottles and soft, white nodules of calcium carbonate.

This soil is low in natural fertility and content of organic matter. It is strongly acid to slightly acid in the upper part of the profile, but the underlying material is moderately alkaline to neutral. Permeability is very slow, and available water capacity is high. Tilth is fair. The root zone is restricted to the surface layer and the subsoil.

Included with this soil in mapping are small areas of Sumter and Susquehanna soils.

This Oktibbeha soil is only moderately suited to row crops, small grain, hay, and pasture because root penetration is restricted. In addition, erosion is a hazard if cultivated crops are grown because of the high runoff rate. Tilth can be maintained in most places by returning crop residue to the soil. Conservation tillage, using cover crops that include grasses and legumes in the cropping system, and contouring help to reduce runoff and control erosion.

Loblolly pine and slash pine are only moderately suited to this soil. Limited use of equipment, seedling mortality, and plant competition are management concerns.

This soil is poorly suited to most urban use and recreational development. Very slow permeability, the high shrink-swell potential, and low strength in the subsoil limit many uses.

This soil is in capability subclass IIIe and woodland suitability group 3c.

OkC—Oktibbeha loam, 5 to 8 percent slopes. This moderately well drained, gently sloping soil is on hillsides on uplands of the Black Lands. Slopes are smooth and convex. Areas range from 5 to 50 acres.

Typically, the surface layer is brown loam about 6 inches thick. The subsoil is clay that extends to a depth of 40 inches. The upper few inches are reddish brown, and the rest of the subsoil is red and has gray mottles. The underlying material to a depth of 60 inches or more is pale yellow clay that has light gray and white mottles and soft, white nodules of calcium carbonate.

This soil is low in natural fertility and content of organic matter. It is strongly acid to slightly acid throughout, but the underlying material is alkaline to neutral. Permeability is very slow, and available water capacity is high. Tilth is fair. The root zone is restricted to the surface layer and the subsoil.

Included with this soil in mapping are small areas of Sumter and Susquehanna soils.

This Oktibbeha soil is poorly suited to row crops and small grain because of the high runoff rate. In addition, root penetration is restricted to the surface layer and subsoil. However, this soil is moderately suited to hay and pasture.

Loblolly pine and slash pine are only moderately suited to this soil. Limited use of equipment, seedling mortality, and plant competition are management concerns.

This soil is poorly suited to most urban use and recreational development. Very slow permeability, the high shrink-swell potential, and low strength in the subsoil limit many uses.

This soil is in capability subclass IVe and woodland suitability group 3c.

OrA—Orangeburg loamy sand, 0 to 2 percent slopes. This well drained, nearly level soil is on broad ridgetops on uplands of the Southern Coastal Plain. Areas range from 30 to 70 acres.

Typically, the surface layer is dark grayish brown loamy sand about 8 inches thick. The subsoil extends to a depth of 65 inches or more. The upper part is predominantly yellowish red sandy clay loam, the middle part is red sandy clay loam, and the lower part is red sandy clay.

This soil is low in natural fertility and content of organic matter. It is strongly acid or very strongly acid throughout except for the surface layer in limed areas. Permeability is moderate, and available water capacity is medium. Tilth is good. This soil can be worked

throughout a wide range of moisture content. The root zone is deep and easily penetrated by plant roots.

Included with this soil in mapping are a few small areas of Eustis, Faceville, Lucy, and Red Bay soils.

This Orangeburg soil is well suited to row crops, small grain, hay, and pasture. During dry seasons, this soil responds well to irrigation, and high yields can be obtained. Good tilth is easily maintained by returning crop residue to the soil. Conservation tillage and using cover crops that include grasses and legumes in the cropping system help to increase the content of organic matter.

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

This soil is well suited to most urban use and recreational development.

This soil is in capability class I and woodland suitability group 2o.

OrB—Orangeburg loamy sand, 2 to 5 percent slopes. This well drained, very gently sloping soil is on ridgetops and hillsides on uplands of the Southern Coastal Plain. Slopes commonly are smooth and convex. Areas range from 5 to 90 acres.

Typically, the surface layer is dark grayish brown loamy sand about 10 inches thick. The subsoil is predominantly sandy clay loam that extends to a depth of 65 inches or more. The upper part is yellowish red, and the lower part is red.

This soil is low in natural fertility and content of organic matter. It is strongly acid or very strongly acid throughout except for the surface layer in limed areas. Permeability is moderate, and available water capacity is medium. Tilth is good. This soil can be worked throughout a wide range of moisture content. The root zone is deep and easily penetrated by plant roots.

Included with this soil in mapping are a few small areas of Eustis, Faceville, Lucy, and Red Bay soils.

This Orangeburg soil is well suited to row crops, small grain, hay, and pasture. During dry seasons, this soil responds well to irrigation, and high yields can be obtained. Good tilth is easily maintained by returning crop residue to the soil. Erosion is a moderate hazard if cultivated crops are grown. Conservation tillage, using cover crops that include grasses and legumes in the cropping system, terracing, and contouring help to reduce runoff and control erosion.

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

This soil is well suited to most urban use and recreational development.

This soil is in capability subclass IIe and woodland suitability group 2o.

OrD—Orangeburg loamy sand, 8 to 12 percent slopes. This well drained, sloping soil is on hillsides on uplands of the Southern Coastal Plain. Slopes are short. Areas range from 5 to 48 acres.

Typically, the surface layer is dark grayish brown loamy sand about 7 inches thick. The subsoil extends to a depth of 65 inches or more. The upper part is yellowish red sandy loam, and the rest of the subsoil is red sandy clay loam except for the lower part, which has reddish yellow mottles.

This soil is low in natural fertility and content of organic matter. It is strongly acid or very strongly acid throughout except for the surface layer in limed areas. Permeability is moderate, and available water capacity is medium. Tilth is good. The root zone is deep and easily penetrated by plant roots.

Included with this soil in mapping are a few small areas of Faceville and Lucy soils. Also included are soils on the lower part of some hillsides that have a subsoil that extends to a depth of less than 60 inches.

This Orangeburg soil is poorly suited to row crops, small grain, hay, and pasture because of slope. Erosion is a severe hazard if cultivated crops are grown.

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

This soil is only moderately suited to most urban use and recreational development because of slope.

This soil is in capability subclass IVe and woodland suitability group 2o.

OrE—Orangeburg loamy sand, 12 to 20 percent slopes. This well drained, moderately steep and steep soil is on short hillsides on uplands of the Southern Coastal Plain. It is mainly adjacent to the larger creeks or their branches. Areas range from 15 to 70 acres.

Typically, the surface layer is dark grayish brown loamy sand about 4 inches thick. The subsurface layer is brown loamy sand that extends to a depth of about 10 inches. The subsoil extends to a depth of 65 inches or more. The upper part is yellowish red sandy loam, and the rest of the subsoil is red sandy clay loam except for the lower part, which has reddish mottles.

This soil is low in natural fertility and content of organic matter. It is strongly acid or very strongly acid throughout except for the surface layer in limed areas. Permeability is moderate, and available water capacity is medium. Tilth is good. The root zone is deep and easily penetrated by plant roots.

Included with this soil in mapping are a few small areas of soils on the lower part of some hillsides. These soils are similar to Orangeburg soil, but they have a subsoil that extends to a depth of less than 60 inches. Because they respond much the same as Orangeburg soils for common uses, these soils were not separated in mapping.

This Orangeburg soil is poorly suited to row crops, small grain, hay, and pasture because of the moderately steep slope. Erosion is a severe hazard if the soil is cultivated and not protected.

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

This soil is only moderately suited to most urban use and recreational development because of slope.

This soil is in capability subclass VIe and woodland suitability group 2o.

OsC2—Orangeburg sandy loam, 5 to 8 percent slopes, eroded. This well drained, gently sloping soil is on hillsides on uplands of the Southern Coastal Plain. The surface layer is a mixture of part of the original surface soil and the upper part of the subsoil. Slopes are convex. In places, the soil has rills, galled spots, shallow gullies, and an occasional deep gully. Areas range from 5 to 30 acres.

Typically, the surface layer is reddish brown sandy loam about 4 inches thick. The subsoil extends to a depth of 65 inches. The upper part is yellowish red sandy loam, and the rest of the subsoil is red sandy clay loam except for the lower part, which has brownish mottles.

This soil is low in natural fertility and content of organic matter. It is strongly acid or very strongly acid throughout except for the surface layer in limed areas. Permeability is moderate, and available water capacity is medium. Tilth is fair. The root zone is deep and easily penetrated by plant roots.

Included with this soil in mapping are a few small areas of Faceville and Lucy soils.

This Orangeburg soil is only moderately suited to row crops and small grain because of slope and the eroded surface layer. However, this soil is well suited to hay and pasture. Tilth can be improved in most places by returning crop residue to the soil. Erosion is a severe hazard if cultivated crops are grown. Conservation tillage, using cover crops that include grasses and legumes in the cropping system, terracing, and contouring help to reduce runoff and control erosion.

Slash pine and loblolly pine are well suited to this soil. There are no significant limitations for woodland use or management.

This soil is well suited to most urban use and recreational development.

This soil is in capability subclass IIIe and woodland suitability group 2o.

Ra—Rains sandy loam. This poorly drained, nearly level soil is on broad, smooth areas and in slight depressions on uplands of the Southern Coastal Plain. Slope is 0 to 2 percent. Areas range from 5 to 60 acres.

Typically, the surface layer is very dark grayish brown sandy loam about 8 inches thick. The subsurface layer is gray sandy loam about 7 inches thick. The subsoil is predominantly sandy clay loam that extends to a depth of 65 inches or more. It is gray throughout except for the lower part, which has yellowish brown, red, and strong brown mottles.

This soil is low in natural fertility and content of organic matter. It is very strongly acid or strongly acid throughout except for the surface layer in limed areas. Permeability is moderate, and available water capacity is medium. Tilth is good. Although the root zone is deep, a water table, which commonly is at a depth of less than 1 foot from late in fall to mid spring, limits the growth of many plants.

Included with this soil in mapping are a few small areas of Ardilla and Grady soils. Also included are soils that have a layer that somewhat restricts the movement of water below a depth of about 30 inches.

Most of the acreage of this Rains soil is wooded. The soil is poorly suited to cultivated crops and pasture because of wetness.

Slash pine, loblolly pine, and sweetgum are well suited to this soil. Wetness is a limitation to use of equipment in managing and harvesting the tree crop. However, logging operations can be successfully performed during the drier seasons. Drainage measures are needed to overcome seedling mortality.

This soil is poorly suited to most urban use and recreational development because of wetness. Unless outlets are available to improve the drainage, overcoming this limitation is difficult.

This soil is in capability subclass IVw and woodland suitability group 2w.

ReA—Red Bay sandy loam, 0 to 2 percent slopes. This well drained, nearly level soil is on broad ridgetops on uplands of the Southern Coastal Plain. Areas range from 20 to 100 acres.

Typically, the surface layer is dark reddish brown sandy loam about 7 inches thick. The subsoil is dark red sandy clay loam that extends to a depth of 62 inches or more.

This soil is low in natural fertility and content of organic matter. It is strongly acid or very strongly acid throughout except for the surface layer in limed areas. Permeability is moderate, and available water capacity is medium. Tilth is good. This soil can be worked throughout a wide range of moisture content. The root zone is deep and easily penetrated by plant roots.

Included with this soil in mapping are a few intermingled areas of Americus, Greenville, and Orangeburg soils.

This Red Bay soil is well suited to row crops, small grain, hay, and pasture. During dry seasons, this soil responds well to irrigation, and high yields can be obtained. Conservation tillage and using cover crops that include grasses and legumes in the cropping system

help to conserve moisture and maintain the content of organic matter.

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

This soil is well suited to most urban use and recreational development.

This soil is in capability subclass I and woodland suitability group 2o.

ReB—Red Bay sandy loam, 2 to 5 percent slopes. This well drained, very gently sloping soil is on ridgetops and hillsides on uplands of the Southern Coastal Plain. Slopes are smooth and convex. Areas range from 20 to 60 acres.

Typically, the surface layer is dark reddish brown sandy loam about 7 inches thick. The subsoil is dark red sandy clay loam that extends to a depth of 60 inches or more.

This soil is low in natural fertility and content of organic matter. It is strongly acid or very strongly acid throughout except for the surface layer in limed areas. Permeability is moderate, and available water capacity is medium. Tilth is good. This soil can be worked throughout a wide range of moisture content. The root zone is deep and easily penetrated by plant roots.

Included with this soil in mapping are a few small areas of Americus, Greenville, and Lucy soils.

This Red Bay soil is well suited to row crops, small grain, hay, and pasture. During dry seasons, this soil responds well to irrigation, and high yields can be obtained. Good tilth is easily maintained by returning crop residue to the soil. Erosion is a moderate hazard if cultivated crops are grown. Conservation tillage, using cover crops that include grasses and legumes in the cropping system, terracing, and contouring help to reduce runoff and control erosion.

Loblolly pine, slash pine, and longleaf pine are well suited to this soil. There are no significant limitations for woodland use or management.

This soil is well suited to most urban use and recreational development.

This soil is in capability subclass IIe and woodland suitability group 2o.

ReC—Red Bay sandy loam, 5 to 8 percent slopes. This well drained, gently sloping soil is on hillsides on uplands of the Southern Coastal Plain. Slopes are smooth and convex. Areas range from 20 to 80 acres.

Typically, the surface layer is dark reddish brown sandy loam about 6 inches thick. The subsoil is dark red sandy clay loam that extends to a depth of 60 inches or more.

This soil is low in natural fertility and content of organic matter. It is strongly acid or very strongly acid throughout except for the surface layer in limed areas. Permeability is moderate, and available water capacity is medium. Tilth is good. This soil can be worked throughout a wide range of moisture content. The root zone is deep and easily penetrated by plant roots.

Included with this soil in mapping are a few small areas of Americus, Greenville, and Orangeburg soils.

This Red Bay soil is only moderately suited to row crops, small grain, hay, and pasture because of slope. The soil, however, is well suited to hay and pasture. Good tilth is easily maintained by returning crop residue to the soil. Erosion is a severe hazard if cultivated crops are grown. Conservation tillage, using cover crops that include grasses and legumes in the cropping system, terracing, and contouring help to reduce runoff and control erosion.

Loblolly pine, longleaf pine, and slash pine are well suited to this soil. There are no significant limitations for woodland use or management.

This soil is well suited to most urban use and recreational development.

This soil is in capability subclass IIIe and woodland suitability group 2o.

SmB—Sumter silty clay loam, 2 to 5 percent slopes. This well drained, very gently sloping soil is on ridgetops and hillsides on uplands of the Black Lands. Slopes are smooth and convex. Areas range from 5 to 50 acres.

Typically, the surface layer is dark gray silty clay loam about 6 inches thick. The subsoil is clay that extends to a depth of 36 inches. The upper few inches is pale yellow and has very pale brown mottles, and the rest of the subsoil is pale yellow and has brownish yellow and light gray mottles. The underlying material to a depth of 60 inches or more is light gray, marly clay or chalk that has pale yellow, white, and yellowish brown mottles and soft nodules of calcium carbonate.

This soil is low in natural fertility and content of organic matter. It is mildly alkaline or moderately alkaline throughout. Permeability is slow, and available water capacity is medium. Tilth is poor. The root zone is restricted to the surface layer and the subsoil.

Included with this soil in mapping are small areas of Oktibbeha and Susquehanna soils. Also included are soils that are strongly acid in the surface layer and upper part of the subsoil.

This soil is only moderately suited to row crops, small grain, and hay. It is better suited to pasture because root penetration is restricted to the surface layer and upper part of the subsoil. Because of the high runoff rate, erosion is a hazard if cultivated crops are grown. Conservation tillage, using cover crops that include grasses and legumes in the cropping system, and contouring help to reduce runoff and control erosion.

Loblolly pine and slash pine are poorly suited to this soil. Seedling mortality and limited use of equipment are management concerns.

This soil is poorly suited to most urban use. Slow permeability, the high shrink-swell potential, and low strength in the subsoil or depth to marly clay or chalk are limitations. This soil is only moderately suited to recreational development because the subsoil has slow permeability and the surface layer is sticky when wet.

This soil is in capability subclass IIIe and woodland suitability group 4c.

SuB—Susquehanna sandy loam, 2 to 5 percent slopes. This somewhat poorly drained, very gently sloping soil is predominantly on ridgetops on uplands of the Southern Coastal Plain. The landscape is undulating. Slopes are convex. Areas range from 5 to 20 acres.

Typically, the surface layer is dark gray sandy loam about 5 inches thick. The subsurface layer is brown clay loam to a depth of about 10 inches. The subsoil is clay that extends to a depth of 65 inches or more. The upper part is yellowish red and has red and gray mottles, and the lower part is mottled gray, red, and brown.

This soil is low in natural fertility and content of organic matter. It is strongly acid or very strongly acid throughout except for the surface layer in limed areas. Permeability is very slow, and available water capacity is medium. Tilth is fair. The root zone is somewhat restricted by the very firm and very sticky, clayey subsoil.

Included with this soil in mapping are small areas of Cowarts, Nankin, Oktibbeha, and Sumter soils.

This Susquehanna soil is poorly suited to row crops and small grain because the subsoil is clayey and very firm, and the hazard of erosion is severe. The soil is moderately suited to hay and pasture.

Loblolly pine and shortleaf pine are only moderately suited to this soil. Limited use of equipment is a management concern in wet seasons.

This soil is poorly suited to most urban use. The very slow permeability in the subsoil limits the use of this soil for septic tank absorption fields, and the high shrink-swell potential is a limitation for building sites. This soil is moderately suited to recreational development because of the very slow permeability and wetness.

This soil is in capability subclass IVe and woodland suitability group 3c.

SuC—Susquehanna sandy loam, 5 to 12 percent slopes. This somewhat poorly drained, gently sloping and sloping soil is on short hillsides on uplands of the Southern Coastal Plain. Slopes are irregular and short. Areas range from 5 to 15 percent.

Typically, the surface layer is dark grayish brown sandy loam about 6 inches thick. The subsoil is clay to a depth of 60 inches or more. The upper few inches is yellowish red and has red and yellowish brown mottles; the middle part is mottled reddish, brownish, and grayish; and the lower part is gray and has red mottles.

This soil is low in natural fertility and content of organic matter. It is strongly acid or very strongly acid throughout except for the surface layer in limed areas. Permeability is very slow, and available water capacity is medium. Tilth is fair. The root zone is somewhat restricted because of the very firm and very sticky, clayey subsoil.

Included with this soil in mapping are areas of Cowarts, Nankin, and Oktibbeha soils.

This Susquehanna soil is poorly suited to row crops, small grain, hay, and pasture because of the hazard of severe erosion and very slow permeability in the subsoil.

Loblolly pine and shortleaf pine are moderately suited to this soil. Limited use of equipment is a management concern in wet seasons.

This soil is poorly suited to most urban use because of very slow permeability in the subsoil and the high shrink-swell potential. It is only moderately suited to most recreational development because of very slow permeability and wetness.

This soil is in capability subclass VIe and woodland suitability group 3c.

TfA—Tifton loamy sand, 0 to 2 percent slopes. This well drained, nearly level soil is on ridgetops on uplands of the Southern Coastal Plain. Areas range from 5 to 80 acres.

Typically, the surface layer is dark grayish brown loamy sand about 10 inches thick. The subsoil is dominantly sandy clay loam that extends to a depth of 65 inches or more. It is yellowish brown throughout except for the lower part, which has red, strong brown, and light gray mottles. Plinthite is below a depth of 42 inches and makes up about 10 percent of the lower part of the subsoil. Nodules of ironstone are on the surface and in the upper and middle parts of the soil.

This soil is low in natural fertility and content of organic matter. It is very strongly acid or strongly acid throughout except for the surface layer in limed areas. Permeability is moderate, and available water capacity is medium. Tilth is good. The soil can be worked throughout a wide range of moisture content. The root zone is deep and easily penetrated by plant roots.

Included with this soil in mapping are a few small areas of Clarendon and Dothan soils.

This Tifton soil is well suited to row crops, small grain, hay, and pasture. During dry seasons, this soil responds favorably to irrigation, and high yields can be obtained. Conservation tillage and using cover crops that include grasses and legumes in the cropping system help to maintain the content of organic matter.

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

This soil is well suited to most urban use and recreational development. However, moderate permeability in the subsoil limits the use of this soil for septic tank absorption fields. Commonly, this limitation

can be overcome by special design and proper installation.

This soil is in capability class I and woodland suitability group 2o.

TfB—Tifton loamy sand, 2 to 5 percent slopes. This well drained, very gently sloping soil is on ridgetops and hillsides on uplands of the Southern Coastal Plain. Slopes commonly are smooth and convex. Areas range from 5 to 150 acres.

Typically, the surface layer is dark grayish brown loamy sand about 8 inches thick. The subsoil is dominantly sandy clay loam that extends to a depth of 65 inches or more. The upper part is yellowish brown; the middle part is yellowish brown and has red mottles; and the lower part is mottled red, yellowish brown, and gray. Plinthite is below a depth of about 38 inches and makes up about 10 to 15 percent of the lower part of the subsoil. Nodules of ironstone are on the surface and in the upper part of the soil.

This soil is low in natural fertility and content of organic matter. It is very strongly acid or strongly acid throughout except for the surface layer in limed areas. Permeability is moderate, and available water capacity is medium. Tilth is good. This soil can be worked throughout a wide range of moisture content. The root zone is deep and easily penetrated by plant roots.

Included with this soil in mapping are a few small areas of Cowarts and Dothan soils.

This Tifton soil is well suited to row crops, small grain, hay, and pasture. During dry seasons, this soil responds well to irrigation, and high yields can be obtained. Good tilth is easily maintained by returning crop residue to the soil. Erosion is a moderate hazard if cultivated crops are grown. Conservation tillage, using cover crops that include grasses and legumes in the cropping system, terracing, and contouring help to reduce runoff and control erosion.

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

This soil is well suited to most urban use and recreational development. However, moderate permeability in the subsoil limits the use of this soil for septic tank absorption fields. Commonly, this limitation can be overcome by special design and installation.

This soil is in capability subclass IIe and woodland suitability group 2o.

TnC2—Tifton sandy loam, 5 to 8 percent slopes, eroded. This well drained, gently sloping soil is on short hillsides on uplands of the Southern Coastal Plain. The surface layer is a mixture of remnants of the original surface soil and the upper part of the subsoil. Slopes are irregular and convex. This soil has rills, galled spots, shallow gullies, and an occasional deep gully. Areas range from 5 to 60 acres.

Typically, the surface layer is brown sandy loam about 6 inches thick. The subsoil is dominantly sandy clay loam that extends to a depth of 60 inches or more. The upper part is yellowish brown; the middle part is yellowish brown and has strong brown and red mottles; and the lower part is mottled yellowish brown, strong brown, red, and gray. Plinthite is below a depth of about 38 inches and makes up 10 to 15 percent of the soil. Nodules of ironstone are on the surface and throughout the upper part of the soil.

This soil is low in natural fertility and content of organic matter. It is strongly acid or very strongly acid throughout except for the surface layer in limed areas. Permeability is moderate, and available water capacity is medium. Tilth is fair. The root zone is deep and easily penetrated by plant roots.

Included with this soil in mapping are small areas of Cowarts and Dothan soils.

This Tifton soil is only moderately suited to row crops and small grain because of slope and the somewhat gullied surface layer. The soil is well suited to hay and pasture. Tilth can be improved by using sod crops and returning the crop residue to the soil. Erosion is a severe hazard if cultivated crops are grown. Conservation tillage, using cover crops that include grasses and legumes in the cropping system, terracing, and contouring help to reduce runoff and control erosion.

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

This soil is well suited to most urban use and recreational development. However, moderate permeability in the subsoil limits the use of this soil for septic tank absorption fields. Commonly, this limitation can be overcome by special design and proper installation.

This soil is in capability subclass IIIe and woodland suitability group 2o.

TrC—Troup loamy sand, 5 to 8 percent slopes. This well drained, gently sloping soil is on hillsides on uplands of the Southern Coastal Plain. Slopes are smooth and convex. Areas range from 10 to 100 acres.

Typically, the surface layer is loamy sand about 11 inches thick. The upper part is dark grayish brown, and the lower part is brown. The subsurface layer is loamy sand that extends to a depth of 60 inches. The upper part is dark yellowish brown, the middle part is yellowish brown, and the lower part is strong brown. The subsoil is yellowish red and extends to a depth of 78 inches or more. The upper few inches is sandy loam, and the rest of the subsoil is sandy clay loam.

This soil is low in natural fertility and content of organic matter. It is very strongly acid or strongly acid throughout except for the surface layer in limed areas. Permeability is rapid in the surface and thick subsurface layers and moderate in the subsoil. Available water

capacity is low. Tilth is good. The root zone is deep and easily penetrated by plant roots.

Included with this soil in mapping are small areas of Lakeland and Lucy soils.

This Troup soil is poorly suited to row crops, small grain, hay, and pasture because of low available water capacity and low fertility.

Loblolly pine, slash pine, and longleaf pine are moderately suited to this soil. Limited use of equipment and seedling mortality are management concerns.

This soil is well suited to most urban use. However, seepage is a limitation for most sanitary facilities. Because it is sandy, this soil is only moderately suited to recreational development.

This soil is in capability subclass IVs and woodland suitability group 3s.

VaB—Vaucluse loamy sand, 2 to 5 percent slopes. This well drained, very gently sloping soil is on ridgetops on uplands of the Sand Hills. Slopes are smooth and convex. Areas range from 10 to 40 acres.

Typically, the surface layer is dark yellowish brown loamy sand about 5 inches thick. The subsoil is sandy clay loam that extends to a depth of 42 inches or more. It is cemented and brittle below a depth of 20 inches. The upper and middle parts are mainly strong brown, and the lower part is red and mottled yellow, brown, and gray.

This soil is low in natural fertility and content of organic matter. It is strongly acid or very strongly acid throughout except for the surface layer in limed areas. Permeability is slow, and available water capacity is medium. Tilth is good. This soil can be worked throughout a wide range of moisture content. Root penetration is limited because of the cemented layer in the subsoil.

Included with this soil in mapping are a few intermingled areas of Cowarts soils. Also included are a few soils that are similar to Vaucluse soils that have a thick sandy surface layer, and areas of soils that have a high content of clay in the subsoil.

This soil is poorly suited to row crops and small grain because of the firm, cemented layer in the subsoil. However, it is moderately suited to hay and pasture. Erosion is a moderate hazard if cultivated crops are grown. Grasses and legumes in the cropping system help to increase the available water capacity and maintain the content of organic matter. Conservation tillage and cover crops that include grasses and legumes in the cropping system help to reduce runoff and control erosion.

Loblolly pine and slash pine are moderately suited to this soil. There are no significant limitations for woodland use or management.

This soil is well suited to most urban use. However, slow permeability in the subsoil limits the use of this soil for septic tank absorption fields. This limitation also restricts some recreational developments.

This soil is in capability subclass IIIs and woodland suitability group 3o.

VaC—Vaucluse loamy sand, 5 to 10 percent slopes. This well drained, gently sloping and sloping soil is on hillsides on uplands of the Sand Hills. Slopes are short and irregular. Areas range from 10 to 60 acres.

Typically, the surface layer is dark yellowish brown loamy sand about 7 inches thick. The subsoil is sandy clay loam that extends to a depth of 43 inches. It is cemented and brittle below a depth of 31 inches. The upper part is strong brown, the middle part is yellowish red and has brownish and strong brown mottles, and the lower part is red and has yellowish brown mottles. The underlying material is red and has gray and yellowish brown mottles.

This soil is low in natural fertility and content of organic matter. It is strongly acid or very strongly acid throughout except for the surface layer in limed areas. Permeability is slow, and available water capacity is medium. Tilth is good. This soil can be worked throughout a wide range of moisture content. Root penetration is limited because of the cemented layer in the subsoil.

Included with this soil in mapping are small intermingled areas of Cowarts and Lakeland soils. Also included are a few areas of soils that are similar to Vaucluse soil but have a thick sandy surface layer and soils that have a high content of clay in the subsoil.

This Vaucluse soil is poorly suited to row crops, small grain, hay, and pasture because of the cemented layer in the subsoil and the slope. Erosion is a severe hazard if cultivated crops are grown. Conservation tillage and cover crops, including grasses and legumes in the cropping system, help to reduce runoff and control erosion.

Loblolly pine and slash pine are moderately suited to this soil. There are no significant limitations for woodland use or management.

This soil is well suited to many urban uses. However, slow permeability in the subsoil limits the use of this soil for septic tank absorption fields. Slow permeability and slope limit some recreational developments.

This soil is in capability subclass IIIe and woodland suitability group 3o.

VaD—Vaucluse loamy sand, 10 to 20 percent slopes. This well drained, sloping to steep soil is on hillsides on uplands of the Sand Hills. Slopes are irregular and convex. Areas range from 30 to 200 acres.

Typically, the surface layer is dark grayish brown loamy sand about 8 inches thick. The subsoil is sandy clay loam that extends to a depth of 60 inches. It is cemented and brittle below a depth of 20 inches. The upper part is yellowish red, the middle part is red, and

the lower part is red and has yellowish brown and light gray mottles.

This soil is low in natural fertility and content of organic matter. It is strongly acid or very strongly acid throughout except for the surface layer in limed areas. Permeability is slow, and available water capacity is medium. Tilth is good. Root penetration is limited because of the brittle and cemented layer in the subsoil.

Included with this soil in mapping are small intermingled areas of Lakeland soils. Also included are a few areas of soils that are similar to Vaucluse soils but have a thick, sandy surface layer and subsurface layer.

This soil is poorly suited to row crops, small grain, hay, and pasture because of slope and the brittle, cemented layer in the subsoil.

Loblolly pine and slash pine are moderately suited to this soil. There are no significant limitations for woodland use or management.

This soil is poorly suited to most urban use and recreational development because of slope.

This soil is in capability subclass VIe and woodland suitability group 3o.

Wa—Wahee loam. This somewhat poorly drained, nearly level soil is on terraces of the larger streams of the Southern Coastal Plain. It occasionally is flooded for brief periods from early in winter to mid spring. Slope is 0 to 2 percent. Areas range from 20 to 450 acres.

Typically, the surface layer is dark grayish brown loam 7 inches thick. The subsurface layer is pale brown loam to a depth of 11 inches. The subsoil extends to a depth of 60 inches or more. The upper part is brown clay loam, the middle part is grayish brown clay, and the lower part is gray clay or sandy clay that has yellowish brown and yellowish red mottles.

Wahee soils are low in natural fertility and content of organic matter. They are very strongly acid or strongly acid throughout except for the surface layer in limed areas. Permeability is slow, and available water capacity is high. The water table, which is at a depth of 0.5 foot to 1.5 feet from early in winter to early in spring, limits the penetration of roots of all plants except those that are water-tolerant.

Included with this soil in mapping are areas of Ocilla soils and areas of soils that are somewhat better drained than Wahee soils.

This soil is poorly suited to row crops and small grain because of wetness and flooding. However, it is moderately suited to hay and pasture. If this soil is drained, protected against flooding, and properly managed, good yields can be obtained.

Slash pine, loblolly pine, sweetgum, and yellow-poplar are well suited to this soil. Wetness and flooding limit the use of equipment and cause moderate seedling mortality. These limitations can be reduced in some places if the soil is drained. Logging operations can be successfully performed during the drier seasons.

This soil is poorly suited to most urban use and recreational development because of wetness and flooding. These limitations can only be overcome by flood control and drainage measures.

This soil is in capability subclass IIIw and woodland suitability group 2w.

important farmland

This section gives the extent and location of the land in Dooly and Macon Counties that is important for producing food, feed, fiber, forage, and oilseed crops.

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

prime farmland

Prime farmland, as defined by the U.S. Department of Agriculture, is the land that is best suited to producing food, feed, forage, fiber, and oilseed crops. It has adequate soil quality, growing season, and moisture supply to economically produce sustained high crop yields if acceptable farming methods are used. Prime farmland produces the highest yields with minimal inputs of energy and money, and farming it results in the least damage to the environment. Prime farmland is of major importance in satisfying the Nation's short- and long-range needs for food and fiber. The supply of high quality farmland is limited, and the U.S. Department of Agriculture recognizes that all levels of government, as well as individuals, must encourage and facilitate the use of prime farmland with wisdom and foresight.

Prime farmland is either currently used for producing food or fiber or is available for this use (fig. 3). Urban or built-up land, water areas, or areas used for other purposes that preclude later use of the soils for farmland are not included. Urban and built-up land is any contiguous unit of land of 10 acres or more that is used for residences, industrial sites, commercial sites, construction sites, institutional sites, public administrative sites, railroad yards, small parks, cemeteries, airports, golf courses, sanitary landfills, sewage treatment plants, water-control structures and spillways, shooting ranges, and other urban facilities.

