United States
Department of
Agriculture

Natural
Resources
Conservation
Service

In cooperation with
Tennessee Agricultural
Experiment Station

Soil Survey of McNairy County, Tennessee

How To Use This Soil Survey

General Soil Map

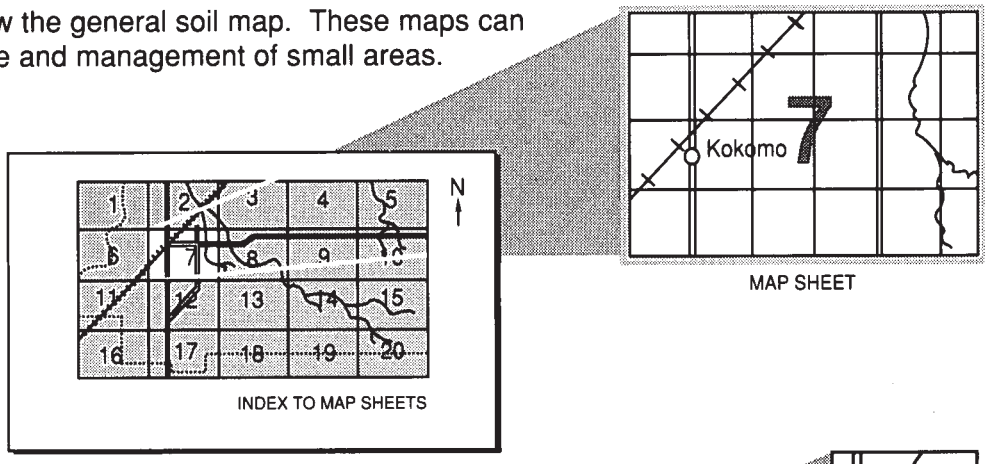
The general soil map, which is the color map preceding the detailed soil maps, shows the survey area divided into groups of associated soils called general soil map units. This map is useful in planning the use and management of large areas.

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

Detailed Soil Maps

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

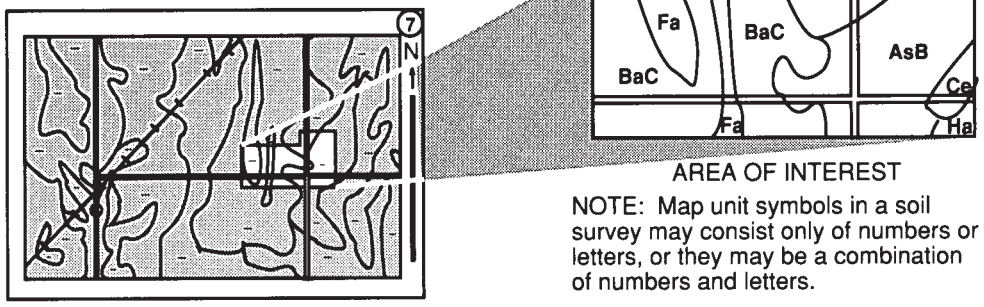
To find information about your area of interest, locate that area on the **Index to Map Sheets**, which precedes the soil maps. Note the number of the map sheet, and turn to that sheet.



INDEX TO MAP SHEETS

MAP SHEET

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



MAP SHEET

AREA OF INTEREST

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

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

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

Major fieldwork for this soil survey was completed in 1985. Soil names and descriptions were approved in 1993. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1993. This soil survey was made cooperatively by the Natural Resources Conservation Service and the McNairy Board of Commissioners, the Tennessee Agricultural Experiment Station, and the Tennessee Department of Agriculture. It is part of the technical assistance furnished to the McNairy Soil 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.

All programs and services of the Natural Resources Conservation Service are offered on a nondiscriminatory basis, without regard to race, color, national origin, religion, sex, age, marital status, or handicap.

Cover: Pasture and hay in an area of Providence silt loam, 5 to 8 percent slopes, severely eroded. The production of livestock is increasing in importance in McNairy County.

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Issued October 1997

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Summary of Tables

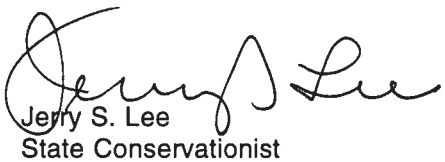
Foreword

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

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

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

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



Jerry S. Lee
State Conservationist
Natural Resources Conservation Service

Soil Survey of McNairy County, Tennessee

Soils surveyed by William T. Brown, Eugene T. Lampley, G.L. Keithley, Olin L. North, and John Myers, Natural Resources Conservation Service

United States Department of Agriculture, Natural Resources Conservation Service
in cooperation with
McNairy County Board of Commissioners, Tennessee Agricultural Experiment Station, and Tennessee Department of Agriculture

McNairy County is in southwestern Tennessee (fig. 1). It is bounded on the north by Chester County, on the east by Hardin County, on the west by Hardeman County, and on the south by Alcorn County, Mississippi. According to the 1980 census, the population of the county was 22,525. The city of Selmer is the county seat, and it is located at the geographical center of the county. The total area of the county is 359,400 acres, or 562 square miles.

The two major economic enterprises in McNairy County are agriculture and forestry. Beef cattle and cotton are the two main agricultural commodities. Other crops include corn, soybeans, milo, and wheat. Swine production is also increasing in importance in the county. Most of the county is wooded, and forestry operations contribute significantly to the economic base. The largest industry in the county is a company that makes molded bathroom fixtures and is located in Adamsville. Another economically important industry in the county involves the mining and sale of gravel. The gravel is used in the construction and highway industries, both within McNairy County and in adjacent counties. Retail sales and services in the towns of Selmer and Adamsville are also important to the economy of the county. Big Hill Pond State Park is in the county, and it brings tourists and outdoor enthusiasts to the area each year.

General Nature of the County

This section gives general facts about McNairy County. It describes history and development, physiography and drainage, geology, and climate.

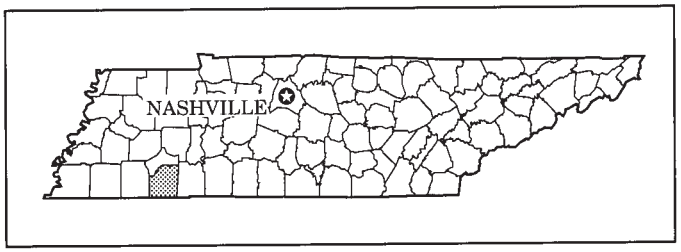


Figure 1.—Location of McNairy County in Tennessee.

History and Development

McNairy County was part of the land that was deeded by George Washington to the Chickasaw Indians in 1785. A portion of Tennessee, including what is now McNairy County, was opened for settlement in 1818 by the Chickasaw Purchase. The first settlers entered the area about 1820. The act that created McNairy County passed the General Assembly on November 8, 1823, and the county was named in honor of Judge John McNairy. The original county included an additional 40,000 acres, but that acreage was later reduced by the formation of Chester County to the north. The first county seat was located in the community of Purdy. It was later moved to Falcon and then to Selmer, where it is currently located *(3)*.

Physiography and Drainage

McNairy County is south-centrally located on the West Tennessee Plain, midway between the Mississippi

River, which is the major drainage in the area, to the west and the Tennessee River to the east.

The topography in the western part of the county is characterized by undulating to rolling, narrow ridgetops adjoining steep, highly dissected hillsides. The soils are well drained and moderately well drained on the ridgetops and are well drained on the steeper side slopes. Stream terraces developed as nearly level and gently sloping benches along some of the major streams and the Hatchie and Tuscumbia Rivers. The soils on stream terraces are moderately well drained and somewhat poorly drained. The flood plains are level and narrow in most areas, except along the Hatchie and Tuscumbia Rivers, where they are one-half mile to one mile wide in places. The soils are moderately well drained to poorly drained on the flood plains.

Most of the central part of the county is composed of gently sloping ridges that adjoin moderately steep to steep side slopes. The soils are well drained to moderately well drained. This part of the county has several larger stream terraces that formed along the major perennial streams. The soils on the stream terraces are moderately well drained to poorly drained. The valleys are wider than in the western part of the county, and the uplands are less dissected. The flood plains are level, and the soils are dominantly somewhat poorly drained and poorly drained.

The eastern part of the county is characterized by broad, undulating stream terraces of the Tennessee River. The soils are well drained and moderately well drained. The area around Michie and Pebble Hill contains high gravel deposits of the Tennessee River, and the topography resembles that of the western part of the county, with narrow, rolling ridgetops and steep hillsides. The soils in this area are well drained. This part of the county is less dissected and has fewer perennial streams than the other two parts. The flood plains are level and moderately wide, and the soils are moderately well drained to poorly drained.

Three major river systems drain McNairy County. They are the Hatchie River, the Tuscumbia River, and the Tennessee River. The Hatchie River meanders along a small part of the southwestern edge of the county. It provides direct drainage to only a small part of the county; however, several of its major tributaries provide drainage to the northwestern section of the county. The Tuscumbia River flows northwesterly, from the Alabama state line across the southwestern section of the county, intersecting with the Hatchie River in the southwestern corner of the county. The Tuscumbia River and numerous tributary streams provide drainage to the western and central sections of the county.

SYSTEM	SERIES	FORMATION
QUATERNARY	Pleistocene and Recent	Alluvium
TERTIARY and QUATERNARY	Pliocene and Pleistocene	Fluvial Deposits
TERTIARY	Paleocene	Clayton Formation Owl Creek Formation McNairy Sand Coon Creek Formation
CRETACEOUS	Upper Cretaceous	Demopolis Formation Sardis Formation Coffee Sand

Figure 2.—Geologic section for McNairy County, Tennessee.

The Tennessee River, in Hardin County, flows north. It indirectly provides drainage to the eastern section of the county through its tributary streams. The flood plains in the county are moderately wide to narrow on most streams. An exception is the flood plains along the Tuscumbia and Hatchie Rivers and several of their major tributaries, which are up to one mile wide in several places. The water flow is sluggish in the Hatchie and Tuscumbia Rivers and their larger tributaries, and all of the major flood plains are subject to periodic flooding.

Geology

This section was prepared by Ronald L. Graner, geologist, Natural Resources Conservation Service.

All of the geologic formations in McNairy County are sedimentary in origin. The sequence of exposed formations ranges in age from Late Cretaceous to Tertiary, with a scattered blanketing of Quaternary deposits and some possible Late Tertiary terrace deposits at various levels. Quaternary alluvium is in the flood plains of streams and rivers. The geologic section for McNairy County is illustrated in figure 2.

The Cretaceous and Tertiary formations are exposed in outcrop belts that extend across the county in a north-northeast to south-southwest direction. They dip slightly to the north-northwest and progressively overlie one another, from the oldest to youngest, from the Hardin County line to the westernmost part of McNairy County. These formations were deposited in West Tennessee during the geologic period when marine seas alternately advanced into and retreated from an

area known as the Mississippi Embayment Section of the Gulf Coastal Plain. The Coffee Sand Formation, Sardis Formation, and Demopolis Formation were deposited during the same period but during different stages of a transgressing Demopolis sea.

The Coffee Sand Formation consists primarily of quartz sand that has some thin, interbedded stringers and lenticular bodies of clay. These materials were deposited in a protected lagoonal and barrier beach environment along the rapidly advancing shoreline.

The Sardis Formation consists of clayey sand and sandy clay. These sediments and a variety of microscopic marine organisms were deposited in a shallow, offshore mixing zone environment and were gently agitated by the wave action of the sea.

The Demopolis Formation was deposited in relatively deep, quiet waters beyond the barrier islands. Silts and clays were transported into this area by weak ocean currents and were combined with skeletal remains of foraminifera, algae, and other marine plankton to form the marls, chalky marls, and calcareous clays of this formation. The transgressing phase of this formation reached as far north as the central part of Henderson County before the regressive phase began. This regressive phase was a result of the basin infilling with sediment more rapidly than the rate of basin subsidence.

As the Demopolis sea retreated from the area, the silty clays, clayey sands, and sands of the Coon Creek Formation were deposited in a nearshore mixing zone environment. The Coon Creek Formation is a transitional formation, representing the transition between the Demopolis marls and clays and the regressive shoreline deposits of the McNairy Sand Formation.

The McNairy Sand Formation consists primarily of very fine to coarse-grained quartz sand and some local occurrences of kaolinitic clay. This formation represents sands that were deposited in shallow offshore waters, along barrier bars and islands, and in a complex network of estuarian channels as the sea retreated. The clays and silts were deposited in off-channel areas and on tidal flats.

After the emergence of the land from the sea, an erosional interval occurred. It was followed by the advancement of another shallow sea, into which the highly fossiliferous marine sands and interlensing sandy clays of the Owl Creek Formation were deposited. The retreat of this sea and a subsequent, prolonged period of erosion removed an unknown amount of the Owl Creek Formation and other formations.

The initial Tertiary sediments of the Clayton Formation were deposited on the erosional surface of the Owl Creek Formation and probably the McNairy Sand Formation. The Clayton Formation is the oldest Tertiary formation exposed in the county. It consists of very fine to medium grained quartz sand that locally contains interbedded stringers of clay. The younger Tertiary formations, exposed elsewhere in West Tennessee, were not deposited in the county or were deposited and were subsequently removed by erosion.

The next record of deposition in the county is in fluvial deposits, which formed an extensive surficial cover over the older formations before being partially removed by erosion. These stream deposits consist mainly of rounded gravel, sand, and silt. They are the result of alternating periods of valley cutting and alluviation by the ancestral streams and major tributaries of the Tennessee River. Remnants of these terrace deposits, which cap the hills in the eastern part of the county, are important sources of gravel and have been mined extensively in the area. In the western part of the county, these deposits contain only minor amounts of gravel and are not considered an important resource.

The youngest materials in the county are the Quaternary alluvial deposits found in the terraces and flood plains of the present-day streams and tributaries. These deposits consist of sand, silt, clay, and gravel, depending upon the source area of the stream.

Climate

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

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

In winter, the average temperature is 39 degrees F and the average daily minimum temperature is 27 degrees. The lowest temperature on record, which occurred at Selmer on January 30, 1966, is -21 degrees. In summer, the average temperature is 76 degrees and the average daily maximum temperature is 89 degrees. The highest recorded temperature, which occurred at Selmer on July 17, 1980, is 105 degrees.

Growing degree days are shown in table 1. They are equivalent to "heat units." During the month, growing degree days accumulate by the amount that the average temperature each day exceeds a base temperature (40 degrees F). The normal monthly accumulation is used to schedule single or successive plantings of a crop between the last freeze in spring and the first freeze in fall.

The total annual precipitation is 56.05 inches. Of this, 26.19 inches, or 47 percent, usually falls in April through September. The growing season for most crops falls within this period. The heaviest 1-day rainfall during the period of record was 6 inches at Selmer on November 28, 1968. Thunderstorms occur on about 53 days each year, and most occur in July.

The average seasonal snowfall is 4 inches. The greatest snow depth at any one time during the period of record was 8 inches. On an average of 2 days, at least 1 inch of snow is on the ground. The number of such days varies greatly from year to year.

The average relative humidity in midafternoon is about 57 percent. Humidity is higher at night, and the average at dawn is about 81 percent. The sun shines 74 percent of the time possible in summer and 51 percent in winter. The prevailing wind is from the south. Average windspeed is highest, 11 miles per hour, in March.

How This Survey Was Made

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

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

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

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

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

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

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

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

Map Unit Composition

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

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

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

General Soil Map Units

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

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

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

1. Smithdale-Providence

Rolling to hilly, well drained and moderately well drained soils that formed in loamy marine sediments or in a silty mantle over loamy marine deposits; on uplands

The soils in this map unit are in the western and central parts of the county. The landscape is characterized by narrow, rolling ridges, steep side slopes, and narrow valleys. The major drainage systems are the Hatchie and Tuscumbia Rivers, which meander from southeast to northwest across the southwestern corner of the county and run parallel to the western county line in Hardeman County. The water flow is generally sluggish, except during periods of high rainfall when the water flow becomes moderate and flooding commonly occurs. A few perennial streams and many intermittent streams intersect the Hatchie River and provide drainage to the dissected uplands (fig. 3).

This map unit makes up approximately 38 percent of the county. It is about 81 percent Smithdale soils and 8 percent Providence soils. The minor soils include Lexington, Silerton, Iuka, Freeland, and Luverne soils.

Smithdale soils are well drained and have a loamy subsoil. They are on narrow, undulating ridgetops and on steep hillsides. Slopes range from 5 to 30 percent.

Providence soils are moderately well drained and have a compact, slowly permeable fragipan in the subsoil. They are on undulating ridgetops and on strongly sloping hillsides. Slopes range from 2 to 15 percent.

Areas of Providence soils on the wider, undulating ridgetops are suited to the production of row crops if erosion-control measures are applied. Well established conservation systems, such as no-till and contour stripcropping, reduce the hazard of erosion and help to maintain productivity. Many of the ridgetops in this map unit are too narrow and too remotely located to be used for cropland.

Areas of this map unit on upland ridgetops are well suited to pasture and hay. Forage crops, such as fescue, white clover, and common bermudagrass, grow well and produce good yields.

Providence soils are well suited to trees. The Smithdale soils on steep hillsides are droughty, and the selection of drought-tolerant species is recommended. Aspect is also an important consideration in order to establish and maintain a productive stand of timber in areas of Smithdale soils.

The Smithdale soils on undulating ridgetops are well suited to most residential and commercial uses. The moderately well drained Providence soils are poorly suited because of the wetness and the slow permeability in the fragipan.

2. Luverne-Silerton-Dulac

Gently sloping to steep, well drained and moderately well drained soils that formed in stratified marine sediments or in a silty mantle over loamy marine sediments; on uplands

The soils in this map unit are in the central part of the county. The landscape is characterized by gently sloping to strongly sloping ridges, steep hillsides, and narrow to moderately wide valleys. Several larger perennial streams dissect the uplands and provide drainage to the unit.

This map unit makes up approximately 19 percent of the county. It is about 51 percent Luverne soils, 15 percent Silerton soils and 7 percent Dulac soils. The

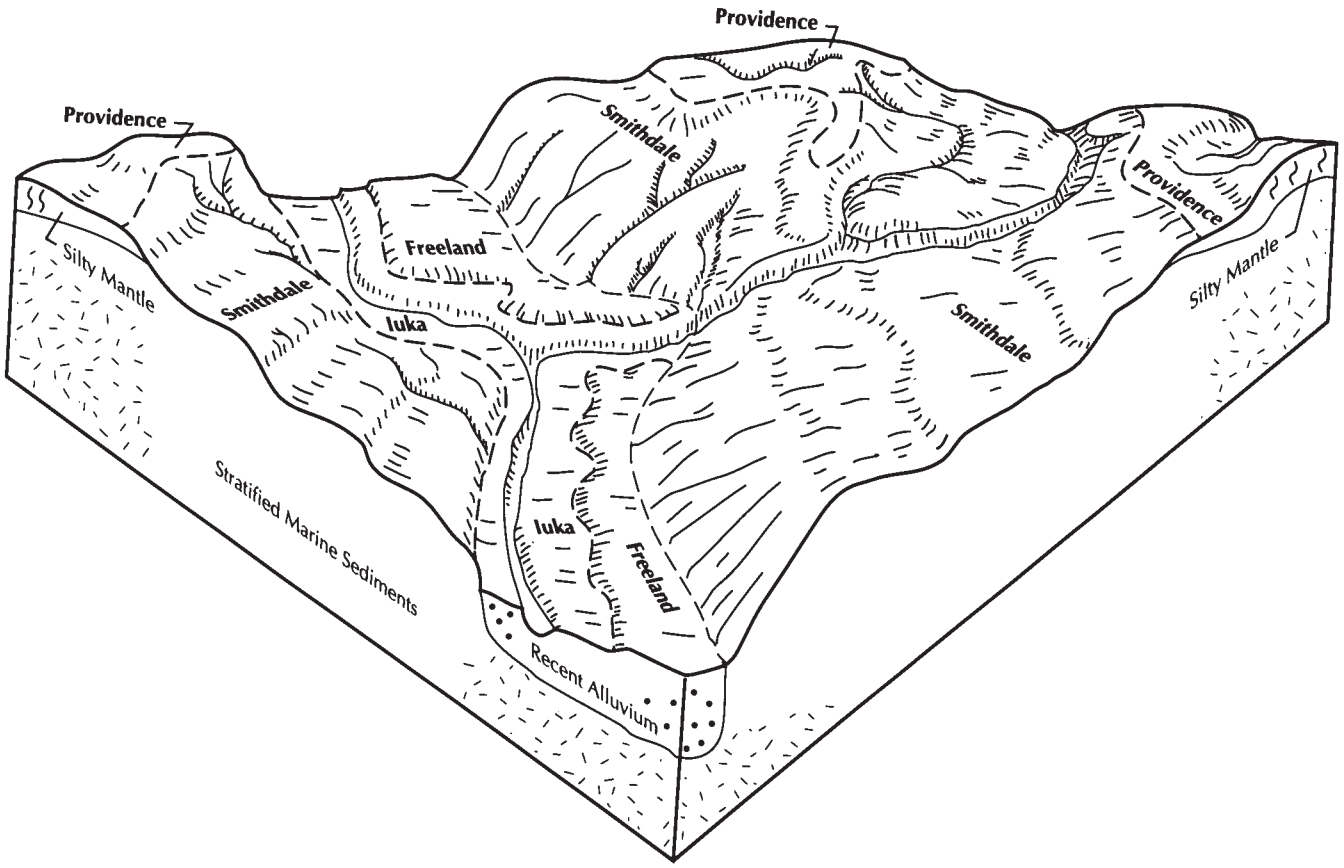


Figure 3.—Typical pattern of soils and parent material in the Smithdale-Providence general soil map unit.

minor soils include Smithdale, Freeland, and Providence soils.

Luverne soils are well drained and have a clayey subsoil. They are on strongly sloping to steep hillsides. Slopes range from 8 to 30 percent.