Prime farmland usually has an adequate and dependable supply of moisture from precipitation or irrigation. It has a favorable temperature and growing season and acceptable soil reaction. It has few or no rocks and is permeable to water and air. Prime farmland

Figure 3.—Cattle grazing the pasturegrass in a pecan grove on Orangeburg loamy sand, 0 to 2 percent slopes. This soil is prime farmland and is well suited to agricultural use.

is not excessively erodible or saturated with water for long periods and is not flooded during the growing season. Slope ranges mainly from 0 to 6 percent. For further information about the criteria for prime farmland, consult the local staff of the Soil Conservation Service.

In Dooly and Macon Counties about 251,504 acres or about 50 percent of the survey area meets the soil requirements for prime farmland (see table 5). Areas are scattered throughout the county, but are mostly in map units 3, 4, and 5 in Dooly County and units 3 and 4 in Macon County on the general soil map unit.

additional farmland of statewide importance

A recent trend in land use in some parts of the county has been the loss of some prime farmland to industrial and urban uses. The loss of prime farmland to other uses puts pressure on additional farmland of statewide importance.

In Dooly and Macon Counties, 136,224 acres is additional farmland of statewide importance (see table

5). This farmland consists of soils that are important to the agricultural resource base in the county but that do not meet the requirements for prime farmland. These soils are more erodible, droughty, seasonally wet, difficult to cultivate, and usually are less productive than prime farmland soils. The slope is 12 percent or less.

use and management of the soils

This soil survey is an inventory and evaluation of the soils in the survey area. It can be used to adjust land uses to the limitations and suitability of natural resources and the environment. Also, it can help 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, pasture, and 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 suitability and limitations of each soil for specific land uses and to help prevent construction failures caused by unfavorable soil properties.

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

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

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

crops and pasture

James E. Helm, conservation agronomist, and Carneth E. Goff, Jr., area 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.

Soil erosion is a major concern on most of the soils used for farming in Dooly and Macon Counties. If slope is more than 2 percent, erosion is a hazard. Cowarts, Dothan, Faceville, Greenville, Nankin, Orangeburg, Red Bay, and Tifton soils, for example, have slopes of predominantly 2 to 8 percent. Gently sloping or sloping Cowarts, Faceville, Greenville, Nankin, and Tifton soils are eroded. The surface layer of these soils is a mixture of the original surface soil and the upper part of the subsoil. These soils have rills and gullies.

Erosion is damaging for two reasons. First, productivity is reduced if the surface layer is lost or the soil is gullied (fig. 4). Erosion is especially damaging on soils that have a clayey subsoil, such as Faceville, Greenville, and Nankin soils, and on soils that have a layer in or below the subsoil that limits the depth of the root zone, such as Vaucluse soils. Second, soil erosion on farmland results in the sedimentation of streams and damages fixed improvements. Control of erosion minimizes the pollution of streams by sediment and improves the quality of water for municipal use, for recreation, and for fish and wildlife.

In many sloping fields, tilling or preparing a good seedbed is difficult on the eroded spots left after the original, friable surface soil has eroded away. Such spots are common in areas of eroded Cowarts, Faceville, Greenville, Nankin, Orangeburg, and Tifton soils.

Erosion control practices provide protective surface cover, reduce runoff, and increase infiltration. A cropping system that keeps plant cover on the soil for extended periods aids in maintaining the productive capacity of the soils. On livestock farms, which require pasture and hay, the grass forage crops in the cropping system reduce erosion on sloping land and improve tilth for the following crop.

Using conservation tillage systems that leave adequate amounts of crop residue on the surface increases infiltration and reduces runoff and erosion.

Figure 4.—This gully formed in soil that was not protected from erosion. Productivity is reduced or destroyed because of the gully. In addition, loss of the soil results in sedimentation of nearby streams.

This practice can be used on most soils in the survey area. No-tillage for corn, the use of which is increasing, reduces erosion on sloping land and can be adapted to most soils in the survey area.

The construction of terraces and diversions shortens the length of slope, reduces runoff and helps to control gully erosion. These structures are most practical on well drained soils that have smooth and convex slopes. Cowarts, Dothan, Faceville, Greenville, Nankin, Orangeburg, Red Bay, and Tifton soils are suitable for terraces.

Contouring is a widely used erosion control practice in the survey area. It is most effective on soils that have smooth, uniform slopes, including most areas of the very gently sloping and gently sloping Cowarts, Dothan, Faceville, Greenville, Nankin, Orangeburg, Red Bay, and Tifton soils. Information on the design of erosion control practices for each kind of soil is available from local offices of the Soil Conservation Service.

Drainage is a major management need on most of the seasonally wet soils used for crops and pasture in the survey area. Other soils are so wet that production of crops common in the area is generally not possible. Soils not suitable for cultivated crops are the poorly drained Bibb, Chastain, Grady, Herod, Kinston, and Rains soils and the very poorly drained Humaquepts. Many areas of these soils are wooded.

Unless artificially drained, the somewhat poorly drained soils are so wet that crops are damaged during most years. In this category are the Ardilla, Chewacla, Ocilla, and Wahee soils. Clarendon soils are moderately well drained, but they need to be artificially drained in most years, if farmed.

The design of both surface and subsurface drainage systems varies with the kind of soil. A combination of surface drainage and tile drainage is needed in most areas of poorly drained soils before they can be used for intensive row cropping. Drains have to be more closely spaced in slowly permeable soils than in more permeable soils. Tile drainage is very slow in the Chastain and Grady soils. Finding adequate outlets for tile drainage systems is difficult in many areas of the Grady and Rains soils.

Soil fertility is naturally low in most soils in the survey area. However, these soils respond well to fertilization and other good management. The soils in depressions on uplands, along drainageways, and on flood plains, such as Bibb, Chastain, Chewacla, Grady, Herod, Kinston, Humaquepts, Rains, and Riverview soils, commonly have higher content of organic matter than most soils on uplands or higher lying stream terraces.

Most of the soils are naturally acid. If the soils used for cultivated crops and pasture have never been limed, applications of ground limestone are needed to raise the pH level sufficiently for good growth of legumes and other crops that grow on nearly neutral soils. Available phosphorus and potash levels are naturally low in most of these soils. On all soils, additions of lime and fertilizer should be based on the results of soil tests, on the needs of the crop, and on the desired level of yields. The Cooperative Extension Service can help in determining the kinds and amounts of fertilizer and lime to apply.

Soil tilth is an important factor in the germination of seeds and the infiltration of water into the soil. Soils with good tilth are granular and porous.

Most of the soils used for crops in the survey area have a surface layer of loamy sand or sandy loam that is low in content of organic matter. Tilth is generally good except on the eroded Cowarts, Faceville, Greenville, Nankin, Orangeburg, and Tifton soils. In these soils the subsoil is exposed. Regular additions of crop residue, manure, and other organic material help to improve or maintain tilth.

Fall plowing is generally not a good practice in the survey area. Most of the cropland consists of soils that are subject to damaging erosion if they are plowed in fall.

Many field crops are suited to the soils and climate of the survey area. Corn, peanuts (fig. 5), soybeans, and cotton (fig. 6) are commonly grown. Tobacco and similar crops can also be grown. Wheat, rye, barley, and oats are the common close-grown crops. These winter cover crops commonly are followed by soybeans. Improved bermudagrass and bahiagrass are common pasture grasses.

Special crops grown commercially in the survey are vegetables, tree fruits, and nursery plants. These crops include melons, sweet corn, tomatoes, sweet potatoes, pecans, and peaches. In addition, large areas could be planted to blueberries and grapes.

Soils that have good natural drainage and that warm

Figure 5.—Peanuts ready for harvest on Tifton loamy sand, 2 to 5 percent slopes. If good management is used, this soil is highly productive for the commonly grown crops.

Figure 6.—Cotton ready for harvest on Tifton loamy sand, 2 to 5 percent slopes. If good management is used, this soil is highly productive for the commonly grown crops.

up early in spring are especially well suited to many vegetables and small fruits. In the survey area, the Cowarts, Dothan, Faceville, Greenville, Orangeburg, Red Bay, and Tifton soils that have slopes of less than 8 percent are well suited. If irrigated, Americus, Eustis, Fuquay, Lakeland, Lucy, and Troup soils that have slopes of less than 8 percent are also well suited to vegetables and small fruits. Crops can generally be planted and harvested earlier on all of these soils than on the other soils in the survey area.

If excess water is removed, the somewhat poorly drained Ardilla soils and the moderately well drained Clarendon soils are well suited to a wide range of vegetables.

Most of the well drained soils in the survey area are suitable for orchards and nursery plants. Soils in low positions where frost is frequent and air drainage is poor generally are poorly suited to early vegetables, small fruits, and orchards. Latest 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 6. In any given year, yields may be higher or lower than those indicated in the table because of variations in rainfall and other climatic factors.

The 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. Fertilizer needs of specific crops on specific soils can be determined by soil tests. General fertilizer recommendations for field crops are also available (*3*).

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

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

Crops other than those shown in table 6 are grown in the survey area, but estimated yields are not listed because the acreage of such crops is small. The local office of the 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.

Capability units are soil groups within a subclass. The soils in a capability unit are enough alike to be suited to the same crops and pasture plants, to require similar management, and to have similar productivity. Capability units are generally designated by adding an Arabic numeral to the subclass symbol, for example, IIe-4 or IIIe-6.

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

woodland management and productivity

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

Forest land has always been a significant land use in Dooly and Macon Counties. Originally, virgin forests covered most of the land in these counties. Types that made up the original forests and are significant today include Longleaf-slash, Loblolly-shortleaf, Oak-pine, Oak-gum-cypress, and Oak-hickory.

According to USDA Forest Service Resource Bulletins SE-19, February 1971 and SE-22, June 1972 (*9, 10*), forest land during that time made up 143,100 acres in Macon County and 97,900 acres in Dooly County. Virtually all of this land is classed as commercial forest. The acreage in Macon County represents about 55 percent of the total acreage of the county, and the acreage in Dooly County represents about 39 percent of the total acreage. One fact that proably accounts for this difference in land use is that soils are extensively used for farming in Dooly County whereas they are less extensively used in Macon County, especially in those areas west of the Flint River.

Farm and miscellaneous private land ownership accounts for almost 90 percent of the land in both counties. Most of the rest is held by the forest industry.

A majority of the soils in these counties is relatively productive. Over two-thirds of the acreage in commercial forest land is capable of producing more than a cord per acre each year. Most of the soils that are not capable of this production rate lie in the Sand Hills of Macon County west of the Flint River.

In spite of the productive capacity of the soils, the land is not well stocked. Fully one-third of the land in the counties is classified as poorly stocked or nonstocked. Only 12 percent is regarded as fully stocked. Because most of this land is privately held, significant gains can be achieved if the management of private holdings is improved.

The soils in Macon and Dooly Counties support a variety of species. The seasonally wet soils on flood plains along the Flint River and its tributaries are highly productive. They are mainly the Chewacla, Chastain, Bibb, and Kinston soils. These soils support cottonwood, ash, gum, red maple, yellow-poplar, and a variety of oak trees. The Chewacla and Chastain soils mainly support hardwoods and the Bibb and Kinston soils typically support mixed forests, including loblolly pine and slash pine. Other seasonally wet soils that mainly support mixed hardwoods and pine forests are the Ardilla and Clarendon soils. These soils are on smooth, low lying uplands and in slight, upland depressions.

In Dooly County, much of the land typed as Oak-pine forest consists mainly of the well drained Faceville, Orangeburg, Greenville, Dothan, and Tifton soils. These soils are also in Macon County, but there they are more associated with types of pine. These soils have a site index of at least 75, and Tifton and Dothan soils range to a site index of about 90 for loblolly pine and slash pine. These soils lend themselves well to pine management. They have few management concerns.

Most of the soils in the western part of Macon County are mainly sandy and are well drained or excessively drained. These soils are predominantly the Lucy, Fuquay, Lakeland, and Vaucluse soils. The soils originally supported extensive stands of longleaf pine, and pine trees still grow well on these sites. Recent plantings of sand pine are also reported to be growing well. Other soils of significant extent in the survey area are the Cowarts, Nankin, Vaucluse, Susquehanna, Oktibbeha, and Eustis soils.

This section explains soil-tree growth relationships in Dooly and Macon Counties. If used carefully, it can provide a useful tool in planning conservation efforts and arriving at investment and management decisions.

Table 8 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; *c*, clay in the upper part of the soil; and *s*, sandy texture. The letter *o* indicates that limitations or restrictions are insignificant. If a soil has more than one limitation, the priority is as follows: w, c, and s.

In table 8, *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.

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 30 years of age for eastern cottonwood, 35 years of age 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 9 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 9, the degree of soil limitation is expressed as slight, moderate, or severe. *Slight* means that soil properties are generally favorable and that limitations are minor and easily overcome. *Moderate* means that limitations can be overcome or alleviated by planning, design, or special maintenance. *Severe* means that soil properties are unfavorable and that limitations can be offset only by costly soil reclamation, special design, intensive maintenance, limited use, or by a combination of these measures.

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

Camp areas require site preparation such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The best soils have 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

Jesse Mercer, Jr., biologist, Soil Conservation Service, helped prepare this section.

Although Dooly and Macon Counties are used mainly for farming, they also provide habitat for a variety of wildlife. Woodland, which makes up about 48 percent of the counties, supports deer, squirrels, raccoons, many nongame animals, and songbirds. Quail, rabbits, and doves are abundant in cropland areas adjacent to the woodland. The Flint River, numerous creeks in the area, and beaver ponds supply habitat for waterfowl and other aquatic wildlife. Nearly 200 farm ponds in the survey area are stocked with fish (fig. 7).

Soils affect the kind and amount of vegetation that is available to wildlife as food and cover. They also affect

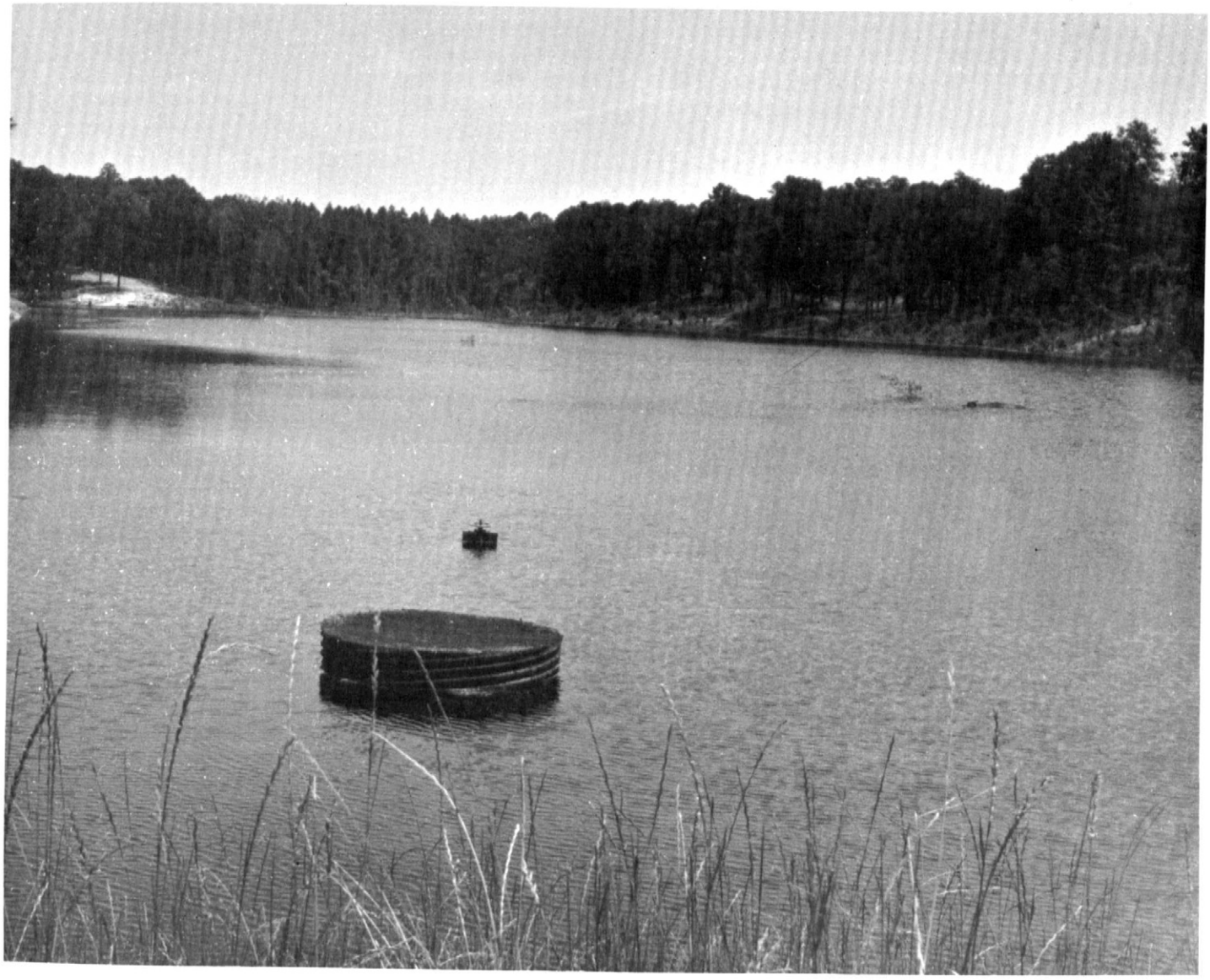


Figure 7.—This farm pond is one of the nearly 200 ponds which provide good fishing in the survey area.

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

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

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

maintained in most places, but management is difficult and must be intensive. A rating of *very poor* indicates that restrictions for the element or kind of habitat are very severe and that unsatisfactory results can be expected. Creating, improving, or maintaining habitat is impractical or impossible.

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

Grain and seed crops are domestic grains and seed-producing herbaceous plants. Soil properties and features that affect the growth of grain and seed crops are depth of the root zone, texture of the surface layer, available water capacity, wetness, slope, surface stoniness, and 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, surface stoniness, flood hazard, and slope. Soil temperature and soil moisture are also considerations. Examples of grasses and legumes are fescue, lovegrass, clover, and alfalfa.

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

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 bicolor lespedeza, 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, slope, and surface stoniness. Examples of wetland plants are smartweed, wild millet, wildrice, rushes, sedges, and reeds.

Shallow water areas have an average depth of less than 5 feet. Some are naturally wet areas. Others are created by dams, levees, or other water-control structures. Soil properties and features affecting shallow water areas are depth to bedrock, wetness, surface stoniness, slope, and permeability.

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, dove, 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, deer, and bear.

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

engineering

Joe A Stevens, assistant State conservation 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, depth to bedrock, hardness of bedrock within 5 to 6 feet of the surface, soil wetness, depth to a seasonal high water table, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kind of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to (1) evaluate the potential of areas for residential, commercial, industrial, and recreation uses; (2) make preliminary estimates of construction conditions; (3) evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; (4) evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; (5) plan detailed onsite investigations of soils and geology; (6) locate potential sources of gravel, sand, earthfill, and topsoil; (7) plan drainage systems, irrigation systems, ponds, terraces, and other structures for soil and water conservation; and (8) predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

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

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

building site development

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

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for basements, graves, utility lines, open ditches, and other purposes. The ratings are based on soil properties, site features, and observed performance of the soils. The ease of digging, filling, and compacting is affected by the depth to bedrock or a very firm dense layer, soil texture, and slope. The time of the year that excavations can be made is affected by the depth to a seasonal high water table and the susceptibility of the soil to flooding. The resistance of the excavation walls or banks to sloughing or caving is affected by soil texture and 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, and shrink-swell potential can cause the movement of footings. A high water table, depth to bedrock, and flooding affect the ease of excavation and construction. Landscaping and grading that require cuts and fills of more than 5 to 6 feet are not considered.

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material, a base of gravel, crushed rock, or stabilized soil material, and a flexible or rigid surface. Cuts and fills are generally limited to less than 6 feet. The ratings are based on soil properties, site features, and observed performance of the soils. Depth to bedrock, a high water table, flooding, large stones, and slope affect the ease of excavating and grading. Soil strength (as inferred from the engineering classification of the soil), shrink-swell potential, and depth to a high water table affect the traffic supporting capacity.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. The ratings are based on soil properties, site features, and observed performance of the soils. Soil reaction, a high water table, depth to bedrock, the available water capacity in the upper 40 inches, and the content of salts, sodium, and sulfidic materials affect plant growth. Flooding, wetness, slope, and the amount of sand, clay, or organic matter in the surface layer affect trafficability after vegetation is established.

sanitary facilities

Table 12 shows the degree and the kind of soil limitations that affect septic tank absorption fields, sewage lagoons, and sanitary landfills. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and

limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required.

Table 12 also shows the suitability of the soils for use as daily cover for landfills. A rating of *good* indicates that soil properties and site features are favorable for the use and good performance and low maintenance can be expected; *fair* indicates that soil properties and site features are moderately favorable for the use and one or more soil properties or site features make the soil less desirable than the soils rated good; and *poor* indicates that one or more soil properties or site features are unfavorable for the use and overcoming the unfavorable properties requires special design, extra maintenance, or costly alteration.

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 72 inches is evaluated. The ratings are based on soil properties, site features, and observed performance of the soils. Permeability, a high water table, depth to bedrock, and flooding affect absorption of the effluent. Bedrock interferes 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 12 gives ratings for the natural soil that makes up the lagoon floor. The surface layer and, generally, 1 or 2 feet of soil material below the surface layer are excavated to provide material for the embankments. The ratings are based on soil properties, site features, and observed performance of the soils. Considered in the ratings are slope, permeability, a high water table, depth to bedrock, flooding, 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 and bedrock can cause construction problems.

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

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

The ratings in table 12 are based on soil properties, site features, and observed performance of the soils. Permeability, depth to bedrock, a high water table, slope, and flooding affect both types of landfill. Texture 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 soils that are free of excess gravel are the best cover for a landfill. Clayey soils are sticky or cloddy and are difficult to spread; sandy soils are subject to soil blowing.

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

construction materials

Table 13 gives information about the soils as a source of roadfill, sand, gravel, and topsoil. The soils are rated

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

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

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

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

Soils rated *good* contain significant amounts of sand or gravel or both. They have at least 5 feet of suitable material, low shrink-swell potential, 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 or slopes of 15 to 25 percent. Depth to the water table is 1 to 3 feet. Soils rated *poor* have a plasticity index of more than 10 and a high shrink-swell potential. 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 13, only the probability of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material.

The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the engineering classification of the soil), 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 such properties as soil reaction, available water capacity, and fertility. The ease of excavating, loading, and spreading is affected by slope, a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, a water table, and bedrock.

Soils rated *good* have friable loamy material to a depth of at least 40 inches. They are free of stones and cobbles, have little or no gravel, and have slopes of less than 8 percent. They are naturally fertile or respond well to fertilizer and are not so wet that excavation is difficult.

Soils rated *fair* are sandy soils, loamy soils that have a relatively high content of clay, soils that have only 20 to 40 inches of suitable material, soils that have an appreciable amount of gravel, or 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, 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 14 gives information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas and embankments, dikes, and levees. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and are easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or

Figure 8.—Grassed waterway on Tifton loamy sand, 2 to 5 percent slopes. Well established waterways are an essential part of many water management systems.

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 other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

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

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

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable

compaction characteristics. A high water table affects the amount of usable material. It also affects trafficability.

Drainage is the removal of excess surface and subsurface water from the soil. How easily and effectively the soil is drained depends on the depth to bedrock or to other layers that affect the rate of water movement; permeability; depth to a high water table or depth of standing water if the soil is subject to ponding; slope; and susceptibility to flooding. Excavating and grading and the stability of ditchbanks are affected by slope and the hazard of cutbanks caving. The productivity of the soil after drainage is adversely affected by acidity. 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 depth to bedrock. The performance of a system is affected by the depth of the root zone and soil reaction.

Terraces and diversions are embankments or a combination of channels and ridges constructed across a slope to reduce erosion and conserve moisture by intercepting runoff. Slope, wetness, and depth to bedrock affect the construction of terraces and diversions. A restricted rooting depth, a severe hazard of water erosion, and restricted permeability adversely affect maintenance.

Grassed waterways are natural or constructed channels, generally broad and shallow, that conduct surface water to outlets at a nonerosive velocity (fig. 8). Wetness, slope, and depth to bedrock affect the construction of grassed waterways. Low available water capacity, restricted rooting depth, and restricted permeability adversely affect the growth and maintenance of the grass after construction.

soil properties

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

Soil properties are determined by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps. Laboratory analyses are not conducted for all soil series in the survey area, but laboratory data for the Americus, Dothan, and Red Bay soils are available (*8*).

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

Depth to the upper and lower boundaries of each layer is indicated. 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. Textural terms are defined in the Glossary.

Classification of the soils is determined according to the Unified soil classification system (*2*) and the system adopted by the American Association of State Highway and Transportation Officials (*1*).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to grain-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as Pt. Soils exhibiting engineering properties of two groups can have a dual classification, for example, SP-SM.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of grain-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

Rock fragments 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 oven-dry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

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

The estimates of grain-size distribution, liquid limit, and plasticity index are rounded to the nearest 5 percent.

Thus, if the ranges of gradation and Atterberg limits extend a marginal amount (1 or 2 percentage points) across classification boundaries, the classification in the marginal zone is omitted in the table.

physical and chemical properties

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

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

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

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

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

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each major soil layer. The capacity varies, depending on soil properties that affect the retention of water and the depth of the root zone. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Soil reaction is a measure of acidity or alkalinity and is expressed as a range in pH values. The range in pH of each major horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Shrink-swell potential is the potential for volume change in a soil with a loss or gain in moisture. Volume change occurs mainly because of the interaction of clay minerals with water and varies with the amount and type of clay minerals in the soil. The size of the load on the soil and the magnitude of the change in soil moisture content influence the amount of swelling of soils in place. Laboratory measurements of swelling of undisturbed clods were made for many soils. For others, swelling was estimated on the basis of the kind and amount of clay minerals in the soil and on measurements of similar soils.

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

Shrink-swell potential classes are based on the change in length of an unconfined clod as moisture content is increased from air-dry to field capacity. The change is based on the soil fraction less than 2 millimeters in diameter. The classes are *low*, a change of less than 3 percent; *moderate*, 3 to 6 percent; and *high*, more than 6 percent. *Very high*, greater than 9 percent, is sometimes used.

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter (up to 4 percent) and on soil structure and permeability. Values of K range from 0.05 to 0.69. The higher the value the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

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

In table 16, the estimated content of organic matter of the plow layer is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

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

soil and water features

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

Hydrologic soil groups are used to estimate runoff from precipitation. Soils 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.

Flooding, the temporary inundation of an area, is caused by overflowing streams or by runoff from adjacent slopes. Water standing for short periods after rainfall or snowmelt and water in swamps and marshes are not considered flooding.

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

Frequency, duration, and probable dates of occurrence are estimated. Frequency 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 once or less 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 17 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 17.

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

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.

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

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that dissolves or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil.

Special site examination and design may be needed if the combination of factors 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 (*11*). 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 18, 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 Fluvaquents (*Fluv*, meaning flood plain, plus *aquent*, the suborder of the Entisols that have an aquic moisture regime).

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

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Mostly the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle-size class, mineral content, temperature regime, depth of the root zone, consistence, moisture equivalent, slope, and permanent cracks. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is fine-loamy, siliceous, acid, thermic Typic Fluvaquents.

SERIES. The series consists of soils that have similar horizons in their profile. The horizons are similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile. The texture of the surface layer or of the substratum can differ within a series.

soil series and their morphology

In this section, each soil series recognized in the survey area is described. The descriptions are arranged in alphabetic order.

Characteristics of the soil and the material in which it formed are identified for each series. The soil is compared with similar soils and with nearby soils of other series. A pedon, a small three-dimensional area of soil, that is typical of the series in the survey area is described. The detailed description of each soil horizon follows standards in the Soil Survey Manual (*7*). Many of the technical terms used in the descriptions are defined in Soil Taxonomy (*11*). 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."

Americus series

The Americus series consists of somewhat excessively drained soils that formed in sandy marine sediment on uplands of the Southern Coastal Plain. Permeability is moderately rapid or rapid. Slope ranges from 0 to 8 percent.

The Americus soils are associated with Greenville, Lucy, Orangeburg, and Red Bay soils. All of the associated soils are well drained. Greenville soils are in a clayey family. Lucy soils are arenic. Orangeburg and

Red Bay soils are in a fine-loamy family. In addition, Orangeburg soils are typic.

Typical pedon of Americus loamy sand, 0 to 5 percent slopes, in planted slash pine, 1.4 miles east of Montezuma city limits on Georgia Highway 224 at Four Points; 900 feet east of the highway; 30 feet north of paved county road; in Macon County:

Ap—0 to 8 inches; dark brown (7.5YR 3/2) loamy sand; weak fine granular structure; very friable; many fine roots; strongly acid; clear wavy boundary.
B1—8 to 13 inches; dark red (2.5YR 3/6) loamy sand; weak fine granular structure; very friable; common fine roots; strongly acid; gradual smooth boundary.
B21t—13 to 21 inches; dark red (2.5YR 3/6) loamy sand; weak medium granular structure; very friable; common fine roots; strongly acid; gradual smooth boundary.
B22t—21 to 43 inches; dark red (2.5YR 3/6) loamy sand; weak fine subangular blocky structure; very friable; few fine roots; strongly acid; diffuse smooth boundary.
B23t—43 to 72 inches; dark red (2.5YR 3/6) sandy loam; weak fine subangular blocky structure; friable; few fine roots in upper part; strongly acid.

The thickness of the solum ranges from 72 to 80 inches or more. The soil is strongly acid or very strongly acid throughout except for the surface layer in limed areas.

The Ap horizon is 6 to 9 inches thick. It has hue of 7.5YR, value of 3, and chroma of 2; hue of 5YR, value of 3, and chroma of 4; or hue of 2.5YR, value of 3, and chroma of 2 or 4.

The B horizon has hue of 5YR, value of 3, and chroma of 4; hue of 2.5YR, value of 3, and chroma of 4 or 6; or it has hue of 10R, value of 3, and chroma of 3, 4, or 6. The B1 horizon and upper part of the Bt horizon are dominantly loamy sand but range to loamy fine sand. The lower part of the Bt horizon is sandy loam or fine sandy loam.

Ardilla series

The Ardilla series consists of somewhat poorly drained soils that formed mainly in loamy marine sediment on smooth, low lying, upland areas of the Southern Coastal Plain. Permeability is moderate in the upper part of the subsoil and moderately slow in the lower part. The water table is at a depth of 1 foot to 2 feet from late in fall to mid spring. Slope is 0 to 2 percent.

The Ardilla soils are associated with Clarendon, Dothan, Rains, and Tifton soils. Clarendon soils are moderately well drained. Dothan and Tifton soils are well drained and commonly are on somewhat higher lying areas than Ardilla soils. The poorly drained Rains soils are less than 5 percent plinthite within a depth of 60 inches and commonly are on somewhat lower lying areas.

Typical pedon of Ardilla loamy sand, in a cultivated field 1.5 miles south of railroad crossing in Vienna on Old Cordele Road; 50 feet west of road; in Dooly County:

Ap—0 to 8 inches; very dark gray (10YR 3/1) loamy sand; weak fine granular structure; very friable; many fine roots; strongly acid; clear smooth boundary.
A2—8 to 12 inches; pale brown (10YR 6/3) sandy loam; weak fine granular structure; very friable; many fine roots; very strongly acid; gradual smooth boundary.
B1—12 to 16 inches; light yellowish brown (10YR 6/4) sandy loam; weak fine granular structure; very friable; common fine roots; very strongly acid; gradual smooth boundary.
B21t—16 to 25 inches; light yellowish brown (2.5Y 6/4) sandy clay loam; common medium distinct light gray (10YR 7/1) and yellowish brown (10YR 5/6) mottles; weak medium subangular blocky structure; friable; patchy clay films on faces of peds; common fine roots; very strongly acid; gradual wavy boundary.
B22t—25 to 35 inches; mottled gray (10YR 6/1), yellowish brown (10YR 5/6), and red (2.5YR 4/6) sandy clay loam; moderate medium subangular blocky structure; firm; thin patchy clay films on faces of peds; few fine roots; very strongly acid; gradual wavy boundary.
B23tg—35 to 45 inches; mottled gray (10YR 6/1), strong brown (7.5YR 5/6), and red (2.5YR 4/6) sandy clay loam; weak medium subangular blocky structure; firm, 40 percent brittleness in red and strong brown part; slightly sticky; thin patchy clay films on faces of peds; about 6 percent plinthite; very strongly acid; gradual wavy boundary.
B24tg—45 to 60 inches; gray (10YR 6/1) sandy clay; common medium prominent strong brown (7.5YR 5/6) and red (2.5YR 4/6) mottles; weak medium subangular blocky structure; firm, 45 percent brittle and cemented; thin patchy clay films on faces of peds; about 6 percent plinthite; very strongly acid.

The thickness of the solum ranges from 72 to 80 inches or more. The soil is strongly acid or very strongly acid throughout except for the surface layer in limed areas. Depth to horizons that are more than 5 percent plinthite is 35 to 40 inches.

The Ap horizon is 6 to 8 inches thick. It 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 2 to 4.

The B1 horizon has hue of 10YR, value of 5 or 6, and chroma of 4, 6, or 8; or it has hue of 2.5Y, value of 5 or 6, and chroma of 4 or 6.

The B21t horizon has hue of 10YR, value of 5 or 6, and chroma of 4, 6, or 8; or it has hue of 2.5Y, value of 5 or 6, and chroma of 4 or 6. Mottles are gray, yellowish brown, red, or yellowish red.

The Bt horizons below the B21t horizon have yellowish brown, red, strong brown, and gray mottles. Plinthite ranges from 5 to 8 percent. The Bt horizon is predominantly sandy clay loam, but it commonly is sandy clay in the lower part.

Bibb series

The Bibb series consists of poorly drained, moderately permeable soils that formed in loamy and sandy alluvial sediment. These soils are on flood plains of the Southern Coastal Plain. The water table is within a depth of 0.5 foot to 1.5 feet in winter and spring. Slope is 0 to 2 percent.

The Bibb soils are associated with Ardilla, Clarendon, Dothan, Kinston, Ochlockonee, and Rains soils. The poorly drained Rains soils, somewhat poorly drained Ardilla soils, moderately well drained Clarendon soils, and well drained Dothan soils are on upland areas. Kinston soils are in a fine-loamy family. Ochlockonee soils are well drained.

Typical pedon of Bibb loam in an area of Bibb and Kinston soils, in woodland 4 miles south of Byronville and 2.75 miles west of Lilly; north of the bridge over Turkey Creek; in Dooly County:

A1—0 to 6 inches; dark gray (10YR 4/1) loam; weak fine granular structure; very friable; strongly acid; clear smooth boundary.
C1g—6 to 12 inches; light gray (10YR 7/1) loamy sand; common fine distinct dark grayish brown mottles; single grained; loose; common fine roots; strongly acid; clear wavy boundary.
C2g—12 to 34 inches; light gray (10YR 7/1) sandy loam; common coarse distinct dark grayish brown (10YR 4/2) mottles; massive; very friable; few medium roots; strongly acid; gradual wavy boundary.
C3g—34 to 60 inches; light gray (10YR 7/1) loamy sand; few medium distinct dark grayish brown (10YR 4/2) mottles and few medium faint light gray (10YR 7/2) mottles; single grained; loose; strongly acid.

The thickness of the sediment ranges from 60 to 80 inches or more. The soil is strongly acid or very strongly acid except for the surface layer in limed areas.

The A horizon is 6 to 16 inches thick. The A11 horizon has hue of 10YR, value of 2 to 4, and chroma of 1 or 2.

The A12g horizon, if present, has hue of 10YR, value of 3 to 7, and chroma of 1 or 2; or it has hue of 2.5Y, value of 3 to 7, and chroma of 2. The A horizon is loamy sand, sandy loam, or loam.

The C horizon has hue of 10YR, value of 4 to 7, and chroma of 1 or 2. It is loamy sand, sandy loam, or loam. Few or common, fine or medium, brown, yellow, white, and red mottles are throughout the horizon.

Cahaba series

The Cahaba series consists of well drained, moderately permeable soils that formed in loamy sediment. These soils are on stream terraces about 4 to 8 feet above the flood plains adjacent to the Flint River. Slope is 0 to 2 percent.

The Cahaba soils are associated with Riverview and Wahee soils. Riverview soils are in somewhat lower lying positions and exhibit more alluvial properties than Cahaba soils. The Wahee soils are in similar positions on the landscape, but they are somewhat poorly drained and clayey.

Typical pedon of Cahaba sandy loam, 0 to 2 percent slopes, in a wooded area 2.3 miles southwest of Baker Field Baptist Church and 0.5 mile east of the Flint River; in Dooly County:

A1—0 to 8 inches; very dark grayish brown (10YR 3/2) sandy loam; weak fine granular structure; very friable; many fine roots; few fine flakes of mica; medium acid; clear smooth boundary.
A2—8 to 12 inches; yellowish brown (10YR 5/4) sandy loam; weak fine granular structure; very friable; many fine roots; few fine flakes of mica; medium acid; clear smooth boundary.
B1—12 to 18 inches; yellowish red (5YR 5/6) sandy loam; weak fine subangular blocky structure; very friable; common fine roots; few fine flakes of mica; medium acid; gradual wavy boundary.
B2t—18 to 38 inches; red (2.5YR 5/8) sandy clay loam; weak medium subangular blocky structure; friable; clay bridging of sand grains; common fine roots; few fine flakes of mica; medium acid; gradual wavy boundary.
B3—38 to 45 inches; yellowish red (5YR 5/8) sandy loam; weak fine granular structure; very friable; few fine roots; few fine flakes of mica; medium acid; gradual wavy boundary.
C—45 to 60 inches; reddish yellow (5YR 6/8) loamy sand; massive; very friable; strongly acid.

The thickness of the solum ranges from 40 to 60 inches. The soil ranges from very strongly acid to medium acid throughout except for the surface layer in limed areas.

The A1 horizon or Ap horizon is 4 to 10 inches thick. It has hue of 10YR, value of 3 through 5, and chroma of 2 through 4. The A2 horizon, if present, has hue of 10YR, value of 5 or 6, and chroma of 2 to 4; or it has hue of 7.5YR, value of 5, and chroma of 6 or 8.

The B1 horizon has hue of 5YR, value of 4 or 5, and chroma of 6. The B2t horizon has hue of 5YR, value of 4 or 5, and chroma of 8; or it has hue of 2.5YR, value of 4 or 5, and chroma of 6 or 8. It is sandy clay loam or clay

loam. The B3 horizon has hue of 2.5YR, value of 4 or 5, and chroma of 6 or 8; or it has hue of 5YR and 7.5YR, value of 5, and chroma of 6 or 8.

The C1 horizon has hue of 5YR and 10YR, value of 5 or 6, and chroma of 6 or 8; or it has hue of 7.5YR, value of 5 or 6, and chroma of 6 or 8. It is loamy sand, sand, or fine sandy loam. Mottles, if present, are brownish, yellowish, and grayish.

Chastain series

The Chastain series consists of poorly drained, slowly permeable soils that formed in clayey sediment. These soils are on flood plains near the larger rivers that drain mainly from the Southern Piedmont. The water table commonly is at a depth of less than 1 foot from late in fall to late in spring. Slope is 0 to 2 percent.

The Chastain soils are associated with Bibb, Chewacla, Kinston, and Riverview soils. Bibb and Kinston soils are in drainageways on the outer part of the flood plain. Chewacla soils are somewhat poorly drained and are on slightly higher lying areas. Riverview soils are well drained and are on slightly higher lying areas commonly adjacent to the major streams.

Typical pedon of Chastain silt loam, in an area of Chewacla-Chastain-Riverview association, in a wooded area 0.8 mile west of Flint River ferry on Georgia Highway 127; 350 feet south of the highway; in Macon County:

A11—0 to 4 inches; dark grayish brown (10YR 4/2) silt loam; weak medium granular structure; friable; many fine roots; strongly acid; clear smooth boundary.

A12—4 to 7 inches; dark gray (10YR 4/1) silt loam; weak fine granular structure; friable; common fine roots; very strongly acid; clear smooth boundary.

B21g—7 to 11 inches; gray (10YR 5/1) silty clay; few medium distinct yellowish brown (10YR 5/6) mottles; weak medium subangular blocky structure; firm, plastic; common fine roots; very strongly acid; gradual wavy boundary.

B22g—11 to 19 inches; light gray (10YR 7/1) silty clay; common medium distinct yellowish brown (10YR 5/6) and strong brown (7.5YR 5/6) mottles; weak medium subangular blocky structure; firm, plastic; few fine roots; very strongly acid; gradual wavy boundary.

B23g—19 to 42 inches; gray (10YR 6/1) clay; common medium distinct yellowish brown (10YR 5/6) mottles; moderate medium subangular blocky structure; firm, plastic; few fine roots; very strongly acid; gradual wavy boundary.

B24g—42 to 48 inches; light gray (10YR 7/1) clay; common medium distinct yellowish brown (10YR 5/8) mottles; weak medium subangular blocky structure; firm, plastic; very strongly acid; gradual wavy boundary.

C1g—48 to 54 inches; light gray (10YR 7/1) sandy loam; common coarse distinct yellowish brown (10YR 5/8) mottles; massive; very friable; very strongly acid; gradual wavy boundary.

C2g—54 to 60 inches; gray (10YR 5/1) clay; common coarse distinct yellowish brown (10YR 5/8) mottles; massive; firm, plastic; very strongly acid.

The thickness of the solum ranges from 48 to 65 inches or more. The soil is very strongly acid or strongly acid throughout except for the surface layer in limed areas.

The A horizon is 6 to 12 inches thick. It has hue of 7.5YR, value of 4 or 5, and chroma of 2 or 4; or it has hue of 10YR, value of 4 or 5, and chroma of 1 to 4.

The Bg horizon has hue of 5Y to 10YR, value of 4 to 7, and chroma of 1 or 2. It is clay loam, silty clay, or clay. If present, mottles are common or many, brown, strong brown, pale brown, and yellowish brown. Flakes of mica and small black concretions are few and fine or medium.

The Cg horizon has colors and textures similar to the Bg horizon. In some pedons, sandy or loamy strata are below a depth of about 40 inches.

Chewacla series

The Chewacla series consists of somewhat poorly drained, moderately permeable soils that formed in loamy alluvial sediment. These soils are on flood plains near the Flint River that drains from the Southern Piedmont. The water table is at a depth of 0.5 foot to 1.5 feet from late in fall to mid spring. Slope is 0 to 2 percent.

The Chewacla soils are associated with Bibb, Chastain, Kinston, and Riverview soils. The poorly drained Bibb and Kinston soils are in small drainageways on the outer part of the flood plain. Chastain soils are poorly drained and are on slightly lower lying areas. Riverview soils are well drained and are on slightly higher lying parts of the landscape mainly adjacent to the river.

Typical pedon of Chewacla loam in an area of Chewacla-Chastain-Riverview association, in a wooded area 200 feet west of Flint River ferry on Georgia Highway 127; 50 feet south of the highway; in Macon County:

A1—0 to 6 inches; dark grayish brown (10YR 4/2) loam; weak fine granular structure; very friable; many fine and medium roots; strongly acid; clear smooth boundary.

B1—6 to 12 inches; brown (10YR 4/3) silt loam; weak fine granular structure; very friable; many fine and medium roots; few fine flakes of mica; strongly acid; clear smooth boundary.

B21—12 to 28 inches; grayish brown (10YR 5/2) silt loam; few fine faint light grayish brown and strong brown mottles; weak fine granular structure; very friable; few fine roots; few fine flakes of mica; strongly acid; clear wavy boundary.
B22—28 to 38 inches; grayish brown (10YR 5/2) silty clay loam; common fine distinct light gray and strong brown mottles; weak fine subangular blocky structure; friable; few fine roots; few fine flakes of mica; very strongly acid; clear wavy boundary.
B3—38 to 60 inches; mottled grayish brown (10YR 5/2), light gray (10YR 7/2), and strong brown (7.5YR 5/6) silty clay loam; weak fine subangular blocky structure; friable; few fine roots; few fine flakes of mica; very strongly acid; clear wavy boundary.
C—60 to 70 inches; mottled light gray (10YR 7/2) and yellowish brown (10YR 5/6) stratified loamy sand and sandy loam; very strongly acid.

The thickness of the solum ranges from 46 to 65 inches or more. The soil is very strongly acid or strongly acid throughout except for the surface layer in limed areas.

The A horizon is 4 to 10 inches thick. It has hue of 10YR, value of 3 to 5, and chroma of 3; hue of 10YR, value of 4, and chroma of 2; hue of 7.5, value of 3 to 5, and chroma of 2; or it has hue of 7.5YR, value of 4 or 5, and chroma of 4.

The B1 horizon has hue of 10YR, value of 4, and chroma of 3 or 4; or it has hue of 7.5YR, value of 4 or 5, and chroma of 2 or 4. It is fine sandy loam or silt loam.

The B2 horizon has hue of 10YR, value of 5 or 6, and chroma of 2 to 4; or hue of 2.5Y, value of 5, and chroma of 2, 4, or 6; or it has hue of 2.5Y, value of 6, and chroma of 2. This horizon is silt loam, silty clay loam, or sandy clay loam. Strong brown, light grayish brown, light gray, and yellowish brown mottles are few to many.

The C horizon is mottled light gray, yellowish brown, or strong brown loamy sand and sandy loam that is stratified.

Clarendon series

The Clarendon series consists of moderately well drained soils that formed in loamy marine sediment on low lying uplands of the Southern Coastal Plain. Permeability is moderate in the upper part of the subsoil and moderately slow in the lower part. The water table is at a depth of 1.5 to 2.5 feet in winter and early in spring. Slope is 0 to 2 percent.

The Clarendon soils are associated with Ardilla, Dothan, Rains, and Tifton soils. Ardilla soils are somewhat poorly drained. Dothan and Tifton soils are well drained and commonly are on somewhat higher lying areas. The poorly drained Rains soils are less than 5 percent plinthite within a depth of 60 inches and commonly are on somewhat lower lying areas.

Typical pedon of Clarendon sandy loam, in a forested area 2.3 miles southwest of Vienna on a county road; 0.2 mile west on dirt road; 300 feet north of the road; in Dooly County:

Ap—0 to 9 inches; dark gray (10YR 4/1) sandy loam; weak fine granular structure; very friable; many fine roots; few nodules of ironstone; strongly acid; clear smooth boundary.
B1—9 to 17 inches; yellowish brown (10YR 5/6) sandy loam; weak fine granular structure; very friable; common fine roots; few nodules of ironstone; strongly acid; gradual wavy boundary.
B21t—17 to 23 inches; yellowish brown (10YR 5/6) sandy clay loam; moderate medium subangular blocky structure; friable; few fine roots; few nodules of ironstone; 1 to 2 percent plinthite; clay bridging between sand grains; strongly acid; gradual wavy boundary.
B22t—23 to 33 inches; yellowish brown (10YR 5/6) sandy clay loam; common medium distinct strong brown (7.5YR 5/6), red (2.5YR 4/8), and gray (10YR 6/1) mottles; moderate medium subangular blocky structure; firm; clay bridging between sand grains; few fine roots; few nodules of ironstone; 3 to 4 percent plinthite; strongly acid; gradual wavy boundary.
B23t—33 to 40 inches; yellowish brown (10YR 5/6) sandy clay loam; many medium distinct strong brown (7.5YR 5/6), red (2.5YR 4/8), and gray (10YR 6/1) mottles; moderate medium subangular blocky structure; firm; patchy clay films on faces of peds; 20 percent plinthite; strongly acid; gradual wavy boundary.
B3—40 to 60 inches; mottled yellowish brown (10YR 5/6), strong brown (7.5YR 5/6), red (2.5YR 4/8), and gray (10YR 6/1) sandy clay loam; weak medium subangular blocky structure; firm; 12 percent plinthite; clay bridging of sand grains; strongly acid.

The thickness of the solum ranges from 60 to 80 inches or more. The soil is strongly acid or very strongly acid throughout except for the surface layer in limed areas. Nodules of ironstone, if present, range from 1 to 4 percent in the Bt horizon. Depth to horizons that are more than 5 percent plinthite is 30 to 48 inches. Gray mottles that have chroma of 2 or less are at a depth of 20 to 30 inches.

The Ap horizon is 6 to 10 inches thick. It has hue of 10YR, value of 4 or 6, and chroma of 2; or it has hue of 10YR, value of 4, and chroma of 1.

The B2t horizon has hue of 10YR, value of 5 or 6, and chroma of 4, 6, or 8. Mottles in the middle and lower parts commonly are brown, red, yellow, and gray. This horizon is sandy clay loam, but in some pedons, sandy clay is in the lower part.

The B3 horizon is mottled brown, red, and gray; or it may have a gray matrix and few to many mottles of high chroma. It is sandy clay loam or sandy clay.

Cowarts series

The Cowarts series consists of well drained soils that formed in loamy marine sediment on uplands of the Southern Coastal Plain. Permeability is moderate in the subsoil and moderately slow or slow in the underlying material. Slope is 2 to 8 percent.

The Cowarts soils are associated with Clarendon, Dothan, Lakeland, Tifton, and Vaucluse soils. All of the associated soils except Lakeland soils have a thicker sola than Cowarts soils. Clarendon soils are moderately well drained. Dothan and Tifton soils are 5 percent or more plinthite in the middle and lower parts of the subsoil. In addition, Tifton soils are more than 5 percent nodules of ironstone in the A horizon. Lakeland soils are sandy throughout. Vaucluse soils have a cemented layer in the subsoil.

Typical pedon of Cowarts sandy loam, 2 to 5 percent slopes, in west roadbank 0.8 mile north of Georgia Highway 215; 2.2 miles south of the Smyrna Baptist Church; in Dooly County:

Ap—0 to 8 inches; dark grayish brown (10YR 4/2) sandy loam; weak fine granular structure; very friable; many fine roots; few nodules of ironstone; strongly acid; abrupt wavy boundary.

A2—8 to 15 inches; light yellowish brown (10YR 6/4) sandy loam; weak fine granular structure; very friable; common fine roots; few nodules of ironstone; strongly acid; clear wavy boundary.

B1—15 to 18 inches; yellowish brown (10YR 5/6) sandy loam; weak fine granular structure; friable; few fine roots; few nodules of ironstone; strongly acid; abrupt smooth boundary.

B21t—18 to 34 inches; yellowish brown (10YR 5/6) sandy clay loam; moderate medium subangular blocky structure; firm; common thin patchy clay films on faces of peds; 1 or 2 percent plinthite; few nodules of ironstone; strongly acid; clear wavy boundary.

B22t—34 to 38 inches; yellowish brown (10YR 5/6) sandy clay loam; common medium distinct strong brown (7.5YR 5/6) mottles and few medium prominent yellowish red (5YR 4/6) mottles; weak medium subangular blocky structure; firm; continuous clay films on faces of peds; 3 or 4 percent plinthite; strongly acid; clear wavy boundary.

C—38 to 60 inches; mottled yellowish red (5YR 4/6), yellowish brown (10YR 5/6), light gray (10YR 7/1), and red (2.5YR 4/6) sandy clay loam; massive; firm; strongly acid.

The thickness of the solum ranges from 20 to 40 inches. The soil is strongly acid or very strongly acid except for the surface layer in limed areas. Nodules of ironstone range from 1 to 5 percent in the A horizon and B horizon.

The A horizon is 6 to 8 inches thick. It has hue of 10YR, value of 4 to 6, and chroma of 2 to 4.

The Bt horizon has hue of 10YR, value of 5 or 6, and chroma of 4 or 6. If present, mottles are brown, red, yellow, and gray in the lower part. This horizon is sandy clay loam, but in some pedons the lower part is sandy clay.

The B3 horizon has hue of 10YR, value of 4 or 5, and chroma of 6 or 8; or it has hue of 7.5YR, value of 4 or 5, and chroma of 6. It commonly is mottled brown, red, gray, and yellow. This horizon is sandy clay loam or sandy clay.

The C horizon is mottled in hue of 2.5YR, value of 4 to 6, and chroma of 4 to 6; hue of 5YR, value of 4 to 6, and chroma of 6; hue of 7.5YR, value of 4 to 6, and chroma of 6 or 8; hue of 10YR, value of 4 to 7, and chroma of 1 to 6; or it has hue of 10R, value of 4, and chroma of 6. The C horizon is loamy sand, sandy loam, or sandy clay loam.

Dothan series

The Dothan series consists of well drained soils that formed dominantly in loamy marine sediment on uplands of the Southern Coastal Plain. Permeability is moderate in the upper part of the subsoil and moderately slow in the lower part. Slope is 0 to 8 percent.

The Dothan soils are associated with Ardilla, Clarendon, Cowarts, Fuquay, and Tifton soils. Ardilla soils are somewhat poorly drained, and Clarendon soils are moderately well drained. Cowarts soils have a thinner sola and less than 5 percent plinthite in the subsoil. Fuquay soils are arenic. Tifton soils are more than 5 percent nodules of ironstone.

Typical pedon of Dothan loamy sand, 0 to 2 percent slopes, in south roadbank 0.3 mile east of Interstate 75 on Georgia Highway 215; 1.1 miles south on dirt road; 0.1 mile east of the crossroads; in Dooly County:

Ap—0 to 8 inches; dark grayish brown (10YR 4/2) loamy sand; weak fine granular structure; very friable; many fine roots; strongly acid; gradual smooth boundary.

A2—8 to 14 inches; grayish brown (10YR 5/2) loamy sand; weak fine granular structure; very friable; many fine roots; strongly acid; gradual wavy boundary.

B1—14 to 18 inches; yellowish brown (10YR 5/6) sandy loam; weak fine granular structure; very friable; common fine roots; strongly acid; gradual wavy boundary.

B21t—18 to 25 inches; yellowish brown (10YR 5/6) sandy clay loam; weak fine subangular blocky structure; friable; clay bridging of sand grains; few fine roots; strongly acid; gradual wavy boundary.
B22t—25 to 35 inches; yellowish brown (10YR 5/6) sandy clay loam; moderate medium subangular blocky structure; few fine roots; thin patchy clay films on faces of peds; few nodules of ironstone; strongly acid; gradual wavy boundary.
B23t—35 to 45 inches; yellowish brown (10YR 5/6) sandy clay loam; few medium distinct strong brown (7.5YR 5/6) mottles; moderate medium subangular blocky structure; firm; patchy clay films on faces of peds; 15 percent plinthite; few nodules of ironstone; strongly acid; gradual wavy boundary.
B24t—45 to 60 inches; mottled yellowish brown (10YR 5/6), strong brown (7.5YR 5/6), light gray (10YR 6/1), and dark red (10R 3/6) sandy clay loam; weak medium subangular blocky structure; firm; clay bridging of sand grains; 15 percent plinthite; strongly acid.

The thickness of the solum ranges from 60 to 80 inches or more. The soil is strongly acid or very strongly acid throughout except for the surface layer in limed areas. If present, nodules of ironstone range from 1 to 5 percent by volume in the A horizon and B horizon. Depth to horizons that are more than 5 percent plinthite ranges from 30 to 56 inches.

The Ap horizon is 6 to 12 inches thick. It has hue of 10YR, value of 4 to 6, and chroma of 2 to 4. The A2 horizon has hue of 10YR, value of 4 or 5, and chroma of 2 or 3.

The B1 horizon is 2 to 10 inches thick. It has hue of 10YR, value of 5 or 6, and chroma of 4, 6, or 8. The Bt horizon has hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 6 or 8; or it has hue of 2.5Y, value of 5 or 6, and chroma of 6. Plinthite ranges from 5 to 20 percent. The lower part of the Bt horizon has red, strong brown, light gray, and pale brown mottles.

Eustis series

The Eustis series consists of somewhat excessively drained soils that formed in sandy marine sediment on uplands of the Southern Coastal Plain. Permeability is moderately rapid or rapid. Slope is 0 to 5 percent.

The Eustis soils are associated with Americus, Lakeland, Lucy, Orangeburg, and Troup soils. Americus soils are rhodic. The excessively drained Lakeland soils do not have an argillic horizon. The well drained Lucy soils are arenic. The well drained Orangeburg soils are in a fine-loamy family. Troup soils are grossarenic.

Typical pedon of Eustis loamy sand, 0 to 2 percent slopes, in a cultivated field 800 feet west of River Road; about 1,000 feet southwest of the Pleasant Hill Baptist Church; in Dooly County:

Ap—0 to 7 inches; dark brown (10YR 3/3) loamy sand; weak fine granular structure; very friable; many fine roots; strongly acid; clear wavy boundary.
A21—7 to 20 inches; brown (10YR 4/3) loamy sand; weak fine granular structure; very friable; many fine roots; strongly acid; gradual wavy boundary.
A22—20 to 26 inches; strong brown (7.5YR 4/6) loamy sand; weak fine granular structure; very friable; few fine roots; strongly acid; gradual wavy boundary.
B1—26 to 36 inches; yellowish red (5YR 5/6) loamy sand; weak medium granular structure; very friable; few fine roots; strongly acid; gradual wavy boundary.
B21t—36 to 58 inches; yellowish red (5YR 5/6) loamy sand; moderate medium granular structure; sand grains coated and bridged with clay; few fine roots; strongly acid; gradual wavy boundary.
B22t—58 to 68 inches; strong brown (7.5YR 5/8) loamy sand; moderate medium granular structure; sand grains coated and bridged with clay; few fine roots; strongly acid.

The thickness of the solum ranges from 60 to 70 inches or more. The soil is strongly acid or very strongly acid throughout except for the surface layer in limed areas.

The A horizon is 18 to 34 inches thick. The A1 horizon or Ap horizon has hue of 7.5YR, value of 3 to 5, and chroma of 2; or it has hue of 10YR, value of 3 to 5, and chroma of 2 or 3. The A21 horizon has hue of 10YR, value of 4 or 5, and chroma of 2 to 4. The A22 horizon has hue of 7.5YR or 10YR, value of 3 to 5, and chroma of 3 or more.

The B1 horizon has hue of 5YR or 7.5YR, value of 3 to 6, and chroma of 4, 6, or 8. The Bt horizon has hue of 2.5YR or 5YR, value of 4 to 6, and chroma of 6 or 8; or it has hue of 7.5YR, value of 5 or 6, and chroma of 6 or 8. Few, fine, faint, light yellowish brown and pale brown mottles are below a depth of 60 inches in some pedons.

Faceville series

The Faceville series consists of well drained, moderately permeable soils that formed predominantly in clayey marine sediment. These soils are on uplands of the Southern Coastal Plain. Slope ranges from 0 to 12 percent.

The Faceville soils are associated with Greenville, Orangeburg, and Red Bay soils. Greenville and Red Bay soils are rhodic; in addition, Red Bay and Orangeburg soils are in a fine-loamy family.

Typical pedon of Faceville sandy loam, 0 to 2 percent slopes, in a pecan grove 2.4 miles north of Marshallville on Georgia Highway 49; 1 mile east on paved road; south of the road; in Macon County:

Ap—0 to 7 inches; brown (10YR 4/3) sandy loam; weak fine granular structure; very friable; many fine roots; strongly acid; abrupt smooth boundary.

B1—7 to 12 inches; yellowish red (5YR 4/6) sandy clay loam; weak medium subangular blocky structure; friable; common fine roots; strongly acid; clear wavy boundary.
B21t—12 to 30 inches; red (2.5YR 4/6) sandy clay; weak medium subangular blocky structure; friable; clay films on faces of peds; very strongly acid; gradual wavy boundary.
B22t—30 to 40 inches; red (2.5YR 4/6) sandy clay; moderate medium subangular blocky structure; friable; patchy clay films on faces of peds; very strongly acid; gradual wavy boundary.
B23t—40 to 65 inches; red (2.5YR 4/8) sandy clay; moderate medium subangular blocky structure; friable; patchy clay films on faces of peds; very strongly acid.

The thickness of the solum ranges from 65 to 70 inches or more. The soil is very strongly acid or strongly acid throughout except for the surface layer in limed areas.

The Ap horizon is 4 to 8 inches thick. It has hue of 10YR, value of 4, and chroma of 2 to 4; or it has hue of 5YR, value of 4 or 5, and chroma of 3, 4, 6, or 8; or hue of 7.5YR, value of 5, and chroma of 6 or 8. The A2 horizon, if present, has hue of 10YR, value of 6, and chroma of 3 or 4; or it has hue of 7.5YR, value of 6, and chroma of 4. Nodules of ironstone are few or common in some pedons.

The B1 horizon has hue of 2.5YR and 5YR, value of 4 or 5, and chroma of 6 or 8; or it has hue of 7.5YR, value of 5, and chroma of 6 or 8.

The Bt horizon has hue of 2.5YR or 5YR, value of 4 or 5, and chroma of 4, 6, or 8. If present, mottles are few or common, yellow, brown, and red in the B23t horizon. The Bt horizon is sandy clay or clay. Nodules of ironstone are few or common in some pedons.

Fuquay series

The Fuquay series consists of well drained soils that formed in sandy and loamy marine sediment on uplands of the Southern Coastal Plain. Permeability is moderate in the upper part of the subsoil and slow in the lower part. Slope ranges from 0 to 8 percent.

The Fuquay soils are associated with Dothan, Lakeland, Tifton, and Troup soils. Dothan and Tifton soils have an A horizon less than 20 inches thick, and in addition, Tifton soils are more than 5 percent nodules of ironstone in the A horizon. Lakeland soils are sandy throughout. Troup soils are grossarenic.

Typical pedon of Fuquay loamy sand, 0 to 5 percent slopes; in road cut 1.7 miles west of ferry on Georgia Highway 127; 300 feet north on a paved county road; in Macon County:

Ap—0 to 8 inches; dark grayish brown (10YR 4/2) loamy sand; weak fine granular structure; very friable; many fine roots; few nodules of ironstone; strongly acid; abrupt smooth boundary.
A2—8 to 22 inches; light yellowish brown (10YR 6/4) loamy sand; weak fine granular structure; very friable; many fine roots; few nodules of ironstone; very strongly acid; clear wavy boundary.
B1—22 to 30 inches; yellowish brown (10YR 5/6) sandy loam; weak fine subangular blocky structure; very friable; few fine roots; few nodules of ironstone; very strongly acid; clear wavy boundary.
B21t—30 to 36 inches; yellowish brown (10YR 5/6) sandy clay loam; weak fine and medium subangular blocky structure; friable; few nodules of ironstone; common fine pores; few patchy clay films on faces of peds; very strongly acid; gradual wavy boundary.
B22t—36 to 50 inches; yellowish brown (10YR 5/8) sandy clay loam; moderate medium subangular blocky structure; friable; common fine pores; few patchy clay films on faces of peds; very strongly acid; clear wavy boundary.
B23t—50 to 65 inches; mottled yellowish brown (10YR 5/6), strong brown (7.5YR 5/6), and red (2.5YR 4/6) sandy clay loam; weak medium subangular blocky structure; firm; few fine roots; about 10 percent plinthite; few patchy clay films on faces of peds; very strongly acid.

The thickness of the solum is 81 inches or more. The soil is very strongly acid or strongly acid throughout except for the surface layer in limed areas. Depth to plinthite ranges from 45 to 60 inches.

The A horizon is 20 to 40 inches thick. The Ap horizon or A1 horizon has hue of 10YR, value of 4, and chroma of 1 or 2. The A2 horizon has hue of 10YR, value of 5 or 6, and chroma of 3 or 4; or it has hue of 2.5Y, value of 6, and chroma of 4 or 6. If present, nodules of ironstone are less than 5 percent.

The B1 horizon has hue of 10YR and 7.5YR, value of 5, and chroma of 4, 6, or 8. The Bt horizon has hue of 10YR, value of 5, and chroma of 4, 6, or 8; or it has hue of 10YR, value of 6, and chroma of 6. The lower part of the Bt horizon has common, medium and coarse, brown, red, and gray mottles; or it is mottled with these colors. Plinthite ranges from 5 to 12 percent in the lower part of the Bt horizon. Few or common nodules of ironstone are in the upper part of the Bt horizon.

Grady series

The Grady series consists of poorly drained, slowly permeable soils that formed predominantly in clayey marine sediment. These soils are in depressions on uplands of the Southern Coastal Plain. This soil commonly is ponded, or the water table is within 1 foot

of the surface in winter to early in summer. Slope is 0 to 2 percent.

The Grady soils are associated with Clarendon, Dothan, Rains, and Tifton soils. The well drained Dothan and Tifton soils and moderately well drained Clarendon soils have plinthite and are in higher lying positions on the landscape than Grady soils. Rains soils are in a fine-loamy family.

Typical pedon of Grady sandy loam, in a wooded area 1.8 miles east of Pinehurst on Hawkinsville road; 100 feet south of the road; in Dooly County:

A1—0 to 6 inches; black (10YR 2/1) sandy loam; weak fine granular structure; very friable; many fine roots; very strongly acid; clear smooth boundary.

A2—6 to 10 inches; light gray (10YR 7/1) sandy loam; weak fine granular structure; very friable; common fine roots; very strongly acid; clear smooth boundary.

B1g—10 to 17 inches; gray (10YR 5/1) sandy clay loam; common fine prominent yellowish brown (10YR 5/8) mottles; weak medium subangular blocky structure; friable; few fine roots; very strongly acid; clear wavy boundary.

B21tg—17 to 30 inches; gray (N 5/0) sandy clay; common coarse prominent yellowish brown (10YR 5/8) mottles; moderate medium subangular blocky structure; very firm; clay films on faces of peds; sticky; very strongly acid; gradual wavy boundary.

B22tg—30 to 62 inches; gray (N 6/0) sandy clay; many coarse prominent brownish yellow (10YR 6/8) mottles; moderate medium subangular blocky structure; very firm; clay films on faces of peds; sticky; very strongly acid.