Silerton soils are well drained and have a loamy subsoil. They are on broad, gently sloping to strongly sloping ridgetops. Slopes range from 2 to 12 percent.

Dulac soils are moderately well drained and have a compact, slowly permeable fragipan in the subsoil. They are on undulating ridgetops. Slopes range from 2 to 5 percent.

Areas of Silerton and Dulac soils on the gently sloping ridgetops are well suited to row crops if erosion-control measures are applied. Well established conservation systems, such as no-till and contour stripcropping, reduce the hazard of erosion and help to maintain productivity.

Most areas of Dulac and Silerton soils are well suited to pasture and hay. Luverne soils in some of the less sloping areas can be used for pasture and hay. Forage crops, such as fescue, white clover, and common bermudagrass, grow well and produce good yields.

Dulac and Silerton soils are suited to trees. Luverne soils tend to be droughty, and the selection of drought-tolerant species is recommended. Aspect is also an important consideration in order to establish and maintain a productive stand of timber in areas of Luverne soils.

Silerton soils are suited to most residential and commercial uses. Luverne soils are poorly suited to most residential and commercial uses because of the slow permeability and the high shrink-swell potential. The moderately well drained Dulac soils are poorly suited to septic tank absorption fields because of the wetness and the slow permeability in the fragipan.

3. Bibb-Enville-Iuka

Nearly level, poorly drained to moderately well drained soils that formed in loamy alluvium; on flood plains

The soils in this map unit are on flood plains in all parts of the county. The landscape is characterized by nearly level flood plains and nearly level to gently

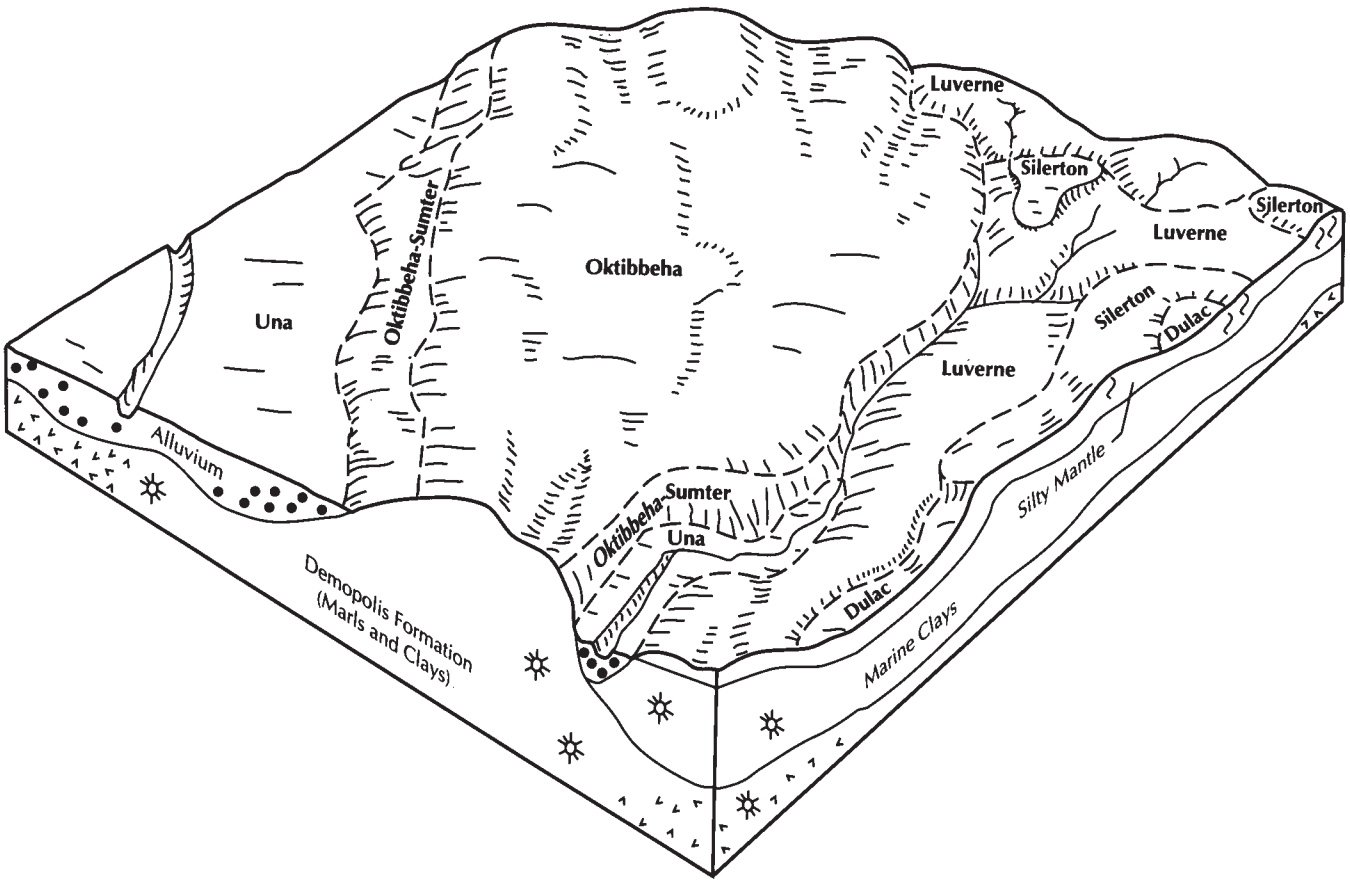


Figure 4.—Typical pattern of soils and parent material in the Oktibbeha-Silerton-Dulac-Luverne general soil map unit.

sloping stream terraces. The soils formed in recent alluvium.

This map unit makes up approximately 22 percent of the county. It is about 28 percent Bibb soils, 26 percent Enville soils, and 24 percent Iuka soils. The minor soils include Freeland, Hatchie, Ochlockonee, Guyton, and Una soils.

Bibb soils are poorly drained and have a loamy subsoil. They are in lower positions on most of the flood plains in the county, and they are the dominant soils on the Hatchie River flood plain. Slopes range from 0 to 2 percent.

Enville soils are somewhat poorly drained and have a loamy subsoil. They are on most of the wider flood plains in the county. Slopes range from 0 to 2 percent.

Iuka soils are moderately well drained and have a loamy subsoil. They are on many of the narrow flood plains in the northern and central parts of the county. Slopes range from 0 to 2 percent.

Enville and Iuka soils in areas of this map unit are suited to late-season crops, such as soybeans or grain sorghum, because of the occasional flooding early in spring. Bibb soils are unsuited to crops because of the wetness and the frequent flooding.

Enville and Iuka soils are suited to pasture and hay. Forage crops, such as fescue and white clover, grow well and produce good yields. They can tolerate short periods of wetness.

The soils in this map unit are suited to trees. Most locally adapted bottomland hardwoods grow well. The flooding and the seasonal wetness are limitations for planting and harvesting trees, and forestry operations are best suited to the summer and fall.

The soils in this map unit are poorly suited to residential and commercial uses because of the flooding and the seasonal wetness.

4. Oktibbeha-Silerton-Dulac-Luverne

Gently sloping to steep, well drained and moderately well drained soils that formed in clayey marine sediments and in a silty mantle over clayey marine sediments; on uplands

The soils in this map unit are in the eastern part of

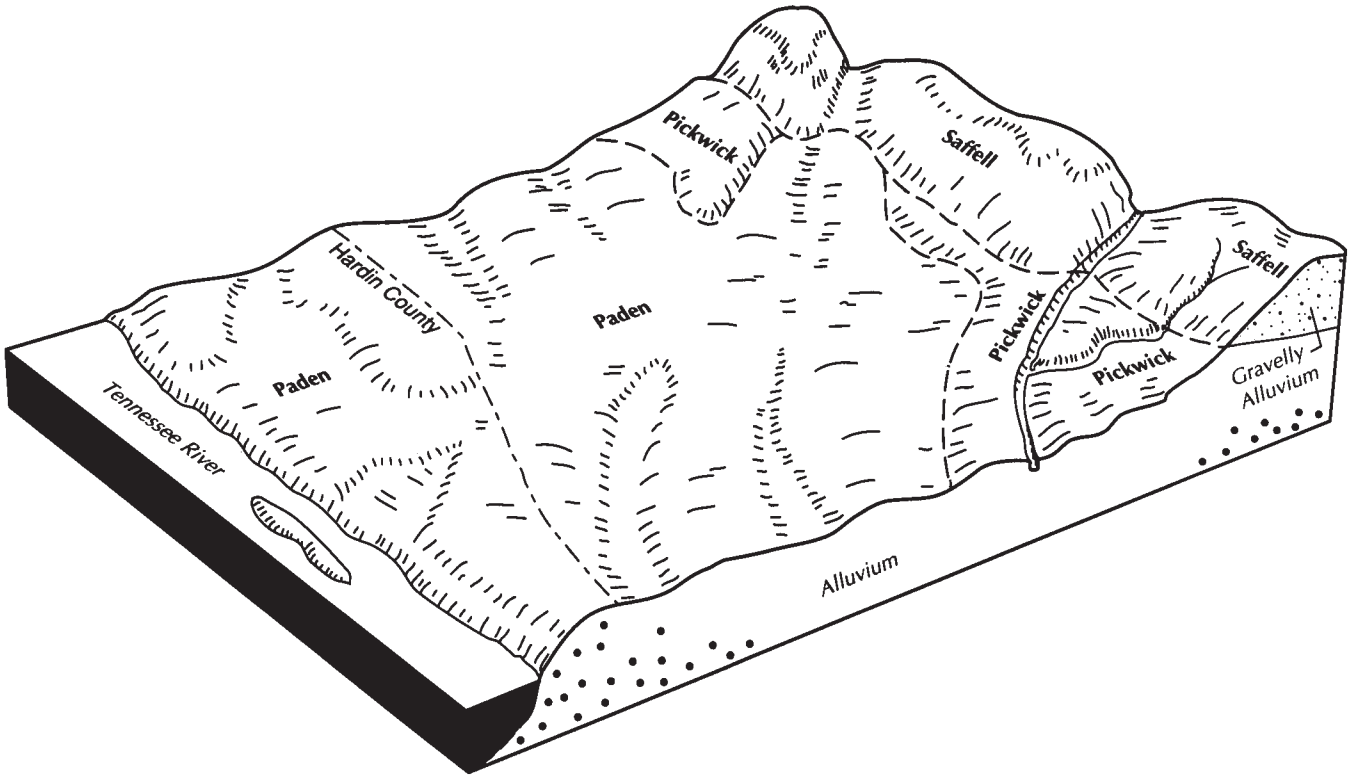


Figure 5.—Typical pattern of soils and parent material in the Paden-Saffell-Pickwick general soil map unit.

the county. The landscape in this unit is diverse. In the northern and central parts of the unit, the landscape is characterized by broad, undulating ridges and moderately steep side slopes. The southern part of the unit is characterized by gently sloping and strongly sloping ridgetops and steep hillsides. The soils formed in clayey marine deposits from the Demopolis Formation or in a silty mantle over clayey marine sediments. The map unit is drained by numerous small intermittent streams that dissect the uplands (fig. 4).

This map unit makes up approximately 13 percent of the county. It is about 23 percent Oktibbeha soils, 14 percent Silerton soils, 12 percent Dulac soils, and 11 percent Luverne soils. The minor soils include Sumter, Freeland, Hatchie, Una, Providence, and Guyton soils.

Oktibbeha soils are well drained and have a clayey subsoil. They are on broad, gently sloping ridgetops and moderately steep side slopes. Slopes range from 2 to 20 percent.

Silerton soils are well drained and have a loamy subsoil. They are on broad, gently sloping to strongly sloping ridgetops. Slopes range from 2 to 12 percent.

Dulac soils are moderately well drained and have a compact, slowly permeable fragipan in the subsoil. They are on broad, undulating ridgetops. Slopes range from 2 to 5 percent.

Luverne soils are well drained and have a clayey subsoil. They are on steep hillsides. Slopes range from 12 to 30 percent.

Areas of Dulac and Silerton soils on gently sloping ridgetops are well suited to row crops if erosion-control measures are applied. Well established conservation systems, such as no-till and contour stripcropping, reduce the hazard of erosion and help to maintain productivity. Oktibbeha soils are poorly suited to use as cropland because of the dense, clayey subsoil that restricts the movement of roots and water.

Most of the major soils on ridgetops are suited to pasture and hay. Forage crops, such as fescue and white clover, are suitable to plant on the Dulac and Silerton soils. Common bermudagrass is recommended in the less sloping areas of the Oktibbeha soils. Oktibbeha and Luverne soils in the steeper areas are poorly suited to pasture and hay because of the low available water and the dense, clayey subsoil.

Gently sloping areas of Dulac and Silerton soils are suited to trees. Oktibbeha and Luverne soils are droughty, and planting drought-tolerant species on

north- and east-facing aspects of these soils is recommended.

Silerton soils are suited to some residential and commercial uses. Oktibbeha, Dulac, and Luverne soils are poorly suited to most residential and commercial uses.

5. Paden-Saffell-Pickwick

Gently sloping to steep, moderately well drained and well drained soils that formed in loamy and gravelly alluvial deposits of the Tennessee River; on old high terraces of the Tennessee River

The soils in this map unit are in the easternmost part of the county. Most of the landscape is characterized by broad, undulating terraces of the Tennessee River. Around the communities of Michie and Pebble Hill, the landscape is characterized by narrow, rolling ridgetops and steep hillsides. Paden and Pickwick soils formed in loamy alluvium from the Tennessee River, and Saffell soils formed in deep gravelly sediments deposited by the Tennessee River. The map unit is drained by several perennial streams and numerous intermittent steams that eventually intersect the Tennessee River in Hardin County (fig. 5).

Paden soils are moderately well drained and have a compact, slowly permeable fragipan in the subsoil. They are on the broad, undulating terraces of the Tennessee River. Slopes range from 2 to 5 percent.

Saffell soils are well drained, gravelly soils that have a loamy subsoil. They are on rolling to hilly terraces of the Tennessee River. Slopes range from 5 to 30 percent.

Pickwick soils are well drained and have a loamy subsoil. They are on undulating to strongly sloping terraces of the Tennessee River. Slopes range from 2 to 12 percent.

This map unit makes up approximately 8 percent of the county. It is about 34 percent Paden soils, 12 percent Saffell soils, and 8 percent Pickwick soils. The minor soils include Smithdale, Luverne, Iuka, Enville, Bibb, and Freeland soils.

The undulating areas of Paden and Pickwick soils are well suited to row crops if erosion-control measures are applied. Contour farming, retaining crop residue on the surface, planting cover crops, and using a conservation system such as no-till or contour stripcropping reduce the hazard of erosion and help to maintain productivity.

The undulating and strongly sloping areas of Paden and Pickwick soils are well suited to pasture and hay. Saffell soils on narrow, rolling ridgetops are droughty, and planting common bermudagrass in these areas is recommended.

Paden and Pickwick soils are well suited to trees. Saffell soils are droughty, and the selection of drought-tolerant species is recommended. Aspect is also an important consideration in order to establish and maintain a productive stand of timber in areas of Saffell soils.

Pickwick soils are suited to most residential and commercial uses. Paden and Saffell soils are poorly suited to building site development and septic tank absorption fields because of the slope, the permeability, and the wetness.

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 of a soil for specific uses. They also can be used to plan the management needed for those uses. More information on each map unit, or soil, is given under the heading "Use and Management of the Soils."

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

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

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

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

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

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. Oktibbeha and Sumter soils, 8 to 20 percent slopes, is an undifferentiated group in this survey area.

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

This survey includes *miscellaneous areas*. Such areas have little or no natural soil material or are sparsely vegetated. Urban land is an example. Miscellaneous areas are shown on the soil maps. Some that are too small to be shown are identified by a special symbol on the soil maps.

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

Bb—Bibb fine sandy loam, frequently flooded

Setting

Landscape position: Flood plains
Slope range: 0 to 2 percent
Shape of areas: Long and narrow
Size of areas: 10 to 250 acres
Major uses: Woodland, wetland wildlife habitat

Typical Profile

Surface layer:
0 to 8 inches, brown fine sandy loam

Subsurface layer:
8 to 13 inches, gray fine sandy loam that has brownish mottles

Substratum:
13 to 32 inches, light brownish gray sandy loam that has brownish mottles
32 to 48 inches, gray sandy loam that has brownish mottles

48 to 60 inches, dark gray stratified sandy loam and loamy sand that has brownish mottles

Inclusions

• Small areas of the somewhat poorly drained Enville and moderately well drained Iuka soils along natural stream levees

Important Soil Properties and Features

Drainage class: Poorly drained
Permeability: Moderate
Available water capacity: High
Soil reaction: Very strongly acid or strongly acid
Flood hazard: Frequent for long durations in winter and spring
High water table: Seasonal, within a depth of 0.5 to 1 foot in winter and spring

Use and Management

Cropland

Suitability: Unsuited
General management considerations:
• Seasonal wetness and frequent flooding limit the production and harvest of crops.
Capability class: Vw

Pasture and hayland

Suitability: Poorly suited
General management considerations:
• This soil is poorly suited to pasture and hay because of frequent flooding and seasonal wetness.
Suitable management practices:
• In some areas of the unit where the flooding is less severe, water-tolerant plants, such as tall fescue and white clover, can be grown for pasture.

Woodland

Suitablility: Suited to water-tolerant trees; provides excellent habitat for wetland wildlife
Trees suitable for planting: American sycamore, sweetgum, water oak, cherrybark oak, swamp white oak, green ash, shagbark hickory, and blackgum
General management considerations:
• The main limitations for the management of timber on this soil are the equipment limitation, seedling mortality, and plant competition.
Suitable management practices:
• Harvesting and planting operations should be limited to the late summer and early fall, when the hazard of flooding and the seasonal wetness are reduced.
• Planting water-tolerant species and planting on beds help to increase the seedling survival rate.
• Site preparation, such as chopping, burning, and applying herbicide, reduces the immediate plant competition.

Residential and commercial uses

Suitability: Unsuited
General management considerations:
• All residential and commercial uses are unsuited to this soil because of frequent flooding and seasonal wetness.

DeB—Deanburg silt loam, 2 to 5 percent slopes

Setting

Landscape position: Stream terraces
Shape of areas: Irregular
Size of areas: 5 to 30 acres
Major use: Cropland

Typical Profile

Surface layer:
0 to 9 inches, brown silt loam

Subsoil:
9 to 28 inches, dark brown loam
28 to 43 inches, dark brown sandy clay loam
43 to 60 inches, brownish yellow loamy sand that is stratified with strong brown sandy loam

Inclusions

• Small areas of the moderately well drained Freeland soils in saddles
• Areas of the moderately well drained Iuka soils adjacent to narrow drainageways

Important Soil Properties and Features

Drainage class: Well drained
Permeability: Moderate in the upper part, moderately rapid to rapid in the lower part
Available water capacity: Moderate or high
Soil reaction: Strongly acid or medium acid
Flood hazard: None
High water table: None

Use and Management

Cropland

Suitability: Suited
General management considerations:
• This soil is subject to erosion, which can result in the removal of valuable topsoil.
Suitable management practices:
• No-till planting, contour farming, and stripcropping can help to control erosion and maintain productivity.
Capability class: IIe

Pasture and hayland

Suitability: Well suited

General management considerations:
• This soil has no significant limitations for forage production if erosion is controlled.
Suitable management practices:
• The quality and quantity of forage can be maintained by rotating grazing, controlling weeds, and applying fertilizer annually.

Woodland

Suitability: Well suited
Trees suitable for planting: Loblolly pine, cherrybark oak, mockernut hickory, and white oak
General management considerations:
• The main limitation for the management of timber is plant competition.
Suitable management practices:
• Site preparation, such as chopping, burning, and applying herbicide, reduces the immediate plant competition.

Residential and commercial uses

Suitability: Well suited
General management considerations:
• Low strength is a limitation for local roads and streets.
Suitable management practices:
• If the soil is to be used as a base for roads and streets, mixing the upper part with coarser textured material will increase the soil's strength and stability.

DeC3—Deanburg sandy clay loam, 5 to 8 percent slopes, severely eroded

Setting

Landscape position: Moderately sloping stream terraces
Shape of areas: Irregular to narrow
Size of areas: 5 to 25 acres
Major uses: Cropland, a few areas of pasture

Typical Profile

Surface layer:
0 to 5 inches, brown sandy clay loam that has brownish mottles

Subsoil:
5 to 22 inches, strong brown clay loam
22 to 34 inches, strong brown sandy clay loam
34 to 60 inches, brownish yellow loamy sand that is stratified with strong brown sandy loam

Inclusions

• Areas of the moderately well drained Iuka soils adjacent to narrow drainageways

Important Soil Properties and Features

Drainage class: Well drained
Permeability: Moderate in the upper part, moderately rapid to rapid in the lower part
Available water capacity: Moderate
Soil reaction: Strongly acid or medium acid
Flood hazard: None
High water table: None

Use and Management

Cropland

Suitability: Poorly suited
General management considerations:
• This soil should not be used continuously as cropland because of the slope and the high erosion potential.
Suitable management practices:
• Areas used as cropland should only be cultivated on the contour, using a rotation system in which the land remains in a vegetative cover for several seasons following cultivation.
• Using practices such as no-till and contour stripcropping reduces the hazard of water erosion and runoff.
Capability class: IVe

Pasture and hayland

Suitability: Well suited
General management considerations:
• If the plants are overgrazed or if plant stands are poor, the slope can increase the hazard of erosion.
Suitable management practices:
• The quality and quantity of forage can be maintained by rotating grazing, controlling weeds, and applying fertilizer annually.

Woodland

Suitability: Well suited
Trees suitable for planting: Loblolly pine, chestnut oak, mockernut hickory, and white oak
General management considerations:
• The main limitations for the management of timber are plant competition and seedling mortality.
Suitable management practices:
• Planting hardier, drought-tolerant species increases the seedling survival rate.
• Site preparation, such as chopping, burning, and applying herbicide, reduces the immediate plant competition.

Residential and commercial uses

Suitability: Suited
General management considerations:
• The slope is a limitation for small commercial buildings.
• Low strength is a limitation for local roads and streets.
Suitable management practices:
• Proper building designs and the construction costs are the major considerations on sites that need to be

excavated or filled to construct small commercial buildings.
• If the soil is to be used as a base for roads and streets, mixing the upper part with coarser textured material will increase the soil's strength and stability.

DuB—Dulac silt loam, 2 to 5 percent slopes

Setting

Landscape position: Broad, gently sloping ridgetops
Shape of areas: Irregular
Size of areas: 5 to 200 acres
Major use: Cropland

Typical Profile

Surface layer:
0 to 6 inches, dark yellowish brown silt loam
Subsoil:
6 to 22 inches, strong brown silt loam
22 to 28 inches, strong brown silt loam that has brownish and grayish mottles
28 to 48 inches, mottled yellowish brown, strong brown, and light brownish gray silty clay loam fragipan
48 to 60 inches, mottled strong brown, light olive brown, red, and gray clay

Inclusions

• Small areas of the well drained Luverne soils adjacent to the steeper side slopes
• Small, intermingled areas of the well drained Silerton soils
• Small areas of somewhat poorly drained, clayey soils in slight depressions

Important Soil Properties and Features

Drainage class: Moderately well drained
Permeability: Moderate above the fragipan, slow in the fragipan
Available water capacity: High
Soil reaction: Strongly acid or very strongly acid
Flood hazard: None
High water table: Perched, within a depth of 1.0 to 2.0 feet in winter and early spring

Use and Management

Cropland

Suitability: Well suited
General management considerations:
• Most climatically adapted crops grow well if they are managed to control erosion.
• The seasonal wetness in winter and spring can restrict rooting depth and inhibit plant germination.
Suitable management practices:
• Planting cover crops, using a crop rotation system, returning crop residue to the soil, and using conservation tillage practices can reduce erosion and increase soil moisture.
• Planting crops later in the spring improves plant germination and early growth.
Capability class: IIe

Pasture and hayland

Suitability: Well suited (fig. 6)
General management considerations:
• Because of the seasonal wetness, only those hay and pasture plants that can tolerate short periods of wetness, such as fescue and white clover, should be selected.
• A perched water table limits grazing for several days at a time during the winter and early spring.
Suitable management practices:
• Grazing should be deferred until a period from late in spring to early fall.
• The quality and quantity of forage can be maintained by rotating grazing, controlling weeds, and applying fertilizer annually.

Woodland

Suitability: Well suited
Trees suitable for planting: Loblolly pine, yellow-poplar, southern red oak, and cherrybark oak
General management considerations:
• The main limitation for the management of timber on this soil is plant competition.
Suitable management practices:
• Site preparation, such as chopping, burning, and applying herbicide, reduces the immediate plant competition.

Residential and commercial uses

Suitability: Poorly suited
General management considerations:
• A seasonally perched water table and restricted permeability in the subsoil are major limitations for septic tank absorption fields.
• The seasonal wetness is a limitation for dwellings without basements and small commercial buildings.
• The seasonal wetness and the high shrink-swell potential are limitations for dwellings with basements.
• Low strength is a major limitation for local roads and streets.
Suitable management practices:
• Using subsurface drains or open ditches lowers the water table around areas to be used for septic tank filter fields and dwellings with basements.
• Increasing the size of the absorption field or adding suitable fill material on the surface helps to overcome the restricted permeability.
• Providing drainage and diverting runoff away from

Figure 6.—An area of Dulac silt loam, 2 to 5 percent slopes. This soil is well suited to bermudagrass or fescue-ladino pastures. An area of Smithdale fine sandy loam, 5 to 8 percent slopes, is in the background. Bermudagrass pastures grow best on this soil.

foundations reduce the wetness around small commercial buildings and dwellings.
• Backfilling deep cuts with material that has a low shrink-swell potential and diverting runoff away from buildings help to prevent possible structural damage to dwellings.
• If the soil is to be used as a base for roads and streets, mixing the upper part with coarser textured material will increase the soil's strength and stability.

DuB3—Dulac silt loam, 2 to 5 percent slopes, severely eroded

Setting

Landscape position: Broad, gently sloping ridgetops
Shape of areas: Irregular
Size of areas: 5 to 100 acres
Major uses: Cropland, pasture

Typical Profile

Surface layer:
0 to 5 inches, dark yellowish brown silt loam that has brownish mottles

Subsoil:
5 to 18 inches, strong brown silt loam that has brownish mottles
18 to 22 inches, strong brown silt loam that has grayish and brownish mottles
22 to 36 inches, mottled strong brown, light olive brown, and light gray silty clay loam fragipan
36 to 45 inches, mottled gray, light olive brown, strong brown, and yellowish brown clay
45 to 60 inches, strong brown, light olive brown, red, and gray clay

Inclusions

• Small areas of the well drained Luverne soils adjacent to steeper side slopes

• Small, intermingled areas of the well drained Silerton soils
• Small areas of somewhat poorly drained, clayey soils in slight depressions

Important Soil Properties and Features

Drainage class: Moderately well drained
Permeability: Moderate above the fragipan, slow in the fragipan
Available water capacity: Moderate
Soil reaction: Strongly acid or very strongly acid
Flood hazard: None
High water table: Perched, within a depth of 1.0 to 2.0 feet in winter and early spring

Use and Management

Cropland

Suitability: Suited
General management considerations:
• This soil is subject to erosion, which can result in the removal of valuable topsoil.
• Accelerated erosion by water can remove valuable topsoil and adversely affect rooting depth.
• The seasonal wetness in winter and spring can restrict rooting depth and inhibit plant germination.
Suitable management practices:
• Using conservation practices such as no-till and contour stripcropping reduces the hazard of water erosion and runoff.
• Tilth can be improved or maintained by using a cropping system that includes grasses, legumes, or grass-legume mixtures; rotating crops; using minimum tillage; and growing cover crops.
• Planting crops later in the spring improves plant germination and early growth.
Capability class: IIIe

Pasture and hayland

Suitability: Well suited
General management considerations:
• Yields of hay can be low in dry years because of the low available moisture.
• If the plants are overgrazed or if plant stands are poor, the slope increases the hazard of erosion.
Suitable management practices:
• Selecting plants that can tolerate droughty conditions is recommended.
• The quality and quantity of forage can be maintained by rotating grazing, controlling weeds, and applying fertilizer annually.

Woodland

Suitability: Well suited
Trees suitable for planting: Loblolly pine, southern red oak, cherrybark oak, and yellow-poplar
General management considerations:
• The main limitation for the management of timber on this soil is plant competition.
Suitable management practices:
• Site preparation, such as chopping, burning, and applying herbicide, reduces the immediate plant competition.

Residential and commercial uses

Suitability: Poorly suited
General management considerations:
• A seasonally perched water table and restricted permeability in the subsoil are major limitations for septic tank absorption fields.
• The seasonal wetness is a limitation for dwellings without basements and small commercial buildings.
• The seasonal wetness and the high shrink-swell potential are limitations for dwellings with basements.
• Low strength is a major limitation for local roads and streets.
Suitable management practices:
• Using subsurface drains or open ditches lowers the water table around areas to be used for septic tank filter fields.
• Increasing the size of the absorption field or adding suitable fill material on the surface helps to overcome the restricted permeability.
• Providing drainage and diverting runoff away from foundations reduce the wetness around small commercial buildings and dwellings.
• Backfilling deep cuts with material that has a low shrink-swell potential and diverting runoff away from buildings help to prevent possible structural damage to dwellings.
• If the soil is to be used as a base for roads and streets, mixing the upper part with coarser textured material will increase the soil's strength and stability.

En—Enville fine sandy loam, occasionally flooded

Setting

Landscape position: Flood plains
Slope range: 0 to 2 percent
Shape of areas: Long and narrow
Size of areas: 5 to 250 acres
Major use: Cropland

Typical Profile

Surface layer:
0 to 7 inches, dark yellowish brown fine sandy loam that has brownish mottles

Substratum:
7 to 14 inches, brown sandy loam that has brownish mottles
14 to 28 inches, grayish brown sandy loam that has brownish mottles
28 to 40 inches, grayish brown loam that has brownish mottles
40 to 60 inches, light brownish gray sandy loam that has brownish mottles

Inclusions

• Small, intermingled areas of the poorly drained Bibb and moderately well drained Iuka soils

Important Soil Properties and Features

Drainage class: Somewhat poorly drained
Permeability: Moderate
Available water capacity: Moderate
Soil reaction: Strongly acid or very strongly acid
Flood hazard: Occasional for brief durations in winter and early in spring
High water table: Seasonal, within a depth of 1.0 to 1.5 feet in winter and early spring

Use and Management

Cropland

Suitability: Suited
General management considerations:
• Seasonal wetness and flooding limit the production and harvest of some crops.
Suitable management practices:
• Because of the wetness and the hazard of flooding early in spring, planting short-season annuals, such as soybeans or grain sorghum, is recommended.
Capability class: IIw

Pasture and hayland

Suitability: Suited
General management considerations:
• Only those hay and pasture plants that can tolerate periodic inundation and seasonal wetness should be selected.
• The seasonal high water table limits grazing for several days at a time during the winter and early spring.
Suitable management practices:
• Plants, such as fescue and white clover, that can tolerate short periods of wetness should be selected.
• Grazing should be deferred until a period from late in spring to early fall.

Woodland

Suitability: Suited
Trees suitable for planting: Yellow-poplar, American sycamore, sweetgum, swamp white oak, green ash, and shagbark hickory
General management considerations:
• The main limitations for the management of timber are the equipment limitation, which is caused by flooding and seasonal wetness, and plant competition.
Suitable management practices:
• The hazard of flooding and the seasonal high water table restrict the use of equipment for planting and harvesting operations to dry periods from midsummer through early fall.
• Site preparation, such as chopping, burning, applying herbicide, and planting on beds, reduces the immediate plant competition.

Residential and commercial uses

Suitability: Poorly suited
General management considerations:
• This soil is poorly suited to residential and commercial uses because of the flooding and the seasonal wetness.
Suitable management practices:
• Dwellings, small commercial buildings, and roads and streets should be located in higher areas that are not subject to flooding and excessive wetness.

FrB—Freeland silt loam, 1 to 4 percent slopes

Setting

Landscape position: Gently sloping stream terraces
Shape of areas: Irregular
Size of areas: 5 to 80 acres
Major use: Cropland (fig. 7)

Typical Profile

Surface layer:
0 to 13 inches, brown silt loam

Subsoil:
13 to 20 inches, dark yellowish brown silt loam
20 to 27 inches, yellowish brown silt loam
27 to 36 inches, yellowish brown silt loam that has brownish mottles
36 to 41 inches, mottled light gray, yellowish brown, brownish yellow, and light brownish gray silt loam
41 to 50 inches, mottled yellowish brown, strong brown, and gray silt loam fragipan
50 to 60 inches, light gray, light olive brown, and light yellowish brown loam fragipan

Inclusions

• Small areas of the somewhat poorly drained Hatchie soils in slight depressions

Figure 7.—Soybeans in an area of Freeland silt loam, 1 to 4 percent slopes. An area of Iuka fine sandy loam, occasionally flooded, is in the background. Soils on nearly level and gently sloping stream terraces and flood plains are well suited to most row crops.

• Areas of the moderately well drained Iuka soils in narrow drainageways
• Small areas of the poorly drained Guyton soils in depressions and in old stream channels

Important Soil Properties and Features

Drainage class: Moderately well drained
Permeability: Moderate above the fragipan, slow in the fragipan
Available water capacity: High
Soil reaction: Strongly acid or very strongly acid
Flood hazard: None
High water table: Perched, within a depth of 1.5 to 2.5 feet in winter and early spring

Use and Management

Cropland

Suitability: Well suited
General management considerations:
• Most climatically adapted crops grow well if they are managed to control erosion.
• The seasonal wetness in winter and spring can restrict rooting depth and inhibit plant germination.
Suitable management practices:
• Planting cover crops, using a crop rotation system, returning crop residue to the soil, and using conservation tillage practices reduce the hazard of erosion and increase soil moisture.

• Planting crops later in the spring improves plant germination and early growth.
Capability class: IIe

Pasture and hayland

Suitability: Well suited
General management considerations:
• Because of the seasonal wetness, only those hay and pasture plants that can tolerate short periods of wetness, such as fescue and white clover, should be selected.
• A perched water table limits grazing for several days at a time during the winter and early spring.
Suitable management practices:
• Grazing should be deferred until a period from late in spring to early fall.
• The quality and quantity of forage can be maintained by rotating grazing, controlling weeds, and applying fertilizer annually.

Woodland

Suitability: Well suited
Trees suitable for planting: Black walnut, white oak, cherrybark oak, yellow-poplar, sweetgum, and loblolly pine
General management considerations:
• The main limitation for the management of timber on this soil is plant competition.
Suitable management practices:
• Site preparation, such as chopping, burning, and applying herbicide, reduces the immediate plant competition.

Residential and commercial uses

Suitability: Poorly suited
General management considerations:
• A seasonally perched water table and restricted permeability in the subsoil are major limitations for septic tank absorption fields.
• Low strength and the seasonal wetness are limitations for local roads and streets.
• The seasonal wetness is a limitation for dwellings with basements and small commercial buildings.
Suitable management practices:
• Using subsurface drains or open ditches lowers the water table around areas to be used for septic tank filter fields and dwellings with basements.
• Increasing the size of the absorption field or adding suitable fill material on the surface helps to overcome the restricted permeability.
• If the soil is to be used as a base for roads and streets, mixing the upper part with coarser textured material will increase the soil's strength and stability.
• Providing drainage and diverting runoff away from foundations reduce the wetness around small commercial buildings and dwellings.

FrB3—Freeland silt loam, 1 to 4 percent slopes, severely eroded

Setting

Landscape position: Gently sloping stream terraces
Shape of areas: Irregular
Size of areas: 5 to 50 acres
Major uses: Cropland, pasture

Typical Profile

Surface layer:
0 to 6 inches, dark yellowish brown silt loam that has brownish mottles

Subsoil:
6 to 19 inches, yellowish brown silt loam
19 to 23 inches, mottled light gray, yellowish brown, and brownish yellow silt loam
23 to 36 inches, yellowish brown silt loam fragipan that has grayish and brownish mottles
36 to 60 inches, mottled light gray, light olive brown, and light yellowish brown loam fragipan

Inclusions

• Small areas of the somewhat poorly drained Hatchie soils in slight depressions
• Areas of the moderately well drained Iuka soils in narrow drainageways
• Small areas of the poorly drained Guyton soils in depressions and in old stream channels

Important Soil Properties and Features

Drainage class: Moderately well drained
Permeability: Moderate above the fragipan, slow in the fragipan
Available water capacity: Moderate
Soil reaction: Strongly acid or very strongly acid
Flood hazard: None
High water table: Perched, within a depth of 1.5 to 2.5 feet in winter and early spring

Use and Management

Cropland

Suitability: Suited
General management considerations:
• Accelerated erosion by water can remove valuable topsoil and adversely affect rooting depth.
• The seasonal wetness in winter and spring can inhibit plant germination and restrict rooting depth.
Suitable management practices:
• Using practices such as no-till and contour stripcropping reduces the hazard of water erosion and runoff.
• Planting crops later in the spring improves plant germination and early growth.
Capability class: IIIe

Pasture and hayland

Suitability: Well suited
General management considerations:
• Because of the seasonal wetness, only those hay and pasture plants that can tolerate short periods of wetness, such as fescue and white clover, should be selected.
• A perched water table limits grazing for several days at a time during the winter and early spring.
Suitable management practices:
• The quality and quantity of forage can be maintained by rotating grazing, controlling weeds, and applying fertilizer annually.
• Grazing should be deferred until a period from late in spring to early fall.

Woodland

Suitability: Well suited
Trees suitable for planting: Black walnut, white oak, cherrybark oak, yellow-poplar, sweetgum, and loblolly pine
General management considerations:
• The main limitation for the management of timber on this soil is plant competition.
Suitable management practices:
• Site preparation, such as chopping, burning, and applying herbicide, reduces the immediate plant competition.

Residential and commercial uses

Suitability: Poorly suited
General management considerations:
• A seasonally perched water table and restricted permeability in the subsoil are major limitations for septic tank absorption fields.
• Low strength and the seasonal wetness are limitations for local roads and streets.
• The seasonal wetness is a limitation for dwellings with basements and small commercial buildings.
Suitable management practices:
• Using subsurface drains or open ditches lowers the water table around areas to be used for septic tank filter fields and dwellings with basements.
• Increasing the size of the absorption field or adding suitable fill material on the surface helps to overcome the restricted permeability.
• If the soil is to be used as a base for roads and streets, mixing the upper part with coarser textured material will increase the soil's strength and stability.
• Providing drainage and diverting runoff away from foundations reduce the wetness around small commercial buildings and dwellings.

Gu—Guyton silt loam

Setting

Landscape position: Low stream terraces
Slope range: 0 to 1 percent
Shape of areas: Irregular
Size of areas: 50 to 150 acres
Major uses: Woodland, some areas of pasture

Typical Profile

Surface layer:
0 to 6 inches, brown silt loam
Subsurface layer:
6 to 28 inches, gray silt loam that has brownish mottles
Subsoil:
28 to 48 inches, gray silty clay loam
48 to 60 inches, grayish brown silty clay loam that has brownish mottles

Inclusions

• A few small areas of the somewhat poorly drained Hatchie soils in slightly higher positions on the landscape
• Areas of the somewhat poorly drained Enville soils in narrow drainageways

Important Soil Properties and Features

Drainage class: Poorly drained
Permeability: Slow
Available water capacity: High
Soil reaction: Strongly acid to medium acid
Flood hazard: None
High water table: Perched, within a depth of 0 to 1 foot in winter and spring

Use and Management

Cropland

Suitability: Poorly suited
General management considerations:
• The seasonal wetness limits the production and harvesting of most crops.
Suitable management practices:
• If this soil is currently used for crop production, planting later in the growing season and planting short-season annuals, such as soybeans or grain sorghum, is recommended.
Capability class: IIIw

Pasture and hayland

Suitability: Poorly suited
General management considerations:
• This soil is poorly suited to pasture and hay because of excessive wetness.

Suitable management practices:
• Water-tolerant plants, such as tall fescue and white clover, that can tolerate short periods of wetness can be planted for pasture and hay.
• Because of the excessive wetness, grazing should be deferred until summer and livestock should be removed in fall.

Woodland

Suitability: Suited to water-tolerant trees
Trees suitable for planting: American sycamore, yellow-poplar, willow oak, swamp white oak, cherrybark oak, and sweetgum
General management considerations:
• The main limitations for the management of timber on this soil are seedling mortality, restricted use of equipment, and plant competition.
Suitable management practices:
• Planting water-tolerant species and planting on beds help to increase the seedling survival rate.
• Logging during dry periods in summer and early fall and using low-pressure ground equipment will cause less damage to the soil and will help to maintain productivity.
• Site preparation, such as planting on beds, chopping, burning, and applying herbicide, reduces the immediate plant competition.

Residential and commercial uses

Suitability: Poorly suited
General management considerations:
• This soil is poorly suited to most residential and commercial uses because of the excessive seasonal wetness.
Suitable management practices:
• A well designed drainage system of open ditches and land shaping helps to lower the seasonal water table and reduces surface water from areas used for septic tank absorption fields, dwellings, and small commercial buildings.
• Dwellings with basements are not recommended because of the wetness.
• If the soil is to be used as a base for roads and streets, mixing the upper part with coarser textured material and designing an adequate drainage system will increase the soil's strength and stability.

Ha—Hatchie silt loam

Setting

Landscape position: Low stream terraces
Slope range: 0 to 2 percent
Shape of areas: Irregular and narrow
Size of areas: 5 to 70 acres
Major uses: Cropland, pasture

Typical Profile

Surface layer:
0 to 7 inches, brown silt loam that has brownish and grayish mottles
Subsoil:
7 to 19 inches, yellowish brown silt loam that has grayish mottles
19 to 26 inches, light gray, yellowish brown, and strong brown silt loam that has brownish mottles
26 to 38 inches, mottled light gray, strong brown, and yellowish brown loam fragipan
38 to 60 inches, yellowish brown loam fragipan that has grayish mottles

Inclusions

• Small areas of the moderately well drained Freeland soils on gentle knolls
• Areas of the moderately well drained Iuka soils in narrow drainageways
• Small areas of the poorly drained Guyton soils in depressions and in old stream channels

Important Soil Properties and Features

Drainage class: Somewhat poorly drained
Permeability: Moderate above the fragipan, slow in the fragipan
Available water capacity: Moderate or high
Soil reaction: Very strongly acid or strongly acid, except in areas where lime has been added
Flood hazard: None
High water table: Perched, within a depth of 1.0 to 2.0 feet in winter and spring

Use and Management

Cropland

Suitability: Suited
General management considerations:
• The seasonal wetness limits the production and harvesting of some crops.
Suitable management practices:
• Because of the seasonal wetness early in spring, planting short-season annuals, such as soybeans or grain sorghum, is recommended.
• A well designed drainage system of open ditches and land shaping lowers the season high water table and helps to remove excess surface water from areas of cropland.
Capability class: IIw

Pasture and hayland

Suitability: Suited
General management considerations:
• Only those hay and pasture plants that can tolerate periodic inundation and seasonal wetness should be selected.

• The seasonal high water table limits grazing for several days at a time during the winter and early spring.
Suitable management practices:
• Plants, such as fescue and white clover, that can tolerate short periods of wetness should be selected.
• Grazing should be deferred until a period from late in spring to early fall.