The thickness of the solum ranges from 60 to 70 inches or more. The soil is very strongly acid or strongly acid throughout except for the surface layer in limed areas.

The A horizon is 5 to 10 inches thick. The A1 horizon or Ap horizon has hue of 10YR, value of 2 to 4, and chroma of 1; or hue of 10YR, value of 3, and chroma of 2; or it is neutral and has value of 2 or 3. The A2 horizon has hue of 10YR, value of 5 or 6, and chroma of 1.

The B1 horizon and Bt horizon have hue of 10YR, value of 5 to 7, and chroma of 1; or they are neutral and have value of 5 to 7. The Bt horizon is sandy clay or clay and has common or many, brown, yellow, and red mottles.

Greenville series

The Greenville series consists of well drained, moderately permeable soils that formed predominantly in clayey marine sediment. These soils are on uplands of the Southern Coastal Plain. Slope ranges from 0 to 12 percent.

The Greenville soils are associated with Faceville, Orangeburg, and Red Bay soils. Faceville and Orangeburg soils have a Bt horizon with value of 4 or more. In addition, Orangeburg soils are in a fine-loamy family. Red Bay soils are similar to Greenville soils except Red Bay soils are in a fine-loamy family.

Typical pedon of Greenville sandy loam, 2 to 5 percent, in a cultivated field 1.2 miles west of Houston County line on Georgia Highway 127; 50 feet south of the highway; in Macon County:

Ap—0 to 8 inches; dark reddish brown (2.5YR 3/4) sandy loam; weak fine granular structure; very friable; many fine roots; strongly acid; abrupt smooth boundary.

B1—8 to 13 inches; dark reddish brown (2.5YR 2/4) sandy clay loam; weak medium subangular blocky structure; friable; slightly sticky; few fine roots; few clay films on faces of peds; strongly acid; gradual wavy boundary.

B21t—13 to 20 inches; dark red (2.5YR 3/6) sandy clay; moderate medium subangular blocky structure; friable; sticky; clay films on faces of peds; strongly acid; gradual wavy boundary.

B22t—20 to 72 inches; dark red (10R 3/6) sandy clay; moderate medium subangular blocky structure; friable; very sticky; clay films on faces of peds; strongly acid.

The thickness of the solum is 72 inches or more. The soil is medium acid to very strongly acid throughout except for the surface layer in limed areas. Nodules of ironstone are few or common in some pedons.

The A horizon is 5 to 9 inches thick. It has hue of 2.5YR or 5YR, value of 3, and chroma of 2 to 4. This horizon is sandy loam or sandy clay loam.

The Bt horizon has hue of 10R or 2.5YR, value of 3, and chroma of 4 or 6. It is sandy clay or clay. Red and brown mottles are in the lower part of some pedons.

Herod series

The Herod series consists of poorly drained, moderately permeable soils that formed in loamy alluvial sediment. These soils are on flood plains of the Southern Coastal Plain. The water table commonly is 0.5 foot to 1.5 feet below the surface in the winter. Slope is 0 to 2 percent.

The Herod soils are associated with Bibb and Kinston soils. Bibb and Kinston soils have a pH of less than 5.5 throughout the profile. In addition, Bibb soils are in a coarse-loamy family.

Typical pedon of Herod loam, in a wooded area 800 feet west of bridge over Limestone Creek on a county road; 400 feet north of the Crisp County line; in Dooly County:

A1—0 to 9 inches; dark grayish brown (10YR 4/2) loam; moderate medium granular structure; friable; many fine and medium roots; many partially decayed bits of forest litter; medium acid; clear wavy boundary.
A2—9 to 15 inches; light brownish gray (10YR 6/2) loam; many fine prominent light yellowish brown (2.5Y 6/4) and strong brown (7.5YR 5/6) mottles; moderate medium granular structure; friable; many fine and medium roots; few bits of partially decomposed forest litter; medium acid; clear wavy boundary.
C1g—15 to 26 inches; mottled light brownish gray (10YR 6/2), light yellowish brown (2.5Y 6/4), and strong brown (7.5YR 5/6) sandy clay loam; massive; friable; few medium roots; few bits of partially decomposed forest litter; neutral; gradual wavy boundary.
C2g—26 to 32 inches; light brownish gray (2.5Y 6/2) sandy clay loam; common medium prominent strong brown (7.5YR 5/6) and few fine faint light yellowish brown mottles; massive; friable; neutral; gradual wavy boundary.
C3g—32 to 42 inches; gray (5Y 5/1) sandy clay loam; common medium prominent strong brown (7.5YR 5/6) and brownish yellow (10YR 6/6) mottles; massive; friable; neutral; gradual wavy boundary.
C4g—42 to 60 inches; gray (10YR 6/1) sandy loam; massive; very friable; neutral.

Loamy sediment is 60 to 70 inches or more thick. The A horizon is strongly acid or medium acid, and the C horizon is medium acid to neutral.

The A horizon is 8 to 15 inches thick. It has hue of 10YR, value of 3 to 6, and chroma of 1 or 2.

The C1g horizon and the C2g horizon have hue of 10YR, value of 4 to 6, and chroma of 1 or 2; or they have hue of 2.5Y, value of 6, and chroma of 2. These horizons are clay loam, loam, or sandy clay loam and have common gray or brown mottles. The C3g horizon is sandy loam or sandy clay loam. Thin, sandy or clayey strata are common throughout the Cg horizon. The C4g horizon is sandy loam or loamy sand.

Kinston series

The Kinston series consists of poorly drained, moderately permeable soils that formed in loamy fluvial sediment. These soils are on flood plains of the Southern Coastal Plain. The water table commonly is at a depth of 1 foot or less from late in fall to early in summer. Slope is 0 to 2 percent.

The Kinston soils are associated with Bibb and Ochlockonee soils. The associated soils are in a coarse-loamy family and are stratified. In addition, Ochlockonee soils are well drained.

Typical pedon of Kinston fine sandy loam in an area of Bibb and Kinston soils, in a wooded area on the flood plain 6 miles west of Vienna on Georgia Highway 27; 0.7 mile north of highway on dirt county road at a bridge over Pennahatchee Creek; east side of the bridge; in Dooly County:

A11—0 to 6 inches; dark grayish brown (10YR 4/2) fine sandy loam; weak fine granular structure; very friable; many fine roots; strongly acid; clear smooth boundary.
A12—6 to 10 inches; grayish brown (10YR 5/2) fine sandy loam; weak medium granular structure; friable; many fine roots; strongly acid; clear wavy boundary.
B1g—10 to 26 inches; gray (10YR 5/1) sandy clay loam; few fine faint brownish yellow mottles; massive in place, parting to weak medium subangular blocky structure; friable; slightly sticky; few medium roots; strongly acid; gradual smooth boundary.
B2g—26 to 45 inches; gray (10YR 5/1) sandy clay loam; common medium distinct brownish yellow (10YR 6/8) and strong brown (7.5YR 5/8) mottles; massive in place, parting to weak medium subangular blocky structure; friable; slightly sticky; strongly acid; gradual wavy boundary.
IICcg—45 to 65 inches; gray (10YR 6/1) sandy loam that is stratified; very friable; strongly acid.

The thickness of the solum ranges from 40 to 60 inches or more. The soil is strongly acid or very strongly acid throughout except for the surface layer in limed areas.

The A horizon is 4 to 10 inches thick. It has hue of 10YR, value of 4 or 5, and chroma of 1 to 3.

The B1g horizon has hue of 10YR, value of 5, and chroma of 1; or it has hue of 10YR, value of 6, and chroma of 1 or 2. Few or common, yellowish or brownish mottles are throughout the horizon. The B1g horizon is loam or sandy loam.

The B2g horizon has hue of 10YR, value of 5 or 6, and chroma of 1. If present, yellowish or brownish mottles are few or common. This horizon is sandy clay loam and clay loam.

The IICg horizon has hue of 10YR, value of 5 or 6, and chroma of 1 or 2. If present, brownish mottles are few or common. This horizon is sand, loamy sand, and sandy loam that is stratified.

Lakeland series

The Lakeland series consists of excessively drained, very rapidly permeable soils that formed in sandy marine sediment. These soils are on uplands of the Sand Hills. Slope ranges from 0 to 15 percent.

The Lakeland soils are associated with Fuquay, Lucy, Troup, and Vaucluse soils. All of the associated soils are well drained and have an argillic horizon. Fuquay soils are arenic and have a subsoil that contains plinthite. Lucy soils are arenic. Troup soils are grossarenic. Vaucluse soils have a cemented horizon in the subsoil.

Typical pedon of Lakeland sand, 0 to 8 percent slopes, in a forested subdivision 2.4 miles northwest of the northern city limits of Oglethorpe on Georgia Highway 90; about 600 feet south of the highway; in Macon County:

A1—0 to 4 inches; brown (10YR 4/3) sand; single grained; loose; many fine roots; strongly acid; clear smooth boundary.
C1—4 to 19 inches; brown (10YR 5/3) sand; single grained; loose; common fine roots; strongly acid; gradual wavy boundary.
C2—19 to 39 inches; yellowish brown (10YR 5/4) sand; single grained; loose; common fine roots; strongly acid; gradual wavy boundary.
C3—39 to 80 inches; yellowish brown (10YR 5/6) sand; single grained; loose; few fine roots in upper part; strongly acid.

Thickness of the sand is 80 inches or more. The soil is strongly acid or very strongly acid throughout except for the surface layer in limed areas.

The A horizon is 4 to 8 inches thick. It has hue of 10YR, value of 3 or 4, and chroma of 1, 2, or 3.

The C horizon has hue of 10YR, value of 5 to 7, and chroma of 3, 4, or 6; or it has hue of 7.5YR, value of 5 or 6, and chroma of 6 or 8.

Lucy series

The Lucy series consists of well drained, moderately permeable soils that formed in sandy and loamy marine sediment. These soils are on uplands of the Southern Coastal Plain. Slope ranges from 0 to 12 percent.

The Lucy soils are associated with Eustis, Orangeburg, and Troup soils. Eustis soils have a loamy sand or loamy fine sand Bt horizon. Orangeburg soils have an A horizon less than 20 inches thick. Troup soils are grossarenic.

Typical pedon of Lucy loamy sand, 0 to 5 percent slopes, in a cultivated field 3 miles west of Oglethorpe on Smith Road Extension; 900 feet north of a county dirt road; in Macon County:

Ap—0 to 8 inches; dark grayish brown (10YR 4/2) loamy sand; weak fine granular structure; very friable; many fine roots; strongly acid; clear smooth boundary.
A2—8 to 28 inches; strong brown (7.5YR 5/8) loamy sand; weak fine granular structure; very friable; common fine roots; strongly acid; gradual smooth boundary.
B1—28 to 33 inches; yellowish red (5YR 5/8) sandy loam; weak fine subangular blocky structure; very friable; few fine roots; sand grains coated and bridged with clay; strongly acid; gradual wavy boundary.
B21t—33 to 38 inches; red (2.5YR 5/8) sandy clay loam; weak medium subangular blocky structure; friable; few patchy clay films on faces of peds; strongly acid; gradual wavy boundary.
B22t—38 to 65 inches; red (2.5YR 4/8) sandy clay loam; moderate medium subangular blocky structure; friable; patchy clay films on faces of peds; strongly acid.

The thickness of the solum ranges from 60 to 80 inches or more. The soil is very strongly acid or strongly acid throughout except for the surface layer in limed areas. A few nodules of ironstone are on the surface and in the soil in some pedons.

The A horizon ranges from 20 to 40 inches in thickness. The A1 horizon or Ap horizon has hue of 10YR, value of 3 to 5, and chroma of 2 or 3; or it has hue of 7.5YR, value of 3 to 5, and chroma of 2. The A2 horizon has hue of 10YR, value of 4 to 6, and chroma of 3, 4, 6, or 8; or it has hue of 7.5YR, value of 4 or 5, and chroma of 4, 6, or 8.

The B1 horizon and the Bt horizon have hue of 2.5YR or 5YR, value of 4 or 5, and chroma of 6 or 8. In some pedons, yellow or brown mottles are below a depth of 36 inches. The Bt horizon is sandy clay loam; sandy loam; or, rarely, clay loam.

Nankin series

The Nankin series consists of well drained soils that formed mainly in clayey marine sediment on uplands of the Southern Coastal Plain. Permeability is moderately slow. Slope ranges from 2 to 8 percent.

The Nankin soils are associated with Cowarts, Dothan, Faceville, and Tifton soils. All of the associated soils except the Cowarts soils are Paleudults, and all of the soils except the clayey Faceville soils are in a fine-loamy family.

Typical pedon of Nankin sandy loam, 2 to 5 percent slopes, in a wooded area 0.5 mile southeast of Double Branch Creek Baptist Church; 0.2 mile west of the Pulaski County line; in Dooly County:

Ap—0 to 7 inches; grayish brown (10YR 5/2) sandy loam; weak fine granular structure; very friable; many fine roots; few nodules of ironstone; strongly acid; clear smooth boundary.
B1—7 to 13 inches; strong brown (7.5YR 5/6) sandy clay loam; weak fine subangular blocky structure; friable; common fine roots; few nodules of ironstone; strongly acid; gradual wavy boundary.
B21t—13 to 20 inches; yellowish red (5YR 5/8) sandy clay; moderate medium subangular blocky structure; firm; few patchy clay films on faces of peds; few fine roots; strongly acid; gradual wavy boundary.

B22t—20 to 34 inches; mottled yellowish red (5YR 5/6), strong brown (7.5YR 5/8), brownish yellow (10YR 6/8), and red (2.5YR 4/6) sandy clay; moderate medium subangular blocky structure; firm; few patchy clay films on faces of peds; very strongly acid; gradual wavy boundary.
B3—34 to 44 inches; mottled red (2.5YR 4/8), brownish yellow (10YR 6/8), and light gray (10YR 7/1) sandy clay loam; weak medium subangular blocky structure; friable; very strongly acid; gradual wavy boundary.
C—44 to 60 inches; mottled strong brown (7.5YR 4/6), brownish yellow (10YR 6/6), and light gray (10YR 7/1) sandy loam; pockets and strata of sandy clay loam; massive; friable; very strongly acid.

The thickness of the solum ranges from 40 to 60 inches. The soil is strongly acid or very strongly acid except for the surface layer in limed areas. In some pedons, nodules of ironstone are few or common in the surface layer and upper part of the subsoil. In most areas, a few rounded, small quartz pebbles are on the surface.

The Ap horizon has hue of 7.5YR, value of 3 to 5, and chroma of 2 or 4; or it has hue of 10YR, value of 3 to 5, and chroma of 2 to 4. The A2 horizon, if present, has hue of 10YR, value of 4 to 6, and chroma of 2 or 3.

The B1 horizon has hue of 5YR, 7.5YR, or 10YR; value of 5 or 6; and chroma of 4 or 6. The B21t horizon has hue of 5YR or 7.5YR, value of 4 or 5, and chroma of 6 or 8. The B22t horizon is mottled yellow, brown, and red; or the matrix has hue of 5YR or 7.5YR, value of 5, and chroma of 6 or 8. The Bt horizon is sandy clay but commonly is sandy clay loam in the lower part. The B3 horizon is mottled red, yellow, brown, and gray. It is sandy clay loam or sandy loam.

The C horizon has colors similar to the B3 horizon. This horizon is sandy loam or sandy clay loam that has strata or pockets of loamy sand.

Ochlockonee series

The Ochlockonee series consists of well drained soils that formed in loamy alluvial sediment from uplands of the Southern Coastal Plain. Permeability is moderately rapid. These soils are in flood plains, draws, and depressions. The water table is at a depth of 3 to 4 feet from early in winter to mid spring. Slope is 0 to 2 percent.

The Ochlockonee soils are associated with Bibb, Dothan, Orangeburg, and Rains soils. Bibb and Rains soils are poorly drained; in addition, Rains soils are not subject to flooding. Dothan and Orangeburg soils have an argillic horizon and are on uplands.

Typical pedon of Ochlockonee sandy loam, in a pecan grove 2 miles west on Georgia Highway 127 from Houston County line; 500 feet west of Camp John Hope Road; 800 feet north of the highway; in Macon County:

Ap—0 to 7 inches; dark brown (7.5YR 3/2) sandy loam; weak fine granular structure; very friable; many fine roots; strongly acid; clear smooth boundary.
C—7 to 22 inches; brown (7.5YR 4/4) coarse sandy loam; massive; very friable; many fine roots; strongly acid; clear smooth boundary.
Ab—22 to 28 inches; dark brown (7.5YR 3/2) sandy loam; weak fine granular structure; very friable; common fine roots; strongly acid; clear smooth boundary.
IIC—28 to 60 inches; brown (7.5YR 4/4) loamy sand; massive; very friable; few fine roots; very strongly acid.

Thickness of the sediment ranges from 60 to 70 inches or more. The soil is strongly acid or very strongly acid throughout except for the surface layer in limed areas.

The A horizon is 4 to 12 inches thick. It has hue of 10YR, value of 3 to 5, and chroma of 2 to 4; or it has hue of 7.5YR, value of 3 to 5, and chroma of 2 or 4.

The C horizon has hue of 7.5YR, value of 4 to 6, and chroma of 3 or 4; or it has hue of 10YR, value of 4 to 6, and chroma of 3 to 6. It is stratified sandy loam, loamy sand, loam, or sandy clay loam.

The Ab horizon has hue of 10YR, value of 3 or 4, and chroma of 1 or 2; or it has hue of 7.5YR, value of 3, and chroma of 2. The Ab horizon is sandy loam or loamy sand.

Ocilla series

The Ocilla series consists of somewhat poorly drained, moderately permeable soils that formed in sandy and loamy sediment. These low lying soils are on uplands and on high terraces of the Southern Coastal Plain. The water table is 1 foot to 2.5 feet below the surface from early in winter to mid spring. Slope is 0 to 2 percent.

The Ocilla soils are associated with Rains soils. Rains soils are in lower lying positions on the landscape than Ocilla soils, and they are poorly drained.

Typical pedon of Ocilla loamy sand, in a cultivated field 500 feet north of Baker Field Baptist Church on River Road to junction with dirt county road; 0.7 mile northeast on county road; 30 feet south of the road; in Dooly County:

A1—0 to 6 inches; dark grayish brown (10YR 4/2) loamy sand; weak fine granular structure; very friable; common fine roots; strongly acid; abrupt wavy boundary.
A21—6 to 12 inches; pale brown (10YR 6/3) loamy sand; weak fine granular structure; very friable; few fine roots; common root holes filled with very dark gray loamy sand; strongly acid; clear wavy boundary.

A22—12 to 30 inches; pale brown (10YR 6/3) loamy sand; common medium distinct yellowish brown (10YR 5/6) and light gray (10YR 6/1) mottles; weak fine granular structure; very friable; few fine roots; strongly acid; gradual wavy boundary.

B1—30 to 35 inches; light yellowish brown (10YR 6/4) sandy loam; common medium distinct light gray (10YR 7/1) and yellowish brown (10YR 5/6) mottles; weak fine subangular blocky structure; friable; sand grains coated and bridged with clay; very strongly acid; gradual wavy boundary.

B21t—35 to 50 inches; brownish yellow (10YR 6/6) sandy clay loam; many medium distinct light gray (10YR 7/1) and yellowish brown (10YR 5/6) mottles; moderate medium subangular blocky structure; friable; sand grains coated and bridged with clay; very strongly acid; gradual wavy boundary.

B22t—50 to 65 inches; mottled strong brown (7.5YR 5/6), light gray (10YR 7/1), and yellowish brown (10YR 5/6) sandy clay loam; moderate medium subangular blocky structure; friable; very strongly acid.

The thickness of the solum ranges from 72 to 80 inches or more. The soil is very strongly acid or strongly acid throughout except for the surface layer in limed areas.

The A horizon ranges from 20 to 40 inches in thickness. The Ap horizon or A1 horizon is 4 to 6 inches thick. It has hue of 10YR, value of 3 or 4, and chroma of 1 or 2. The A2 horizon ranges from 16 to 34 inches thick. It has hue of 10YR, value of 6 or 7, and chroma of 3 or 4; or hue of 2.5Y, value of 6 or 7, and chroma of 4. Gray and brown mottles are few to many.

The B1 horizon has hue of 10YR, value of 5 or 6, and chroma of 4 or 6; or hue of 2.5Y, value of 5 or 6, and chroma of 4 to 8. Gray or brown mottles are common.

The B21t horizon has hue of 10YR, value of 5 to 7, and chroma of 4, 6, or 8; or it has hue of 2.5Y, value of 6 or 7, and chroma of 4 to 6. Light gray, yellowish brown, and yellowish red mottles are few to many.

The B22t horizon ranges from mottled gray, brown, yellow, and red to a matrix that has hue of 10YR, value of 6, and chroma of 1, 4, or 6; or hue of 2.5Y, value of 6, and chroma of 2, 4, or 6. Gray, brown, and red mottles are common or many. Plinthite ranges from 0 to 3 percent.

Oktibbeha series

The Oktibbeha series consists of moderately well drained, very slowly permeable soils that formed in deposits of acid clay overlying marly clay or chalk. These soils are on uplands of the Black Lands. Slope ranges from 2 to 8 percent.

The Oktibbeha soils are associated with Sumter and Susquehanna soils. The well drained Sumter soils are alkaline throughout, whereas the somewhat poorly drained Susquehanna soils are acid.

Typical pedon of Oktibbeha loam, 5 to 8 percent slopes, in a cultivated field 2.5 miles southwest of Houston County line on Georgia Highway 224; 3 miles southwest on dirt road; north of the road; in Macon County:

Ap—0 to 6 inches; brown (10YR 4/3) loam; weak fine granular structure; friable; many fine roots; strongly acid; clear smooth boundary.

B21t—6 to 12 inches; reddish brown (5YR 5/4) clay; moderate medium subangular blocky structure; very firm, plastic; many fine roots; strongly acid; clear wavy boundary.

B22t—12 to 20 inches; red (2.5YR 5/6) clay; few fine distinct gray mottles; strong medium subangular and angular blocky structure; very firm, very plastic; few fine roots; strongly acid; clear wavy boundary.

B23t—20 to 40 inches; red (2.5YR 4/6) clay; common medium distinct light gray (10YR 6/1) mottles; very firm, very plastic; few fine roots; strongly acid; clear wavy boundary.

C1—40 to 60 inches; pale yellow (2.5Y 7/4) clay; common medium distinct light gray (2.5Y 7/2) and white (10YR 8/1) mottles; massive; firm, plastic; common or many soft nodules of calcium carbonate; moderately alkaline; calcareous.

The thickness of the solum ranges from 20 to 50 inches. The surface layer and subsoil range from strongly acid to slightly acid, and the underlying material ranges from neutral to moderately alkaline.

The A horizon is 3 to 6 inches thick. It has hue of 7.5YR or 10YR, value of 3 to 5, and chroma of 2 to 4.

The Bt horizon has hue of 2.5YR, value of 4 or 5, and chroma of 4, 6, or 8; or it has hue of 5YR or 7.5YR, value of 4 or 5, and chroma of 4 or 6. The B22t horizon and B23t horizon have few or common, light yellowish brown and gray mottles.

The C horizon has hue of 2.5Y, value of 5 to 7, and chroma of 4 or 6; or it has hue of 5Y, value of 5 to 7, and chroma of 3, 4, or 6. It is clay, marly clay, or chalk and is mottled in brown, white, and gray. It has common or many, soft, white nodules of calcium carbonate.

Orangeburg series

The Orangeburg series consists of well drained, moderately permeable soils that formed dominantly in loamy marine sediment. These soils are on uplands of the Southern Coastal Plain. Slope ranges from 0 to 20 percent.

The Orangeburg soils are associated with Americus, Eustis, Faceville, Greenville, Lucy, and Red Bay soils. Americus, Greenville, and Red Bay soils are in a rhodic subgroup. In addition, Americus soils are in a sandy family, and Greenville soils have a clayey Bt horizon.

Eustis soils are sandy throughout, and Faceville soils have a clayey Bt horizon.

Typical pedon of Orangeburg loamy sand, 0 to 2 percent slopes, in planted pines 1.25 miles south of Georgia Highway 26, and .75 mile east of Schley County line; north side of the dirt road; in Macon County:

Ap—0 to 8 inches; dark grayish brown (10YR 4/2) loamy sand; weak fine granular structure; very friable; many fine roots; strongly acid; abrupt smooth boundary.

B1—8 to 12 inches; yellowish red (5YR 5/6) sandy loam; weak fine subangular blocky structure; very friable; many fine roots; strongly acid; clear wavy boundary.

B21t—12 to 28 inches; yellowish red (5YR 4/6) sandy clay loam; weak medium subangular blocky structure; friable; clay bridging of sand grains; few fine roots in upper part; many fine and medium pores; very strongly acid; gradual wavy boundary.

B22t—28 to 35 inches; red (2.5YR 4/6) sandy clay loam; moderate medium subangular blocky structure; friable; thin patchy clay films on faces of peds; very strongly acid; gradual wavy boundary.

B23t—35 to 65 inches; red (2.5YR 4/6) sandy clay; moderate medium subangular blocky structure; friable; few thin patchy clay films on faces of peds; very strongly acid.

The thickness of the solum ranges from 72 to 80 inches or more. The soil is very strongly acid or strongly acid throughout except for the surface layer in limed areas.

The A horizon is 6 to 10 inches thick. The Ap horizon has hue of 10YR, value of 4 or 5, and chroma of 2 to 4; or it has hue of 7.5YR, value of 4, and chroma of 2 or 4. The A2 horizon, if present, has hue of 10YR, value of 5, and chroma of 4 or 6. The A horizon is loamy sand or sandy loam. In some pedons, a few nodules of ironstone are in the A horizon.

The B1 horizon has hue of 5YR, value of 4 or 5, and chroma of 6 or 8; or hue of 7.5YR, value of 5, and chroma of 4, 6, or 8; or it has hue of 7.5YR, value of 4, and chroma of 4. The Bt horizon has hue of 2.5YR or 5YR, value of 4 or 5, and chroma of 6 or 8. The lower part of the Bt horizon is red or dark red in places and has common brownish mottles. The Bt horizon is sandy loam or sandy clay loam; or, in some pedons, it is sandy clay in the lower part of the horizon.

Rains series

The Rains series consists of poorly drained, moderately permeable soils that formed in loamy marine sediment. These soils are in slight depressions and on smooth, upland areas of the Southern Coastal Plain. The water table commonly is at a depth of less than 1 foot from late in fall to mid spring. Slope is 0 to 2 percent.

Rains soils are associated with Ardilla and Grady soils. The somewhat poorly drained Ardilla soils are in somewhat higher lying positions on the landscape than Rains soils, and they are 5 percent or more plinthite within a depth of 60 inches. Grady soils are in a clayey family.

Typical pedon of Rains sandy loam, in a wooded area 1 mile south of Vienna on U.S. Highway 41; east of the highway; in Dooly County:

Ap—0 to 8 inches; very dark grayish brown (10YR 3/2) sandy loam; weak fine granular structure; very friable; many fine roots; very strongly acid; abrupt smooth boundary.

A2—8 to 15 inches; gray (10YR 6/1) sandy loam; weak fine granular structure; very friable; many fine roots; very strongly acid; clear wavy boundary.

B1g—15 to 19 inches; gray (10YR 6/1) sandy loam; weak fine subangular blocky structure; friable; common fine roots; sand grains coated and bridged with clay; very strongly acid; clear wavy boundary.

B21tg—19 to 30 inches; gray (10YR 6/1) sandy clay loam; weak fine subangular blocky structure; friable; many fine pores; thin patchy clay films on faces of peds; very strongly acid; gradual wavy boundary.

B22tg—30 to 40 inches; gray (10YR 6/1) sandy clay loam; common medium distinct yellowish brown (10YR 5/6), red (2.5YR 4/8), and strong brown (7.5YR 5/8) mottles; moderate medium subangular blocky structure; friable; slightly firm; many fine pores; thin patchy clay films on faces of peds; very strongly acid; gradual wavy boundary.

B23tg—40 to 65 inches; gray (10YR 6/1) sandy clay loam; few medium distinct yellowish brown (10YR 5/8) and strong brown (7.5YR 5/8) mottles; weak medium subangular blocky structure; friable; thin patchy clay films on faces of peds; very strongly acid.

The thickness of the solum ranges from 60 to 80 inches or more. The soil is strongly acid or very strongly acid throughout except for the surface layer in limed areas.

The A horizon ranges from 8 to 16 inches in thickness. The Ap horizon has hue of 10YR, value of 2 to 4, and chroma of 1 or 2; hue of 2.5Y, value of 3 or 4, and chroma of 2; or it is neutral and has value of 2. The A2 horizon has hue of 10YR, value of 4, 5, or 6, and chroma of 1 or 2.

The B1 horizon has hue of 10YR, value of 5 or 6, and chroma of 1.

The Bt horizon has hue of 10YR, value of 6, and chroma of 1; or it is neutral and has value of 6. It has gray, strong brown, yellowish brown, and red mottles. The Bt horizon is sandy clay loam but commonly is sandy clay in the lower part.

Red Bay series

The Red Bay series consists of well drained, moderately permeable soils that formed in loamy marine sediment. These soils are on uplands of the Southern Coastal Plain. Slope ranges from 0 to 8 percent.

The Red Bay soils are associated with Americus, Greenville, Lucy, and Orangeburg soils. Americus soils are in a sandy family, and Greenville soils are in a clayey family. Lucy soils and Orangeburg soils have a Bt horizon with value of 4 or more throughout the soil; in addition, Lucy soils are arenic.

Typical pedon of Red Bay sandy loam, 0 to 2 percent slopes, in a peach orchard about 1 mile north of Four Points on Georgia Highway 224; east of the highway; in Macon County:

Ap—0 to 7 inches; dark reddish brown (5YR 3/3) sandy loam; weak fine granular structure; very friable; many fine roots; strongly acid; clear wavy boundary.
B1—7 to 13 inches; dark red (2.5YR 3/6) sandy clay loam; weak medium subangular blocky structure; friable; common fine roots; common fine pores; strongly acid; clear smooth boundary.
B21t—13 to 32 inches; dark red (10R 3/6) sandy clay loam; weak medium subangular blocky structure; friable; common fine roots; common fine pores; few patchy clay films on faces of peds; strongly acid; gradual smooth boundary.
B22t—32 to 62 inches; dark red (10R 3/6) sandy clay loam; moderate medium subangular blocky structure; friable; few fine roots; few patchy clay films on faces of peds; few fine pores; strongly acid.

The thickness of the solum is 60 inches or more. The soil is strongly acid or very strongly acid except for the surface layer in limed areas.

The Ap horizon is 6 to 10 inches thick. It has hue of 2.5YR or 7.5YR, value of 3, and chroma of 2 or 4; or it has hue of 5YR, value of 3, and chroma of 2 to 4.

The B1 horizon has hue of 5YR, value of 3, and chroma of 4; or it has hue of 2.5YR or 10R, value of 3, and chroma of 4 or 6. It is sandy loam or sandy clay loam.

The Bt horizon has hue of 10R or 2.5YR, value of 3, and chroma of 6. It is sandy loam or sandy clay loam.

Riverview series

The Riverview series consists of well drained, moderately permeable soils that formed in loamy sediment. These soils are on flood plains near the larger rivers that drain from the Southern Piedmont. The water table commonly is at a depth of 3 to 5 feet in winter and early in spring. Slope is 0 to 2 percent.

The Riverview soils are associated with Bibb, Chastain, Chewacla, and Kinston soils. The poorly drained Bibb and Kinston soils are in drainageways on the outer part of the flood plain. The poorly drained Chastain soils and somewhat poorly drained Chewacla soils are on slightly lower lying areas than Riverview soils.

Typical pedon of Riverview loam, in an area of Chewacla-Chastain-Riverview association, in a wooded area 2 miles southwest of Bay Point Church; 75 feet east of the Flint River; in Dooly County:

A—0 to 6 inches; dark brown (7.5YR 3/2) loam; weak medium granular structure; friable; many fine roots; strongly acid; clear smooth boundary.
B21—6 to 20 inches; brown (7.5YR 5/4) silt loam; weak medium subangular blocky structure; friable; many fine roots; strongly acid; gradual wavy boundary.
B22—20 to 32 inches; yellowish brown (10YR 5/6) sandy clay loam; moderate medium subangular blocky structure; friable; common fine roots; strongly acid; gradual wavy boundary.
B3—32 to 38 inches; strong brown (7.5YR 5/8) fine sandy loam; weak fine granular structure; very friable; few fine roots; strongly acid; gradual wavy boundary.
C—38 to 60 inches; strong brown (7.5YR 5/6) loamy sand; common medium distinct very pale brown (10YR 7/3), yellowish brown (10YR 5/6), and light gray (2.5Y 7/2) mottles; single grained; loose; strongly acid.

The thickness of the solum ranges from 30 to 40 inches. The soil is strongly acid or very strongly acid throughout except for the surface layer in limed areas.

The A horizon has hue of 10YR, value of 3 to 5, and chroma of 2 to 4; or it has hue of 7.5YR, value of 3 to 5, and chroma of 2 or 4.

The B2 horizon has hue of 10YR, value of 4 or 5, and chroma of 4, 6, or 8; or it has hue of 7.5YR, value of 4 or 5, and chroma of 4. It is sandy clay loam, loam, silt loam, or silty clay loam.

The B3 horizon has hue of 10YR or 7.5YR, value of 5, and chroma of 6 or 8. It is sandy clay loam, loam, or fine sandy loam.

The C horizon has hue of 10YR, value of 5 to 7, and chroma of 4, 6, or 8; or it has hue of 7.5YR, value of 5 to 7, and chroma of 4, 6, or 8. If present, light gray, very pale brown, and yellowish brown mottles are few or common.

Sumter series

The Sumter series consists of well drained, slowly permeable soils that formed in deposits of marly clay and chalk. These soils are on uplands of the Black Lands. Slope ranges from 2 to 5 percent.

The Sumter soils are associated with Oktibbeha and Susquehanna soils. The moderately well drained Oktibbeha soils have a reddish, acid, clayey subsoil over

marly clay. The somewhat poorly drained Susquehanna soils have a thick, reddish subsoil that is acid throughout.

Typical pedon of Sumter silty clay loam, 2 to 5 percent slopes, in a cultivated field; 2.5 miles southwest of Houston County line on Georgia Highway 224; 3 miles southwest on dirt road; north of the road; in Macon County:

Ap—0 to 6 inches; dark gray (10YR 4/1) silty clay loam; weak fine granular structure; friable; many fine roots; mildly alkaline; clear smooth boundary.

B1—6 to 10 inches; pale yellow (5Y 7/3) clay; few fine faint very pale brown mottles; weak medium platy structure; firm, plastic; intrusions of organic matter from the surface layer; few fine nodules of calcium carbonate; few fine roots; mildly alkaline; calcareous; clear wavy boundary.

B2—10 to 26 inches; pale yellow (5Y 7/3) clay; common medium distinct brownish yellow (10YR 6/6) mottles; moderate medium platy structure; firm, plastic; few fine roots; mildly alkaline; calcareous; clear wavy boundary.

B3—26 to 36 inches; pale yellow (5Y 7/3) clay; few fine faint light gray and yellow mottles; moderate medium platy structure; firm, plastic; few fine roots; few medium nodules of calcium carbonate; moderately alkaline; calcareous; wavy smooth boundary.

Cr—36 to 60 inches; light gray (5Y 7/1) marly clay or chalk; pale yellow, white, and yellowish brown streaks and mottles; moderately alkaline; calcareous.

The thickness of the solum ranges from 20 to 40 inches. The soil and underlying layers are mildly alkaline or moderately alkaline.

The Ap horizon is 4 to 6 inches thick. It has hue of 10YR, value of 3 to 5, and chroma of 1 or 2.

The B horizon has hue of 5YR, value of 5 to 7, and chroma of 3, 4, or 6; or it has hue of 2.5Y, value of 5 to 7, and chroma of 4 or 6. The B horizon has few or common, yellow and brown mottles and few or common nodules of calcium carbonate. It is silty clay or clay.

The Cr horizon has hue of 5Y, value of 5, 6, or 7, and chroma of 1 to 3; or it has hue of 2.5Y, value of 7 or 8, and chroma of 2. It is mottled yellow, brown, and white and has common or many nodules of calcium carbonate. The Cr horizon is marly clay or chalk.

Susquehanna series

The Susquehanna series consists of somewhat poorly drained, very slowly permeable soils that formed in clayey marine sediment. These soils are on uplands of the Southern Coastal Plain. The water table commonly is at a depth of more than 6 feet. These soils are wet during periods of high rainfall, but they do not have a free water table. Slope ranges from 2 to 12 percent.

The Susquehanna soils are associated with Cowarts, Nankin, Oktibbeha, and Sumter soils. Cowarts and Nankin soils are well drained. In addition, Cowarts soils are in a fine-loamy family and have a solum about 38 inches thick, and Nankin soils are in a clayey family. The moderately well drained Oktibbeha soils have underlying material that is alkaline. The well drained Sumter soils are alkaline throughout.

Typical pedon of Susquehanna sandy loam, 2 to 5 percent slopes, in a wooded area; 2.2 miles northwest of Houston County line on Georgia Highway 224; 1.7 miles southwest on county dirt road; 30 feet southeast of the road; in Macon County:

A1—0 to 5 inches; dark gray (10YR 4/1) sandy loam; weak fine granular structure; very friable; many fine and medium roots; strongly acid; clear smooth boundary.

A2—5 to 10 inches; brown (10YR 5/3) clay loam; weak fine subangular blocky structure; friable; many fine roots; strongly acid; clear smooth boundary.

B21t—10 to 20 inches; yellowish red (5YR 4/6) clay; common medium distinct red (2.5YR 4/6) and gray (10YR 6/1) mottles; weak medium angular blocky structure; very firm, plastic; few fine roots; strongly acid; clear wavy boundary.

B22t—20 to 40 inches; mottled gray (10YR 6/1), red (2.5YR 4/6), and strong brown (7.5YR 5/6) clay; moderate medium angular blocky structure; very firm, very plastic; common fine roots; continuous clay films on faces of peds; strongly acid; clear wavy boundary.

B23t—40 to 65 inches; gray (10YR 6/1) clay; many medium prominent red (2.5YR 4/6) and strong brown (7.5YR 5/6) mottles; moderate medium angular blocky structure; very firm, very plastic; continuous clay films on faces of peds; few fine roots; strongly acid.

The thickness of the solum ranges from 60 to 70 inches or more. The soil is very strongly acid or strongly acid except for the surface layer in limed areas.

The A1 horizon has hue of 10YR, value of 3 or 4, and chroma of 1 or 2. A few nodules of ironstone are in some pedons. If present, the A2 horizon has hue of 10YR, value of 4 or 5, and chroma of 2 to 4; or it has hue of 10YR, value of 6, and chroma of 4 or 6.

The upper part of the Bt horizon has hue of 2.5YR, value of 4 or 5, and chroma of 4, 6, or 8; hue of 5YR, value of 4 or 5, and chroma of 6; or it has hue of 7.5YR, value of 5, and chroma of 6. Red, gray, and brown mottles are few or common. The rest of the Bt horizon has hue of 10YR, value of 4 to 6, and chroma of 1 or 2; or it has hue of 2.5Y, value of 4 to 6, and chroma of 2. It has few to many, red and brown mottles. Some pedons do not have matrix colors but are mottled in red, brown, and gray. The Bt horizon is clay or silty clay.

Tifton series

The Tifton series consists of well drained, moderately permeable soils that formed dominantly in loamy marine sediment. These soils are on uplands of the Southern Coastal Plain. Slope ranges from 0 to 8 percent.

The Tifton soils are associated with Clarendon, Cowarts, and Dothan soils. The moderately well drained Clarendon soils commonly are on lower lying areas. Cowarts soils have a thinner sola than Tifton soils, and they are less than 5 percent plinthite in the subsoil. Dothan soils have fewer nodules of ironstone throughout.

Typical pedon of Tifton loamy sand, 0 to 2 percent slopes, in a cultivated field 2.3 miles southwest of Vienna on a paved county road; 0.2 mile west on dirt road; 50 feet south of the road; in Dooly County:

Apcn—0 to 10 inches; dark grayish brown (10YR 4/2) loamy sand; weak fine granular structure; very friable; many fine roots; 8 percent small nodules of ironstone 0.12 to 0.5 inch in diameter; strongly acid; abrupt smooth boundary.

B1cn—10 to 12 inches; yellowish brown (10YR 5/6) sandy loam; weak fine subangular blocky structure; very friable; 10 percent small nodules of ironstone; strongly acid; clear wavy boundary.

B21tcn—12 to 18 inches; yellowish brown (10YR 5/8) sandy clay loam; weak medium subangular blocky structure; friable; sand grains coated and bridged with clay; thin patchy clay films on faces of peds; 10 percent small nodules of ironstone; very strongly acid; gradual wavy boundary.

B22t—18 to 42 inches; yellowish brown (10YR 5/8) sandy clay loam; moderate medium subangular blocky structure; friable; thin patchy clay films on faces of peds; 8 percent small nodules of ironstone; very strongly acid; gradual smooth boundary.

B23t—42 to 65 inches; yellowish brown (10YR 5/8) sandy clay loam; common medium prominent red (2.5YR 4/8), common medium distinct strong brown (7.5YR 5/8), and light gray (10YR 7/2) mottles; weak medium subangular blocky structure; firm; thin patchy clay films on faces of peds; 10 percent plinthite; very strongly acid.

The thickness of the solum ranges from 60 to 72 inches or more. The soil is strongly acid or very strongly acid throughout except for the surface layer in limed areas.

The Ap horizon is 6 to 10 inches thick. It has hue of 10YR, value of 3, 4, or 5, and chroma of 2 or 3. The A2 horizon, if present, has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 4 to 6. Nodules of ironstone range from 8 to 25 percent by volume.

The Bt horizon has hue of 10YR or 7.5YR, value of 5, and chroma of 4, 6, or 8. The lower part of the Bt horizon has few to many red, brown, and gray mottles. Plinthite ranges from 8 to 15 percent at a depth of 30 to 50 inches. Nodules of ironstone range from 8 to 20 percent in the upper part of the Bt horizon and are as much as 10 percent in the middle and lower part.

Troup series

The Troup series consists of well drained soils that formed in sandy and loamy marine sediment on uplands of the Southern Coastal Plain. Permeability is rapid in the surface layer and thick, subsurface layer and moderate in the subsoil. Slope ranges from 5 to 8 percent.

The Troup soils are associated with Eustis, Lucy, and Orangeburg soils. Eustis soils are in a sandy family. Lucy soils are arenic. Orangeburg soils have an A horizon less than 20 inches thick.

Typical pedon of Troup loamy sand, 5 to 8 percent slopes, in a wooded area; 0.7 mile north of Bay Point Church on River Road; 0.3 mile west to cemetery; 900 feet southeast of the cemetery; in Dooly County:

Ap1—0 to 6 inches; dark grayish brown (10YR 4/2) loamy sand; single grained; loose; many fine roots; very strongly acid; clear smooth boundary.

Ap2—6 to 11 inches; brown (10YR 4/3) loamy sand; single grained; loose; few fine roots; very strongly acid; gradual wavy boundary.

A21—11 to 28 inches; dark yellowish brown (10YR 4/4) loamy sand; single grained; loose; few fine roots; very strongly acid; gradual wavy boundary.

A22—28 to 56 inches; yellowish brown (10YR 5/4) loamy sand; single grained; few fine roots; very strongly acid; clear smooth boundary.

A3—56 to 60 inches; strong brown (7.5YR 5/6) loamy sand; weak fine granular structure; very friable; very strongly acid; clear wavy boundary.

B1—60 to 63 inches; yellowish red (5YR 5/6) sandy loam; weak medium subangular blocky structure; very friable; very strongly acid; gradual smooth boundary.

B2t—63 to 78 inches; yellowish red (5YR 5/6) sandy clay loam; weak moderate subangular blocky structure; friable; clay bridging of sand grains; very strongly acid.

The thickness of the solum ranges from 80 to 120 inches or more. The soil is very strongly acid or strongly acid throughout except for the surface layer in limed areas.

The A horizon ranges from 45 to 65 inches in thickness. The Ap horizon or A2 horizon has hue of 7.5YR, value of 3 to 6, and chroma of 4, 6, or 8; or it has hue of 10YR, value of 3 to 5, and chroma of 2 to 4. The A1 horizon has hue of 7.5YR, value of 3 to 5, and chroma of 2; or it has hue of 10YR, value of 3 to 5, and chroma of 2 or 3.

The B1 horizon has hue of 5YR or 7.5YR, value of 5 or 6, and chroma of 6 or 8.

The Bt horizon has hue of 5YR, value of 4 or 5, and chroma of 6 or 8; or it has hue of 7.5YR and 10YR, value of 5 or 6, and chroma of 6 or 8. It is sandy loam or sandy clay loam.

Vaucluse series

The Vaucluse series consists of well drained, slowly permeable soils that formed mainly in loamy marine sediment. These soils are on uplands of the Sand Hills. Slope ranges from 2 to 20 percent.

Vaucluse soils are associated with Cowarts and Lakeland soils. Cowarts soils do not have a cemented layer in the subsoil. Lakeland soils are sandy throughout.

Typical pedon of Vaucluse loamy sand, 10 to 20 percent slopes, in a road cut; 1.4 miles east of Schley County line on Georgia Highway 240; north of the highway; in Macon County:

Ap—0 to 8 inches; dark grayish brown (10YR 4/2) loamy sand; weak fine granular structure; very friable; many fine roots; strongly acid; clear smooth boundary.

B21t—8 to 12 inches; yellowish red (5YR 5/6) sandy clay loam; weak fine subangular blocky structure; friable; common fine roots; strongly acid; clear wavy boundary.

B22t—12 to 20 inches; red (2.5YR 5/6) sandy clay loam; moderate medium subangular blocky structure; friable; clay bridging of sand grains; few fine roots; strongly acid; clear wavy boundary.

B23t—20 to 40 inches; red (2.5YR 5/6) sandy clay loam; common coarse distinct yellowish brown (10YR 5/8) mottles; moderate medium platy structure; firm, brittle and cemented; clay films on some ped faces; few fine roots; strongly acid; clear wavy boundary.

B3—40 to 60 inches; red (2.5YR 4/6) sandy clay loam; many coarse prominent yellowish brown (10YR 5/8), light gray (10YR 7/1), and yellowish red (5YR 5/6) mottles; moderate medium platy structure; very firm, brittle and cemented; few white kaolin particles; common quartz grains; few fine roots; strongly acid; gradual smooth boundary.

C—60 to 70 inches; red (2.5YR 5/6) coarse loamy sand; massive; very friable; few white kaolin particles; few or common quartz grains; strongly acid.

The thickness of the solum ranges from 40 to 70 inches. The soil is strongly acid or very strongly acid throughout except for the surface layer in limed areas. In some places, small to large nodules of ironstone are on the surface and throughout the soil.

The A horizon ranges from 4 to 12 inches in thickness. It has hue of 10YR, value of 4 or 5, and chroma of 2 to 4. The A2 horizon, if present, has hue of 10YR, value of 5 or 6, and chroma of 4 to 6.

The B1 horizon, if present, has hue of 5YR, value of 4 or 5, and chroma of 6; or it has hue of 7.5YR or 10YR, value of 5, and chroma of 6 or 8.

The Bt horizon has hue of 2.5YR to 10YR, value of 4 or 5, and chroma of 4 or 6. White kaolin clay balls 0.25 to 1 inch in diameter are in the B2t horizons in places. The lower part of the Bt horizon in some pedons does not have matrix colors but has reddish, brownish, yellowish, and grayish mottles. White kaolin clay balls are in many pedons.

The C horizon has hue of 2.5YR, value of 4 to 6, and chroma of 6 or 8; or it has hue of 7.5YR, value of 4 or 5, and chroma of 6. Some pedons have reddish, yellowish, and grayish mottles. White kaolin clay balls are common in many pedons.

Wahee series

The Wahee series consists of somewhat poorly drained, slowly permeable soils that formed in loamy and clayey sediment. These soils are on terraces near the larger streams of the Southern Coastal Plain. The water table is at a depth of 0.5 foot to 1.5 feet from early in winter to early in spring. Slope is 0 to 2 percent.

The Wahee soils are associated with Ocilla soils. Ocilla soils are in positions on the landscape similar to Wahee soils. The Ocilla soils are arenic and have a loamy subsoil.

Typical pedon of Wahee loam, in a wooded area; 0.4 mile southeast of Groves Landing; 0.3 mile north of the bend in Flint River; in Dooly County:

A1—0 to 7 inches; dark grayish brown (10YR 4/2) loam; weak fine granular structure; friable; many fine and medium roots; strongly acid; clear smooth boundary.

A2—7 to 11 inches; pale brown (10YR 6/3) loam; weak fine granular structure; friable; many fine and medium roots; strongly acid; gradual wavy boundary.

B1—11 to 15 inches; brown (10YR 5/3) clay loam; weak fine subangular blocky structure; firm; common fine roots; strongly acid; gradual wavy boundary.

B21tg—15 to 24 inches; grayish brown (10YR 5/2) clay; moderate medium subangular blocky structure; common fine roots; strongly acid; gradual wavy boundary.

B22tg—24 to 40 inches; gray (10YR 5/1) clay; few fine faint yellowish brown mottles; strong medium subangular blocky structure; firm; few medium roots; strongly acid; gradual wavy boundary.

B23tg—40 to 45 inches; gray (10YR 5/1) clay; few fine faint yellowish brown and few medium distinct yellowish red (5YR 4/6) mottles; moderate medium subangular blocky structure; firm; few medium roots; very strongly acid; gradual wavy boundary.

B3g—45 to 60 inches; gray (10YR 5/1) sandy clay; common medium distinct yellowish brown (10YR 5/6) and yellowish red (5YR 4/6) mottles; weak medium subangular blocky structure; firm; few medium roots; very strongly acid.

The thickness of the solum ranges from 40 to 65 inches or more. The soil is very strongly acid or strongly acid throughout except for the surface layer in limed areas.

The A horizon ranges from 5 to 13 inches in thickness. The A1 horizon 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 5 or 6, and chroma of 2 or 3.

The B1 horizon, if present, has hue of 10YR, value of 5 or 6, and chroma of 3, 4, or 6; or it has hue of 2.5Y, value of 5 or 6, and chroma of 4 or 6. The Btg horizon has hue of 10YR, value of 5 to 7, and chroma of 1 or 2. It has common or many, yellow, brown, and red mottles. The Btg horizon commonly is sandy clay, silty clay, or clay but ranges to clay loam. The B3g horizon, if present, is mottled gray, brown, yellow, and red; or it has matrix hue of 10YR, value of 6 or 7, and chroma of 1. This horizon is sandy clay or clay loam.

formation of the soils

This section discusses the factors of soil formation and relates them to soils in the survey area. It also explains the processes of soil formation.

factors of soil formation

Soils are formed when parent material, plants and animals, climate, and topography, or relief, interact for long periods (*4*). It is the combination of these factors that largely determines the properties of the soil. All of these factors have influenced the formation of each soil in Dooly and Macon Counties.

Climate and vegetation are the principal active forces that gradually alter the parent material to form a soil. Topography mainly influences soil drainage and runoff and also influences soil temperature. In combination, climate, vegetation, and topography act over long periods to bring about changes in parent material. The five factors of soil formation are discussed in the following paragraphs.

parent material

Parent material is the unconsolidated mass in which a soil forms. It is largely responsible for the chemical and mineralogical composition of a soil. Dooly and Macon Counties are underlain by Coastal Plain sediment (*5*).

The Suwannee Limestone Formation of the Tertiary Period and its residuum makes up most of the eastern half of Dooly County. The well drained Dothan and Tifton soils are the main soils that formed on uplands in material from this formation. These soils have mainly a sandy surface layer and a brownish, loamy subsoil. Of lesser extent are the well drained Cowarts, Faceville, Orangeburg, and Nankin soils; the moderately well drained Clarendon soils; and the somewhat poorly drained Ardilla soils.

The Ocala Limestone Formation of the Tertiary Period makes up most of the western half of Dooly County. The well drained Faceville, Orangeburg, and Greenville soils are the main soils that formed on uplands in material from this formation. These soils have a sandy or loamy surface layer and a reddish, clayey or loamy subsoil. Of lesser extent are the well drained Dothan and Tifton soils.

The Eocene Undifferentiated Formations of the Tertiary Period make up most of the eastern half of Macon County. The well drained Dothan, Faceville, Greenville, Orangeburg, and Tifton soils are the main soils that formed on uplands in material from this formation. These soils have a sandy or loamy surface layer and a reddish or brownish, clayey or loamy subsoil. Of lesser extent are the somewhat poorly drained Susquehanna soils and the moderately well drained Oktibbeha soils.

The Providence Sand Formation of the Cretaceous Period makes up most of the nearly level and very gently sloping soils on ridgetops and some of the gently sloping and sloping soils on hillsides in the western half of Macon County. The Dothan, Lucy, Fuquay, and Lakeland soils are the main soils that formed on uplands in material from this formation. The well drained Dothan soils have mainly a sandy surface layer and a brownish, loamy subsoil. The well drained Lucy and Fuquay soils have a sandy surface layer, a thick, sandy subsurface layer, and a brownish, loamy subsoil. The excessively drained Lakeland soils are sandy throughout.

The Ripley Formation of the Cretaceous Period makes up some of the very gently sloping soils on ridgetops and most of the gently sloping to moderately steep soils on hillsides in the western half of Macon County. Lakeland and Vaucluse soils are the main soils that formed on uplands in material from this formation. The excessively drained Lakeland soils are sandy throughout. The well drained Vaucluse soils have a sandy surface layer and a loamy subsoil that is mainly cemented and brittle.

Stream alluvium is adjacent to all of the streams in the survey area, but it is most extensive on the flood plain of the Flint River. The soils on the flood plains formed in more recent sediment than the soils on uplands. Chewacla and Chastain soils are the main soils. The somewhat poorly drained Chewacla soils are loamy throughout. The poorly drained Chastain soils are mainly clayey throughout.

plants and animals

Plants, animals, and other organisms play significant roles in soil development, but the direct impact of each factor is difficult to measure. Some of the changes caused by plants and animals are gains in organic matter and nitrogen, gain or loss in plant nutrients, and changes in structure and porosity.

The soils of Dooly and Macon Counties formed under a succession of plants. Deciduous trees are the climax vegetation that has contributed significantly toward the recycling of plant nutrients and accumulation of organic matter, and the energy for animal life. Plants provide

cover that reduces erosion, and they stabilize the surface of the soil, enabling the soil-forming processes to continue. Plants provide a more stable environment for the soil-forming processes because they reduce the extremes in temperature in unprotected soils.

Animal life in the soils is abundant under the present vegetation and environment. Ants, bees, wasps, earthworms, and spiders, by making channels in the soil, and rodents, moles, crustacea, reptiles, and foxes, by making burrows, mix the soil in the upper horizons. Bacteria, fungi, and other micro-organisms hasten decomposition of organic matter and increase the release of minerals for additional plant growth. Man affects the soil-forming process by tilling the soils, leveling hills, filling valleys, and reducing or increasing soil fertility.

The gains and losses caused by plant and animals in the soil-forming process are important in Dooly and Macon Counties. However, within the relatively small confines of the survey area, one soil does not significantly differ from another soil because of plants and animals.

climate

Rainfall and temperature are the two most important measured features of climate that relate to soil properties.

Water is essential in the formation of soil. It dissolves soluble materials and is used by plants and animals. It transports material from one part of the soil to another part and from one area to another area. These processes and chemical reactions in the soil are dependent to some extent on temperature. Temperature is important in controlling the type and quantity of vegetation, the amount and kind of organic matter, and the rate of decomposition of organic matter. Soils in Dooly and Macon Counties formed under a thermic temperature regime. The average annual air temperature is about 66 degrees F. The soil temperature at a depth of 20 inches is normally about 2 degrees higher.

The climate of Dooly and Macon Counties is warm and moist and is probably similar to the climate that existed as the soils were forming. The relatively high rainfall and warm temperature contribute to rapid soil formation. Rainfall and temperature are uniform throughout the survey area.

relief

Relief implies relative elevation and is defined as the elevation or inequalities of a land surface considered collectively (*7*). Features commonly related to relief are color of the soil, wetness, thickness and content of the organic matter of the A horizon, and plant cover.

In Dooly and Macon Counties the obvious effects of relief are color of the soil and wetness. Dothan and Tifton soils have a brown subsoil. Grady and Rains soils have a gray matrix throughout the B horizon. This color difference is attributed to a difference in relief and a corresponding difference in internal drainage. Dothan and Tifton soils are higher lying and are better drained than Grady and Rains soils. As a result, both of these soils have better oxidization and a brownish subsoil.

The movement of water across the surface soil and through the soil profile is controlled to a large extent by relief. Movement of water across the slope commonly carries solid particles and causes erosion or deposition depending on the kind of relief. On sloping areas, runoff is higher and areas are drier because less water enters the soil. Lower lying areas are commonly wetter as a result of runoff and the lateral movement of water through the the soil.

time

The length of time that the soil-forming factors act on the parent material determines to a large degree the characteristics of the soil. Soils in Dooly and Macon Counties are generally classified as either young or mature. The young soils do not have a pedogenic horizon. They show an irregular decrease in content of carbon with an increase in depth. Mature soils are in equilibrium with the environment. They have readily recognizable pedogenic horizons and show a regular decrease in content of carbon with an increase in depth.

Bibb and Kinston soils are on flood plains that annually receive new sediment from floodwaters. These soils are stratified, and they are not old enough to have a zone of illuviation. Cowarts, Dothan, Faceville, Greenville, Nankin, Red Bay, Orangeburg, and Tifton soils commonly are on broad, stable, upland landscapes where the soil-forming processes have been active for thousands of years. These soils have a thick solum, and they have a highly developed zone of illuviation.

references

(1) American Association of State Highway [and Transportation] Officials. 1970. Standard specifications for highway materials and methods of sampling and testing. Ed. 10, 2 vol., illus.

(2) American Society for Testing and Materials. 1974. Method for classification of soils for engineering purposes. ASTM Stand. D 2487-69. *In* 1974 Annual Book of ASTM Standards, Part 19, 464 pp., illus.

(3) Bergeaux, P. J. 1976. Fertilizer recommendations for field crops. Univ. of Ga., Coll. of Agric., Circ. 639.

(4) Byers, H. G., Charles E. Kellogg, M. S. Anderson, and James Thorp. 1938. Formation of soil. *In* Soils and men. U.S. Dep. Agric. Yearb., pp. 948-978.

(5) Georgia Department of Natural Resources. 1976. Geologic map of Georgia. Geol. and Water Resour. Div., Ga. Geol. Surv., 1 p., map.

(6) United States Department of Agriculture. 1926. Soil survey of Dooly County, Georgia. Bur. of Soils, 307 pp., map.

(7) United States Department of Agriculture. 1951. Soil survey manual. U.S. Dep. Agric. Handb. 18, 503 pp., illus. [Supplements replacing pp. 173-188 issued May 1962]

(8) United States Department of Agriculture. 1967. Soil survey laboratory data and descriptions for some soils of Georgia, North Carolina, and South Carolina. Soil Surv. Invest. Rep. No. 16.

(9) United States Department of Agriculture. 1971. Forest statistics for southwest Georgia. Forest Serv., Southeast Forest Exp. Stn. Resour. Bull. SE-19, 34 pp.

(10) United States Department of Agriculture. 1972. Forest statistics for central Georgia. Forest Serv., Resour. Bull. SE-22, 34 pp.

(11) United States Department of Agriculture. 1975. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. Soil Conserv. Serv., U.S. Dep. Agric. Handb. 436, 754 pp., illus.

glossary

Alluvium. Material, such as sand, silt, or clay, deposited on land by streams.

Area reclaim (in tables). An area difficult to reclaim after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

Association, soil. A group of soils geographically associated in a characteristic repeating pattern and defined and delineated as a single map unit.

Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as—

	Inches
Very low	0 to 3
Low	3 to 6
Moderate	6 to 9
High	9 to 12
Very high	More than 12

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Bottom land. The normal flood plain of a stream, subject to flooding.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay film. A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.

Climax vegetation. The stabilized plant community on a particular site. The plant cover reproduces itself and does not change so long as the environment remains the same.

Concretions. Grains, pellets, or nodules of various sizes, shapes, and colors consisting of concentrated compounds or cemented soil grains. The composition of most concretions is unlike that of the surrounding soil. Calcium carbonate and iron oxide are common compounds in concretions.

Conservation tillage. Only the tillage essential to crop production and prevention of soil damage.

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.

Depth to rock (in tables). Bedrock is too near the surface for the specified use.

Diversion (or diversion terrace). A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

Drainage class (natural). Refers to the frequency and duration of periods of saturation or partial saturation during soil formation, as opposed to altered drainage, which is commonly the result of artificial drainage or irrigation but may be caused by the sudden deepening of channels or the blocking of drainage outlets. Seven classes of natural soil drainage are recognized:
Excessively drained.—Water is removed from the soil very rapidly. Excessively drained soils are commonly very coarse textured, rocky, or shallow. Some are steep. All are free of the mottling related to wetness.
Somewhat excessively drained.—Water is removed from the soil rapidly. Many somewhat excessively drained soils are sandy and rapidly pervious. Some are shallow. Some are so steep that much of the water they receive is lost as runoff. All are free of the mottling related to wetness.
Well drained.—Water is removed from the soil readily, but not rapidly. It is available to plants throughout most of the growing season, and wetness does not inhibit growth of roots for significant periods during most growing seasons. Well drained soils are commonly medium textured. They are mainly free of mottling.
Moderately well drained.—Water is removed from the soil somewhat slowly during some periods. Moderately well drained soils are wet for only a short time during the growing season, but periodically they are wet long enough that most mesophytic crops are affected. They commonly have a slowly pervious layer within or directly below the solum, or periodically receive high rainfall, or both.
Somewhat poorly drained.—Water is removed slowly enough that the soil is wet for significant periods during the growing season. Wetness markedly restricts the growth of mesophytic crops unless artificial drainage is provided. Somewhat poorly drained soils commonly have a slowly pervious layer, a high water table, additional water from seepage, nearly continuous rainfall, or a combination of these.
Poorly drained.—Water is removed so slowly that the soil is saturated periodically during the growing season or remains wet for long periods. Free water is commonly at or near the surface for long enough during the growing season that most mesophytic crops cannot be grown unless the soil is artificially drained. The soil is not continuously saturated in layers directly below plow depth. Poor drainage results from a high water table, a slowly pervious layer within the profile, seepage, nearly continuous rainfall, or a combination of these.
Very poorly drained.—Water is removed from the soil so slowly that free water remains at or on the surface during most of the growing season. Unless the soil is artificially drained, most mesophytic crops cannot be grown. Very poorly drained soils are commonly level or depressed and are frequently ponded. Yet, where rainfall is high and nearly continuous, they can have moderate or high slope gradients.

Drainage, surface. Runoff, or surface flow of water, from an area.

Eluviation. The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.

Erosion. The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.
Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.
Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of the activities of man or other animals or of a catastrophe in nature, for example, fire, that exposes the surface.

Excess fines (in tables). Excess silt and clay in the soil. The soil 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.

Flood plain. A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

Grassed waterway. A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.

Gravel. Rounded or angular fragments of rock up to 3 inches (2 millimeters to 7.5 centimeters) in diameter. An individual piece is a pebble.

Gully. A miniature valley with steep sides cut by running water and through which water ordinarily runs only after rainfall. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an upper case letter represents the major horizons. Numbers or lower case letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the *Soil Survey Manual*. The major horizons of mineral soil are as follows:

O horizon.—An organic layer of fresh and decaying plant residue at the surface of a mineral soil.

A horizon.—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

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.

Hydrologic soil groups. Refers to soils grouped according to their runoff-producing characteristics. The chief consideration is the inherent capacity of soil bare of vegetation to permit infiltration. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff. Soils are assigned to four groups. In group A are soils having a high infiltration rate when thoroughly wet and having a low runoff potential. They are mainly deep, well drained, and sandy or gravelly. In group D, at the other extreme, are soils having a very slow infiltration rate and thus a high runoff potential. They have a claypan or clay layer at or near the surface, have a permanent high water table, or are shallow over nearly impervious bedrock or other material. A soil is assigned to two hydrologic groups if part of the acreage is artificially drained and part is undrained.

Illuviation. The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Irrigation. Application of water to soils to assist in production of crops. Methods of irrigation in Dooly and Macon Counties, Georgia, are—

Sprinkler. Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

Drip. Water is applied slowly and under low pressure through such applicators as orifices, emitters, porous tubing, and perforated pipe. It is applied on the surface or in the soil.

Leaching. The removal of soluble material from soil or other material by percolating water.

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.

Morphology, soil. The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mottling, soil. Irregular spots of different colors that vary in number and size. Mottling generally indicates poor aeration and impeded drainage. Descriptive terms are as follows: abundance—*few, common,* and *many*; size—*fine, medium,* and *coarse*; and contrast—*faint, distinct,* and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium*, from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse*, more than 15 millimeters (about 0.6 inch).

Munsell notation. A designation of color by degrees of the three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color of 10YR hue, value of 6, and chroma of 4.

Neutral soil. A soil having a pH value between 6.6 and 7.3. (See Reaction, soil.)

Nutrient, plant. Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

Organic matter. Plant and animal residue in the soil in various stages of decomposition.

Parent material. The unconsolidated organic and mineral material in which soil forms.

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Pedon. The smallest volume that can be called "a soil." A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

Percolation. The downward movement of water through the soil.

Percs slowly (in tables). The slow movement of water through the soil adversely 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.