Woodland

Suitability: Suited
Trees suitable for planting: Yellow-poplar, American sycamore, sweetgum, swamp white oak, green ash, cherrybark oak, and pin oak
General management considerations:
• The main limitations for the management of timber are the equipment limitation, which is caused by seasonal wetness, and plant competition.
Suitable management practices:
• The seasonal high water table restricts the use of equipment for planting and harvesting to dry periods from midsummer through early fall.
• Site preparation, such as chopping, burning, applying herbicide, and planting on beds, reduces the immediate plant competition.

Residential and commercial uses

Suitability: Poorly suited
General management considerations:
• A seasonally perched water table and restricted permeability in the subsoil are major limitations for septic tank absorption fields.
• The seasonal wetness is a limitation for dwellings with basements and small commercial buildings.
• Low strength and the seasonal wetness are limitations for local roads and streets.
Suitable management practices:
• Using subsurface drains or open ditches lowers the water table around areas to be used for septic tank filter fields and dwellings with basements.
• Increasing the size of the absorption field or adding suitable fill material on the surface helps to overcome the restricted permeability.
• If the soil is to be used as a base for roads and streets, mixing the upper part with coarser textured material will increase the soil's strength and stability.
• Providing drainage and diverting runoff away from foundations reduce the wetness around small commercial buildings and dwellings.

lu—luka fine sandy loam, occasionally flooded

Setting

Landscape position: Flood plains
Slope range: 0 to 2 percent
Shape of areas: Long and narrow
Size of areas: 5 to 250 acres
Major use: Cropland

Typical Profile

Surface layer:
0 to 7 inches, yellowish brown fine sandy loam
Substratum:
7 to 14 inches, brown fine sandy loam
14 to 25 inches, brown loam that has grayish mottles
25 to 60 inches, yellowish brown loam that has grayish mottles

Inclusions

• A few intermingled areas of the well drained Ochlockonee and somewhat poorly drained Enville soils

Important Soil Properties and Features

Drainage class: Moderately well drained
Permeability: Moderate
Available water capacity: Moderate
Soil reaction: Strongly acid or very strongly acid
Flood hazard: Occasional for brief durations in winter and early spring
High water table: Seasonal, within a depth of 1.0 to 3.0 feet in winter and spring

Use and Management

Cropland

Suitability: Well suited
General management considerations:
• Most locally adapted crops can be grown, and good yields can be attained.
• Small grains produce good yields on this soil but can be damaged by the occasional flooding.
Suitable management practices:
• Seasonal flooding occurs in winter and early spring, but it is not a limitation for management.
Capability class: IIw

Pasture and hayland

Suitability: Well suited
General management considerations:
• Only those hay and pasture plants that can tolerate periodic inundation and seasonal wetness should be selected.
• The seasonal high water table limits grazing for several days at a time during the winter and early spring.
Suitable management practices:
• Plants, such as fescue and white clover, that can tolerate short periods of wetness should be selected.
• Grazing should be deferred until a period from late in spring to early fall.

Woodland

Suitability: Well suited
Trees suitable for planting: Yellow-poplar, American sycamore, sweetgum, swamp white oak, green ash, cherrybark oak, and pin oak
General management considerations:
• The main limitations for the management of timber are the equipment limitation, which is caused by flooding and seasonal wetness, and plant competition.
Suitable management practices:
• The hazard of flooding and the seasonal high water table restrict the use of equipment for planting and harvesting to dry periods from midsummer through early fall.
• Site preparation, such as chopping, burning, applying herbicide, and planting on beds, reduces the immediate plant competition.

Residential and commercial uses

Suitability: Poorly suited
General management considerations:
• This soil is poorly suited to residential and commercial uses because of the flooding and the seasonal wetness.
Suitable management practices:
• Dwellings, small commercial buildings, and roads and streets should be located in higher areas that are not subject to flooding and seasonal wetness.

LeB2—Lexington silt loam, 1 to 4 percent slopes, eroded

Setting

Landscape position: Upland ridgetops
Shape of areas: Broad and undulating
Size of areas: 20 to 100 acres
Major uses: Cropland, a few small areas of woodland

Typical Profile

Surface layer:
0 to 4 inches, yellowish brown silt loam that has reddish mottles

Subsoil:
4 to 35 inches, yellowish red silty clay loam
35 to 42 inches, yellowish red loam that has yellowish and brownish mottles
42 to 60 inches, yellowish red sandy loam

Inclusions

• Small areas of the moderately well drained Providence soils in slight depressions

Important Soil Properties and Features

Drainage class: Well drained
Permeability: Moderate
Available water capacity: High
Soil reaction: Medium acid to very strongly acid
Flood hazard: None
High water table: None

Use and Management

Cropland

Suitability: Well suited (fig. 8)
General management considerations:
• Most locally adapted crops can be grown, and good yields can be attained.
• This soil is subject to erosion, which can result in the removal of valuable topsoil.
Suitable management practices:
• No-till planting, contour farming, and stripcropping can help to control erosion and maintain productivity.
Capability class: IIe

Pasture and hayland

Suitability: Well suited
General management considerations:
• This soil has no significant limitations for forage production if erosion is controlled.
Suitable management practices:
• The quality and quantity of forage can be maintained by rotating grazing, controlling weeds, and applying fertilizer annually.

Woodland

Suitability: Well suited
Trees suitable for planting: Yellow-poplar, cherrybark oak, southern red oak, mockernut hickory, and loblolly pine
General management considerations:
• The main limitation for the management of timber is plant competition.
Suitable management practices:
• Site preparation, such as chopping, burning, and applying herbicide, reduces the immediate plant competition.

Residential and commercial uses

Suitability: Well suited
General management considerations:
• Low strength is a limitation for local roads and streets.
• Permeability in the subsoil is a limitation for septic tank absorption fields.
Suitable management practices:
• If the soil is to be used as a base for roads and streets, mixing the upper part with coarser textured material will increase the soil's strength and stability.
• Increasing the size of the septic tank absorption area helps to overcome the restricted permeability.

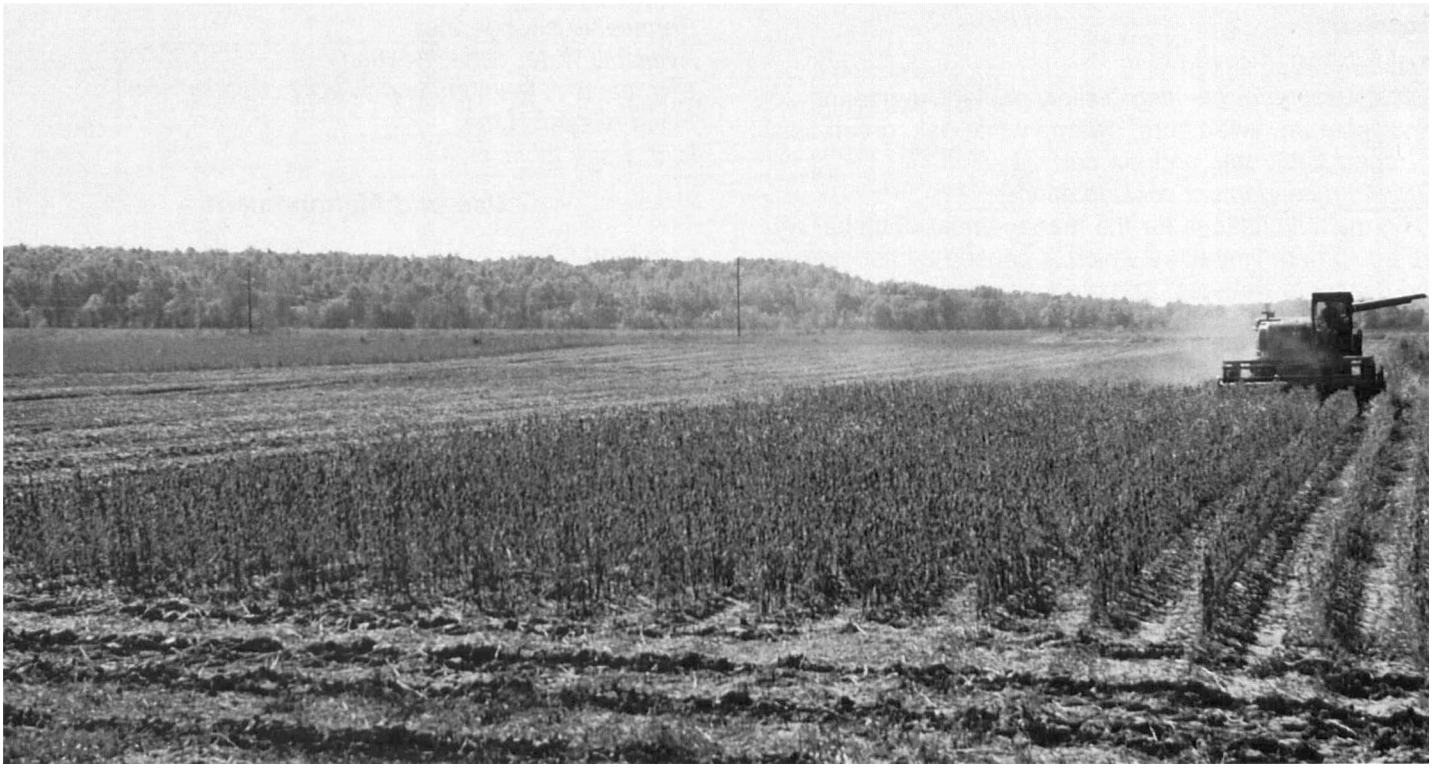


Figure 8.—Soybeans in an area of Lexington silt loam, 1 to 4 percent slopes, eroded. This soil is well suited to cropland.

LuD—Luverne fine sandy loam, 8 to 12 percent slopes

Setting

Landscape position: Strongly sloping side slopes
Shape of areas: Long and narrow
Size of areas: 5 to 80 acres
Major uses: Woodland, a few small areas of pasture

Typical Profile

Surface layer:
0 to 2 inches, dark grayish brown fine sandy loam

Subsurface layer:
2 to 5 inches, yellowish brown fine sandy loam

Subsoil:
5 to 10 inches, reddish brown clay loam
10 to 24 inches, red sandy clay
24 to 34 inches, reddish yellow sandy clay loam that has brownish mottles
34 to 45 inches, light gray clay that has reddish mottles
45 to 60 inches, light brown fine sandy loam that has reddish mottles

Inclusions

- A few small areas of Silerton soils on shoulder slopes
- Small, intermingled areas of Smithdale soils on side slopes
- Areas of the moderately well drained Dulac soils in slightly higher positions on side slopes

Important Soil Properties and Features

Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: Moderate
Soil reaction: Extremely acid to strongly acid
Flood hazard: None
High water table: None

Use and Management

Cropland

Suitability: Poorly suited
General management considerations:
- The main limitations are the size and shape of the map unit, the severe hazard of erosion, the slope, and the limited available water during dry years.

Suitable management practices:
• Because this unit has extensive limitations for crops, other areas that are more desirable for use as cropland should be selected.
Capability class: VIe

Pasture and hayland

Suitability: Suited
General management considerations:
• Pasture renovation is necessary when the better forage plants have decreased to a level less than that needed for optimum production.
• If the plants are overgrazed or if plant stands are poor, the slope increases the hazard of erosion.
• The low amount of available water reduces yields during dry summers.
Suitable management practices:
• The quality and quantity of forage can be maintained by rotating grazing, controlling weeds, and applying fertilizer annually.
• Forage plants that can tolerate droughty conditions should be selected.
• The hazard of erosion can be reduced by avoiding overgrazing, especially on the steeper slopes.

Woodland

Suitability: Suited to drought-tolerant species
Trees suitable for planting: Loblolly pine, white oak, mockernut hickory, chestnut oak, and eastern redcedar
General management considerations:
• The main limitations for the management of timber on this soil are the equipment limitation and plant competition.
Suitable management practices:
• Wheeled and tracked equipment can be used in the moderately steep areas, but logging and harvesting operations should be conducted during dry seasons from midsummer through early fall.
• Competing vegetation can be reduced by using controlled burning, applying herbicide, and girdling or cutting unwanted trees.

Residential and commercial uses

Suitability: Suited
General management considerations:
• Permeability in the subsoil is a major limitation for septic tank filter fields.
• Low strength is a major limitation for local roads and streets.
• The slope and the shrink-swell potential are limitations for dwellings and small commercial buildings.
Suitable management practices:
• Increasing the size of the septic tank absorption field and placing filter lines on the contour help to overcome the restricted permeability.
• If the soil is to be used as a base for roads and streets, mixing the upper part with coarser textured material will increase the soil's strength and stability.
• Proper building designs and the construction costs are the major considerations on sites that need to be excavated or filled to construct small commercial buildings or dwellings.
• Backfilling deep cuts with material that has a low shrink-swell potential and diverting runoff away from buildings help to prevent possible structural damage to dwellings.

LuD3—Luverne clay loam, 8 to 12 percent slopes, severely eroded

Setting

Landscape position: Strongly sloping side slopes
Shape of areas: Long and narrow
Size of areas: 5 to 50 acres
Major use: Woodland

Typical Profile

Surface layer:
0 to 4 inches, reddish brown clay loam
Subsoil:
4 to 20 inches, red sandy clay
20 to 30 inches, red sandy clay loam
30 to 42 inches, gray clay that has reddish and brownish mottles
42 to 50 inches, reddish yellow sandy loam that has yellowish and brownish mottles
50 to 60 inches, mottled red, yellowish red, light yellowish brown, and light gray sandy loam that has strata of loamy sand

Inclusions

• A few small areas of Silerton soils on shoulder slopes
• Small, intermingled areas of Smithdale soils on side slopes
• Areas of the moderately well drained Dulac soils in slightly higher positions on side slopes

Important Soil Properties and Features

Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: Moderate
Soil reaction: Extremely acid to strongly acid
Flood hazard: None
High water table: None

Use and Management

Cropland

Suitability: Poorly suited

General management considerations:
• The main limitations are the size and shape of the map unit, the severe hazard of erosion, the slope, and the limited available water during dry years.
Suitable management practices:
• Because this unit has extensive limitations for crops, other areas that are more desirable for use as cropland should be selected.
Capability class: VIe

Pasture and hayland

Suitability: Suited
General management considerations:
• Pasture renovation is necessary when the better forage plants have decreased to a level less than that needed for optimum production.
• If the plants are overgrazed or if plant stands are poor, the slope increases the hazard of erosion.
• The low amount of available water reduces yields during dry summers.
Suitable management practices:
• The quality and quantity of forage can be maintained by rotating grazing, controlling weeds, and applying fertilizer annually.
• Forage plants that can tolerate droughty conditions should be selected.
• The hazard of erosion can be reduced by avoiding overgrazing, especially on the steeper slopes.

Woodland

Suitability: Suited to drought-tolerant species
Trees suitable for planting: Loblolly pine, white oak, mockernut hickory, chestnut oak, and eastern redcedar
General management considerations:
• The main limitations for the management of timber on this soil are seedling mortality, the equipment limitation, and plant competition.
Suitable management practices:
• Planting hardier seedlings on north- and east-facing slopes and selecting drought-resistant species increase the seedling survival rate.
• Wheeled and tracked equipment can be used in the moderately steep areas, but logging and harvesting operations should be conducted during dry seasons from midsummer through early fall.
• Competing vegetation can be reduced by using controlled burning, applying herbicide, and girdling or cutting unwanted trees.

Residential and commercial uses

Suitability: Suited
General management considerations:
• Permeability in the subsoil is a major limitation for septic tank filter fields.
• Low strength is a major limitation for local roads and streets.
• The slope and the shrink-swell potential are limitations for dwellings and small commercial buildings.
Suitable management practices:
• Increasing the size of the septic tank absorption field and placing filter lines on the contour help to overcome the restricted permeability.
• If the soil is to be used as a base for roads and streets, mixing the upper part with coarser textured material will increase the soil's strength and stability.
• Proper building designs and the construction costs are the major considerations on sites that need to be excavated or filled to construct small commercial buildings and dwellings.
• Backfilling deep cuts with material that has a low shrink-swell potential and diverting runoff away from buildings help to prevent possible structural damage to dwellings.

LuE—Luverne fine sandy loam, 12 to 30 percent slopes

Setting

Landscape position: Hillsides
Shape of areas: Long and narrow
Size of areas: 10 to 250 acres
Major use: Woodland

Typical Profile

Surface layer:
0 to 2 inches, dark grayish brown fine sandy loam
Subsurface layer:
2 to 5 inches, yellowish brown fine sandy loam
Subsoil:
5 to 10 inches, reddish brown clay loam
10 to 24 inches, red sandy clay
24 to 34 inches, reddish yellow sandy clay loam that has brownish mottles
34 to 45 inches, light gray clay that has reddish mottles
45 to 60 inches, light brown fine sandy loam that has reddish mottles

Inclusions

• Intermingled areas of Smithdale soils on hillsides
• Small areas of the moderately well drained Dulac soils on shoulder slopes
• Small, severely eroded areas of soils that have a clay loam surface

Important Soil Properties and Features

Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: Moderate

Soil reaction: Extremely acid to strongly acid
Flood hazard: None
High water table: None

Use and Management

Cropland

Suitability: Unsuited
General management considerations:
• The unit is unsuited as cropland because of the slope and the severe hazard of erosion.
Capability class: VIIe

Pasture and hayland

Suitability: Poorly suited
General management considerations:
• This soil is poorly suited to hayland and pasture because of the steep slope, the severe hazard of erosion, and the limited available water during dry summers.

Woodland

Suitability: Suited to drought-tolerant species
Trees suitable for planting: Loblolly pine, white oak, mockernut hickory, chestnut oak, and eastern redcedar
General management considerations:
• The main limitations for the management of timber on this soil are the erosion hazard, the equipment limitation, and plant competition.
Suitable management practices:
• Seeding logging roads, skid trails, yarding paths, and landings to permanent plant cover reduces the hazard of erosion.
• Wheeled and tracked equipment can be used in the moderately steep areas, but logging and harvesting operations should be conducted during dry seasons from midsummer through early fall.
• Competing vegetation can be reduced by using controlled burning, applying herbicide, and girdling or cutting unwanted trees.

Residential and commercial uses

Suitability: Poorly suited
General management considerations:
• This soil is poorly suited to most residential and commercial uses because of the slope, the limited permeability in the subsoil, and the shrink-swell potential.

Oc—Ochlockonee fine sandy loam, occasionally flooded

Setting

Landscape position: Flood plains
Slope range: 0 to 2 percent
Shape of areas: Long and narrow
Size of areas: 5 to 200 acres
Major use: Cropland

Typical Profile

Surface layer:
0 to 8 inches, brown fine sandy loam
Substratum:
8 to 26 inches, brown fine sandy loam
26 to 60 inches, brown sandy loam that has brownish mottles

Inclusions

• A few small areas of the moderately well drained Iuka and somewhat poorly drained Enville soils in lower positions on the landscape near steep side slopes

Important Soil Properties and Features

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate
Soil reaction: Very strongly acid or strongly acid
Flood hazard: Occasional for very brief durations in winter and early spring
High water table: Seasonal, within a depth of 3 to 5 feet in winter and early spring

Use and Management

Cropland

Suitability: Well suited
General management considerations:
• Most locally adapted crops can be grown, and good yields can be attained.
• Small grain can be damaged by the occasional flooding.
Suitable management practices:
• Planting crops later in spring reduces the risk of damage caused by flooding.
• Small grain should be planted in the higher areas that are not subject to flooding.
Capability class: IIw

Pasture and hayland

Suitability: Well suited
General management considerations:
• Because of the flooding, only those hay and pasture plants that can tolerate short periods of wetness, such as fescue and white clover, should be selected.
Suitable management practices:
• The quality and quantity of forage can be maintained by rotating grazing, controlling weeds, and applying fertilizer annually.

Woodland

Suitability: Well suited

Trees suitable for planting: Black walnut, loblolly pine, yellow-poplar, American sycamore, sweetgum, and cherrybark oak
General management considerations:
• The main limitation for the management of timber is plant competition.
Suitable management practices:
• Site preparation, such as chopping, burning, and applying herbicide, reduces the immediate plant competition.

Residential and commercial uses

Suitability: Poorly suited
General management considerations:
• All residential and commercial uses are poorly suited to this soil because of the hazard of flooding.
Suitable management practices:
• The hazard of flooding can be reduced by locating dwellings, commercial structures, and roads and streets above the expected flood level.

OkB—Oktibbeha clay loam, 2 to 5 percent slopes

Setting

Landscape position: Gently sloping, upland ridgetops
Shape of areas: Irregular
Size of areas: 5 to 80 acres
Major uses: Woodland, pasture or hay, and a few small areas of cropland

Typical Profile

Surface layer:
0 to 4 inches, dark brown clay loam

Subsoil:
4 to 16 inches, red clay that has reddish mottles
16 to 24 inches, yellowish red clay that has grayish and brownish mottles
24 to 40 inches, mottled light olive brown, light brownish gray, and yellowish red clay

Substratum:
40 to 60 inches, pale yellow marly clay that has grayish and brownish mottles

Inclusions

• Small areas of the well drained Silerton and moderately well drained Dulac soils on small, convex knolls on narrow ridges

Important Soil Properties and Features

Drainage class: Moderately well drained
Permeability: Very slow
Available water capacity: Moderate
Soil reaction: Very strongly acid or strongly acid in the upper part, neutral to moderately alkaline in the lower part
Flood hazard: None
High water table: Perched, within a depth of 1 to 3 feet for short periods in winter

Use and Management

Cropland

Suitability: Suited
General management considerations:
• Accelerated erosion by water can remove valuable topsoil and adversely affect rooting depth.
• The texture of the subsoil restricts the rooting depth and makes cultivation difficult unless the soil is moist.
• The soil may be droughty in dry years, and yields are reduced.
Suitable management practices:
• Using practices such as no-till and contour stripcropping reduces the hazard of water erosion and runoff.
• Tilth can be improved or maintained and soil moisture can be increased by using a cropping system that includes grasses, legumes, or grass-legume mixtures; rotating crops; using minimum tillage; and growing cover crops.
Capability class: IIIe

Pasture and hayland

Suitability: Suited
General management considerations:
• Pasture renovation is necessary when the better forage plants have decreased to a level less than that needed for optimum production.
• If the plants are overgrazed or if plant stands are poor, the slope increases the hazard of erosion.
• The low available water reduces yields in most years.
Suitable management practices:
• The quality and quantity of forage can be maintained by rotating grazing, controlling weeds, and applying fertilizer annually.
• Forage plants that can tolerate droughty conditions should be selected.
• The hazard of erosion can be reduced by avoiding overgrazing, especially on the steeper slopes.