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Piping (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Plinthite. The sesquioxide-rich, humus-poor, highly weathered mixture of clay with quartz and other diluents. It commonly appears as red mottles, usually in platy, polygonal, or reticulate patterns. Plinthite changes irreversibly to an ironstone hardpan or to irregular aggregates on repeated wetting and drying, especially if it is exposed also to heat from the sun. In a moist soil, plinthite can be cut with a spade. It is a form of laterite.

Ponding. Standing water on soils in closed depressions. The water can be removed only by percolation or evapotranspiration.

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

Relief. The elevations or inequalities of a land surface, considered collectively.

Rill. A steep sided channel resulting from accelerated erosion. A rill is generally a few inches deep and not wide enough to be an obstacle to farm machinery.

Root zone. The part of the soil that can be penetrated by plant roots.

Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Sand. As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Seepage (in tables). The movement of water through the soil. 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.

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. An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field is generally built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.

Terrace (geologic). An old alluvial plain, ordinarily flat or undulating, bordering a river, a lake, or the sea.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

Thin layer (in tables). Otherwise suitable soil material too thin for the specified use.

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Topsoil. The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Upland (geology). Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

Weathering. All physical and chemical changes produced in rocks or other deposits at or near the earth's surface by atmospheric agents. These changes result in disintegration and decomposition of the material.

tables

TABLE 1.--TEMPERATURE AND PRECIPITATION

[Recorded in the period 1957-77 at Marshallville, Ga.]

Month	Temperature						Precipitation				
	Average daily maximum	Average daily minimum	Average daily	2 years in 10 will have-- Maximum temperature higher than--	2 years in 10 will have-- Minimum temperature lower than--	Average number of growing degree days[1]	Average	2 years in 10 will have-- Less than--	2 years in 10 will have-- More than--	Average number of days with 0.10 inch or more	Average snowfall
	°F	°F	°F	°F	°F	Units	In	In	In		In
January	58.2	35.1	42.2	77	9	374	4.96	2.44	7.01	6	.0
February	62.6	37.9	50.3	80	15	146	5.17	2.83	7.08	6	.8
March	69.6	43.9	56.8	86	24	248	5.24	3.02	7.03	8	.0
April	79.3	52.4	65.9	91	34	477	3.78	1.57	5.56	5	.0
May	85.9	59.3	72.6	98	42	701	4.02	1.70	5.90	6	.0
June	89.7	65.5	77.6	99	52	828	5.45	3.25	7.40	8	.0
July	91.6	68.2	79.9	101	60	927	5.79	3.43	7.89	8	.0
August	91.3	67.8	79.6	99	60	918	3.96	2.35	5.39	6	.0
September	87.3	63.6	75.4	96	48	762	3.17	1.81	4.28	5	.0
October	78.4	51.9	65.1	91	33	468	2.32	.48	3.77	4	.0
November	68.9	42.0	52.7	84	22	439	2.57	1.14	3.72	4	.0
December	61.0	36.2	48.7	78	14	119	4.04	2.40	5.49	4	.0
Yearly:											
Average	77.0	52.0	63.9	---	---	---	---	---	---	---	---
Extreme	---	---	---	101	7	---	---	---	---	---	---
Total	---	---	---	---	---	6,407	50.47	44.70	57.76	70	.8

[1] A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (50° F.)

TABLE 2.--FREEZE DATES IN SPRING AND FALL

[Recorded in the period 1957-77 at Marshallville, Ga.]

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 3	March 25	April 7
2 years in 10 later than--	February 26	March 17	April 1
5 years in 10 later than--	February 16	March 2	March 20
First freezing temperature in fall:			
1 year in 10 earlier than--	November 18	November 6	October 26
2 years in 10 earlier than--	November 25	November 11	October 29
5 years in 10 earlier than--	December 8	November 20	November 6

TABLE 3.--GROWING SEASON

[Recorded in the period 1957-77 at Marshallville, Ga.]

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	267	236	207
8 years in 10	276	245	215
5 years in 10	294	262	230
2 years in 10	313	280	245
1 year in 10	322	289	252

TABLE 4.--ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS

Map symbol	Soil name	Dooly County	Macon County	Total--	
				Area	Extent
		Acres	Acres	Acres	Pct
AmB	Americus loamy sand, 0 to 5 percent slopes	90	2,075	2,165	0.4
AmC	Americus loamy sand, 5 to 8 percent slopes	0	1,435	1,435	0.3
ArA	Ardilla loamy sand, 0 to 2 percent slopes	9,085	2,795	11,880	2.3
BK	Bibb and Kinston soils	21,465	16,010	37,475	7.3
CaA	Cahaba sandy loam, 0 to 2 percent slopes	480	0	480	0.1
CC	Chewacla-Chastain-Riverview association	3,100	18,465	21,565	4.2
CnA	Clarendon sandy loam	8,710	1,110	9,820	1.9
CoB	Cowarts sandy loam, 2 to 5 percent slopes	5,090	2,444	7,534	1.5
CrC2	Cowarts sandy loam, 5 to 8 percent slopes, eroded	3,340	3,880	7,220	1.4
DoA	Dothan loamy sand, 0 to 2 percent slopes	8,025	12,610	20,635	4.0
DoB	Dothan loamy sand, 2 to 5 percent slopes	34,560	19,115	53,675	10.7
DoC	Dothan loamy sand, 5 to 8 percent slopes	1,080	1,745	2,825	0.6
EuA	Eustis loamy sand, 0 to 2 percent slopes	1,845	0	1,845	0.4
EuB	Eustis loamy sand, 2 to 5 percent slopes	1,405	65	1,470	0.3
FeA	Faceville sandy loam, 0 to 2 percent slopes	1,305	3,815	5,120	1.0
FeB	Faceville sandy loam, 2 to 5 percent slopes	20,185	12,660	32,845	6.4
FsC2	Faceville sandy clay loam, 5 to 8 percent slopes, eroded	5,475	4,770	10,245	2.0
FsD2	Faceville sandy clay loam, 8 to 12 percent slopes, eroded	725	1,340	2,065	0.4
FuB	Fuquay loamy sand, 0 to 5 percent slopes	6,055	14,445	20,500	4.0
FuC	Fuquay loamy sand, 5 to 8 percent slopes	505	4,475	4,980	1.0
Gr	Grady sandy loam	9,885	5,485	15,370	3.0
GsA	Greenville sandy loam, 0 to 2 percent slopes	470	4,690	5,160	1.0
GsB	Greenville sandy loam, 2 to 5 percent slopes	2,200	5,230	7,430	1.5
GtC2	Greenville sandy clay loam, 5 to 8 percent slopes, eroded	1,785	1,530	3,315	0.6
GtD2	Greenville sandy clay loam, 8 to 12 percent slopes, eroded	335	590	925	0.2
He	Herod loam	515	0	515	0.1
Hu	Humaquepts, loamy	1,595	230	1,825	0.4
LaB	Lakeland sand, 0 to 8 percent slopes	1,925	13,425	15,350	3.0
LaD	Lakeland sand, 8 to 15 percent slopes	270	5,525	5,795	1.1
LuB	Lucy loamy sand, 0 to 5 percent slopes	2,105	13,570	15,675	3.1
LuC	Lucy loamy sand, 5 to 12 percent slopes	915	9,920	10,835	2.1
NaB	Nankin sandy loam, 2 to 5 percent slopes	8,485	0	8,485	1.7
NeC2	Nankin sandy clay loam, 5 to 8 percent slopes, eroded	10,615	40	10,655	2.1
Oc	Ochlockonee sandy loam	3,100	2,895	5,995	1.2
Od	Ocilla loamy sand	305	0	305	0.1
OkB	Oktibbeha loam, 2 to 5 percent slopes	0	655	655	0.1
OkC	Oktibbeha loam, 5 to 8 percent slopes	0	700	700	0.1
OrA	Orangeburg loamy sand, 0 to 2 percent slopes	1,775	4,970	6,745	1.3
OrB	Orangeburg loamy sand, 2 to 5 percent slopes	11,300	16,105	27,405	5.4
OrD	Orangeburg loamy sand, 8 to 12 percent slopes	560	4,315	4,875	1.0
OrE	Orangeburg loamy sand, 12 to 20 percent slopes	0	1,060	1,060	0.2
OsC2	Orangeburg sandy loam, 5 to 8 percent slopes, eroded	2,735	7,180	9,915	1.9
Ra	Rains sandy loam	10,055	2,990	13,045	2.6
ReA	Red Bay sandy loam, 0 to 2 percent slopes	45	1,595	1,640	0.3
ReB	Red Bay sandy loam, 2 to 5 percent slopes	700	3,600	4,300	0.8
ReC	Red Bay sandy loam, 5 to 8 percent slopes	195	1,005	1,200	0.2
SmB	Sumter silty clay loam, 2 to 5 percent slopes	0	385	385	0.1
SuB	Susquehanna sandy loam, 2 to 5 percent slopes	1,580	1,170	2,750	0.5
SuC	Susquehanna sandy loam, 5 to 12 percent slopes	910	865	1,775	0.3
TfA	Tifton loamy sand, 0 to 2 percent slopes	3,655	175	3,830	0.8
TfB	Tifton loamy sand, 2 to 5 percent slopes	35,350	2,720	38,070	7.5
TnC2	Tifton sandy loam, 5 to 8 percent slopes, eroded	3,555	835	4,390	0.9
TrC	Troup loamy sand, 5 to 8 percent slopes	430	0	430	0.1
VaB	Vaucluse loamy sand, 2 to 5 percent slopes	0	1,270	1,270	0.2
VaC	Vaucluse loamy sand, 5 to 10 percent slopes	265	3,980	4,245	0.8
VaD	Vaucluse loamy sand, 10 to 20 percent slopes	310	15,530	15,840	3.1
Wa	Wahee loam	2,030	175	2,205	0.4
	Total	252,480	257,664	510,144	100.0

TABLE 5.--IMPORTANT FARMLAND

[Acreage is according to date fieldwork was completed. Soils not listed do not qualify as prime farmland or as additional land of statewide importance]

Soil name and map symbol	Prime farmland	Additional farmland of statewide importance
	Acres	Acres
AmB---------- Americus	---	2,165
AmC---------- Americus	---	1,435
ArA---------- Ardilla	---	11,880
CaA---------- Cahaba	480	---
CC: Chewacla----------	---	8,626
Chastain*----------	---	---
Riverview----------	---	4,313
CnA---------- Clarendon	9,820	---
CoB---------- Cowarts	7,534	---
CrC2---------- Cowarts	---	7,220
DoA---------- Dothan	20,635	---
DoB---------- Dothan	53,675	---
DoC---------- Dothan	2,825	---
EuA---------- Eustis	---	1,845
EuB---------- Eustis	---	1,470
FeA---------- Faceville	5,120	---
FeB---------- Faceville	32,845	---
FsC2---------- Faceville	---	10,245
FuB---------- Fuquay	---	20,500
FuC---------- Fuquay	---	4,980
GsA---------- Greenville	5,160	---
GsB---------- Greenville	7,430	---
GtC2---------- Greenville	---	3,315

See footnote at end of table.

TABLE 5.--IMPORTANT FARMLAND--Continued

Soil name and map symbol	Prime farmland	Additional farmland of statewide importance
	Acres	Acres
LuB---------- Lucy	---	15,675
LuC---------- Lucy	---	10,835
NaB---------- Nankin	8,485	---
NeC2---------- Nankin		10,655
Oc---------- Ochlockonee	---	5,995
Od---------- Ocilla	---	305
OkB---------- Oktibbeha	---	655
OkC---------- Oktibbeha	---	700
OrA---------- Orangeburg	6,745	---
OrB---------- Orangeburg	27,405	---
OrD---------- Orangeburg	---	4,875
OsC2---------- Orangeburg	9,915	---
ReA---------- Red Bay	1,640	---
ReB---------- Red Bay	4,300	---
ReC---------- Red Bay	1,200	
SmB---------- Sumter	---	385
TfA---------- Tifton	3,830	---
TfB---------- Tifton	38,070	---
TnC2---------- Tifton	4,390	---
TrC---------- Troup	---	430
VaB---------- Vaucluse	---	1,270
VaC---------- Vaucluse	---	4,245
Wa---------- Wahee	---	2,205
Total----------	251,504	136,224

* Chastain part of the Chewacla-Chastain-Riverview association does not qualify for prime farmland or additional farmland of statewide importance.

TABLE 6.--YIELDS PER ACRE OF CROPS AND PASTURE

[Yields in the N columns are for nonirrigated soils; those in the I columns are for irrigated soils. Yields are those that can be expected under a high level of management. Absence of a yield figure 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		Cotton lint		Peanuts		Improved bermudagrass		Bahiagrass	
	N	I	N	I	N	I	N	I	N	I	N	I
	Bu	Bu	Bu	Bu	Lb	Lb	Lb	Lb	AUM*	AUM*	AUM*	AUM*
AmB---------- Americus	60	120	25	40	---	---	2,200	3,600	7.0	10.0	7.0	10.0
AmC---------- Americus	55	110	20	35	---	---	2,000	3,500	6.5	9.5	6.5	9.5
ArA---------- Ardilla	85	135	45	55	---	---	---	---	8.5	10.5	8.5	10.5
BK---------- Bibb and Kinston	---	---	---	---	---	---	---	---	---	---	---	---
CaA---------- Cahaba	120	190	45	55	900	1,100	4,000	5,400	10.5	13.0	8.5	10.5
CC**:												
Chewacla----------	80	---	30	---	---	---	---	---	9.0	---	8.0	---
Chastain----------	---	---	---	---	---	---	---	---	---	---	---	---
Riverview----------	125	---	45	---	---	---	---	---	10.0	---	9.0	---
CnA---------- Clarendon	110	175	40	50	---	---	---	---	10.5	13.0	10.0	12.5
CoB---------- Cowarts	80	125	35	40	650	800	2,400	3,300	8.0	10.0	7.5	9.5
CrC2---------- Cowarts	60	100	20	23	500	600	1,600	2,200	7.0	9.0	6.5	8.5
DoA---------- Dothan	120	190	40	45	900	1,100	3,800	5,100	10.5	13.0	9	11.5
DoB---------- Dothan	120	190	35	40	900	1,100	3,600	4,800	10.5	13.0	9	11.5
DoC---------- Dothan	100	160	30	35	800	950	3,600	4,800	10.0	12.5	8	10.0
EuA, EuB---------- Eustis	60	120	25	40	---	---	2,400	3,800	7.0	10.0	6.5	9.5
FeA---------- Faceville	115	185	45	50	875	1,050	4,000	4,750	10.0	12.5	7.0	9.0
FeB---------- Faceville	115	185	45	50	875	1,050	4,000	4,750	10.0	12.5	7.0	9.0
FsC2---------- Faceville	75	120	20	23	500	600	2,600	3,100	8.0	10.0	5.0	6.5
FsD2---------- Faceville	---	---	---	---	---	---	---	---	6.0	7.0	4.0	5.0
FuB---------- Fuquay	80	140	30	40	650	800	2,900	4,350	7.5	9.5	7.5	9.0
FuC---------- Fuquay	75	130	25	30	600	750	2,600	4,000	7.0	9.0	7.0	9.0
Gr---------- Grady	---	---	---	---	---	---	---	---	---	---	---	---

See footnotes at end of table.

TABLE 6.--YIELDS PER ACRE OF CROPS AND PASTURE--Continued

Soil name and map symbol	Corn		Soybeans		Cotton lint		Peanuts		Improved bermudagrass		Bahiagrass	
	N	I	N	I	N	I	N	I	N	I	N	I
	Bu	Bu	Bu	Bu	Lb	Lb	Lb	Lb	AUM*	AUM*	AUM*	AUM*
GsA---------- Greenville	115	185	45	50	875	1,050	4,000	4,750	10	12.5	7.0	9.0
GsB---------- Greenville	115	185	45	50	875	1,050	4,000	4,750	10	12.5	7.0	9.0
GtC2---------- Greenville	75	120	20	23	500	600	2,600	3,100	8.0	10.0	5.0	6.5
GtD2---------- Greenville	---	---	---	---	---	---	---	---	6.0	7.0	4.0	5.0
He---------- Herod	---	---	---	---	---	---	---	---	---	---	---	---
HU**. Humaquepts												
LaB---------- Lakeland	55	110	20	35	---	---	2,000	3,500	7.0	10.0	7.0	10.0
LaD---------- Lakeland	---	---	---	---	---	---	---	---	6.5	9.5	6.5	9.5
LuB---------- Lucy	80	140	33	45	650	800	3,000	4,500	8.0	10.0	8.5	10.0
LuC---------- Lucy	70	120	25	35	600	750	2,500	3,750	7.5	9.5	8.5	9.0
NaB---------- Nankin	75	115	30	35	600	750	2,200	3,100	7.5	8.5	7.0	9.0
NeC2---------- Nankin	50	85	20	22	450	550	1,400	2,000	6.0	8.0	6.0	7.0
Oc---------- Ochlockonee	110	---	40	---	---	---	---	---	8.0	---	8.0	---
Od---------- Ocilla	75	120	35	40	---	---	---	---	8.5	10.5	7.5	10.0
OkB---------- Oktibbeha	55	90	35	40	---	---	---	---	6.5	8.5	6.5	7.5
OkC---------- Oktibbeha	50	80	30	35	---	---	---	---	6.0	8.0	6.0	7.0
OrA---------- Orangeburg	120	190	45	55	900	1,100	4,000	5,400	10.5	13.0	8.5	10.5
OrB---------- Orangeburg	120	190	45	55	900	1,100	4,000	5,400	10.5	13.0	8.5	10.5
OrD---------- Orangeburg	85	135	30	35	650	800	2,800	3,800	9.0	11.0	7.0	8.5
OrE---------- Orangeburg	---	---	---	---	---	---	---	---	8.0	10.0	6.0	7.0
OsC2---------- Orangeburg	85	135	35	40	700	850	2,800	3,800	10.0	12.5	8.0	10.0
Ra---------- Rains	---	---	---	---	---	---	---	---	---	---	6.0	---
ReA---------- Red Bay	120	190	45	55	900	1,100	4,000	5,400	10.5	13.0	8.5	10.5

See footnotes at end of table.

TABLE 6.--YIELDS PER ACRE OF CROPS AND PASTURE--Continued

Soil name and map symbol	Corn		Soybeans		Cotton lint		Peanuts		Improved bermudagrass		Bahiagrass	
	N	I	N	I	N	I	N	I	N	I	N	I
	Bu	Bu	Bu	Bu	Lb	Lb	Lb	Lb	AUM*	AUM*	AUM*	AUM*
ReB---------- Red Bay	120	190	45	55	900	1,100	4,000	5,400	10.5	13.0	8.5	10.5
ReC---------- Red Bay	85	135	35	40	700	850	2,800	---	10.0	12.5	8.0	10.0
SmB---------- Sumter	70	110	25	30	500	600	2,000	2,700	7.5	8.5	7.0	9.0
SuB---------- Susquehanna	---	---	---	---	---	---	---	---	---	---	6.5	7.5
SuC---------- Susquehanna	---	---	---	---	---	---	---	---	---	---	5.5	6.5
TfA---------- Tifton	115	185	46	55	950	1,150	3,800	5,100	10.5	13.5	8.5	10.5
TfB---------- Tifton	115	185	46	55	950	1,150	3,800	5,100	10.5	13.5	8.5	10.5
TnC2---------- Tifton	80	130	34	40	650	800	3,000	4,050	9.0	11.0	7.0	8.5
TrC---------- Troup	55	100	22	30	---	---	1,800	3,000	7.0	10.0	7.0	10.0
VaB---------- Vaucluse	65	105	25	30	500	600	2,000	2,700	8	9.5	7	8.5
VaC---------- Vaucluse	60	95	20	25	400	500	1,700	2,300	7	8.5	6	7.0
VaD---------- Vaucluse	---	---	---	---	---	---	---	---	7	8.5	6	7.0
Wa---------- Wahee	90	145	40	50	---	---	---	---	---	---	8.0	10.0

* Animal-unit-month: The amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for 30 days.

** See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 7.--CAPABILITY CLASSES AND SUBCLASSES

[Miscellaneous areas are excluded. Dashes indicate no acreage]

Class	Total acreage	Major management concerns (Subclass)		
		Erosion (e)	Wetness (w)	Soil problem (s)
		Acres	Acres	Acres
I:				
Dooly County	15,755	---	---	---
Macon County	27,855	---	---	---
II:				
Dooly County	147,787	117,870	21,757	8,160
Macon County	100,140	61,874	10,251	28,015
III:				
Dooly County	14,010	7,830	2,335	3,845
Macon County	23,845	15,785	175	7,885
IV:				
Dooly County	38,621	23,355	11,996	3,270
Macon County	51,939	16,405	10,754	24,780
V:				
Dooly County	31,865	---	31,865	---
Macon County	21,495	---	21,495	---
VI:				
Dooly County	4,059	2,280	1,509	270
Macon County	30,948	19,385	6,038	5,525
VII:				
Dooly County	---	---	---	---
Macon County	---	---	---	---
VIII:				
Dooly County	1,595	---	1,595	---
Macon County	230	---	230	---

TABLE 8.--WOODLAND MANAGEMENT AND PRODUCTIVITY

[Only the soils suitable for production of commercial trees are listed. Absence of an entry indicates that information was not available]

Soil name and map symbol	Ordination symbol	Management concerns			Potential productivity		Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Common trees	Site index	
AmB, AmC---------- Americus	3s	Slight	Moderate	Moderate	Slash pine----------	84	Slash pine, longleaf pine.
					Loblolly pine----------	84	
					Longleaf pine----------	70	
ArA---------- Ardilla	2w	Slight	Moderate	Moderate	Loblolly pine----------	90	Loblolly pine, longleaf pine, slash pine, sweetgum.
					Longleaf pine----------	78	
					Slash pine----------	89	
					Sweetgum----------	90	
					Water oak----------	90	
BK*:							
Bibb----------	2w	Slight	Severe	Severe	Loblolly pine----------	95	Eastern cottonwood, loblolly pine, sweetgum, yellow-poplar.
					Sweetgum----------	90	
					Water oak----------	90	
Kinston----------	1w	Slight	Severe	Severe	Loblolly pine----------	100	Loblolly pine, slash pine, American sycamore, yellow-poplar, eastern cottonwood, cherrybark oak, green ash, sweetgum.
					Sweetgum----------	95	
					White oak----------	90	
					Eastern cottonwood-----	100	
					Cherrybark oak---------	95	
CaA---------- Cahaba	2o	Slight	Slight	Slight	Loblolly pine----------	87	Loblolly pine, slash pine, yellow-poplar, sweetgum, American sycamore.
					Slash pine----------	91	
					Yellow-poplar----------	---	
					Sweetgum----------	90	
					Southern red oak-------	---	
					White oak----------	---	
					Cherrybark oak---------	---	
					Longleaf pine----------	72	
					Blackgum----------	---	
CC*:							
Chewacla----------	1w	Slight	Moderate	Moderate	Loblolly pine----------	96	Loblolly pine, slash pine, American sycamore, yellow-poplar, sweetgum, eastern white pine, green ash.
					Yellow-poplar----------	104	
					American sycamore------	90	
					Sweetgum----------	97	
					Water oak----------	86	
					Eastern cottonwood-----	100	
					Green ash----------	97	
					Southern red oak-------	90	
Chastain----------	2w	Slight	Severe	Severe	Sweetgum----------	94	Loblolly pine, American sycamore, sweetgum, cherrybark oak.
					Water oak----------	89	
					Eastern cottonwood-----	90	
					Green ash----------	88	
					Loblolly pine----------	90	
					Water tupelo----------	---	
					White oak----------	---	
					Southern red oak-------	---	
					Baldcypress----------	---	
Riverview---------	1w	Slight	Moderate	Moderate	Yellow-poplar----------	110	Loblolly pine, slash pine, eastern cottonwood, sweetgum, yellow-poplar, American sycamore.
					Loblolly pine----------	100	
					Sweetgum----------	100	

See footnote at end of table.

TABLE 8.--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	Common trees	Site index	
CnA---------- Clarendon	2w	Slight	Moderate	Slight	Loblolly pine----------	90	Loblolly pine, slash pine, American sycamore, yellow-poplar, sweetgum.
					Slash pine----------	90	
					Sweetgum----------	85	
CoB, CrC2---------- Cowarts	2o	Slight	Slight	Slight	Loblolly pine----------	86	Loblolly pine, longleaf pine, slash pine.
					Slash pine----------	86	
					Longleaf pine----------	67	
DoA, DoB, DoC------ Dothan	2o	Slight	Slight	Slight	Slash pine----------	89	Slash pine, loblolly pine, longleaf pine.
					Longleaf pine----------	75	
					Loblolly pine----------	90	
EuA, EuB---------- Eustis	3s	Slight	Moderate	Moderate	Slash pine----------	85	Slash pine, loblolly pine.
					Loblolly pine----------	85	
					Longleaf pine----------	65	
FeA, FeB, FsC2, FsD2---------- Faceville	3o	Slight	Slight	Slight	Loblolly pine----------	82	Loblolly pine, slash pine.
					Slash pine----------	80	
					Longleaf pine----------	65	
FuB, FuC---------- Fuquay	3s	Slight	Moderate	Moderate	Loblolly pine----------	83	Slash pine, longleaf pine.
					Slash pine----------	85	
					Longleaf pine----------	75	
Gr---------- Grady	4w	Slight	Severe	Severe	Baldcypress----------	68	American sycamore, water tupelo.
					Blackgum----------	65	
					Water oak----------	65	
GsA, GsB, GtC2, GtD2---------- Greenville	3o	Slight	Slight	Slight	Loblolly pine----------	85	Loblolly pine, longleaf pine, slash pine.
					Longleaf pine----------	70	
					Slash pine----------	85	
He---------- Herod	1w	Slight	Severe	Severe	Loblolly pine----------	100	Loblolly pine, slash pine, sweetgum, eastern cottonwood.
					Sweetgum----------	95	
					Water oak----------	90	
					Eastern cottonwood-----	100	
LaB, LaD---------- Lakeland	4s	Slight	Moderate	Moderate	Slash pine----------	75	Slash pine, loblolly pine.
					Loblolly pine----------	75	
					Longleaf pine----------	60	
LuB, LuC---------- Lucy	3s	Slight	Moderate	Moderate	Slash pine----------	85	Slash pine, longleaf pine, loblolly pine.
					Longleaf pine----------	74	
					Loblolly pine----------	85	
NaB, NeC2---------- Nankin	3o	Slight	Slight	Slight	Loblolly pine----------	80	Loblolly pine, slash pine.
					Slash pine----------	80	
					Longleaf pine----------	70	
Oc---------- Ochlockonee	1o	Slight	Slight	Slight	Eastern cottonwood-----	100	Loblolly pine, yellow-poplar, eastern cottonwood.
					Loblolly pine----------	102	
					Yellow-poplar----------	116	
					Slash pine----------	102	
					Sweetgum----------	95	
					Water oak----------	80	
Od---------- Ocilla	3w	Slight	Moderate	Moderate	Loblolly pine----------	85	Loblolly pine, slash pine.
					Slash pine----------	85	
					Longleaf pine----------	75	
OkB, OkC---------- Oktibbeha	3c	Slight	Moderate	Moderate	Loblolly pine----------	76	Loblolly pine, eastern redcedar.
					Shortleaf pine----------	66	
					Eastern redcedar-------	45	
					Southern red oak-------	70	

See footnote at end of table.

TABLE 8.--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	Common trees	Site index	
OrA, OrB, OrD, OrE, OsC2--- Orangeburg	2o	Slight	Slight	Slight	Loblolly pine--- Slash pine--- Longleaf pine---	80 86 77	Slash pine, loblolly pine.
Ra--- Rains	2w	Slight	Severe	Severe	Loblolly pine--- Slash pine--- Sweetgum---	94 91 90	Loblolly pine, slash pine, sweetgum, American sycamore.
ReA, ReB, ReC--- Red Bay	2o	Slight	Slight	Slight	Loblolly pine--- Slash pine--- Longleaf pine---	90 90 77	Loblolly pine, slash pine, longleaf pine.
SmB--- Sumter	4c	Moderate	Moderate	Moderate	Eastern redcedar---	37	Eastern redcedar.
SuB, SuC--- Susquehanna	3c	Slight	Moderate	Slight	Loblolly pine--- Shortleaf pine---	78 70	Loblolly pine, shortleaf pine.
TfA, TfB, TnC2--- Tifton	2o	Slight	Slight	Slight	Loblolly pine--- Slash pine--- Longleaf pine---	86 86 72	Loblolly pine, slash pine.
TrC--- Troup	3s	Slight	Moderate	Moderate	Loblolly pine--- Longleaf pine--- Slash pine---	77 76 85	Loblolly pine, longleaf pine, slash pine.
VaB, VaC, VaD--- Vaucluse	3o	Slight	Slight	Slight	Loblolly pine--- Shortleaf pine--- Slash pine--- Longleaf pine---	76 56 75 ---	Loblolly pine, slash pine.
Wa--- Wahee	2w	Slight	Moderate	Moderate	Loblolly pine--- Slash pine--- Sweetgum---	86 86 90	Loblolly pine, slash pine, sweetgum, American sycamore, water oak.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 9.--RECREATIONAL DEVELOPMENT

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not rated]

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
AmB Americus	Moderate: too sandy.	Moderate: too sandy.	Moderate: slope, too sandy.	Moderate: too sandy.	Moderate: droughty.
AmC Americus	Moderate: too sandy.	Moderate: too sandy.	Severe: slope.	Moderate: too sandy.	Moderate: droughty.
ArA Ardilla	Severe: wetness.	Moderate: wetness, percs slowly.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.
BK*: Bibb	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.	Severe: wetness, flooding.
Kinston	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.	Severe: wetness, flooding.
CaA Cahaba	Severe: flooding.	Slight	Slight	Slight	Slight.
CC*: Chewacla	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.	Severe: wetness, flooding.
Chastain	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.	Severe: wetness, flooding.
Riverview	Severe: flooding.	Moderate: flooding.	Severe: flooding.	Moderate: flooding.	Severe: flooding.
CnA Clarendon	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Moderate: wetness.	Moderate: wetness.
CoB Cowarts	Moderate: percs slowly.	Moderate: percs slowly.	Moderate: slope, percs slowly.	Slight	Slight.
CrC2 Cowarts	Moderate: percs slowly.	Moderate: percs slowly.	Severe: slope.	Slight	Slight.
DoA Dothan	Slight	Slight	Slight	Slight	Slight.
DoB Dothan	Slight	Slight	Moderate: slope.	Slight	Slight.
DoC Dothan	Slight	Slight	Severe: slope.	Slight	Slight.
EuA Eustis	Moderate: too sandy.	Moderate: too sandy.	Moderate: too sandy.	Moderate: too sandy.	Moderate: droughty.
EuB Eustis	Moderate: too sandy.	Moderate: too sandy.	Moderate: slope, too sandy.	Moderate: too sandy.	Moderate: droughty.
FeA Faceville	Slight	Slight	Slight	Slight	Slight.
FeB Faceville	Slight	Slight	Moderate: slope.	Slight	Slight.

See footnote at end of table.

TABLE 9.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
FsC2--- Faceville	Slight	Slight	Severe: slope.	Slight	Slight.
FsD2--- Faceville	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight	Moderate: slope.
FuB--- Fuquay	Moderate: too sandy.	Moderate: too sandy.	Moderate: slope, too sandy.	Moderate: too sandy.	Moderate: droughty.
FuC--- Fuquay	Moderate: too sandy.	Moderate: too sandy.	Severe: slope.	Moderate: too sandy.	Moderate: droughty.
Gr--- Grady	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
GsA--- Greenville	Slight	Slight	Slight	Slight	Slight.
GsB--- Greenville	Slight	Slight	Moderate: slope.	Slight	Slight.
GtC2--- Greenville	Slight	Slight	Severe: slope.	Slight	Slight.
GtD2--- Greenville	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight	Moderate: slope.
He--- Herod	Severe: flooding, wetness.	Severe: wetness.	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.
HU*. Humaquepts					
LaB--- Lakeland	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: droughty, too sandy.
LaD--- Lakeland	Severe: too sandy.	Severe: too sandy.	Severe: slope, too sandy.	Severe: too sandy.	Moderate: droughty, slope, too sandy.
LuB--- Lucy	Moderate: too sandy.	Moderate: too sandy.	Moderate: slope, too sandy.	Moderate: too sandy.	Moderate: droughty.
LuC--- Lucy	Moderate: slope, too sandy.	Moderate: slope, too sandy.	Severe: slope.	Moderate: too sandy.	Moderate: droughty, slope.
NaB--- Nankin	Moderate: percs slowly.	Moderate: percs slowly.	Moderate: slope, percs slowly.	Slight	Slight.
NeC2--- Nankin	Moderate: percs slowly.	Moderate: percs slowly.	Severe: slope.	Slight	Slight.
Oc--- Ochlockonee	Severe: flooding.	Slight	Moderate: flooding.	Slight	Moderate: flooding.
Od--- Ocilla	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness, droughty.
OkB--- Oktibbeha	Severe: percs slowly.	Severe: percs slowly.	Severe: percs slowly.	Slight	Slight.

See footnote at end of table.

TABLE 9.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
OkC---- Oktibbeha	Severe: percs slowly.	Severe: percs slowly.	Severe: slope, percs slowly.	Slight----	Slight.
OrA---- Orangeburg	Slight----	Slight----	Slight----	Slight----	Slight.
OrB---- Orangeburg	Slight----	Slight----	Moderate: slope.	Slight----	Slight.
OrD---- Orangeburg	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight----	Moderate: slope.
OrE---- Orangeburg	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
OsC2---- Orangeburg	Slight----	Slight----	Severe: slope.	Slight----	Slight.
Ra---- Rains	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
ReA---- Red Bay	Slight----	Slight----	Slight----	Slight----	Slight.
ReB---- Red Bay	Slight----	Slight----	Moderate: slope.	Slight----	Slight.
ReC---- Red Bay	Slight----	Slight----	Severe: slope.	Slight----	Slight.
SmB---- Sumter	Moderate: percs slowly.	Moderate: percs slowly.	Moderate: slope, percs slowly.	Severe: erodes easily.	Moderate: thin layer.
SuB---- Susquehanna	Severe: percs slowly.	Severe: percs slowly.	Severe: percs slowly.	Slight----	Slight.
SuC---- Susquehanna	Severe: percs slowly.	Severe: percs slowly.	Severe: slope, percs slowly.	Severe: erodes easily.	Moderate: slope.
TfA---- Tifton	Slight----	Slight----	Moderate: small stones.	Slight----	Slight.
TfB---- Tifton	Slight----	Slight----	Moderate: slope, small stones.	Slight----	Slight.
TnC2---- Tifton	Slight----	Slight----	Severe: slope.	Slight----	Slight.
TrC---- Troup	Moderate: too sandy.	Moderate: too sandy.	Severe: slope.	Moderate: too sandy.	Moderate: droughty.
VaB---- Vaucluse	Moderate: percs slowly.	Moderate: percs slowly.	Moderate: slope.	Slight----	Moderate: droughty.
VaC---- Vaucluse	Moderate: percs slowly.	Moderate: percs slowly.	Severe: slope.	Slight----	Moderate: droughty.
VaD---- Vaucluse	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
Wa---- Wahee	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 10.--WILDLIFE HABITAT

[See text for definitions of "good," "fair," "poor," and "very poor." Absence of an entry indicates that the soil was not rated]

Soil name and map symbol	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
AmB, AmC---------- Americus	Poor	Fair	Fair	Poor	Poor	Very poor.	Very poor.	Fair	Poor	Very poor.
ArA---------- Ardilla	Fair	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor.
BK*:										
Bibb----------	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
Kinston----------	Very poor.	Poor	Poor	Poor	Poor	Good	Fair	Poor	Poor	Fair.
CaA---------- Cahaba	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
CC*:										
Chewacla----------	Very poor.	Poor	Poor	Good	Good	Fair	Fair	Poor	Good	Fair.
Chastain----------	Very poor.	Poor	Poor	Fair	Poor	Good	Good	Poor	Fair	Good.
Riverview----------	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
CnA---------- Clarendon	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
CoB---------- Cowarts	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
CrC2---------- Cowarts	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
DoA, DoB, DoC------ Dothan	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
EuA, EuB---------- Eustis	Poor	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
FeA---------- Faceville	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
FeB---------- Faceville	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
FsC2, FsD2--------- Faceville	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
FuB---------- Fuquay	Fair	Fair	Good	Fair	Fair	Poor	Very poor.	Good	Fair	Very poor.
FuC---------- Fuquay	Poor	Fair	Good	Fair	Fair	Poor	Very poor.	Good	Fair	Very poor.
Gr---------- Grady	Very poor.	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good.
GsA, GsB---------- Greenville	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
GtC2, GtD2--------- Greenville	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.

See footnote at end of table.

TABLE 10.--WILDLIFE HABITAT--Continued

Soil name and map symbol	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
He---------- Herod	Poor	Poor	Fair	Fair	Fair	Good	Fair	Poor	Fair	Fair.
HU*. Humaquepts										
LaB, LaD---------- Lakeland	Poor	Fair	Fair	Poor	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
LuB---------- Lucy	Poor	Fair	Good	Good	Good	Poor	Very poor.	Fair	Good	Very poor.
LuC---------- Lucy	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
NaB---------- Nankin	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
NeC2---------- Nankin	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
Oc---------- Ochlockonee	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
Od---------- Ocilla	Fair	Fair	Good	Fair	Good	Fair	Fair	Fair	Good	Fair.
OkB---------- Oktibbeha	Fair	Fair	Fair	Good	Good	Very poor.	Very poor.	Fair	Good	Poor.
OkC---------- Oktibbeha	Fair	Fair	Fair	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
OrA, OrB---------- Orangeburg	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
OrD---------- Orangeburg	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
OrE---------- Orangeburg	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
OsC2---------- Orangeburg	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
Ra---------- Rains	Very poor.	Very poor.	Very poor.	Fair	Fair	Good	Good	Very poor.	Poor	Good.
ReA---------- Red Bay	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
ReB---------- Red Bay	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
ReC---------- Red Bay	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
SmB---------- Sumter	Fair	Fair	Fair	Good	Good	Poor	Very poor.	Fair	Good	Very poor.
SuB, SuC---------- Susquehanna	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
TfA---------- Tifton	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.

See footnote at end of table.

TABLE 10.--WILDLIFE HABITAT--Continued

Soil name and map symbol	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
TfB---------- Tifton	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
TnC2---------- Tifton	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
TrC---------- Troup	Poor	Fair	Fair	Poor	Poor	Very poor.	Very poor.	Fair	Poor	Very poor.
VaB, VaC---------- Vaucluse	Fair	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
VaD---------- Vaucluse	Poor	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
Wa---------- Wahee	Fair	Fair	Fair	Good	Good	Fair	Fair	Fair	Good	Fair.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 11.--BUILDING SITE DEVELOPMENT

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not rated]

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
AmB---- Americus	Severe: cutbanks cave.	Slight	Slight	Slight	Slight	Moderate: droughty.
AmC---- Americus	Severe: cutbanks cave.	Slight	Slight	Moderate: slope.	Slight	Moderate: droughty.
ArA---- Ardilla	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.
BK*:						
Bibb----	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.	Severe: wetness, flooding.
Kinston----	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.	Severe: wetness, flooding.
CaA---- Cahaba	Slight	Severe: flooding.	Severe: flooding.	Severe: flooding.	Moderate: flooding.	Slight.
CC*:						
Chewacla----	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, wetness, flooding.	Severe: wetness, flooding.
Chastain----	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, wetness, flooding.	Severe: wetness, flooding.
Riverview----	Moderate: wetness.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.
CnA---- Clarendon	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.
CoB---- Cowarts	Slight	Slight	Slight	Slight	Slight	Slight.
CrC2---- Cowarts	Slight	Slight	Slight	Moderate: slope.	Slight	Slight.
DoA, DoB---- Dothan	Moderate: wetness.	Slight	Moderate: wetness.	Slight	Slight	Slight.
DoC---- Dothan	Moderate: wetness.	Slight	Moderate: wetness.	Moderate: slope.	Slight	Slight.
EuA, EuB---- Eustis	Severe: cutbanks cave.	Slight	Slight	Slight	Slight	Moderate: droughty.
FeA, FeB---- Faceville	Moderate: too clayey.	Slight	Slight	Slight	Moderate: low strength.	Slight.
FsC2---- Faceville	Moderate: too clayey.	Slight	Slight	Moderate: slope.	Moderate: low strength.	Slight.
FsD2---- Faceville	Moderate: too clayey, slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: low strength, slope.	Moderate: slope.
FuB---- Fuquay	Moderate: cutbanks cave.	Slight	Moderate: wetness.	Slight	Slight	Moderate: droughty.

See footnote at end of table.

TABLE 11.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
FuC---------- Fuquay	Moderate: cutbanks cave.	Slight---------	Moderate: wetness.	Moderate: slope.	Slight---------	Moderate: droughty.
Gr---------- Grady	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: low strength, ponding.	Severe: ponding.
GsA, GsB---------- Greenville	Moderate: too clayey.	Slight---------	Slight---------	Slight---------	Moderate: low strength.	Slight.
GtC2---------- Greenville	Moderate: too clayey.	Slight---------	Slight---------	Moderate: slope.	Moderate: low strength.	Slight.
GtD2---------- Greenville	Moderate: too clayey, slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: low strength, slope.	Moderate: slope.
He---------- Herod	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding. wetness.
HU*. Humaquepts						
LaB---------- Lakeland	Severe: cutbanks cave.	Slight---------	Slight---------	Moderate: slope.	Slight---------	Moderate: droughty, too sandy.
LaD---------- Lakeland	Severe: cutbanks cave.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: droughty, slope, too sandy.
LuB---------- Lucy	Moderate: cutbanks cave.	Slight---------	Slight---------	Slight---------	Slight---------	Moderate: droughty.
LuC---------- Lucy	Moderate: cutbanks cave, slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: droughty, slope.
NaB---------- Nankin	Moderate: too clayey.	Slight---------	Slight---------	Slight---------	Slight---------	Slight.
NeC2---------- Nankin	Moderate: too clayey.	Slight---------	Slight---------	Moderate: slope.	Slight---------	Slight.
Oc---------- Ochlockonee	Moderate: wetness.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Moderate: flooding.
Od---------- Ocilla	Severe: cutbanks cave, wetness.	Moderate: wetness.	Severe: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness, droughty.
OkB, OkC---------- Oktibbeha	Moderate: too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: low strength, shrink-swell.	Slight.
OrA, OrB---------- Orangeburg	Slight---------	Slight---------	Slight---------	Slight---------	Slight---------	Slight.
OrD---------- Orangeburg	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: slope.
OrE---------- Orangeburg	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
OsC2---------- Orangeburg	Slight---------	Slight---------	Slight---------	Moderate: slope.	Slight---------	Slight.

See footnote at end of table.

TABLE 11.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
Ra---------- Rains	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
ReA, ReB---------- Red Bay	Slight---------	Slight---------	Slight---------	Slight---------	Slight---------	Slight.
ReC---------- Red Bay	Slight---------	Slight---------	Slight---------	Moderate: slope.	Slight---------	Slight.
SmB---------- Sumter	Moderate: depth to rock, too clayey.	Severe: shrink-swell.	Moderate: depth to rock.	Severe: shrink-swell.	Severe: low strength, shrink-swell.	Moderate: thin layer.
SuB---------- Susquehanna	Moderate: too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: low strength, shrink-swell.	Slight.
SuC---------- Susquehanna	Moderate: too clayey, slope.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, slope.	Severe: low strength, shrink-swell.	Moderate: slope.
TfA, TfB---------- Tifton	Moderate: wetness.	Slight---------	Moderate: wetness.	Slight---------	Slight---------	Slight.
TnC2---------- Tifton	Moderate: wetness.	Slight---------	Moderate: wetness.	Moderate: slope.	Slight---------	Slight.
TrC---------- Troup	Severe: cutbanks cave.	Slight---------	Slight---------	Moderate: slope.	Slight---------	Moderate: droughty.
VaB---------- Vaucluse	Moderate: dense layer.	Slight---------	Slight---------	Slight---------	Slight---------	Moderate: droughty.
VaC---------- Vaucluse	Moderate: dense layer.	Slight---------	Slight---------	Moderate: slope.	Slight---------	Moderate: droughty.
VaD---------- Vaucluse	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Wa---------- Wahee	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, wetness, flooding.	Severe: wetness.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 12.--SANITARY FACILITIES

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "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
AmB, AmC Americus	Slight	Severe: seepage.	Severe: seepage.	Severe: seepage.	Fair: too sandy.
ArA Ardilla	Severe: wetness, percs slowly.	Moderate: seepage.	Severe: wetness.	Severe: seepage, wetness.	Poor: wetness.
BK*: Bibb	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
Kinston	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
CaA Cahaba	Moderate: flooding.	Severe: seepage, flooding.	Severe: seepage.	Moderate: flooding.	Fair: thin layer.
CC*: Chewacla	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
Chastain	Severe: flooding, wetness, percs slowly.	Severe: flooding, wetness.	Severe: flooding, wetness, too clayey.	Severe: flooding, wetness.	Poor: wetness.
Riverview	Severe: flooding, wetness.	Severe: seepage, flooding.	Severe: flooding, seepage, wetness.	Severe: flooding, seepage.	Fair: wetness.
CnA Clarendon	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Fair: wetness.
CoB, CrC2 Cowarts	Severe: percs slowly.	Moderate: slope.	Slight	Slight	Good.
DoA Dothan	Moderate: wetness, percs slowly.	Moderate: seepage.	Slight	Slight	Good.
DoB, DoC Dothan	Moderate: wetness, percs slowly.	Moderate: seepage, slope.	Slight	Slight	Good.
EuA, EuB Eustis	Severe: poor filter.	Severe: seepage.	Severe: seepage.	Severe: seepage.	Fair: too sandy.
FeA Faceville	Slight	Moderate: seepage.	Moderate: too clayey.	Slight	Fair: too clayey.
FeB, FsC2 Faceville	Slight	Moderate: seepage, slope.	Moderate: too clayey.	Slight	Fair: too clayey.

See footnote at end of table.

TABLE 12.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
FsD2---------- Faceville	Moderate: slope.	Severe: slope.	Moderate: slope, too clayey.	Moderate: slope.	Fair: too clayey, slope.
FuB, FuC---------- Fuquay	Moderate: percs slowly.	Moderate: slope.	Slight----------	Slight----------	Fair: too sandy.
Gr---------- Grady	Severe: ponding, percs slowly.	Severe: ponding.	Severe: ponding, too clayey.	Severe: ponding.	Poor: ponding.
GsA---------- Greenville	Slight----------	Moderate: seepage.	Moderate: too clayey.	Slight----------	Fair: too clayey.
GsB, GtC2---------- Greenville	Slight----------	Moderate: seepage, slope.	Moderate: too clayey.	Slight----------	Fair: too clayey.
GtD2---------- Greenville	Moderate: slope.	Severe: slope.	Moderate: slope, too clayey.	Moderate: slope.	Fair: too clayey, slope.
He---------- Herod	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
HU*. Humaquepts					
LaB---------- Lakeland	Severe: poor filter.	Severe: seepage.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
LaD---------- Lakeland	Severe: poor filter.	Severe: seepage, slope.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
LuB---------- Lucy	Slight----------	Severe: seepage.	Slight----------	Slight----------	Good.
LuC---------- Lucy	Moderate: slope.	Severe: seepage, slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
NaB, NeC2---------- Nankin	Severe: percs slowly.	Moderate: seepage, slope.	Moderate: too clayey.	Slight----------	Fair: too clayey.
Oc---------- Ochlockonee	Severe: flooding, wetness.	Severe: seepage, flooding, wetness.	Severe: flooding, seepage, wetness.	Severe: flooding, wetness.	Fair: wetness.
Od---------- Ocilla	Severe: wetness.	Severe: seepage, wetness.	Severe: wetness.	Severe: seepage, wetness.	Fair: wetness.
OkB, OkC---------- Oktibbeha	Severe: percs slowly.	Moderate: slope.	Severe: too clayey.	Slight----------	Poor: too clayey, hard to pack.
OrA---------- Orangeburg	Slight----------	Moderate: seepage.	Slight----------	Slight----------	Good.
OrB---------- Orangeburg	Slight----------	Moderate: seepage, slope.	Slight----------	Slight----------	Good.

See footnote at end of table.

TABLE 12.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
OrD---------- Orangeburg	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
OrE---------- Orangeburg	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
OsC2---------- Orangeburg	Slight----------	Moderate: seepage, slope.	Slight----------	Slight----------	Good.
Ra---------- Rains	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
ReA---------- Red Bay	Slight----------	Moderate: seepage.	Slight----------	Slight----------	Good.
ReB, ReC---------- Red Bay	Slight----------	Moderate: seepage, slope.	Slight----------	Slight----------	Good.
SmB---------- Sumter	Severe: depth to rock, percs slowly.	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Poor: area reclaim, hard to pack.
SuB---------- Susquehanna	Severe: percs slowly.	Moderate: slope.	Severe: too clayey.	Slight----------	Poor: too clayey, hard to pack.
SuC---------- Susquehanna	Severe: percs slowly.	Severe: slope.	Severe: too clayey.	Moderate: slope.	Poor: too clayey, hard to pack.
TfA---------- Tifton	Moderate: percs slowly, wetness.	Moderate: seepage.	Slight----------	Slight----------	Fair: small stones.
TfB, TnC2---------- Tifton	Moderate: percs slowly, wetness.	Moderate: slope, seepage.	Slight----------	Slight----------	Fair: small stones.
TrC---------- Troup	Slight----------	Severe: seepage.	Moderate: too sandy.	Severe: seepage.	Fair: too sandy.
VaB---------- Vaucluse	Severe: percs slowly.	Moderate: slope.	Severe: seepage.	Slight----------	Good.
VaC---------- Vaucluse	Severe: percs slowly.	Severe: slope.	Severe: seepage.	Slight----------	Good.
VaD---------- Vaucluse	Severe: percs slowly, slope.	Severe: slope.	Severe: seepage, slope.	Severe: slope.	Poor: slope.
Wa---------- Wahee	Severe: flooding, wetness, percs slowly.	Severe: flooding, wetness.	Severe: flooding, wetness, too clayey.	Severe: flooding, wetness.	Poor: too clayey, hard to pack, wetness.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 13.--CONSTRUCTION MATERIALS

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "good," "fair," "poor," "probable," and "improbable." Absence of an entry indicates that the soil was not rated]

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
AmB, AmC---------- Americus	Good----------	Improbable: excess fines.	Improbable: excess fines.	Fair: too sandy.
ArA---------- Ardilla	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
BK*:				
Bibb----------	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
Kinston----------	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
CaA---------- Cahaba	Good----------	Improbable: excess fines.	Improbable: excess fines.	Good.
CC*:				
Chewacla----------	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Good.
Chastain----------	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness, too clayey.
Riverview----------	Good----------	Improbable: excess fines.	Improbable: excess fines.	Good.
CnA---------- Clarendon	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Good.
CoB, CrC2---------- Cowarts	Good----------	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
DoA, DoB, DoC--------- Dothan	Good----------	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
EuA, EuB---------- Eustis	Good----------	Probable----------	Improbable: too sandy.	Fair: too sandy.
FeA, FeB, FsC2, FsD2-- Faceville	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
FuB, FuC---------- Fuquay	Good----------	Improbable: excess fines.	Improbable: excess fines.	Fair: too sandy.
Gr---------- Grady	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.
GsA, GsB, GtC2, GtD2-- Greenville	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
He---------- Herod	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
HU*. Humaquepts				
LaB, LaD---------- Lakeland	Good----------	Probable----------	Improbable: too sandy.	Poor: too sandy.

See footnote at end of table.

TABLE 13.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
LuB---------- Lucy	Good----------	Improbable: excess fines, thin layer.	Improbable: excess fines.	Fair: too sandy.
LuC---------- Lucy	Good----------	Improbable: excess fines, thin layer.	Improbable: excess fines.	Fair: too sandy, slope.
NaB, NeC2---------- Nankin	Good----------	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
Oc---------- Ochlockonee	Good----------	Improbable: excess fines.	Improbable: excess fines.	Good.
Od---------- Ocilla	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: too sandy.
OkB, OkC---------- Oktibbeha	Poor: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
OrA, OrB---------- Orangeburg	Good----------	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
OrD---------- Orangeburg	Good----------	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey. slope.
OrE---------- Orangeburg	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
OsC2---------- Orangeburg	Good----------	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
Ra---------- Rains	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
ReA, ReB, ReC---------- Red Bay	Good----------	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
SmB---------- Sumter	Poor: area reclaim, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
SuB, SuC---------- Susquehanna	Poor: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
TfA, TfB, TnC2---------- Tifton	Good----------	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones.
TrC---------- Troup	Good----------	Probable----------	Improbable: too sandy.	Fair: too sandy.
VaB, VaC---------- Vaucluse	Good----------	Improbable: excess fines.	Improbable: excess fines.	Fair: area reclaim.
VaD---------- Vaucluse	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Wa---------- Wahee	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness, too clayey.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 14.--WATER MANAGEMENT

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not evaluated]

Soil name and map symbol	Limitations for--		Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Drainage	Irrigation	Terraces and diversions	Grassed waterways
AmB--- Americus	Severe: seepage.	Severe: seepage, piping.	Deep to water	Droughty---	Too sandy---	Droughty.
AmC--- Americus	Severe: seepage.	Severe: seepage, piping.	Deep to water	Droughty, slope.	Too sandy---	Droughty.
ArA--- Ardilla	Moderate: seepage.	Severe: wetness.	Favorable---	Wetness---	Wetness---	Wetness.
BK*:						
Bibb---	Moderate: seepage.	Severe: piping, wetness.	Flooding---	Wetness, flooding.	Wetness---	Wetness.
Kinston---	Moderate: seepage.	Severe: wetness.	Flooding---	Wetness, flooding.	Wetness---	Wetness.
CaA--- Cahaba	Severe: seepage.	Moderate: thin layer, piping.	Deep to water	Favorable---	Favorable---	Favorable.
CC*:						
Chewacla---	Moderate: seepage.	Severe: piping, wetness.	Flooding---	Wetness, flooding.	Wetness---	Wetness.
Chastain---	Slight---	Severe: hard to pack, wetness.	Percs slowly, flooding.	Wetness, percs slowly.	Wetness, percs slowly.	Wetness, percs slowly.
Riverview---	Severe: seepage.	Severe: piping.	Deep to water	Flooding---	Favorable---	Favorable.
CnA--- Clarendon	Moderate: seepage.	Moderate: wetness.	Favorable---	Wetness---	Wetness---	Favorable.
CoB, CrC2--- Cowarts	Slight---	Slight---	Deep to water	Percs slowly, slope.	Percs slowly---	Percs slowly.
DoA--- Dothan	Moderate: seepage.	Slight---	Deep to water	Favorable---	Favorable---	Favorable.
DoB, DoC--- Dothan	Moderate: seepage.	Slight---	Deep to water	Slope---	Favorable---	Favorable.
EuA, EuB--- Eustis	Severe: seepage.	Severe: seepage, piping.	Deep to water	Droughty---	Too sandy---	Droughty.
FeA--- Faceville	Moderate: seepage.	Slight---	Deep to water	Favorable---	Favorable---	Favorable.
FeB, FsC2--- Faceville	Moderate: seepage.	Slight---	Deep to water	Slope---	Favorable---	Favorable.
FsD2--- Faceville	Moderate: seepage.	Slight---	Deep to water	Slope---	Slope---	Slope.
FuB--- Fuquay	Moderate: seepage.	Slight---	Deep to water	Droughty---	Too sandy---	Droughty.

See footnote at end of table.

TABLE 14.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--		Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Drainage	Irrigation	Terraces and diversions	Grassed waterways
FuC---------- Fuquay	Moderate: seepage.	Slight----------	Deep to water	Droughty, slope.	Too sandy------	Droughty.
Gr---------- Grady	Slight----------	Severe: ponding.	Ponding, percs slowly.	Ponding, percs slowly.	Ponding, percs slowly.	Wetness, percs slowly.
GsA---------- Greenville	Moderate: seepage.	Slight----------	Deep to water	Favorable------	Favorable------	Favorable.
GsB, GtC2--------- Greenville	Moderate: seepage.	Slight----------	Deep to water	Slope----------	Favorable------	Favorable.
GtD2---------- Greenville	Moderate: seepage.	Slight----------	Deep to water	Slope----------	Slope----------	Slope.
He---------- Herod	Moderate: seepage.	Severe: wetness.	Flooding-------	Flooding, wetness.	Wetness--------	Wetness.
HU*. Humaquepts						
LaB---------- Lakeland	Severe: seepage.	Severe: seepage.	Deep to water	Droughty, slope.	Too sandy------	Droughty.
LaD---------- Lakeland	Severe: seepage.	Severe: seepage.	Deep to water	Droughty, slope.	Slope, too sandy.	Slope, droughty.
LuB---------- Lucy	Moderate: seepage.	Slight----------	Deep to water	Droughty-------	Too sandy------	Droughty.
LuC---------- Lucy	Moderate: seepage.	Slight----------	Deep to water	Droughty, slope.	Too sandy, slope.	Slope, droughty.
NaB, NeC2--------- Nankin	Moderate: seepage.	Slight----------	Deep to water	Slope----------	Favorable------	Favorable.
Oc---------- Ochlockonee	Severe: seepage.	Severe: piping.	Deep to water	Flooding-------	Favorable------	Favorable.
Od---------- Ocilla	Severe: seepage.	Severe: piping, wetness.	Favorable------	Wetness, droughty.	Wetness--------	Droughty.
OkB, OkC---------- Oktibbeha	Slight----------	Moderate: hard to pack.	Deep to water	Percs slowly, slope.	Percs slowly---	Percs slowly.
OrA---------- Orangeburg	Moderate: seepage.	Slight----------	Deep to water	Favorable------	Favorable------	Favorable.
OrB---------- Orangeburg	Moderate: seepage.	Slight----------	Deep to water	Slope----------	Favorable------	Favorable.
OrD, OrE---------- Orangeburg	Moderate: seepage.	Slight----------	Deep to water	Slope----------	Slope----------	Slope.
OsC2---------- Orangeburg	Moderate: seepage.	Slight----------	Deep to water	Slope----------	Favorable------	Favorable.
Ra---------- Rains	Moderate: seepage.	Severe: piping, wetness.	Favorable------	Wetness--------	Wetness--------	Wetness.
ReA---------- Red Bay	Moderate: seepage.	Slight----------	Deep to water	Favorable------	Favorable------	Favorable.

See footnote at end of table.

TABLE 14.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--		Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Drainage	Irrigation	Terraces and diversions	Grassed waterways
ReB, ReC---------- Red Bay	Moderate: seepage, slope.	Slight---------	Deep to water	Slope----------	Favorable------	Favorable.
SmB---------- Sumter	Moderate: seepage, depth to rock, slope.	Moderate: hard to pack.	Deep to water	Percs slowly, depth to rock.	Depth to rock, erodes easily.	Erodes easily, depth to rock.
SuB---------- Susquehanna	Slight---------	Severe: hard to pack.	Percs slowly, slope.	Percs slowly, slope.	Percs slowly---	Percs slowly.
SuC---------- Susquehanna	Slight---------	Severe: hard to pack.	Percs slowly, slope.	Percs slowly, slope.	Percs slowly, slope.	Percs slowly, slope.
TfA---------- Tifton	Moderate: seepage.	Slight---------	Deep to water	Favorable------	Favorable------	Favorable.
TfB, TnC2--------- Tifton	Moderate: seepage.	Slight---------	Deep to water	Slope----------	Favorable------	Favorable.
TrC---------- Troup	Severe: seepage.	Severe: seepage, piping.	Deep to water	Droughty, slope.	Too sandy------	Droughty.
VaB, VaC---------- Vaucluse	Slight---------	Slight---------	Deep to water	Droughty-------	Percs slowly---	Droughty, rooting depth.
VaD---------- Vaucluse	Slight---------	Slight---------	Deep to water	Droughty-------	Slope, percs slowly.	Slope, droughty, rooting depth.
Wa---------- Wahee	Slight---------	Severe: wetness.	Percs slowly, floods.	Wetness, percs slowly, flooding.	Wetness, percs slowly.	Wetness, percs slowly.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 15.--ENGINEERING INDEX PROPERTIES

[The symbol < means less than; > means more than. Absence of an entry indicates that data were not estimated]

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 3 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
AmB, AmC---------- Americus	0-8	Loamy sand-------	SM, SP-SM	A-2	0	100	95-100	80-85	10-20	---	NP
	8-43	Loamy sand, loamy fine sand.	SM	A-2	0	100	95-100	85-90	13-20	---	NP
	43-72	Sandy loam, loamy sand, fine sandy loam.	SM, SM-SC	A-2	0	95-100	95-100	75-90	15-35	<28	NP-7
ArA---------- Ardilla	0-12	Loamy sand-------	SM	A-2	0	98-100	95-100	80-90	20-35	---	NP
	12-35	Sandy clay loam, sandy loam.	SM, SM-SC, SC	A-2, A-4	0	98-100	95-100	75-90	30-45	<30	NP-8
	35-60	Sandy clay loam, sandy clay.	SM, SM-SC, SC	A-4, A-6	0	95-100	90-100	70-90	36-50	<35	NP-15
BK*:											
Bibb----------	0-34	Loam----------	SM, SM-SC, ML, CL-ML	A-2, A-4	0-5	95-100	90-100	60-90	30-60	<25	NP-7
	34-60	Sandy loam, loam, silt loam.	SM, SM-SC, ML, CL-ML	A-2, A-4	0-10	60-100	50-100	40-100	30-90	<30	NP-7
Kinston---------	0-10	Fine sandy loam	SM, SC, SM-SC	A-2, A-4	0	100	98-100	55-100	25-49	<35	NP-10
	10-45	Loam, clay loam, sandy clay loam.	CL	A-4, A-6, A-7	0	100	95-100	75-100	60-95	20-45	8-22
	45-65	Variable---------	---	---	0	---	---	---	---	---	---
CaA---------- Cahaba	0-12	Sandy loam-------	SM	A-4, A-2-4	0	95-100	95-100	65-90	30-45	---	NP
	12-45	Sandy clay loam, loam, clay loam.	SC, CL	A-4, A-6	0	90-100	80-100	75-90	40-75	22-35	8-15
	45-60	Sand, loamy sand, fine sandy loam.	SM, SP-SM	A-2-4	0	95-100	90-100	60-85	10-35	---	NP
CC*:											
Chewacla--------	0-6	Loam----------	ML, CL, CL-ML	A-4, A-6, A-7	0	98-100	95-100	70-100	55-90	25-49	4-20
	6-28	Silt loam, silty clay loam, clay loam.	ML, CL	A-4, A-6, A-7	0	96-100	95-100	80-100	51-98	30-49	4-22
	28-60	Silt loam, clay loam, silty clay loam.	ML, MH	A-4, A-6, A-7	0	75-100	65-100	60-100	51-98	32-61	4-28
	60-70	Variable---------	---	---	---	---	---	---	---	---	---
Chastain--------	0-7	Silt loam--------	ML, CL, CL-ML	A-4, A-6, A-7	0	100	100	90-100	70-95	23-45	3-18
	7-48	Silty clay loam, silty clay, clay.	CL, CH, ML, MH	A-6, A-7	0	100	100	95-100	85-98	35-75	12-40
	48-60	Silty clay loam, silty clay, sandy clay loam.	CL, CH, ML, MH	A-6, A-7	0	100	100	90-100	51-90	30-78	11-42
Riverview-------	0-6	Loam----------	CL, CL-ML, ML	A-4	0	100	100	90-100	60-80	18-30	5-10
	6-38	Sandy clay loam, silty clay loam, loam.	CL, ML, CL-ML	A-4, A-6	0	100	100	90-100	60-95	20-40	4-20
	38-60	Loamy fine sand, sandy loam, sand.	SM, SC, SM-SC	A-2, A-4, A-6	0	100	100	50-95	15-45	<30	NP-7

See footnote at end of table.