Woodland

Suitability: Suited to drought-tolerant species
Trees suitable for planting: Loblolly pine, eastern redcedar, southern red oak, white oak, and mockernut hickory
General management considerations:
• The main limitations for the management of timber on this soil are seedling mortality, the equipment limitation, and plant competition.

Suitable management practices:
• Selecting drought-resistance species and planting on north- or east-facing slopes reduce the seedling mortality rate.
• Wheeled and tracked equipment can be used, but logging and harvesting operations should be conducted during dry seasons from midsummer through early fall.
• Competing vegetation can be reduced by using controlled burning, applying herbicide, and girdling or cutting unwanted trees.

Residential and commercial uses

Suitability: Poorly suited
General management considerations:
• This soil is poorly suited to most residential and commercial uses because of the high shrink-swell potential and the very slow permeability in the subsoil.

OkC3—Oktibbeha clay, 5 to 8 percent slopes, severely eroded

Setting

Landscape position: Strongly sloping, upland ridgetops
Shape of areas: Irregular
Size of areas: 5 to 25 acres
Major uses: Woodland, a few areas of pasture

Typical Profile

Surface layer:
0 to 5 inches, reddish brown clay that has reddish mottles

Subsoil:
5 to 13 inches, red clay that has yellowish and brownish mottles
13 to 30 inches, yellowish red clay that has grayish and brownish mottles
30 to 38 inches, mottled light olive brown, light brownish gray, and yellowish red clay

Substratum:
38 to 60 inches, pale yellow marly clay that has olive, yellowish, and brownish mottles

Inclusions

• Small areas of the well drained Silerton and moderately well drained Dulac soils on small, convex knolls on narrow ridges
• Small areas of the well drained Sumter soils on shoulder slopes

Important Soil Properties and Features

Drainage class: Moderately well drained
Permeability: Very slow
Available water capacity: Moderate
Soil reaction: Very strongly acid or strongly acid in the upper part, neutral to moderately alkaline in the lower part
Flood hazard: None
High water table: Perched, within a depth of 1 to 3 feet for short periods

Use and Management

Cropland

Suitability: Poorly suited
General management considerations:
• This soil is poorly suited to cropland because of the hazard of erosion, the permeability and shrink-swell potential of the subsoil, the low available water during summer months, and the difficultly involved in tillage operations.
Suitable management practices:
• Areas used as cropland should only be cultivated on the contour, using a rotation system in which the land remains in a vegetative cover for several seasons following cultivation.
Capability class: VIe

Pasture and hayland

Suitability: Suited
General management considerations:
• Pasture renovation is necessary when the better forage plants have decreased to a level less than that needed for optimum production.
• If the plants are overgrazed or if plant stands are poor, the slope increases the hazard of erosion.
• The low available water reduces yields in most years.
Suitable management practices:
• The quality and quantity of forage can be maintained by rotating grazing, controlling weeds, and applying fertilizer annually.
• Forage plants that can tolerate droughty conditions should be selected.
• The hazard of erosion can be reduced by avoiding overgrazing, especially on the steeper slopes.

Woodland

Suitability: Suited to drought-tolerant species
Trees suitable for planting: Loblolly pine, eastern redcedar, southern red oak, white oak, and mockernut hickory
General management considerations:
• The main limitations for the management of timber on this soil are seedling mortality, the equipment limitation, and plant competition.
Suitable management practices:
• Selecting drought-resistance species and planting on north- or east-facing slopes reduce the seedling mortality rate.

• Wheeled and tracked equipment can be used, but logging and harvesting operations should be conducted during dry seasons from midsummer through early fall.
• Competing vegetation can be reduced by using controlled burning, applying herbicide, and girdling or cutting unwanted trees.

Residential and commercial uses

Suitability: Poorly suited
General management considerations:
• This soil is poorly suited to most residential and commercial uses because of the high shrink-swell potential, the low strength, and the very slow permeability in the subsoil.

OsD—Oktibbeha and Sumter soils, 8 to 20 percent slopes

Setting

Landscape position: Hillsides
Shape of areas: Long and narrow
Size of areas: 10 to 200 acres
Composition of the map unit: 55 percent Oktibbeha soil, 35 percent Sumter soil, and 10 percent included soils
Major use: Woodland

Typical Profile

Oktibbeha
Surface layer:
0 to 4 inches, dark brown clay loam

Subsoil:
4 to 16 inches, red clay that has reddish mottles
16 to 24 inches, yellowish red clay that has grayish and brownish mottles
24 to 40 inches, mottled light olive brown, light brownish gray, and yellowish red clay

Substratum:
40 to 60 inches, pale yellow marly clay that has grayish and brownish mottles

Sumter
Surface layer:
0 to 4 inches, grayish brown silty clay

Subsoil:
4 to 10 inches, olive silty clay that has brownish and yellowish mottles
10 to 23 inches, pale yellow silty clay that has brownish, yellowish, and grayish mottles
10 to 23 inches, pale yellow silty clay that has brownish, olive, and grayish mottles

Substratum:
23 to 32 inches, variegated brown, light olive gray, light gray, and olive yellow marly silty clay
32 to 60 inches, light gray chalk

Inclusions

• Areas that have chalk outcrops at the surface in lower positions on side slopes
• Small areas of Silerton and Luverne soils on shoulder slopes
• Small areas of the poorly drained Una soils in narrow drainageways

Important Soil Properties and Features

Drainage class: Oktibbeha—moderately well drained; Sumter—well drained
Permeability: Oktibbeha—very slow; Sumter—slow
Available water capacity: Oktibbeha—moderate; Sumter—moderate or low
Soil reaction: Oktibbeha—very strongly to strongly acid in the upper part and neutral to moderately alkaline in the lower part; Sumter—neutral to moderately alkaline
Flood hazard: None
High water table: Oktibbeha—perched for short periods in winter from a depth of 1 to 3 feet; Sumter—none

Use and Management

Cropland

Suitability: Unsuited
General management considerations:
• This map unit is unsuited to crops because of the slope, the depth to rock, the limited available water, the permeability in the subsoil, and the high shrink-swell potential.
Capability class: VIIe

Pasture and hayland

Suitability: Poorly suited
General management considerations:
• The slope, the low available water, the hazard of erosion, and the depth to rock are major limitations for the use of this map unit as pasture.
Suitable management practices:
• The quality and quantity of forage can be maintained by rotating grazing, controlling weeds, and applying fertilizer annually.
• Forage plants that can tolerate droughty conditions should be selected.
• The hazard of erosion can be reduced by avoiding overgrazing, especially on the steeper slopes.

Woodland

Suitability: Suited to drought-tolerant species
Trees suitable for planting: Eastern redcedar, white oak, chestnut oak, loblolly pine, and Virginia pine

General management considerations:
• The main limitations for the management of timber in this map unit are seedling mortality, the hazard of erosion, the equipment limitation, and plant competition.
Suitable management practices:
• Selecting drought-tolerant species and planting hardier seedlings on north- or east-facing slopes increases the survival rate of seedlings.
• Steep yarding paths, skid trails, fire breaks, and landings are subject to rilling and gullying unless they are provided with adequate water bars, are protected by plant cover, or both.
• Wheeled and tracked equipment can be used in the most areas, but planting and harvesting operations should be conducted during dry seasons from midsummer through early fall.
• Site preparation, such as chopping, burning, applying herbicide, and girdling or cutting unwanted trees, reduces the immediate plant competition.

Residential and commercial uses

Suitability: Poorly suited
General management considerations:
• This map unit is poorly suited to most residential and commercial uses because of the slope, the permeability in the subsoil, the depth to rock, and the high shrink-well potential.

PaB—Paden silt loam, 2 to 5 percent slopes

Setting

Landscape position: High terraces of the Tennessee River
Shape of areas: Irregular
Size of areas: 5 to 400 acres
Major uses: Cropland, a few areas of pasture and hay

Typical Profile

Surface layer:
0 to 8 inches, dark brown silt loam

Subsurface layer:
8 to 12 inches, brown silt loam

Subsoil:
12 to 18 inches, strong brown silt loam
18 to 28 inches, yellowish brown silt loam that has brownish mottles
28 to 32 inches, light brownish gray and yellowish brown silt loam that has brownish mottles
32 to 46 inches, yellowish brown silty clay loam fragipan that has grayish, brownish, and reddish mottles
46 to 60 inches, mottled red, yellowish brown, and gray clay loam

Inclusions

• A few areas of the well drained Pickwick soils on small, convex knolls
• Small areas of the well drained Saffell soils in slightly higher positions on ridges in the Pebble Hill and Michie areas of the county

Important Soil Properties and Features

Drainage class: Moderately well drained
Permeability: Moderate above the fragipan, slow in the fragipan
Available water capacity: High
Soil reaction: Very strongly acid or strongly acid
Flood hazard: None
High water table: Perched, within a depth of 1.5 to 3 feet in winter and early spring

Use and Management

Cropland

Suitability: Well suited
General management considerations:
• Most climatically adapted crops grow well if they are managed to prevent erosion.
• The seasonal wetness in winter and spring can restrict rooting depth and inhibit plant germination.
Suitable management practices:
• Planting cover crops, using a crop rotation system, returning crop residue to the soil, and using conservation tillage practices reduce the hazard of erosion and increase soil moisture.
• Planting crops later in the spring improves plant germination and early growth.
Capability class: IIe

Pasture and hayland

Suitability: Well suited
General management considerations:
• Because of the seasonal wetness, only those hay and pasture plants that can tolerate short periods of wetness, such as fescue and white clover, should be selected.
• A perched water table limits grazing for several days at a time during the winter and early spring.
Suitable management practices:
• Grazing should be deferred until a period from late in spring to early fall.
• The quality and quantity of forage can be maintained by rotating grazing, controlling weeds, and applying fertilizer annually.

Woodland

Suitability: Well suited
Trees suitable for planting: Black walnut, white oak, southern red oak, yellow-poplar, and loblolly pine

General management considerations:
• The main limitation for the management of timber on this soil is plant competition.
Suitable management practices:
• Site preparation, such as chopping, burning, and applying herbicide, reduces the immediate plant competition.

Residential and commercial uses

Suitability: Poorly suited
General management considerations:
• A seasonally perched water table and restricted permeability in the subsoil are major limitations for septic tank absorption fields.
• The low strength is a major limitation for local roads and streets.
• The seasonal wetness is a limitation for dwellings with basements and small commercial buildings.
Suitable management practices:
• Using subsurface drains or open ditches lowers the water table around areas to be used for septic tank filter fields and dwellings with basements.
• Increasing the size of the absorption field or adding suitable fill material on the surface helps to overcome the restricted permeability.
• If the soil is to be used as a base for roads and streets, mixing the upper part with coarser textured material will increase the soil's strength and stability.
• Providing drainage and diverting runoff away from foundations reduce the wetness around small commercial buildings and dwellings.

PaB3—Paden silt loam, 2 to 5 percent slopes, severely eroded

Setting

Landscape position: High terraces of the Tennessee River
Shape of areas: Irregular
Size of areas: 5 to 150 acres
Major uses: Cropland, some areas of pasture and hay

Typical Profile

Surface layer:
0 to 5 inches, dark yellowish brown silt loam that has brownish mottles

Subsoil:
5 to 18 inches, strong brown silt loam
18 to 21 inches, yellowish brown and light gray silt loam
21 to 41 inches, yellowish brown silty clay loam fragipan that has grayish and brownish mottles
41 to 60 inches, yellowish red clay loam that has brownish mottles

Inclusions

• Small areas of the well drained Pickwick soils on slight, convex knolls
• Small areas of the well drained Saffell soils in slightly higher positions on ridges in the Pebble Hill and Michie areas of the county

Important Soil Properties and Features

Drainage class: Moderately well drained
Permeability: Moderate above the fragipan, slow in the fragipan
Available water capacity: Moderate
Soil reaction: Very strongly acid or strongly acid
Flood hazard: None
High water table: Perched, within a depth of 1.5 to 3 feet in winter and early spring

Use and Management

Cropland

Suitability: Suited
General management considerations:
• Accelerated erosion by water can remove valuable topsoil and adversely affect rooting depth.
• The seasonal wetness in winter and spring can inhibit plant germination and restrict rooting depth.
• Plants may experience moisture stress during dry periods in summer because of the limited available water.
Suitable management practices:
• Using practices such as no-till and contour stripcropping reduces the hazard of water erosion and runoff.
• Planting crops later in the spring improves plant germination and early growth.
• Planting cover crops, using a crop rotation system, returning crop residue to the soil, and using conservation tillage practices increase soil moisture.
Capability class: IIIe

Pasture and hayland

Suitability: Well suited
General management considerations:
• Because of the seasonal wetness, plants that can tolerate short periods of wetness, such as fescue and white clover, should be selected.
• A perched water table limits grazing for several days at a time during the winter and early spring.
• Yields of hay can be moderate or low in dry years because of the reduced available water.
Suitable management practices:
• Grazing should be deferred until a period from late in spring to early fall.
• The quality and quantity of forage can be maintained by rotating grazing, controlling weeds, and applying fertilizer annually.

Woodland

Suitability: Well suited
Trees suitable for planting: Black walnut, white oak, southern red oak, yellow-poplar, eastern white pine, and loblolly pine
General management considerations:
• The main limitation for the management of timber on this soil is plant competition.
Suitable management practices:
• Site preparation, such as chopping, burning, and applying herbicide, reduces the immediate plant competition.

Residential and commercial uses

Suitability: Poorly suited
General management considerations:
• A seasonally perched water table and restricted permeability in the subsoil are major limitations for septic tank absorption fields.
• Low strength is a major limitation for local roads and streets.
• The seasonal wetness is a limitation for dwellings with basements and small commercial buildings.
Suitable management practices:
• Using subsurface drains or open ditches lowers the water table around areas to be used for septic tank filter fields.
• If the soil is to be used as a base for roads and streets, mixing the upper part with coarser textured material will increase the soil's strength and stability.
• Providing drainage reduces the wetness around small commercial buildings and dwellings.

PkB—Pickwick silt loam, 2 to 5 percent slopes

Setting

Landscape position: High terraces of the Tennessee River
Shape of areas: Irregular
Size of areas: 5 to 50 acres
Major use: Cropland

Typical Profile

Surface layer:
0 to 7 inches, dark brown silt loam

Subsoil:
7 to 21 inches, yellowish red silty clay loam
21 to 40 inches, yellowish red silty clay loam that has brownish mottles
40 to 60 inches, yellowish red clay loam that has brownish mottles

Inclusions

• A few areas of the moderately well drained Paden soils in saddles and slight depressions
• A few areas of the well drained Saffell soils in slightly higher positions on ridges near the communities of Pebble Hill and Michie

Important Soil Properties and Features

Drainage class: Well drained
Permeability: Moderate
Available water capacity: High
Soil reaction: Very strongly acid or strongly acid
Flood hazard: None
High water table: None

Use and Management

Cropland

Suitability: Well suited
General management considerations:
• Most locally adapted crops can be grown, and good yields can be attained.
• This soil is subject to erosion, which can result in the removal of valuable topsoil.
Suitable management practices:
• No-till planting, contour farming, and stripcropping can help to control erosion and maintain productivity.
Capability class: IIe

Pasture and hayland

Suitability: Well suited
General management considerations:
• This soil has no significant limitations for forage production if erosion is controlled.
Suitable management practices:
• The quality and quantity of forage can be maintained by rotating grazing, controlling weeds, and applying fertilizer annually.

Woodland

Suitability: Well suited
Trees suitable for planting: Yellow-poplar, black walnut, white oak, southern red oak, mockernut hickory, eastern white pine, and loblolly pine
General management considerations:
• The main limitation for the management of timber on this soil is plant competition.
Suitable management practices:
• Site preparation, such as chopping, burning, and applying herbicide, reduces the immediate plant competition.

Residential and commercial uses

Suitability: Well suited
General management considerations:
• Low strength is a limitation for local roads and streets.

• Permeability in the subsoil is a limitation for septic tank absorption fields.
Suitable management practices:
• If the soil is to be used as a base for roads and streets, mixing the upper part with coarser textured material will increase the soil's strength and stability.
• Increasing the size of the septic tank absorption area helps to overcome the restricted permeability.

PkC3—Pickwick silty clay loam, 5 to 12 percent slopes, severely eroded

Setting

Landscape position: High terraces of the Tennessee River
Shape of areas: Irregular
Size of areas: 5 to 30 acres
Major uses: Cropland, woodland

Typical Profile

Surface layer:
0 to 3 inches, strong brown silty clay loam that has reddish mottles

Subsoil:
3 to 10 inches, yellowish red silty clay loam
10 to 38 inches, red silty clay loam that has brownish mottles
38 to 60 inches, red clay loam

Inclusions

• A few areas of the moderately well drained Paden soils in saddles and slight depressions
• A few areas of the well drained Saffell soils in slightly higher positions on ridges near the communities of Pebble Hill and Michie

Important Soil Properties and Features

Drainage class: Well drained
Permeability: Moderate
Available water capacity: High
Soil reaction: Very strongly acid or strongly acid
Flood hazard: None
High water table: None

Use and Management

Cropland

Suitability: Suited
General management considerations:
• This soil should not be used continuously as cropland because of the slope and the high erosion potential.
Suitable management practices:
• Areas used as cropland should only be cultivated on the contour, using a rotation system in which the land remains in a vegetative cover for several seasons following cultivation.
• Using practices such as no-till planting and stripcropping can help to control erosion and maintain productivity.
Capability class: IVe

Pasture and hayland

Suitability: Well suited
General management considerations:
• This soil has no significant limitations for forage production if erosion is controlled.
Suitable management practices:
• The quality and quantity of forage can be maintained by rotating grazing, controlling weeds, and applying fertilizer annually.

Woodland

Suitability: Well suited
Trees suitable for planting: Yellow-poplar, black walnut, white oak, southern red oak, mockernut hickory, eastern white pine, and loblolly pine
General management considerations:
• The main limitations for the management of timber are the erosion hazard and plant competition.
Suitable management practices:
• Yarding paths, skid trails, fire breaks, and landings are subject to rilling and gullying unless they are provided with adequate water bars, are protected by plant cover, or both.
• Site preparation, such as chopping, burning, and applying herbicide, reduces the immediate plant competition.

Residential and commercial uses

Suitability: Suited
General management considerations:
• Low strength is a limitation for local roads and streets.
• The slope and the permeability of the subsoil are limitations for septic tank absorption fields.
• The slope is a limitation for dwellings and small commercial buildings.
Suitable management practices:
• If the soil is to be used as a base for roads and streets, mixing the upper part with coarser textured material will increase the soil's strength and stability.
• Increasing the size of the septic tank absorption area and placing filter lines on the contour help to overcome the slope and restricted permeability.
• Proper building designs and the construction costs are the major considerations on sites that need to be excavated or filled to construct dwellings or small commercial buildings.

PrB—Providence silt loam, 2 to 5 percent slopes

Setting

Landscape position: Upland ridgetops and high stream terraces
Shape of areas: Irregular and long and narrow
Size of areas: 5 to 150 acres
Major uses: Woodland, cropland

Typical Profile

Surface layer:
0 to 5 inches, yellowish brown silt loam

Subsoil:
5 to 22 inches, reddish brown silty clay loam
22 to 35 inches, yellowish red silty clay loam fragipan that has brownish and grayish mottles
35 to 52 inches, yellowish red loam fragipan that has brownish and grayish mottles
52 to 60 inches, mottled yellowish red, gray, and brownish yellow sandy clay loam

Inclusions

• Small areas of the well drained Lexington soils on small, convex knolls
• Intermingled areas of Smithdale soils on narrow ridgetops
• A few areas of Freeland soils in slightly lower positions on stream terraces

Important Soil Properties and Features

Drainage class: Moderately well drained
Permeability: Moderate above the fragipan, slow in the fragipan
Available water capacity: Moderate
Soil reaction: Strongly acid or very strongly acid
Flood hazard: None
High water table: Perched, within a depth of 1.5 to 3.0 feet in winter and early spring

Use and Management

Cropland

Suitability: Well suited
General management considerations:
• Most climatically adapted crops grow well if they are managed to control erosion.
• The seasonal wetness in winter and spring can restrict rooting depth and inhibit plant germination.
Suitable management practices:
• Planting cover crops, using a crop rotation system, returning crop residue to the soil, and using conservation tillage practices reduce the hazard of erosion and increase soil moisture.
• Planting crops later in the spring improves plant germination and early growth.
Capability class: IIe

Pasture and hayland

Suitability: Well suited
General management considerations:
• Because of the seasonal wetness, only those hay and pasture plants that can tolerate short periods of wetness, such as fescue and white clover, should be selected.
• A perched water table limits grazing for several days at a time during the winter and early spring.
Suitable management practices:
• Grazing should be deferred until a period from late in spring to early fall.
• The quality and quantity of forage can be maintained by rotating grazing, controlling weeds, and applying fertilizer annually.

Woodland

Suitability: Well suited
Trees suitable for planting: Black walnut, white oak, southern red oak, yellow-poplar, and loblolly pine
General management considerations:
• The main limitation for the management of timber on this soil is plant competition.
Suitable management practices:
• Site preparation, such as chopping, burning, and applying herbicide, reduces the immediate plant competition.

Residential and commercial uses

Suitability: Poorly suited
General management considerations:
• A seasonally perched water table and restricted permeability in the subsoil are major limitations for septic tank absorption fields.
• Low strength is a major limitation for local roads and streets.
• The seasonal wetness is a limitation for dwellings with basements and small commercial buildings.
Suitable management practices:
• Using subsurface drains or open ditches lowers the water table around areas to be used for septic tank filter fields and dwellings with basements.
• Increasing the size of the absorption field or adding suitable fill material on the surface helps to overcome the restricted permeability.
• If the soil is to be used as a base for roads and streets, mixing the upper part with coarser textured material will increase the soil's strength and stability.
• Providing drainage and diverting runoff away from foundations reduce the wetness around small commercial buildings and dwellings.

PrC3—Providence silty clay loam, 5 to 8 percent slopes, severely eroded

Setting

Landscape position: Upland ridgetops and high stream terraces
Shape of areas: Irregular and long and narrow
Size of areas: 5 to 50 acres
Major uses: Woodland, cropland

Typical Profile

Surface layer:
0 to 4 inches, yellowish brown silty clay loam that has brownish mottles

Subsoil:
4 to 18 inches, reddish brown silty clay loam
18 to 28 inches, yellowish red silty clay loam fragipan that has brownish and grayish mottles
28 to 50 inches, yellowish red loam fragipan that has brownish and grayish mottles
50 to 60 inches, yellowish red sandy clay loam that has grayish and yellowish mottles

Inclusions

• Intermingled areas of Smithdale soils on narrow ridgetops
• A few areas of Freeland soils in slightly lower positions on stream terraces

Important Soil Properties and Features

Drainage class: Moderately well drained
Permeability: Moderate above the fragipan, slow in the fragipan
Available water capacity: Moderate
Soil reaction: Strongly acid or very strongly acid
Flood hazard: None
High water table: Perched, within a depth of 1.5 to 3.0 feet in winter and early spring

Use and Management

Cropland

Suitability: Suited
General management considerations:
• This soil should not be used continuously as cropland because of the slope and the high erosion potential.
• Accelerated erosion by water removes valuable topsoil and adversely affects rooting depth.
• Plants may experience moisture stress during dry periods in summer because of the limited available water.
• The seasonal wetness in winter and spring can restrict rooting depth and inhibit plant germination.
Suitable management practices:
• Using practices such as no-till and contour stripcropping reduces the hazard of water erosion and runoff.
• Planting cover crops, using a crop rotation system, returning crop residue to the soil, and using conservation tillage practices increase soil moisture.
• Planting crops later in the spring improves plant germination and early growth.
Capability class: IVe

Pasture and hayland

Suitability: Well suited
General management considerations:
• Because of the seasonal wetness, only those hay and pasture plants that can tolerate short periods of wetness, such as fescue and white clover, should be selected.
• A perched water table limits grazing for several days at a time during the winter and early spring.
• In some areas, the yields of hay may be reduced in dry years because of reduced available water.
Suitable management practices:
• Grazing should be deferred until a period from late in spring to early fall.
• The quality and quantity of forage can be maintained by rotating grazing, controlling weeds, and applying fertilizer annually.

Woodland

Suitability: Well suited
Trees suitable for planting: Black walnut, white oak, southern red oak, yellow-poplar, and loblolly pine
General management considerations:
• The main limitation for the management of timber on this soil is plant competition.
Suitable management practices:
• Site preparation, such as chopping, burning, and applying herbicide, reduces the immediate plant competition.

Residential and commercial uses

Suitability: Poorly suited
General management considerations:
• A seasonally perched water table and restricted permeability in the subsoil are major limitations for septic tank absorption fields.
• Low strength is a major limitation for local roads and streets.
• The seasonal wetness is a limitation for dwellings with basements and small commercial buildings.
Suitable management practices:
• Using subsurface drains or open ditches lowers the water table around areas to be used for septic tank filter fields and dwellings with basements.
• Increasing the size of the absorption field or adding suitable fill material on the surface helps to overcome the restricted permeability.

• If the soil is to be used as a base for roads and streets, mixing the upper part with coarser textured material will increase the soil's strength and stability.
• Providing drainage and diverting runoff away from foundations reduce the wetness around small commercial buildings and dwellings.

PrD3—Providence silty clay loam, 8 to 15 percent slopes, severely eroded

Setting

Landscape position: Strongly sloping upland side slopes
Shape of areas: Irregular
Size of areas: 5 to 25 acres
Major uses: Woodland, a few areas of pasture

Typical Profile

Surface layer:
0 to 4 inches, yellowish brown silty clay loam that has brownish mottles

Subsoil:
4 to 18 inches, reddish brown silty clay loam
18 to 28 inches, yellowish red silty clay loam fragipan that has brownish and grayish mottles
28 to 50 inches, yellowish red loam fragipan that has brownish and grayish mottles
50 to 60 inches, yellowish red sandy clay loam that has grayish and yellowish mottles

Inclusions

• Intermingled areas of the well drained Smithdale soils on side slopes

Important Soil Properties and Features

Drainage class: Moderately well drained
Permeability: Moderate above the fragipan, slow in the fragipan
Available water capacity: Moderate or low
Soil reaction: Strongly acid or very strongly acid
Flood hazard: None
High water table: Perched, within a depth of 1.5 to 3.0 feet in winter and early spring

Use and Management

Cropland

Suitability: Poorly suited
General management considerations:
• The slope, the high hazard of erosion, the rooting depth, and the low available water are major limitations for the use of this soil as cropland.
Suitable management practices:
• Because this unit has extensive limitations for crops, other areas that are more desirable for use as cropland should be selected.
Capability class: VIe

Pasture and hayland

Suitability: Suited
General management considerations:
• The low amount of available water causes the soil to be droughty and reduces the yields.
• If the plants are overgrazed or if plant stands are poor, the slope increases the hazard of erosion.
Suitable management practices:
• Forage plants that can tolerate droughty conditions should be selected.
• Stocking rates should to be adjusted to prevent overgrazing and help prevent erosion.

Woodland

Suitability: Suited
Trees suitable for planting: Black walnut, white oak, southern red oak, yellow-poplar, and loblolly pine
General management considerations:
• The main limitations for the management of timber on this soil are the hazard of erosion and plant competition.
Suitable management practices:
• Seeding logging roads and skid trails to permanent plant cover reduces the hazard of erosion.
• Site preparation, such as chopping, burning, and cutting or girdling unwanted trees, reduces the immediate plant competition.

Residential and commercial uses

Suitability: Poorly suited
General management considerations:
• The slope, a seasonally perched water table, and the restricted permeability in the subsoil are major limitations for septic tank absorption fields.
• Low strength is a major limitation for local roads and streets.
• The slope and the seasonal wetness are limitations for dwellings and small commercial buildings.
Suitable management practices:
• Using subsurface drains diverts or lowers the water table around areas to be used for septic tank filter fields and dwellings with basements.
• Increasing the size of the absorption field and placing field lines on the contour help to overcome the restricted permeability.
• If the soil is to be used as a base for roads and streets, mixing the upper part with coarser textured material will increase the soil's strength and stability.
• Providing drainage and diverting runoff away from foundations reduce the wetness around small commercial buildings and dwellings.
• Proper building designs and the construction costs are the major considerations on sites that need to be

excavated or filled to construct dwellings or small commercial buildings.

Pt—Pits, gravel

This unit consists of areas that are actively used as gravel pits in the Pebble Hill and Michie communities. The overburden has been removed, and the exposed gravel deposits remain. The gravel is used in the transportation and construction industries. The sidewalls commonly consist of Saffell soils, and they extend to over 10 feet deep in most pits. Generally, an adjacent area is used to deposit the soil overburden. These spoil areas will be used later, when the area is being reclaimed to vegetation. Several areas are in the process of reclamation. Under proper management, these reclaimed areas support vegetation, generally loblolly pine and eastern redcedar. Slopes are variable and generally range from 10 to 25 percent.

This map unit is not assigned a capability class.

SaC—Saffell gravelly sandy loam, 5 to 12 percent slopes

Setting

Landscape position: High terraces of the Tennessee River
Shape of areas: Narrow, undulating ridgetops
Size of areas: 5 to 25 acres
Major uses: Woodland, gravel pits

Typical Profile

Surface layer:
0 to 2 inches, dark brown gravelly sandy loam

Subsurface layer:
2 to 6 inches, brown gravelly sandy loam

Subsoil:
6 to 16 inches, yellowish red gravelly fine sandy loam
16 to 22 inches, yellowish red very gravelly clay loam
22 to 46 inches, red very gravelly sandy clay loam
46 to 60 inches, red very gravelly sandy loam

Inclusions

- A few small areas of Pickwick soils in less sloping, slightly lower positions on the landscape
- A few small areas of the moderately well drained Paden soils in saddles

Important Soil Properties and Features

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Low
Soil reaction: Very strongly acid or strongly acid
Flood hazard: None
High water table: None

Use and Management

Cropland

Suitability: Poorly suited
General management considerations:
- This soil is poorly suited as cropland because of the shape and size of the map unit, the low available water, and the slope and because the content of gravel in the surface and subsoil hinders cultivation.

Suitable management practices:
- If areas of this soil are to be used as cropland, practices such as no-till and minimum tillage are recommended.
- Tilth can be improved or maintained and soil moisture can be increased by using a cropping system that leaves the land in grasses, legumes, or grass-legume mixtures for several seasons following cultivation.

Capability class: IVs

Pasture and hayland

Suitability: Suited
General management considerations:
- The low available water reduces hay yields in most years.
- Pasture renovation is necessary when the better forage plants have decreased to a level less than that needed for optimum production.

Suitable management practices:
- Forage plants that can tolerate droughty conditions should be selected.
- The quality and quantity of forage can be maintained by rotating grazing, controlling weeds, and applying fertilizer annually.

Woodland

Suitability: Suited to drought-tolerant species
Trees suitable for planting: White oak, chestnut oak, loblolly pine, mockernut hickory, and eastern redcedar
General management considerations:
- The main limitation for the management of timber on this soil is plant competition.

Suitable management practices:
- Site preparation, such as chopping, burning, and applying herbicide, reduces the immediate plant competition.

Residential and commercial uses

Suitability: Suited
General management considerations:
- The slope and the seepage that occurs in downslope areas are limitations for septic tank absorption fields.

• The slope is a limitation for dwellings, small commercial buildings, and local roads and streets.
Suitable management practices:
• Installing septic tank filter fields on the contour and avoiding placing the lines in the very gravelly substratum help to overcome the problems associated with the slope and seepage.
• Proper building designs and the construction costs are the major considerations on sites that need to be excavated or filled to construct dwellings or small commercial buildings.
• Placing roads and streets in less sloping areas reduces the amount of cut and fill needed.

SaE—Saffell gravelly sandy loam, 12 to 30 percent slopes

Setting

Landscape position: Steep terrace side slopes
Shape of areas: Long and narrow
Size of areas: 5 to 100 acres
Major use: Woodland

Typical Profile

Surface layer:
0 to 2 inches, dark brown gravelly sandy loam
Subsurface layer:
2 to 6 inches, brown gravelly sandy loam
Subsoil:
6 to 16 inches, yellowish red gravelly fine sandy loam
16 to 22 inches, yellowish red very gravelly sandy clay loam
22 to 46 inches, red very gravelly sandy clay loam
46 to 60 inches, red very gravelly sandy loam

Inclusions

• A few small areas of Pickwick soils in less sloping, slightly lower positions on the landscape

Important Soil Properties and Features

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Low
Soil reaction: Very strongly acid or strongly acid
Flood hazard: None
High water table: None

Use and Management

Cropland

Suitability: Poorly suited
General management considerations:
• This soil is poorly suited as cropland because of the slope and the low available water and because the high content of gravel in the surface and subsoil can hinder cultivation.
Capability class: VIIs

Pasture and hayland

Suitability: Poorly suited
General management considerations:
• The low amount of available water causes the soil to be droughty and reduces yields.
• If the plants are overgrazed or if plant stands are poor, the slope increases the hazard of erosion.
Suitable management practices:
• Forage plants that can tolerate droughty conditions should be selected.
• Stocking rates should be adjusted to reduce the hazard of erosion and prevent overgrazing on the steeper slopes.
• Pasture in areas that have more than 20 percent slopes may be too steep and gravelly for the safe operation of farm equipment.

Woodland

Suitability: Suited to drought-tolerant trees
Trees suitable for planting: White oak, chestnut oak, loblolly pine, mockernut hickory, and eastern redcedar
General management considerations:
• The main limitations for the management of timber on this soil are the erosion hazard, the equipment limitation, seedling mortality, and plant competition.
Suitable management practices:
• Seeding logging roads, skid trails, yarding paths, and landings to permanent plant cover reduces the hazard of erosion.
• Coarse fragments in the surface and subsoil may require special planning or equipment for harvesting and planting operations.
• Planting hardier seedlings on north- and east-facing slopes increases the seedling survival rate.
• Site preparation, such as burning, applying herbicide, and girdling or cutting unwanted trees, reduces the immediate plant competition.

Residential and commercial uses

Suitability: Poorly suited
General management considerations:
• The slope is a severe limitation for all residential and commercial uses in areas of this soil.

SeB—Silerton silt loam, 2 to 5 percent slopes

Setting

Landscape position: Broad, gently sloping, upland ridgetops

Shape of areas: Irregular
Size of areas: 5 to 100 acres
Major uses: Cropland, pasture

Typical Profile

Surface layer:
0 to 8 inches, brown silt loam that has brownish mottles

Subsoil:
8 to 18 inches, strong brown silty clay loam
18 to 28 inches, strong brown silty clay loam that has brownish mottles
28 to 35 inches, mottled yellowish brown, yellowish red, red, and pale brown clay
35 to 60 inches, mottled gray, strong brown, red, and brownish yellow clay

Inclusions

- A few small areas of the moderately well drained Dulac soils in saddles and on gentle flats
- A few severely eroded areas of soils that have a surface texture of clay

Important Soil Properties and Features

Drainage class: Well drained
Permeability: Moderate in the upper part, slow in the lower part
Available water capacity: High
Soil reaction: Very strongly acid or strongly acid
Flood hazard: None
High water table: None

Use and Management

Cropland

Suitability: Well suited
General management considerations:
- Most climatically adapted crops grow well if they are managed to control erosion.

Suitable management practices:
- Using practices such as no-till and contour stripcropping reduces the hazard of water erosion and runoff.

Capability class: IIe

Pasture and hayland

Suitability: Well suited
General management considerations:
- This soil has no significant limitations for forage production if erosion is controlled.

Suitable management practices:
- The quality and quantity of forage can be maintained by rotating grazing, controlling weeds, and applying fertilizer annually.

Woodland

Suitability: Well suited
Trees suitable for planting: Yellow-poplar, black walnut, white oak, southern red oak, mockernut hickory, and loblolly pine
General management considerations:
- The main limitation for the management of timber on this soil is plant competition.

Suitable management practices:
- Site preparation, such as chopping, burning, and applying herbicide, reduces the immediate plant competition.

Residential and commercial uses

Suitability: Suited
General management considerations:
- The permeability in the subsoil is a major limitation for septic tank filter fields.
- The shrink-swell potential in the lower part of the subsoil is a limitation for dwellings with basements.
- Low strength is a limitation for local roads and streets.

Suitable management practices:
- Increasing the size of the septic tank absorption field or mounding the areas used for filter lines with a more suitable material help to overcome the restricted permeability.
- Backfilling deep cuts with material that has a low shrink-swell potential and diverting runoff away from buildings help to prevent possible structural damage to dwellings.
- If the soil is to be used as a base for roads and streets, mixing the upper part with coarser textured material will increase the soil's strength and stability.

SeC2—Silerton silt loam, 5 to 8 percent slopes, eroded

Setting

Landscape position: Sloping, upland ridgetops and side slopes
Shape of areas: Irregular
Size of areas: 5 to 75 acres
Major uses: Cropland, woodland

Typical Profile

Surface layer:
0 to 6 inches, yellowish brown silt loam that has brownish mottles

Subsoil:
6 to 22 inches, strong brown silty clay loam that has brownish and reddish mottles
22 to 40 inches, yellowish red clay that has brownish and yellowish mottles
40 to 60 inches, mottled yellowish brown, red, and reddish yellow clay

Inclusions

• Small areas of soils on steeper slopes along small drainageways
• A few small, severely eroded areas of soils that have a surface texture of clay
• Small areas of the moderately well drained Dulac soils in saddles

Important Soil Properties and Features

Drainage class: Well drained
Permeability: Moderate in the upper part, slow in the lower part
Available water capacity: High
Soil reaction: Very strongly acid or strongly acid
Flood hazard: None
High water table: None

Use and Management

Cropland

Suitability: Suited
General management considerations:
• Accelerated erosion by water can remove valuable topsoil and adversely affect rooting depth.
Suitable management practices:
• Using conservation practices such as no-till and contour stripcropping reduces the hazard of water erosion and runoff.
• Tilth can be improved or maintained by using a cropping system that includes grasses, legumes, or grass-legume mixtures; rotating crops; using minimum tillage; and growing cover crops.
Capability class: IIIe

Pasture and hayland

Suitability: Well suited
General management considerations:
• If the plants are overgrazed or if plant stands are poor, the slope increases the hazard of erosion.
Suitable management practices:
• The quality and quantity of forage can be maintained by rotating grazing, controlling weeds, and applying fertilizer annually.

Woodland

Suitability: Suited
Trees suitable for planting: Yellow-poplar, black walnut, white oak, southern red oak, mockernut hickory, and loblolly pine
General management considerations:
• The main limitations for the management of timber on this soil are the erosion hazard and plant competition.
Suitable management practices:
• Yarding paths, skid trails, fire breaks, and landings are subject to rilling and gullying unless they are provided with adequate water bars, are protected by plant cover, or both.
• Site preparation, such as chopping, burning, and applying herbicide, reduces the immediate plant competition.

Residential and commercial uses

Suitability: Suited
General management considerations:
• The permeability in the subsoil is a major limitation for septic tank filter fields.
• The shrink-swell potential in the lower part of the subsoil is a limitation for dwellings with basements.
• Low strength is a limitation for local roads and streets.
Suitable management practices:
• Increasing the size of the septic tank absorption field or mounding the areas used for filter lines with a more suitable material help to overcome the restricted permeability.
• Backfilling deep cuts with material that has a low shrink-swell potential and diverting runoff away from buildings help to prevent possible structural damage to dwellings.
• If the soil is to be used as a base for roads and streets, mixing the upper part with coarser textured material will increase the soil's strength and stability.

SmC—Smithdale fine sandy loam, 5 to 8 percent slopes

Setting

Landscape position: Undulating, upland ridgetops
Shape of areas: Narrow and winding
Size of areas: 5 to 50 acres
Major uses: Woodland, a few small areas of pasture

Typical Profile

Surface layer:
0 to 3 inches, dark grayish brown fine sandy loam
Subsurface layer:
3 to 11 inches, yellowish brown fine sandy loam
Subsoil:
11 to 22 inches, yellowish red sandy clay loam
22 to 43 inches, red sandy clay loam
43 to 60 inches, red sandy loam that has pockets of loamy sand and sand

Inclusions

• Small areas of Lexington soils on wider ridgetops
• Small areas of the moderately well drained Providence soils in saddles

Important Soil Properties and Features

Drainage class: Well drained

Permeability: Moderate
Available water capacity: Moderate
Soil reaction: Very strongly acid or strongly acid
Flood hazard: None
High water table: None

Use and Management

Cropland

Suitability: Poorly suited
General management considerations:
• This soil is poorly suited to crops because of the narrow winding shape of the map unit, the undulating topography, the small size of most map units, the hazard of erosion, and the limited available water in most years.
Suitable management practices:
• If areas are to be used as cropland, using practices such as no-till and minimum tillage is recommended. These practices help to reduce the hazard of erosion.
• Tilth can be improved or maintained by using a cropping system that includes grasses, legumes, or grass-legume mixtures; rotating crops; using minimum tillage; and growing cover crops.
Capability class: IIIe

Pasture and hayland

Suitability: Suited
General management considerations:
• Pasture renovation is necessary when the better forage plants have decreased to a level less than that needed for optimum production.
• If the plants are overgrazed or if plant stands are poor, the slope increases the hazard of erosion.
Suitable management practices:
• The quality and quantity of forage can be maintained by rotating grazing, controlling weeds, and applying fertilizer annually.
• Forage plants that can tolerate droughty conditions should be selected.
• The hazard of erosion can be reduced by avoiding overgrazing.
• Adjusting stocking rates, especially on the steeper slopes, prevents overgrazing and reduces the hazard of water erosion.

Woodland

Suitability: Well suited
Trees suitable for planting: Loblolly pine, eastern redcedar, chestnut oak, and white oak
General management considerations:
• This soil has no significant limitations for the management of timber.

Residential and commercial uses

Suitability: Suited
General management considerations:
• This soil has no significant limitations for most residential and commercial uses, except for the shape and size of individual areas of the map unit.

SmD—Smithdale fine sandy loam, 8 to 15 percent slopes

Setting

Landscape position: Upland hillsides and strongly sloping ridgetops
Shape of areas: Long and narrow
Size of areas: 5 to 200 acres
Major uses: Woodland, a few small areas of pasture

Typical Profile

Surface layer:
0 to 3 inches, dark grayish brown fine sandy loam
Subsurface layer:
3 to 11 inches, yellowish brown fine sandy loam
Subsoil:
11 to 22 inches, yellowish red sandy clay loam
22 to 43 inches, red sandy clay loam
43 to 60 inches, red sandy loam that has pockets of loamy sand and sand

Inclusions

• Small areas of Lexington and Ruston soils on shoulder slopes

Important Soil Properties and Features

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate
Soil reaction: Very strongly acid or strongly acid
Flood hazard: None
High water table: None

Use and Management

Cropland

Suitability: Poorly suited
General management considerations:
• This soil should not be used continuously as cropland because of the slope and the high erosion potential.
Suitable management practices:
• Areas used as cropland should only be cultivated on the contour, using a rotation system in which the land remains in a vegetative cover for several seasons following cultivation.
Capability class: IVe

Pasture and hayland

Suitability: Suited

General management considerations:
• If the plants are overgrazed or if plant stands are poor, the slope increases the hazard of erosion.
• Pasture renovation is necessary when the better forage plants have decreased to a level less than that needed for optimum production.
Suitable management practices:
• Adjusting stocking rates, especially on the steeper slopes, prevents overgrazing and reduces the hazard of water erosion.
• The quality and quantity of forage can be maintained by rotating grazing, controlling weeds, and applying fertilizer annually.