TABLE 15.--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	
CnA---------- Clarendon	0-17	Sandy loam-------	SM, SC, SM-SC	A-2, A-4	0	98-100	92-100	70-95	20-40	<30	NP-10
	17-40	Sandy clay loam	SC, CL, SM-SC, CL-ML	A-4, A-6	0	98-100	92-100	75-95	36-55	20-40	5-15
	40-60	Sandy clay loam, sandy loam, sandy clay.	SC, CL, SM-SC, CL-ML	A-2, A-4, A-6	0	99-100	95-100	80-95	25-55	<40	NP-15
CoB, CrC2-------- Cowarts	0-15	Sandy loam-------	SM, SM-SC	A-2, A-4	0	95-100	90-100	75-90	20-40	<20	NP-5
	15-34	Fine sandy loam, sandy loam, sandy clay loam.	SM-SC, SC, SM	A-2, A-4, A-6	0	95-100	90-100	60-90	23-45	20-40	NP-15
	34-38	Sandy clay loam, sandy clay.	SM-SC, SM, SC	A-6, A-7	0	95-100	90-100	60-90	25-50	30-54	11-23
	38-60	Sandy loam, sandy clay loam.	SM-SC, SC, CL-ML, CL	A-2, A-4, A-6, A-7	0	85-100	80-100	60-95	30-58	25-53	5-20
DoA, DoB, DoC---- Dothan	0-14	Loamy sand-------	SM	A-2	0	95-100	92-100	60-80	13-30	---	NP
	14-35	Sandy clay loam, sandy loam.	SM-SC, SC, SM	A-2, A-4, A-6	0	95-100	92-100	68-90	23-45	<40	NP-15
	35-60	Sandy clay loam, sandy clay.	SM-SC, SC, SM	A-2, A-4, A-6, A-7	0	95-100	92-100	70-95	30-50	25-45	4-21
EuA, EuB--------- Eustis	0-7	Loamy fine sand	SP-SM, SM	A-3, A-2-4	0	100	100	90-100	5-16	---	NP
	7-26	Sand, fine sand, loamy fine sand.	SP-SM, SM	A-3, A-2-4	0	100	100	90-100	5-16	---	NP
	26-68	Loamy fine sand, loamy sand.	SM	A-2-4	0	100	100	90-100	15-25	---	NP
FeA, FeB--------- Faceville	0-7	Sandy loam-------	SM, SM-SC	A-2, A-4	0	90-100	85-100	72-97	17-38	<25	NP-5
	7-12	Sandy clay loam, sandy clay.	SC, ML, CL, SM	A-4, A-6	0	98-100	90-100	75-98	46-66	<35	NP-13
	12-65	Sandy clay, clay, clay loam.	CL, SC, CH	A-6, A-7	0	98-100	95-100	60-99	43-72	25-59	11-32
FsC2, FsD2------- Faceville	0-4	Sandy clay loam	SM, CL-ML, ML, SM-SC	A-4	0	90-100	90-100	63-97	40-58	<25	NP-7
	4-65	Sandy clay, clay, clay loam.	CL, SC, CH	A-6, A-7	0	98-100	95-100	60-99	43-72	25-59	11-32
FuB, FuC--------- Fuquay	0-22	Loamy sand-------	SP-SM, SM	A-2, A-3	0	95-100	90-100	50-83	5-35	---	NP
	22-30	Sandy loam, sandy clay loam.	SM, SC, SM-SC	A-2, A-4, A-6	0	85-100	85-100	70-90	23-45	<25	NP-13
	30-65	Sandy clay loam	SC	A-2, A-4, A-6	0	95-100	90-100	60-93	28-49	20-49	8-25
Gr---------- Grady	0-10	Sandy loam-------	SM, ML, CL-ML, SM-SC	A-4, A-6	0	100	99-100	85-100	40-75	<30	NP-15
	10-17	Clay loam, sandy clay loam, loam.	CL	A-6	0	100	100	90-100	51-80	25-40	11-20
	17-62	Clay, sandy clay	CL, ML, CH	A-6, A-7	0	100	100	90-100	55-90	30-51	12-25
GsA, GsB--------- Greenville	0-8	Sandy loam-------	SM, SC, SM-SC, CL-ML	A-2, A-4	0	95-100	90-100	65-85	30-55	18-25	NP-10
	8-72	Sandy clay loam, sandy clay, clay.	CL, SC	A-6, A-7	0	98-100	95-100	80-95	40-80	30-47	11-25
GtC2, GtD2------- Greenville	0-4	Sandy clay loam	CL, SC, CL-ML, SM-SC	A-4, A-6	0	95-100	95-100	75-95	45-75	20-35	6-15
	4-60	Sandy clay loam, sandy clay, clay.	CL, SC	A-6, A-7	0	98-100	95-100	80-95	40-80	30-47	11-25

See footnote at end of table.

TABLE 15.--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	
He---------- Herod	0-15	Loam----------	SM, SC, CL, ML	A-2, A-4	0	100	95-100	50-90	30-75	<30	NP-10
	15-42	Clay loam, sandy clay loam, loam.	CL	A-6	0	100	95-100	80-100	55-85	25-40	11-20
	42-60	Sandy loam, sandy clay loam.	CL, SM, ML, SC	A-4, A-6	0	100	95-100	70-90	36-60	<30	NP-15
HU*. Humaquepts											
LaB, LaD--------- Lakeland	0-80	Sand----------	SP-SM	A-3, A-2-4	0	90-100	90-100	60-100	5-12	---	NP
LuB, LuC--------- Lucy	0-28	Loamy sand-------	SM, SP-SM	A-2	0	98-100	95-100	50-87	18-30	---	NP
	28-38	Sandy loam, sandy clay loam.	SM, SC, SM-SC	A-2, A-4, A-6	0	97-100	95-100	55-95	15-50	18-30	NP-15
	38-65	Sandy loam, sandy clay loam, clay loam.	SC, SM-SC, SM	A-2, A-6, A-4	0	100	95-100	60-95	20-50	20-40	3-20
NaB---------- Nankin	0-7	Sandy loam-------	SM	A-2	0	95-100	90-100	70-90	13-30	---	NP
	7-44	Sandy clay, clay, sandy clay loam.	SC, CL	A-4, A-6, A-7	0	98-100	95-100	75-95	40-70	25-45	7-20
	44-60	Sandy clay loam, sandy loam.	SC, SM-SC, CL, CL-ML	A-2, A-4, A-6	0	98-100	95-100	70-85	25-55	<30	NP-12
NeC2----------	0-5	Sandy clay loam	SC, SM, SM-SC	A-2, A-4, A-6	0	97-100	95-100	75-90	25-45	20-35	4-15
Nankin	5-50	Sandy clay, clay, sandy clay loam.	SC, CL	A-4, A-6, A-7	0	98-100	95-100	75-95	40-70	25-45	7-20
	50-60	Sandy clay loam, sandy loam.	SC, SM-SC, CL, CL-ML	A-2, A-4, A-6	0	98-100	95-100	70-85	25-55	<30	NP-12
Oc---------- Ochlockonee	0-28	Sandy loam-------	SM, ML, SM-SC, CL-ML	A-4	0	100	95-100	95-100	36-80	<26	NP-5
	28-60	Loamy sand, sandy loam, silt loam.	SM, ML, CL, SC	A-4, A-2	0	100	95-100	85-99	13-80	<32	NP-9
Od---------- Ocilla	0-30	Loamy sand-------	SM, SP-SM	A-2, A-3	0	100	95-100	75-100	8-35	---	NP
	30-65	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
OkB, OkC--------- Oktibbeha	0-6	Loam----------	ML, SM, CL-ML, SM-SC	A-4	0	100	100	70-100	40-90	<29	NP-7
	6-40	Clay----------	CH	A-7	0	100	95-100	95-100	95-100	55-65	30-40
	40-60	Clay, silty clay	CL	A-7	0	100	95-100	95-100	90-100	41-49	25-30
OrA, OrB, OrD, OrE---------- Orangeburg	0-8	Loamy sand-------	SM	A-2	0	98-100	95-100	60-87	14-28	---	NP
	8-12	Sandy loam-------	SM	A-2	0	98-100	95-100	70-96	25-35	<30	NP-4
	12-35	Sandy clay loam, sandy loam.	SC, CL, SM, SM-SC	A-6, A-4	0	98-100	95-100	71-96	38-58	22-40	6-19
	35-65	Sandy clay loam, sandy clay, sandy loam.	SC, CL	A-6, A-4, A-7	0	98-100	95-100	70-97	40-65	24-46	8-21
OsC2---------- Orangeburg	0-4	Sandy loam-------	SM	A-2	0	98-100	95-100	75-95	20-35	---	NP
	4-12	Sandy loam-------	SM	A-2	0	98-100	95-100	70-96	25-35	<30	NP-4
	12-35	Sandy clay loam, sandy loam.	SC, CL, SM, SM-SC	A-6, A-4	0	98-100	95-100	71-96	38-58	22-40	6-19
	35-65	Sandy clay loam, sandy clay, sandy loam.	SC, CL	A-6, A-4, A-7	0	98-100	95-100	70-97	40-65	24-46	8-21

See footnote at end of table.

TABLE 15.--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	
Ra Rains	0-15	Sandy loam	SM, ML	A-2, A-4	0	100	95-100	50-85	25-56	<35	NP-10
	15-40	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
	40-65	Sandy clay loam, clay loam, sandy clay.	SC, SM-SC, CL, CL-ML	A-4, A-6, A-7	0	100	98-100	60-98	36-72	18-45	4-28
ReA, ReB, ReC Red Bay	0-7	Sandy loam	SM, SM-SC	A-2, A-4	0	100	95-100	60-85	15-45	<20	NP-4
	7-13	Sandy loam, sandy clay loam.	SM, SC, SM-SC	A-2, A-4	0	100	95-100	60-85	15-50	<35	NP-10
	13-62	Sandy clay loam	SM-SC, SC	A-2, A-4, A-6	0	100	95-100	70-90	24-50	18-40	4-16
SmB Sumter	0-6	Silty clay loam	CL	A-7, A-6	0	99-100	99-100	98-100	85-90	35-50	16-25
	6-36	Silty clay, clay, silty clay loam.	CH, CL	A-7, A-6	0	100	99-100	99-100	90-95	35-55	16-32
	36-60	Weathered bedrock	---	---	---	---	---	---	---	---	---
SuB, SuC Susquehanna	0-10	Sandy loam	ML, SM	A-4	0	100	100	65-90	40-55	---	NP
	10-65	Clay, silty clay loam, silty clay.	CH	A-7	0	100	100	88-100	80-98	50-90	28-56
TfA, TfB Tifton	0-10	Loamy sand	SM, SP-SM	A-2	0	70-96	62-94	53-85	11-27	---	NP
	10-42	Sandy clay loam	SC, CL	A-2, A-6	0	70-98	65-94	60-89	22-53	22-40	10-22
	42-65	Sandy clay loam, sandy clay.	SC, CL	A-2, A-6, A-7, A-4	0	87-100	80-99	50-94	34-55	24-45	8-23
TnC2 Tifton	0-6	Sandy loam	SM, SM-SC	A-2	0	70-95	60-89	55-89	15-30	<20	NP-6
	6-42	Sandy clay loam	SC, CL	A-2, A-6	0	70-98	65-94	60-89	22-53	22-40	10-22
	42-60	Sandy clay loam, sandy clay.	SC, CL	A-2, A-6, A-7, A-4	0	87-100	80-99	50-94	34-55	24-45	8-23
TrC Troup	0-60	Loamy sand	SM, SP-SM	A-2	0	100	100	50-75	10-30	---	NP
	60-78	Sandy clay loam, sandy loam.	SC, SM-SC, CL-ML, CL	A-4, A-2	0	95-100	95-100	70-90	24-55	19-30	4-10
VaB, VaC, VaD Vaucluse	0-8	Loamy sand	SM, SP-SM	A-2, A-3	0-5	90-100	90-100	51-70	8-30	---	NP
	8-20	Sandy clay loam, sandy loam.	SC, SM-SC	A-2, A-4, A-6	0-5	90-100	90-100	51-75	25-50	20-40	5-18
	20-60	Sandy clay loam, sandy loam, sandy clay.	SC, SM-SC, SM	A-2, A-4, A-6	0-5	95-100	92-100	55-75	20-50	<40	NP-20
	60-70	Sandy loam, sandy clay loam, loamy sand.	SM, SC, SM-SC	A-2, A-4, A-6	0-2	95-100	95-100	51-90	15-50	<30	NP-12
Wa Wahee	0-11	Loam	ML, CL-ML, CL	A-4	0	100	100	90-98	51-75	20-35	2-10
	11-45	Clay, clay loam, silty clay.	CL, CH	A-7, A-6	0	100	100	85-100	50-90	38-60	18-32
	45-60	Variable	---	---	---	---	---	---	---	---	---

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 16.--PHYSICAL AND CHEMICAL PROPERTIES OF SOILS

[The symbol < means less than; > means more than. Entries under "Erosion factors--T" apply to the entire profile. Entries under "Organic matter" apply only to the surface layer. Absence of an entry indicates that data were not available or were not estimated]

Soil name and map symbol	Depth	Clay <2mm	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors		Organic matter
								K	T	
	In	Pct	G/cm^3	In/hr	In/in	pH				Pct
AmB, AmC	0-8	5-10	---	6.0-20	0.05-0.08	4.5-5.5	Very low	0.17	5	.5-1
Americus	8-43	8-14	---	2.0-6.0	0.09-0.12	4.5-5.5	Very low	0.17		
	43-72	10-20	---	2.0-6.0	0.09-0.12	4.5-5.5	Very low	0.20		
ArA	0-12	4-17	---	2.0-6.0	0.08-0.11	4.5-5.5	Low	0.24	5	.5-2
Ardilla	12-35	18-35	---	0.6-2.0	0.10-0.14	4.5-5.5	Low	0.28		
	35-60	20-40	---	0.2-0.6	0.10-0.15	4.5-5.5	Low	0.28		
BK*:										
Bibb	0-34	2-18	---	0.6-2.0	0.12-0.18	4.5-5.5	Low	0.20	5	.5-2
	34-60	2-18	---	0.6-2.0	0.12-0.20	4.5-5.5	Low	0.37		
Kinston	0-10	5-18	1.40-1.60	2.0-6.0	0.13-0.19	4.5-6.0	Low	0.24	5	2-5
	10-45	18-35	1.30-1.50	0.6-2.0	0.14-0.18	4.5-5.5	Low	0.32		
	45-65	---	---	---	---	---	---	---		
CaA	0-12	7-17	---	2.0-6.0	0.05-0.14	4.5-6.0	Very low	0.24	4	.5-2
Cahaba	12-45	18-35	---	0.6-2.0	0.12-0.15	4.5-6.0	Low	0.28		
	45-60	4-20	---	2.0-20	0.05-0.10	4.5-6.0	Very low	0.24		
CC*:										
Chewacla	0-6	10-27	1.30-1.60	0.6-2.0	0.15-0.24	4.5-6.5	Low	0.28	4	1-4
	6-28	18-35	1.30-1.50	0.6-2.0	0.15-0.24	4.5-6.5	Low	0.32		
	28-60	18-35	1.30-1.50	0.6-2.0	0.15-0.24	4.5-6.5	Low	0.32		
	60-70	---	---	---	---	---	---	---		
Chastain	0-7	15-35	1.20-1.40	0.2-0.6	0.12-0.18	4.5-6.0	Moderate	0.32	5	2-6
	7-48	35-60	1.30-1.50	0.06-0.2	0.12-0.16	4.5-6.0	Moderate	0.37		
	48-60	30-60	1.30-1.50	0.06-0.2	0.12-0.16	4.5-6.0	Moderate	0.37		
Riverview	0-6	10-27	---	0.6-2.0	0.16-0.24	4.5-5.5	Low	0.28	4	.5-2
	6-38	18-35	---	0.6-2.0	0.15-0.22	4.5-5.5	Low	0.24		
	38-60	4-35	---	2.0-6.0	0.07-0.11	4.5-5.5	Low	0.17		
CnA	0-17	5-15	1.30-1.50	2.0-6.0	0.10-0.14	4.5-6.5	Low	0.15	5	.5-3
Clarendon	17-40	18-35	1.40-1.60	0.6-2.0	0.10-0.15	4.5-5.5	Low	0.20		
	40-60	15-40	1.40-1.70	0.2-0.6	0.08-0.12	4.5-5.5	Low	0.15		
CoB, CrC2	0-15	5-20	---	2.0-6.0	0.08-0.13	4.5-5.5	Low	0.24	3	<1
Cowarts	15-34	10-30	---	0.6-2.0	0.10-0.14	4.5-5.5	Low	0.28		
	34-38	25-40	---	0.2-2.0	0.10-0.16	4.5-5.5	Low	0.28		
	38-60	---	---	0.06-0.6	0.08-0.12	4.5-5.5	Low	0.24		
DoA, DoB, DoC	0-14	5-15	---	2.0-6.0	0.06-0.10	4.5-5.5	Very low	0.20	4	<.5
Dothan	14-35	18-35	---	0.6-2.0	0.12-0.16	4.5-5.5	Low	0.28		
	35-60	18-40	---	0.2-0.6	0.08-0.12	4.5-5.5	Low	0.28		
EuA, EuB	0-7	2-10	1.35-1.60	6.0-20	0.08-0.10	4.5-5.5	Low	0.17	5	.5-2
Eustis	7-26	2-10	1.40-1.60	6.0-20	0.05-0.08	4.5-5.5	Low	0.17		
	26-68	6-14	1.40-1.60	6.0-20	0.07-0.11	4.5-5.5	Low	0.17		
FeA, FeB	0-7	5-20	---	6.0-20	0.06-0.09	4.5-5.5	Low	0.28	5	.5-2
Faceville	7-12	20-36	---	0.6-2.0	0.12-0.15	4.5-5.5	Low	0.37		
	12-65	35-55	---	0.6-2.0	0.12-0.18	4.5-5.5	Low	0.37		
FsC2, FsD2	0-4	20-28	---	0.6-2.0	0.10-0.13	4.5-5.5	Low	0.32	3	.5-1
Faceville	4-65	35-55	---	0.6-2.0	0.12-0.18	4.5-5.5	Low	0.37		
FuB, FuC	0-22	2-10	1.60-1.70	>6.0	0.04-0.09	4.5-6.0	Low	0.15	5	.5-2
Fuquay	22-30	10-35	1.40-1.60	0.6-2.0	0.12-0.15	4.5-6.0	Low	0.20		
	30-65	20-35	1.40-1.60	0.06-0.2	0.10-0.13	4.5-6.0	Low	0.20		

See footnote at end of table.

TABLE 16.--PHYSICAL AND CHEMICAL PROPERTIES OF SOILS--Continued

Soil name and map symbol	Depth	Clay <2mm	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors		Organic matter
								K	T	
	In	Pct	G/cm³	In/hr	In/in	pH				Pct
Gr	0-10	15-30	---	0.6-2.0	0.10-0.18	3.6-5.5	Low	0.10	5	---
Grady	10-17	20-35	---	0.2-0.6	0.10-0.15	3.6-5.5	Low	0.10		
	17-62	45-65	---	0.06-0.2	0.12-0.16	3.6-5.5	Moderate	0.10		
GsA, GsB	0-8	5-20	---	0.6-6.0	0.07-0.14	4.5-5.5	Low	0.24	5	.5-1
Greenville	8-72	35-55	---	0.6-2.0	0.14-0.18	4.5-5.5	Low	0.17		
GtC2, GtD2	0-4	15-30	---	0.6-2.0	0.12-0.18	4.5-5.5	Low	0.24	5	.5-1
Greenville	4-60	35-55	---	0.6-2.0	0.14-0.18	4.5-5.5	Low	0.17		
He	0-15	---	---	0.6-2.0	0.12-0.20	5.1-6.0	Low	----	---	---
Herod	15-42	---	---	0.6-2.0	0.14-0.20	5.6-7.3	Low	----		
	42-60	---	---	0.6-2.0	0.12-0.16	5.6-7.3	Low	----		
HU*. Humaquepts										
LaB, LaD	0-80	2-8	1.35-1.55	>20	0.05-0.08	4.5-6.0	Low	0.17	5	>1
Lakeland										
LuB, LuC	0-28	1-12	---	6.0-20	0.06-0.10	5.1-5.5	Low	0.20	5	.5-1
Lucy	28-38	10-30	---	2.0-6.0	0.10-0.12	4.5-5.5	Low	0.24		
	38-65	20-35	---	0.6-2.0	0.12-0.14	4.5-5.5	Low	0.28		
NaB	0-7	5-15	---	2.0-6.0	0.05-0.08	4.5-5.5	Low	0.28	3	.5-1
Nankin	7-44	35-50	---	0.2-0.6	0.11-0.16	4.5-5.5	Low	0.24		
	44-60	15-35	---	0.6-2.0	0.10-0.15	4.5-5.5	Low	0.24		
NeC2	0-5	15-35	---	0.6-2.0	0.10-0.15	4.5-5.5	Low	0.24	3	.5-1
Nankin	5-50	35-50	---	0.2-0.6	0.11-0.16	4.5-5.5	Low	0.24		
	50-60	15-35	---	0.6-2.0	0.10-0.15	4.5-5.5	Low	0.24		
Oc	0-28	3-18	---	2.0-6.0	0.07-0.14	4.5-5.5	Low	0.20	5	.5-2
Ochlockonee	28-60	3-18	---	2.0-6.0	0.06-0.12	4.5-5.5	Low	0.17		
Od	0-30	4-10	---	2.0-20	0.05-0.08	4.5-5.5	Low	0.17	5	1-2
Ocilla	30-65	15-35	---	0.6-2.0	0.09-0.12	4.5-5.5	Low	0.24		
OkB, OkC	0-6	10-27	---	0.6-2.0	0.14-0.18	4.5-6.5	Low	0.32	3	4-7
Oktibbeha	6-40	50-65	---	<0.06	0.12-0.16	4.5-6.5	High	0.32		
	40-60	60-77	---	<0.06	0.10-0.14	6.6-8.4	High	0.32		
OrA, OrB, OrD, OrE	0-8	4-10	---	2.0-6.0	0.06-0.09	4.5-6.0	Low	0.10	5	.5-1
Orangeburg	8-12	7-18	---	2.0-6.0	0.09-0.12	4.5-6.0	Low	0.20		
	12-35	18-35	---	0.6-2.0	0.11-0.14	4.5-5.5	Low	0.24		
	35-65	20-45	---	0.6-2.0	0.11-0.14	4.5-5.5	Low	0.24		
OsC2	0-4	7-15	---	2.0-6.0	0.07-0.10	4.5-6.0	Low	0.17	5	.5-2
Orangeburg	4-12	7-18	---	2.0-6.0	0.09-0.12	4.5-6.0	Low	0.20		
	12-35	18-35	---	0.6-2.0	0.11-0.14	4.5-5.5	Low	0.24		
	35-65	20-45	---	0.6-2.0	0.11-0.14	4.5-5.5	Low	0.24		
Ra	0-15	5-20	1.30-1.60	2.0-6.0	0.08-0.12	4.5-6.5	Low	0.17	5	1-6
Rains	15-40	18-35	1.30-1.50	0.6-2.0	0.10-0.15	4.5-5.5	Low	0.24		
	40-65	18-40	1.30-1.50	0.6-2.0	0.10-0.15	4.5-5.5	Low	0.28		
ReA, ReB, ReC	0-7	7-20	---	2.0-6.0	0.07-0.14	4.5-6.0	Low	0.15	5	<2
Red Bay	7-13	10-25	---	0.6-6.0	0.10-0.14	4.5-5.5	Low	0.15		
	13-62	18-25	---	0.6-2.0	0.12-0.17	4.5-5.5	Low	0.17		
SmB	0-6	32-50	---	0.06-2.0	0.12-0.17	7.4-8.4	High	0.37	3	2-5
Sumter	6-36	35-57	---	0.06-2.0	0.12-0.17	7.4-8.4	High	0.37		
	36-60	---	---	---	---	---	---	----		

See footnote at end of table.

TABLE 16.--PHYSICAL AND CHEMICAL PROPERTIES OF SOILS--Continued

Soil name and map symbol	Depth	Clay <2mm	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors		Organic matter
								K	T	
	In	Pct	G/cm^3	In/hr	In/in	pH				Pct
SuB, SuC----------	0-10	2-12	1.50-1.55	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.43	3	.5-2
Susquehanna	10-65	35-60	1.25-1.50	<0.06	0.15-0.20	4.5-5.5	High---------	0.32		
TfA, TfB----------	0-10	3-8	---	6.0-20	0.03-0.08	4.5-5.5	Low----------	0.05	4	<1
Tifton	10-42	20-35	---	0.6-2.0	0.12-0.15	4.5-5.5	Low----------	0.24		
	42-65	25-40	---	0.2-0.6	0.10-0.13	4.5-5.5	Low----------	0.17		
TnC2----------	0-6	10-20	---	6.0-20	0.06-0.10	4.5-5.5	Low----------	0.17	4	1-2
Tifton	6-42	20-35	---	0.6-2.0	0.12-0.15	4.5-5.5	Low----------	0.24		
	42-60	25-40	---	0.2-0.6	0.10-0.13	4.5-5.5	Low----------	0.17		
TrC----------	0-60	1-10	---	6.0-20	0.03-0.10	4.5-5.5	Very low-----	0.20	5	<1
Troup	60-78	15-35	---	0.6-2.0	0.10-0.13	4.5-5.5	Low----------	0.20		
VaB, VaC, VaD----	0-8	2-10	1.30-1.60	6.0-20	0.04-0.08	4.5-6.0	Low----------	0.15	3	<1
Vaucluse	8-20	18-35	1.35-1.75	0.6-6.0	0.10-0.15	3.6-5.5	Low----------	0.24		
	20-60	18-45	1.75-1.95	0.06-0.6	0.04-0.08	3.6-5.5	Low----------	0.24		
	60-70	5-30	1.55-1.90	2.0-6.0	0.04-0.08	3.6-5.5	Low----------	0.17		
Wa----------	0-11	10-27	1.20-1.50	0.2-2.0	0.15-0.20	4.5-5.5	Low----------	0.28	5	.5-5
Wahee	11-45	35-55	1.40-1.60	0.06-0.2	0.12-0.20	4.5-5.5	Moderate-----	0.28		
	45-60	---	---	0.2-0.6	0.12-0.20	4.5-5.5	Moderate-----	0.28		

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 17.--SOIL AND WATER FEATURES

["Flooding" and "water table" and terms such as "rare," "brief," "apparent," and "perched" are explained in the text. The symbol < means less than; > means more than. Absence of an entry indicates that the feature is not a concern]

Soil name and map symbol	Hydrologic group	Flooding			High water table			Bedrock		Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness	Uncoated steel	Concrete
					Ft			In			
AmB, AmC---------- Americus	A	None--------	---	---	>6.0	---	---	>60	---	Low-------	High.
ArA---------- Ardilla	C	None--------	---	---	1.0-2.0	Apparent	Nov-Apr	>60	---	High------	High.
BK*:											
Bibb----------	C	Frequent----	Brief-----	Dec-May	0.5-1.5	Apparent	Dec-Apr	>60	---	High------	Moderate.
Kinston----------	D	Frequent----	Brief-----	Nov-Jun	0-1.0	Apparent	Nov-Jun	>60	---	High------	High.
CaA---------- Cahaba	B	Rare--------	---	---	>6.0	---	---	>60	---	Moderate	Moderate.
CC*:											
Chewacla---------	C	Frequent----	Brief-----	Nov-Apr	0.5-1.5	Apparent	Nov-Apr	>60	---	High------	Moderate.
Chastain---------	D	Frequent----	Very long	Dec-Apr	0-1.0	Apparent	Nov-May	>60	---	High------	High.
Riverview--------	B	Frequent----	Brief-----	Dec-Mar	3.0-5.0	Apparent	Dec-Mar	>60	---	Low-------	Moderate.
CnA---------- Clarendon	C	None--------	---	---	1.5-2.5	Apparent	Dec-Mar	>60	---	Moderate	High.
CoB, CrC2--------- Cowarts	C	None--------	---	---	>6.0	---	---	>60	---	Moderate	Moderate.
DoA, DoB, DoC----- Dothan	B	None--------	---	---	3.0-5.0	Perched	Jan-Apr	>60	---	Moderate	Moderate.
EuA, EuB---------- Eustis	A	None--------	---	---	>6.0	---	---	>60	---	Low-------	High.
FeA, FeB, FsC2, FsD2---------- Faceville	B	None--------	---	---	>6.0	---	---	>60	---	Low-------	Moderate.
FuB, FuC---------- Fuquay	B	None--------	---	---	4.0-6.0	Perched	Jan-Mar	>60	---	Low-------	High.
Gr---------- Grady	D	None--------	---	---	+2-1.0	Apparent	Dec-Jun	>60	---	High------	High.
GsA, GsB, GtC2, GtD2---------- Greenville	B	None--------	---	---	>6.0	---	---	>60	---	Moderate	High.
He---------- Herod	D	Frequent----	Brief-----	Nov-Apr	0.5-1.5	Apparent	Dec-Mar	>60	---	High------	Moderate.
HU*. Humaquepts											
LaB, LaD---------- Lakeland	A	None--------	---	---	>6.0	---	---	>60	---	Low-------	Moderate.
LuB, LuC---------- Lucy	A	None--------	---	---	>6.0	---	---	>60	---	Low-------	High.
NaB, NeC2--------- Nankin	C	None--------	---	---	>6.0	---	---	>60	---	High------	High.
Oc---------- Ochlockonee	B	Occasional	Very brief	Dec-Apr	3.0-4.0	Apparent	Dec-Apr	>60	---	Low-------	High.

See footnote at end of table.

TABLE 17.--SOIL AND WATER FEATURES--Continued

Soil name and map symbol	Hydrologic group	Flooding			High water table			Bedrock		Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness	Uncoated steel	Concrete
					Ft			In			
Od---------- Ocilla	C	None--------	---	---	1.0-2.5	Apparent	Dec-Apr	>60	---	High-----	Moderate.
OkB, OkC---------- Oktibbeha	D	None--------	---	---	>6.0	---	---	>60	---	High-----	High.
OrA, OrB, OrD, OrE, OsC2-------- Orangeburg	B	None--------	---	---	>6.0	---	---	>60	---	Moderate	Moderate.
Ra---------- Rains	B/D	None--------	---	---	0-1.0	Apparent	Nov-Apr	>60	---	High-----	High.
ReA, ReB, ReC----- Red Bay	B	None--------	---	---	>6.0	---	---	>60	---	Moderate	Moderate.
SmB---------- Sumter	C	None--------	---	---	>6.0	---	---	20-40	Soft	Moderate	Low.
SuB, SuC---------- Susquehanna	D	None--------	---	---	>6.0	---	---	>60	---	High-----	High.
TfA, TfB, TnC2---- Tifton	B	None--------	---	---	3.5-6.0	Perched	Jan-Feb	>60	---	Low------	Moderate.
TrC---------- Troup	A	None--------	---	---	>6.0	---	---	>60	---	Low------	Moderate.
VaB, VaC, VaD----- Vaucluse	C	None--------	---	---	>6.0	---	---	>60	---	Low------	High.
Wa---------- Wahee	D	Occasional	Brief-----	Dec-Apr	0.5-1.5	Apparent	Dec-Mar	>60	---	High-----	High.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 18.--CLASSIFICATION OF THE SOILS

Soil name	Family or higher taxonomic class
Americus	Sandy, siliceous, thermic Rhodic Paleudults
Ardilla	Fine-loamy, siliceous, thermic Fragiaquic Paleudults
Bibb	Coarse-loamy, siliceous, acid, thermic Typic Fluvaquents
Cahaba	Fine-loamy, siliceous, thermic Typic Hapludults
Chastain	Fine, kaolinitic, acid, thermic Typic Fluvaquents
Chewacla	Fine-loamy, mixed, thermic Fluvaquentic Dystrochrepts
Clarendon	Fine-loamy, siliceous, thermic Plinthaquic Paleudults
Cowarts	Fine-loamy, siliceous, thermic Typic Hapludults
Dothan	Fine-loamy, siliceous, thermic Plinthic Paleudults
Eustis	Sandy, siliceous, thermic Psammentic Paleudults
Faceville	Clayey, kaolinitic, thermic Typic Paleudults
Fuquay	Loamy, siliceous, thermic Arenic Plinthic Paleudults
Grady	Clayey, kaolinitic, thermic Typic Paleaquults
Greenville	Clayey, kaolinitic, thermic Rhodic Paleudults
Herod	Fine-loamy, siliceous, nonacid, thermic Typic Fluvaquents
Humaquepts	Loamy, thermic Humaquepts
Kinston	Fine-loamy, siliceous, acid, thermic Typic Fluvaquents
Lakeland	Thermic, coated Typic Quartzipsamments
Lucy	Loamy, siliceous, thermic Arenic Paleudults
Nankin	Clayey, kaolinitic, thermic Typic Hapludults
Ochlockonee	Coarse-loamy, siliceous, acid, thermic Typic Udifluvents
Ocilla	Loamy, siliceous, thermic Aquic Arenic Paleudults
Oktibbeha	Very-fine, montmorillonitic, thermic Vertic Hapludalfs
Orangeburg	Fine-loamy, siliceous, thermic Typic Paleudults
Rains	Fine-loamy, siliceous, thermic Typic Paleaquults
Red Bay	Fine-loamy, siliceous, thermic Rhodic Paleudults
Riverview	Fine-loamy, mixed, thermic Fluventic Dystrochrepts
Sumter	Fine-silty, carbonatic, thermic Rendollic Eutrochrepts
Susquehanna	Fine, montmorillonitic, thermic Vertic Paleudalfs
Tifton	Fine-loamy, siliceous, thermic Plinthic Paleudults
Troup	Loamy, siliceous, thermic Grossarenic Paleudults
Vaucluse	Fine-loamy, siliceous, thermic Typic Hapludults
Wahee	Clayey, mixed, thermic Aeric Ochraquults

☆ U. S. GOVERNMENT PRINTING OFFICE : 1983 O - 357-842 (QL 3)

NRCS Accessibility Statement

This document is not accessible by screen-reader software. The Natural Resources Conservation Service (NRCS) is committed to making its information accessible to all of its customers and employees. If you are experiencing accessibility issues and need assistance, please contact our Helpdesk by phone at 1-800-457-3642 or by e-mail at ServiceDesk-FTC@ftc.usda.gov. For assistance with publications that include maps, graphs, or similar forms of information, you may also wish to contact our State or local office. You can locate the correct office and phone number at http://offices.sc.egov.usda.gov/locator/app.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.