Woodland

Suitability: Well suited
Trees suitable for planting: Loblolly pine, eastern redcedar, chestnut oak, and white oak
General management considerations:
• This soil has no significant limitations for the management of timber.

Residential and commercial uses

Suitability: Suited
General management considerations:
• The slope is the major limitation for septic tank absorption fields, dwellings and small commercial buildings, and local roads and streets.
Suitable management practices:
• Selecting less steep areas and placing septic tank absorption lines on the contour help to overcome the slope.
• Proper building designs and the construction costs are the major considerations on sites that need to be excavated or filled to construct dwellings or small commercial buildings.
• Selecting less steep areas and placing roads and streets on the contour help to overcome the slope.

SmD3—Smithdale loam, 8 to 15 percent slopes, severely eroded

Setting

Landscape position: Upland hillsides and strongly sloping ridgetops
Shape of areas: Long and narrow
Size of areas: 5 to 100 acres
Major use: Woodland

Typical Profile

Surface layer:
0 to 3 inches, strong brown loam that has yellowish and reddish mottles
Subsoil:
3 to 22 inches, red sandy clay loam
22 to 45 inches, red sandy loam
45 to 60 inches, red sandy loam that has pockets of pale brown and brownish yellow loamy sand and sand

Inclusions

• Small areas of Ruston soils on shoulder slopes

Important Soil Properties and Features

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate
Soil reaction: Very strongly acid or strongly acid
Flood hazard: None
High water table: None

Use and Management

Cropland

Suitability: Poorly suited
General management considerations:
• This soil is poorly suited as cropland because of the slope, the severe hazard of erosion, and the limited available water in most years.
Suitable management practices:
• Because this unit has extensive limitations for crops, other areas that are more desirable for use as cropland should be selected.
Capability class: VIe

Pasture and hayland

Suitability: Suited
General management considerations:
• If the plants are overgrazed or if plant stands are poor, the slope increases the hazard of erosion.
• Pasture renovation is necessary when the better forage plants have decreased to a level less than that needed for optimum production.
Suitable management practices:
• Adjusting stocking rates, especially on the steeper slopes, prevents overgrazing and reduces the hazard of water erosion.
• The quality and quantity of forage can be maintained by rotating grazing, controlling weeds, and applying fertilizer annually.

Woodland

Suitability: Suited
Trees suitable for planting: Loblolly pine, eastern redcedar, chestnut oak, and white oak
General management considerations:
• The main limitation for the management of timber is seedling mortality.
Suitable management practices:
• Planting hardier seedlings on north- and east-facing

slopes, which have greater moisture retention during dry seasons, increases the seedling survival rate.

Residential and commercial uses

Suitability: Suited
General management considerations:
• The slope is the major limitation for septic tank absorption fields, dwellings and small commercial buildings, and local roads and streets.
Suitable management practices:
• Selecting less steep areas and placing septic tank absorption lines on the contour help to overcome the slope.
• Proper building designs and the construction costs are the major considerations on sites that need to be excavated or filled to construct dwellings or small commercial buildings.
• Selecting less steep areas and placing roads and streets on the contour help to overcome the slope.

SmE—Smithdale fine sandy loam, 15 to 30 percent slopes

Setting

Landscape position: Upland hillsides
Shape of areas: Long and narrow
Size of areas: 10 to 250 acres
Major use: Woodland

Typical Profile

Surface layer:
0 to 3 inches, dark grayish brown fine sandy loam

Subsurface layer:
3 to 11 inches, yellowish brown fine sandy loam

Subsoil:
11 to 22 inches, yellowish red sandy clay loam
22 to 43 inches, red sandy clay loam
43 to 60 inches, red sandy loam that has pockets of loamy sand and sand

Inclusions

• A few small, intermingled areas of Luverne soils in the western part of the county
• Areas of Ruston soils on shoulder slopes

Important Soil Properties and Features

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate
Soil reaction: Very strongly acid or strongly acid
Flood hazard: None
High water table: None

Use and Management

Cropland

Suitability: Unsuited
General management considerations:
• This soil is unsuited as cropland because of the slope, the severe hazard of erosion, and the limited available water in most years.
Capability class: VIIe

Pasture and hayland

Suitability: Poorly suited as hayland; suited to pasture in some less sloping areas
General management considerations:
• The slope, the high runoff rate, and the hazard of erosion are limitations for pasture management.
• A permanent vegetative cover is needed to prevent erosion.
• The high runoff rate can cause a moisture deficit in late summer, and stands of less hardy plants may suffer from moisture stress.
Suitable management practices:
• Mixtures of hardy forage plants, such as tall fescue and clover or sericea lespedeza, are adapted forage plants.
• Reseeding the pasture may be necessary if the plant cover does not provide a adequate stand of desirable species for forage production and erosion control.
• Adjusting stocking rates, especially on the steeper slopes, prevents overgrazing and reduces the hazard of water erosion.

Woodland

Suitability: Suited
Trees suitable for planting: Loblolly pine, eastern redcedar, chestnut oak, and white oak
General management considerations:
• The main limitations for the management of timber on this soil are the hazard of erosion and the restricted use of equipment.
Suitable management practices:
• Steep yarding paths, skid trails, fire breaks, and landings are subject to rilling and gullying unless they are provided with adequate water bars, are protected by plant cover, or both.
• Wheeled and tracked equipment can be used in the moderately steep areas, but more specialized harvesting methods may be required in the steeper areas.

Residential and commercial uses

Suitability: Poorly suited
General management considerations:
• This soil is poorly suited to most residential and commercial uses because of the slope.

SmE3—Smithdale loam, 15 to 30 percent slopes, severely eroded

Setting

Landscape position: Upland hillsides
Shape of areas: Long and narrow
Size of areas: 10 to 150 acres
Major use: Woodland

Typical Profile

Surface layer:
0 to 3 inches, strong brown loam that has yellowish and reddish mottles

Subsoil:
3 to 22 inches, red sandy clay loam
22 to 45 inches, red sandy loam
45 to 60 inches, red sandy loam that has pockets of pale brown and brownish yellow loamy sand and sand

Inclusions

- A few small, intermingled areas of Luverne soils in the western part of the county
- Areas of Ruston soils on shoulder slopes
- Several areas that have deep gullies

Important Soil Properties and Features

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate or low
Soil reaction: Very strongly acid or strongly acid
Flood hazard: None
High water table: None

Use and Management

Cropland

Suitability: Unsuited
General management considerations:
- This soil is unsuited as cropland because of the slope, the severe hazard of erosion, and the limited available water.

Capability class: VIIe

Pasture and hayland

Suitability: Poorly suited
General management considerations:
- The slope, the high runoff rate, and the hazard of erosion are limitations for pasture management.
- A permanent vegetative cover is needed to prevent erosion.
- The high runoff rate can cause a moisture deficit in late summer, and stands of less hardy plants may suffer from moisture stress.

Suitable management practices:
- Mixtures of hardy forage plants, such as tall fescue and clover or sericea lespedeza, are adapted forage plants.
- Reseeding the pasture may be necessary if the plant cover does not provide a adequate stand of desirable species for forage production and erosion control.
- Adjusting stocking rates, especially on the steeper slopes, prevents overgrazing and reduces the hazard of water erosion.

Woodland

Suitability: Suited
Trees suitable for planting: Loblolly pine, eastern redcedar, chestnut oak, and white oak
General management considerations:
- The main limitations for the management of timber on this soil are the hazard of erosion, seedling mortality, and the restricted use of equipment.

Suitable management practices:
- Steep yarding paths, skid trails, fire breaks, and landings are subject to rilling and gullying unless they are provided with adequate water bars, are protected by plant cover, or both.
- Planting hardier seedlings on north- and east-facing slopes, which have greater moisture retention during dry seasons, increases the seedling survival rate.
- Wheeled and tracked equipment can be used in the moderately steep areas, but more specialized harvesting methods may be required in the steeper areas.

Residential and commercial uses

Suitability: Poorly suited
General management considerations:
- This soil is poorly suited to most residential and commercial uses because of the slope.

Ud—Udorthents, loamy

This map unit consists of areas that have been excavated to the underlying substratum. The remaining soil material is a mixture of loamy sand, sandy loam, and sand. Many areas have numerous gullies, and others have a combination of deep ravines and steep ridges. Most areas do not have distinct sidewalls but grade gently toward the adjacent soil surface. Slopes are variable but generally range from 2 to 15 percent.

Many areas are used as an occasional source of fill material in construction or transportation projects. The remaining soil material is capable of supporting vegetation, and some areas have been reclaimed to stands of loblolly pine and eastern redcedar. Other areas in this unit have a vegetative cover of native grasses, shrubs, and trees.

The areas in this map unit are extremely diverse, and an onsite investigation is needed before planning use and management.

No capability class is assigned to this map unit.

Un—Una silty clay loam, occasionally flooded

Setting

Landscape position: Flood plains
Slope range: 0 to 2 percent
Shape of areas: Long and irregular
Size of areas: 5 to 100 acres
Major uses: Cropland, pasture

Typical Profile

Surface layer:
0 to 4 inches, very dark grayish brown silty clay loam

Subsoil:
4 to 13 inches, dark grayish brown clay that has brownish mottles
13 to 60 inches, gray clay that has brownish mottles

Inclusions

- A few small areas of somewhat poorly drained, clayey soils along stream levees
- Areas of soils that have 2 to 4 inches of silt loam overwash and are adjacent to stream channels
- Areas of soils that are along Snake Creek and have a dark surface layer more than 12 inches thick

Important Soil Properties and Features

Drainage class: Poorly drained
Permeability: Very slow
Available water capacity: High
Soil reaction: Very strongly acid or strongly acid
Flood hazard: Occasional for brief durations in winter and early spring
High water table: Seasonal, within a depth of 0.5 to 1.0 feet in winter and early spring

Use and Management

Cropland

Suitability: Suited
General management considerations:
- Seasonal wetness and flooding limit the production and harvest of some crops.

Suitable management practices:
- Because of the wetness and the hazard of flooding early in spring, planting short-season annuals, such as soybeans or grain sorghum, is recommended.

Capability class: IIIw

Pasture and hayland

Suitability: Suited
General management considerations:
- Only those hay and pasture plants that can tolerate periodic inundation and seasonal wetness should be selected.
- The seasonal high water table limits grazing for several days at a time during the winter and early spring.

Suitable management practices:
- Plants, such as fescue and white clover, that can tolerate short periods of wetness should be selected.
- Grazing should be deferred until a period from late in spring to early fall.

Woodland

Suitability: Suited to water-tolerant species
Trees suitable for planting: Sweetgum, cherrybark oak, green ash, and water oak
General management considerations:
- The main limitations for the management of timber on this soil are the equipment limitation, seedling mortality, and plant competition.

Suitable management practices:
- Harvesting and planting operations should be limited to a period from the midsummer to early fall, when the water table is lowest and the hazard of flooding is least.
- Planting hardier seedlings in raised beds increases the seedling survival rate.
- Site preparation, such as chopping, burning, applying herbicide, and planting on beds, reduces the immediate plant competition.

Residential and commercial uses

Suitability: Poorly suited
General management considerations:
- This soil is poorly suited to residential and commercial uses because of the flooding, the high seasonal water table, and the very slow permeability.

Suitable management practices:
- Dwellings, small commercial buildings, and roads and streets should be located in higher areas that are not subject to flooding and excessive wetness.

Ur—Urban land

This map unit consists of areas in which more than 85 percent of the surface is covered by streets, buildings, parking lots, railroad yards, and airports. The natural soils were altered by cutting, filling, grading, and shaping during the process of urbanization. The original landscape, topography, and drainage patterns commonly have been changed. Slopes are variable but generally are about 2 to 8 percent.

Most of the acreage in this map unit is in the business districts of Selmer and Adamsville and in the industrial areas around these cities.

Recommendations for use and management require onsite investigation.

No capability class is assigned to this map unit.

Prime Farmland

In this section, prime farmland is defined, and the soils in McNairy County that are considered prime farmland are listed.

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

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

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

Prime farmland soils usually receive an adequate and dependable supply of moisture from precipitation or irrigation. The temperature and growing season are favorable. The acidity or alkalinity level of the soils is acceptable. The soils have few or no rocks and are permeable to water and air. They are not excessively erodible or saturated with water for long periods and are frequently flooded during the growing season. The slope ranges mainly from 0 to 5 percent.

The map units, or soils, that are considered prime farmland in McNairy County are listed in table 5. The location of each map unit is shown on the detailed soil maps at the back of this publication. The extent of each unit is given in table 4. The soil qualities that affect use and management are described in the section "Detailed Soil Map Units." This list does not constitute a recommendation for a particular land use.

Use and Management of the Soils

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

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

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

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

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

Health officials, highway officials, engineers, and others may also find this survey useful. The survey can help them plan the safe disposal of wastes and locate sites for pavements, sidewalks, campgrounds, playgrounds, lawns, and trees and shrubs *(4)*.

Crops and Pasture

The major crops grown in McNairy County are corn, soybeans, wheat, cotton, and grain sorghum. Truck crops, hay crops, fruit orchards, and nursery products are increasing in importance in the county. Livestock production, primarily the production of beef cattle and swine, has also increased in the county in the last few years.

Most of the cleared areas that are used for cultivated crops are on undulating stream terraces and bottom land. The cleared areas are desirable because the equipment limitation is reduced, they are easier to access than the dissected uplands, and more moisture is available for plants during dry periods. In recent years, the acreage planted to cultivated crops has been decreasing as a result of land use changes and agricultural legislation. Many areas of cropland have been returned to permanent grass and woodland.

Most of the cleared land in the county is used for pasture and hayland. Tall fescue and white clover or common bermudagrass make up most of the pasture and hay. In many severely eroded areas and in reclaimed borrow areas, lespedeza, vetch, and clover are used for erosion control and hay.

Soil erosion is a management concern in most of the county. The loss of soil through erosion is damaging for two reasons. First, productivity is reduced as the surface layer is lost and part of the subsoil is incorporated into the plow layer. The loss of the surface layer is especially damaging on soils that have a layer in the subsoil that limits the depth of roots, such as in Providence, Dulac, Freeland, and Paden soils. Secondly, controlling erosion minimizes the pollution of streams by sediment and improves the quality of water for municipal and recreational uses and for fish and wildlife.

Erosion-control practices provide a surface cover, reduce the runoff rate, and increase the infiltration of water. A cropping system that retains vegetative cover on the soil surface for extended periods reduces erosion and maintains the productivity of the soil. Using measures such as contour stripcropping, diversions and grassed waterways, contour farming, and conservation tillage practices, including no-till farming, reduce the runoff rate and help to control erosion (fig. 9).

On livestock farms that require pasture and hay, including legumes and grass-forage crops in the

Figure 9.—An area of Hatchie silt loam in the foreground. This soil is well suited to row crops if they are planted in late spring. A bermudagrass pasture in an area of Smithdale fine sandy loam, 8 to 15 percent slopes, is in the background.

cropping system reduces erosion in sloping areas, provides nitrogen, and improves tilth. In the most sloping areas, pasture renovation is needed when the forage plants have decreased to a level lower than that needed for optimum production. Stocking rates should be adjusted to avoid overgrazing in steeply sloping areas. Applications of fertilizer and lime, applied according to soil test recommendations, are needed to maintain forage production. The Cooperative Extension Service can help to determine the kinds and amounts of fertilizer and lime to apply.

General management needed for crops and pasture is suggested in this section. The crops or pasture plants best suited to the soils are identified, the system of land capability classification used by the Natural Resources Conservation Service is explained, 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 the heading "Detailed Soil Map Units." Specific information can be obtained from the local office of the Natural Resources Conservation Service or the Cooperative Extension 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 ensures the smallest possible loss.

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

Crops 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 Natural Resources Conservation Service or of the Cooperative Extension Service can provide information about the management and productivity of the soils for those crops.

Land Capability Classification

Land capability classification shows, in a general way, the suitability of soils for use as cropland *(5)*. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for rangeland, for woodland, or for engineering purposes.

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

Capability classes, the broadest groups, are designated by Roman numerals I through VIII. There are no class I or class VIII soils in McNairy County. The numerals indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class I soils have few limitations that restrict their use.

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

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

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

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

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

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

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

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

The capability classification of each map unit is given in the section "Detailed Soil Map Units" and in the yields table.

Woodland Management and Productivity

Joseph H. Paugh, forester, Natural Resources Conservation Service helped prepare this section.

Forest once covered almost all of the land in McNairy County. The trees have been cleared on most of the land suitable for cultivation or pasture. However, woodland still makes up about 224,400 acres, or 62 percent, of the county *(8)*. Several large tracts of land are owned by commercial timber companies and are managed intensively for timber production. The remainder of the land is small upland woodlots or is in the bottom land. Most of the woodland is in areas of soils that are too steep, droughty, wet, remote, or severely eroded to be practical for the production of row crops or grass. Many of these areas are capable of producing high-quality trees if the woodland is managed properly.

The major forest type groups in the county are the upland oaks and hickory, which makes up 54 percent of the woodland; southern yellow pines, 20 percent; upland oak and pine mixture, 18 percent; and bottom

land, 8 percent. The upland oaks and hickory type is the most extensive forest type group. The common species in this forest type group are white oak, red oak, shagbark hickory, mockernut hickory, and yellow poplar. Many areas that support hardwoods in the uplands are harvested commercially for saw timber. The harvested areas are usually left to be naturally regenerated. Most of the trees in the southern yellow pines type, which is made up predominantly loblolly pine and shortleaf pine, are not native to the county but were seeded in areas where the oak and hickory forest was harvested.

Loblolly pine has been planted in many of the severely eroded areas, where growing row crops and pasture and hay is not profitable. A few places support Virginia pine, eastern white pine, and slash pine, although they are not common species. Pulpwood is the principal wood product from the pine forests. Many of the smaller tracts of woodland are on farms. They were planted primarily for erosion control. Most of the small woodlots are unmanaged and have become overstocked.

Areas of the bottom land forest type are throughout the county. Some of the commercially important species that make up this forest type include water oak, yellow poplar, cherrybark oak, swamp white oak, swamp chestnut oak, sweetgum, willow oak, and sycamore. Baldcypress and water tupelo are in several areas on the flood plain of the Hatchie River. Some of the woodland on bottom land is harvested for saw timber, but most of the land is used for wildlife habitat and recreation.

Some soil-related management concerns affect both the upland oak and southern yellow pine forest types. Plant competition from undesirable species can limit the establishment and growth of desirable seedlings on the more productive soils, such as Providence, Lexington, Dulac, Pickwick, and Paden soils. Using a suitable herbicide or mechanically removing the undesirable species in less sloping areas is recommended. Many eroded areas of Luverne soils have ironstone fragments on the surface, which hinder the mechanical planting or hand planting of seedlings. Some soils, such as Oktibbeha, Sumter, and Luverne soils, have a clayey subsoil that shrinks when dry and swells when moist. The root systems of young seedlings planted in areas of these soils can be adversely affected by shrinking and swelling. As the soil shrinks during dry periods in summer, it can expose the roots and cause the increased seedling mortality. Planting older, hardier seedlings and selecting drought-tolerant species are recommended in areas of clayey soils. In many parts of the county, Luverne and Smithdale soils are on steep hillsides. In these areas, the equipment limitation and the hazard of erosion are management concerns for planting and harvesting operations. Logging roads and skid trails should be carefully planned and located in advance. These soils are droughty in eroded areas, and selecting drought-tolerant species and planting on north and east-facing slopes is recommended. In these areas, use of mechanical planters may not be practical.

Competing vegetation is a major management concern on soils in the bottom land forest type, such as Enville, Bibb, Ochlockonee, Una, and Iuka soils. Flooding and excessive wetness are also management concerns for planting and harvesting operations. In some areas, planting on beds and planting water-tolerant species are recommended. Harvesting operations are best suited to late summer and early fall, when the water table is low and the risk of flooding is reduced. In many areas of Bibb soils, long periods of frequent flooding have killed valuable timber. Many bottom land channels are clogged by sand and silt from erosion in the uplands and by beaver dams. The clogged channels and the subsequent flooding have killed or damaged several bottom land forests. Overcoming such problems requires community efforts.

Unrestricted grazing by livestock is a management concern that affects both the upland oak and bottom land forest types. Allowing cattle to graze and swine to root in the forest destroys much of the natural regeneration of seedlings, compacts the soil, and injures tree roots. Livestock should be confined to other areas.

In addition to their commercial value, the forests in McNairy County provide excellent habitat for wildlife, recreational opportunities, natural beauty, and conservation of soil and water resources.

Soils vary in their ability to produce trees. Available water capacity and depth of the root zone have major effects on tree growth. Fertility and texture also influence tree growth. Elevation, aspect, and climate determine the kinds of trees that can grow on a site. Elevation and aspect are of particular importance in mountainous areas.

This soil survey can be used by woodland managers planning ways to increase the productivity of forest land. Some soils respond better to applications of fertilizer than others, and some are more susceptible to landslides and erosion after roads are built and timber is harvested. Some soils require special reforestation efforts. In the section "Detailed Soil Map Units," the description of each map unit in the survey area suitable for timber includes information about productivity, limitations in harvesting timber, and management concerns in producing timber. Table 7 summarizes this forestry information and rates the soils for a number of factors to be considered in management. *Slight, moderate,* and *severe* are used to indicate the degree of

the major soil limitations to be considered in forest management.

Table 7 provides ratings of the *erosion hazard*, indicating the probability that damage may occur if site preparation or harvesting activities expose the soil. The risk is *slight* if no particular preventive measures are needed under ordinary conditions; *moderate* if erosion-control measures are needed for particular silvicultural activities; and *severe* if special precautions are needed to control erosion for most silvicultural activities. Ratings of moderate or severe indicate the need for construction of higher standard roads, additional maintenance of roads, additional care in planning harvesting and reforestation activities, and the use of special equipment.

Ratings of *equipment limitation* indicate limits on the use of forest managment equipment, year-round or seasonal, because of such soil characteristics as slope, wetness, stoniness, and susceptibility of the surface layer to compaction. As slope gradient and length increase, it becomes more difficult to use wheeled equipment. On the steeper slopes, tracked equipment is needed. On the steepest slopes, even tracked equipment cannot be operated and more sophisticated systems are needed. The rating is *slight* if equipment use is restricted by wetness for less than 2 months and if special equipment is not needed. The rating is *moderate* if slopes are so steep that wheeled equipment cannot be operated safely across the slope, if wetness restricts equipment use from 2 to 6 months per year, if stoniness restricts the use of ground-based equipment, or if special equipment is needed to prevent or minimize compaction. The rating is *severe* if slopes are so steep that tracked equipment cannot be operated safely across the slope, if wetness restricts equipment for more than 6 months per year, if stoniness restricts the use of ground-based equipment, or if special equipment is needed to prevent or minimize compaction. Ratings of moderate or severe indicate a need to choose the best suited equipment and to carefully plan the timing of harvesting and other management activities.

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

Ratings of *plant competition* indicate the likelihood of the growth or invasion of undesirable plants. Plant competition is more severe on the more productive soils, on poorly drained soils, and on soils having a restricted root zone that holds moisture. The risk is *slight* if competition from undesirable plants hinders adequate natural or artificial reforestation but does not necessitate intensive site preparation and maintenance. The risk is *moderate* if competition from undesirable plants hinders natural or artificial reforestation to the extent that intensive site preparation and maintenance are needed. The risk is *severe* if competition from undesirable plants prevents adequate natural or artificial reforestation unless the site is intensively prepared and maintained. A moderate or severe rating indicates the need for site preparation to ensure the development of an adequately stocked stand. Managers must plan site preparation measures to ensure reforestation without delays.

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

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

The *volume* is the yield likely to be produced by the most important trees, expressed in cubic feet per acre per year calculated at the age of culmination of mean annual increment. It can be converted to board feet by multiplying by a factor of about 5. For example, a productivity class of 114 means the soil can be expected to produce approximately 114 cubic feet per acre per year at the point where mean annual increment culminates, or about 570 board feet per acre per year.

Trees to plant are those that are recommended for reforestation or, under suitable conditions, natural regeneration. They are best suited to the soils and can produce a commercial wood crop. The desired product,

topographic position (such as a low, wet area), and droughtiness of the site are three factors among many that can influence the choice of trees for use in reforestation.

Recreation

McNairy County offers an assorted variety of recreational opportunities. The Big Hill Pond State Park, an excellent natural area and sport-fishing lake, is in the county. Also, the mixed hardwood and pine forests in McNairy County make the area popular for hunters across the state. These forests provide excellent habitat for whitetail deer and wild turkey.

The Tuscumbia and Hatchie Rivers traverse the southwestern part of the county. They provide a variety of aquatic and recreational opportunities, including fishing, boating, canoeing, camping, hiking, and bird watching. Many other outdoor recreational activities, such as golf, hiking, bicycling, horseback riding, softball, and swimming are also available in the county. McNairy County has a moderate potential for further recreational development.

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

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

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

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

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

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

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

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

Wildlife Habitat

This section was prepared by Michael E. Zeman, state biologist, Natural Resources Conservation Service.

Wildlife is an important natural resource in McNairy County. It provides a source of revenue from hunting and fishing and provides such recreational activities as camping, boating, hiking, photography, and bird watching. Popular game species include whitetail deer, eastern wild turkey, bobwhite quail, mourning dove, cottontail rabbit, and gray and fox squirrels.

The whitetail deer is the most popular game animal in the county. The population of deer is moderate to high, and substantial herd growth has occurred during the past few years. Harvest records indicate that approximately a fifteen-fold increase in the deer population occurred from 1970 to 1990. The Tennessee Wildlife Resources Agency (TWRA) estimates that areas in the western half of the county contain as many as 30 deer per square mile.

Although they were almost eradicated before the 1950's, flocks of eastern wild turkey have been restored by the Tennessee Wildlife Resources Agency in McNairy County. Significant populations have only recently been established, as indicated by the approximately eight-fold increase in harvest numbers that occurred between 1980 and 1991.

The populations of bobwhite quail is moderate in the county. The largest number of quail are in the southern and eastern areas and are associated with a more interspersed habitat. In these areas, a good habitat diversity is found in areas where brushy fence rows, clearcut areas, and idle grassland fields are adjacent to cropland fields and edges of woodland.

Mourning doves migrate into the county each fall and winter. A healthy population of residual birds inhabits the county and remains throughout the year. The largest population of mourning doves is adjacent to harvested cropland and in idle fields. McNairy County offers an ideal habitat for these migrating birds. It has abundant roosting areas in the large pine plantations that are close to water and cropland.

The cottontail rabbit population is good as a result of abundant desirable habitat throughout the county. The largest population is generally associated with low, brushy or weedy cover near agricultural fields. Another species of rabbit, the swamp rabbit, is also in the county. The swamp rabbit is much larger than the cottontail rabbit, and it prefers lowland swamps and wooded flood plains. It is found on the flood plains of Cypress Creek, Muddy Creek, the Hatchie River, and the Tuscumbia River. The swamp rabbit is listed as a "species of concern" by the state of Tennessee due to declining habitat caused by drainage activities and land clearing.

Three species of squirrels are in McNairy County. They are the southern flying squirrel, the fox squirrel, and the gray squirrel. The gray squirrel is the most common species, and it has an excellent population throughout the hardwood and mixed pine-hardwood forests. The fox squirrel is more common in upland pine plantations, in smaller woodlots, and in woody fence rows near agricultural fields. The southern flying squirrel is less abundant in the area, and it usually inhabits hardwood stands along stream channels.

McNairy County has excellent habitat for migratory waterfowl. The Tennessee River and the Tennessee Wildlife Resources Agency's White Oak Wildlife Management Area, just to the east of the county, attract and maintain large numbers of migrating birds annually. Some common species of waterfowl migrating across the county include the mallard, blue-wing teal, widgeon, bufflehead, Canadian geese, and snow geese. The most prominent species of duck that resides and nests in the county is the wood duck, which primarily uses the flood plains of Tuscumbia River and Cypress Creek. Also, farm ponds and larger flood-prevention reservoirs in the county provide desirable roosting and resting habitat for waterfowl.

Several species of furbearers are in the county. Wetland furbearers, such as mink, muskrat, and beaver, have a moderate to high population along streams, small lakes, farm ponds, and the Tuscumbia and Hatchie Rivers. Upland furbearers are abundant throughout the county. The major species include bobcat, opossum, raccoon, gray fox, striped skunk, and coyote.

Different species of songbirds are associated with different plant communities. Woodland birds, such as the Carolina chickadee, tufted titmouse, pileated woodpecker, and wood thrush thrive in the mixed pine and hardwood forests. Open land birds, including robins, meadowlarks, and various sparrows, are found near homesites and in nonforested areas. The birds of prey that commonly inhabit the county include the red-tailed hawk, sparrow hawk, barred owl, and screech owl.

The county has many ponds and small lakes available for fishing and recreation. Many of the ponds are stocked with largemouth bass, bluegill sunfish, and channel catfish. The water in these ponds is typically acidic and stained. The reproduction and quantity of fish can be restricted if the water quality is not managed.

McNairy County has many wetlands, excluding such artificial wetlands as upland farm ponds. The wetlands are primarily wooded flood plains along the major rivers and streams. Areas of bottom land provide some of the most productive wildlife habitat in the county. These areas improve the water quality of streams by removing nutrients and trapping sediment from upland runoff. Also, they lower the water temperatures by shading streams and provide leaf litter that serves as food for aquatic insects. The wooded bottoms also help to abate flooding.

Conservation practices can improve or maintain quality wildlife habitat. Rotating crops annually and leaving crop residue on the surface can provide food and winter cover for many species of wildlife. Fencing livestock and deferring grazing on some pastures

protect food plots and nesting cover. These practices even protect fish habitat by reducing animal waste and preventing sediment from being washed into streams. Field borders and filter strips along streams protect the water quality and provide food, cover, and travel routes for many species. Thinning the woodland should be performed selectively, in a manner that protects dens and mast-producing trees. Other practices that improve wildlife habitat include incorporating management systems, such as wildlife upland habitat management, wildlife wetland habitat management, fish pond management, pasture and hayland management, livestock exclusion, and woodland improvement, into land use planning.

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

In table 9, the soils in the survey area are rated according to their potential for providing habitat for various kinds of wildlife. This information can be used in planning parks, wildlife refuges, nature study areas, and other developments for wildlife; in selecting soils that are suitable for establishing, improving, or maintaining specific elements of wildlife habitat; and in determining the intensity of management needed for each element of the habitat.

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

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

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

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

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

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

Coniferous plants furnish browse and seeds. Soil properties and features that affect the growth of coniferous trees, shrubs, and ground cover are depth of the root zone, available water capacity, and wetness. Examples of coniferous plants are pine and eastern redcedar.

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, and slope. Examples of wetland plants are smartweed, wild millet, wildrice, cattail, rushes, sedges, and reeds.

Shallow water areas have an average depth of less than 5 feet. Some are naturally wet areas. Others are created by dams, levees, or other water-control structures. Soil properties and features affecting shallow water areas are wetness, slope, and permeability. Shallow water areas are marshes, waterfowl feeding areas, and ponds. Examples of shallow water plants are

coontail, common duckweed, spatterdock, cattail, water lily, arrowhead, and water milfoil.

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

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

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

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

Engineering

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

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

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

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

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about grain-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 or 6 feet of the surface, soil wetness, depth to a seasonal high water table, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kinds of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

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

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

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

Building Site Development

Table 10 shows the degree and kind of soil limitations that affect shallow excavations, dwellings with and without basements, small commercial buildings, local roads and streets, and lawns and landscaping. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required. Special feasibility studies may be required where the soil limitations are severe.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for basements, graves,

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

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

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

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

Sanitary Facilities

Table 11 shows the degree and the kind of soil limitations that affect septic tank absorption fields, sewage lagoons, and sanitary landfills. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required.

Table 11 also shows the suitability of the soils for use as daily cover for landfill. A rating of *good* indicates that soil properties and site features are favorable for the use and that good performance and low maintenance can be expected; *fair* indicates that soil properties and site features are moderately favorable for the use and one or more soil properties or site features make the soil less desirable than the soils rated good; and *poor* indicates that one or more soil properties or site features are unfavorable for the use and overcoming the unfavorable properties requires special design, extra maintenance, or costly alteration.

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 72 inches is evaluated. The ratings are based on soil properties, site features, and observed performance of the soils. Permeability, depth to a high water table, depth to bedrock or to a fragipan, and flooding affect absorption of the effluent. Large stones and bedrock or a fragipan can interfere with installation.

Unsatisfactory performance of septic tank absorption fields, including excessively slow absorption of effluent, surfacing of effluent, and hillside seepage, can affect public health. Ground water can be polluted if highly permeable sand and gravel or fractured bedrock is less than 4 feet below the base of the absorption field, if slope is excessive, or if the water table is near the surface. There must be unsaturated soil material beneath the absorption field to filter the effluent effectively. Many local ordinances require that this material be of a certain thickness.

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

Table 11 gives ratings for the natural soil that makes

up the lagoon floor. The surface layer and, generally, 1 or 2 feet of soil material below the surface layer are excavated to provide material for the embankments. The ratings are based on soil properties, site features, and observed performance of the soils. Considered in the ratings are slope, permeability, depth to a high water table, depth to bedrock or to a fragipan, flooding, and content of coarse fragments.

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

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

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

The ratings in table 11 are based on soil properties, site features, and observed performance of the soils. Permeability, depth to bedrock or to a cemented pan, depth to a water table, slope, and flooding affect both types of landfill. Texture, stones and boulders, and soil reaction affect trench landfills. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, a limitation rated slight or moderate may not be valid. Onsite investigation is needed.

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

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

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

Construction Materials

Table 12 gives information about the soils as a source of roadfill, sand, gravel, and topsoil. The soils are rated *good, fair,* or *poor* as a source of roadfill and topsoil. They are rated as a *probable* or *improbable* source of sand and gravel. The ratings are based on soil properties and site features that affect the removal of the soil and its use as construction material. Normal compaction, minor processing, and other standard construction practices are assumed. Each soil is evaluated to a depth of 5 or 6 feet.

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

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

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

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

table at a depth of less than 1 foot. They may have layers of suitable material, but the material is less than 3 feet thick.

Sand and *gravel* are natural aggregates suitable for commercial use with a minimum of processing. They are used in many kinds of construction. Specifications for each use vary widely. In table 12, only the probability of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material.

The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the engineering classification of the soil), the thickness of suitable material, and the content of rock fragments. Kinds of rock, acidity, and stratification are given in the soil series descriptions. Gradation of grain sizes is given in the table on engineering index properties.

A soil rated as a probable source has a layer of clean sand or gravel or a layer of sand or gravel that is up to 12 percent silty fines. This material must be at least 3 feet thick and less than 50 percent, by weight, large stones. All other soils are rated as an improbable source. Coarse fragments of soft bedrock, such as shale and siltstone, are not considered to be sand and gravel.

Topsoil is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area.

Plant growth is affected by toxic material and by such properties as soil reaction, available water capacity, and fertility. The ease of excavating, loading, and spreading is affected by rock fragments, slope, a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, a water table, rock fragments, bedrock, and toxic material.

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

Soils rated *fair* are sandy soils, loamy soils that have a relatively high content of clay, soils that have only 20 to 40 inches of suitable material, soils that have an appreciable amount of gravel or stones, or soils that have slopes of 8 to 15 percent. The soils are not so wet that excavation is difficult.

Soils rated *poor* are very sandy or clayey, have less than 20 inches of suitable material, have a large amount of gravel or stones, have slopes of more than 15 percent, or have a seasonal high water table at or near the surface.

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

Water Management

Table 13 gives information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas; embankments, dikes, and levees; and aquifer-fed excavated ponds. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and are easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increase in construction costs, and possibly increased maintenance are required.

This table also gives the restrictive features that affect each soil for drainage, terraces and diversions, and grassed waterways.

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the permeability of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

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

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

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, organic matter, or salts or sodium. A high water table affects the amount of

usable material. It also affects trafficability.

Aquifer-fed excavated ponds are pits or dugouts that extend to a ground-water aquifer or to a depth below a permanent water table. Excluded are ponds that are fed only by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Excavated ponds are affected by depth to a permanent water table and permeability of the aquifer. Depth to bedrock and the content of large stones affect the ease of excavation.

Drainage is the removal of excess surface and subsurface water from the soil. How easily and effectively the soil is drained depends on the depth to bedrock, to a fragipan, 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 depth to bedrock or to a fragipan, large stones, slope, and the hazard of cutbanks caving. The productivity of the soil after drainage is adversely affected by extreme 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 large stones and depth to bedrock or to a cemented pan. The performance of a system is affected by the depth of the root zone, the amount of salts or sodium, and soil reaction.

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

Grassed waterways are natural or constructed channels, generally broad and shallow, that conduct surface water to outlets at a nonerosive velocity. Large stones, wetness, slope, and depth to bedrock or to a fragipan affect the construction of grassed waterways. Low available water capacity, restricted rooting depth, low fertility, 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.

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

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

Engineering Index Properties

Table 14 gives estimates of the engineering classification and of the range of index properties for the major layers of each soil in the survey area. Most soils have layers of contrasting properties within the upper 5 or 6 feet.

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

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is as much as 15 percent, an appropriate modifier is added, for example, "gravelly." Textural terms are defined in the Glossary.

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

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

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

Rock fragments larger than 3 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an ovendry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

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

The estimates of grain-size distribution, liquid limit, and plasticity index are generally rounded to the nearest 5 percent. Thus, if the ranges of gradation and Atterberg limits extend a marginal amount (1 or 2

percentage points) across classification boundaries, the classification in the marginal zone is omitted in the table.

Physical and Chemical Properties

Table 15 shows estimates of some characteristics and features that affect soil behavior. These estimates are given for the major layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

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

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

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

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

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

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

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

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

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

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) to predict the average annual rate of soil loss by sheet and rill erosion. Losses are expressed in tons per acre per year. These estimates are based primarily on percentage of silt, sand, and organic matter (up to 4 percent) and on soil structure and permeability. Values of K range from 0.02 to 0.69. The higher the value, the more susceptible the soil is to sheet and rill erosion by water.

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

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

In table 15, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

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

Soil and Water Features

Table 16 gives estimates of various soil and water features. The estimates are used in land use planning that involves engineering considerations.

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

The four hydrologic soil groups are:

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

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

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

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a permanent high water table, soils that have a 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 covering of the soil surface by flowing water, is caused by overflowing streams, by runoff from adjacent slopes, or by inflow from high tides. Shallow water standing or flowing for short periods after rainfall or snowmelt is not considered flooding. Standing water in swamps and marshes or in a closed depression is considered ponding.

Table 16 gives the frequency and duration of flooding and the time of year when flooding is most likely.

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

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

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

High water table (seasonal) is the highest level of a saturated zone in the soil in most years. The estimates are based mainly on the evidence of a saturated zone, namely grayish colors or mottles in the soil. Indicated in table 16 are the depth to the seasonal high water table; the kind of water table, that is, *perched* or *apparent*; and the months of the year that the water table commonly is highest. A water table that is seasonally high for less than 1 month is not indicated in table 16.

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

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

Depth to bedrock is given if bedrock is within a depth of 5 feet. The depth is based on many soil borings and

on observations during soil mapping. The rock is specified as either soft or hard. If the rock is soft or fractured, excavations can be made with trenching machines, backhoes, or small rippers. If the rock is hard or massive, blasting or special equipment generally is needed for excavation.

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

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

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

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories *(6)*. Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or on laboratory measurements. Table 17 shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

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

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

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Hapludults (*Hapl*, meaning minimal horizonation, plus *udults*, the suborder of the Ultisols that has a udic moisture regime).

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

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Generally, the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle-size class, mineral content, temperature regime, depth of the root zone, consistence, moisture equivalent, slope, and permanent cracks. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is fine-loamy, mixed, thermic Typic Hapludults.

SERIES. The series consists of soils that have similar horizons in their profile. The horizons are similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile. There can be some variation in the texture of the surface layer or of the substratum within a series.

Soil Series and Their Morphology

In this section, each soil series recognized in the survey area is described. The descriptions are arranged in alphabetic order.

Characteristics of the soil and the material in which it formed are identified for each series. A pedon, a small three-dimensional area of soil, that is typical of the series in the survey area is described. The detailed description of each soil horizon follows standards in the "Soil Survey Manual" *(7)*. Many of the technical terms used in the descriptions are defined in "Soil Taxonomy" *(6)*. Unless otherwise stated, colors in the descriptions are for moist soil. Following the pedon description is the range of important characteristics of the soils in the series.

The map units of each soil series are described in the section "Detailed Soil Map Units."

Bibb Series

The Bibb series consists of very deep, poorly drained soils that formed in loamy alluvium on flood plains throughout the county. Slopes range from 0 to 2 percent.

Typical pedon of Bibb fine sandy loam, frequently flooded, 5.8 miles west of Bethel Springs, 1.1 miles southwest of the intersection of Rowsey School Road and Church Road, 1,200 feet northwest of the end of Curtis Hill Church Road, in a pasture (atlas sheet 13):

Ap—0 to 8 inches; brown (10YR 5/3) fine sandy loam; weak fine granular structure; very friable; many fine roots; very strongly acid; abrupt smooth boundary.
Ag—8 to 13 inches; gray (10YR 6/1) fine sandy loam; common coarse faint grayish brown (10YR 5/2) mottles; weak fine granular structure; common fine roots; very strongly acid; clear smooth boundary.
Cg1—13 to 32 inches; light brownish gray (10YR 6/2) sandy loam; common medium faint very pale brown (10YR 7/3) and few medium prominent strong brown (7.5YR 5/6) mottles; massive; few thin strata of loamy sand; very friable; very strongly acid; clear wavy boundary.
Cg2—32 to 48 inches; gray (10YR 5/1) sandy loam; common medium prominent strong brown (7.5YR 5/6) and common medium distinct very pale brown (10YR 7/4) mottles; massive; very friable; very strongly acid; clear smooth boundary.
Cg3—48 to 60 inches; dark gray (2.5Y 4/0) stratified sandy loam and loamy sand; common fine distinct brown (10YR 5/3) and common fine prominent strong brown (7.5YR 5/6) mottles; massive; very friable and loose; very strongly acid.

Reaction is very strongly acid or strongly acid, except in areas where lime has been added.

The Ap horizon has hue of 10YR, value of 4 or 5, and chroma of 1 to 3. Texture is fine sandy loam.

The Ag horizon has hue of 10YR, value of 5 to 7, and chroma of 2 or less. Some pedons have mottles in shades of brown. Texture is fine sandy loam.

The Cg horizon has hue of 10YR or 2.5Y, value of 4 to 7, and chroma of 2 or less. Most pedons have mottles in shades of brown. Texture is sandy loam, loam, or silt loam. Many pedons are stratified with sandy loam and loamy sand or sand below a depth of 40 inches.

Deanburg Series

The Deanburg series consists of very deep, well drained soils on stream terraces throughout the county. The soils formed in a thin, silty mantle overlying loamy and sandy alluvium. Slopes range from 2 to 8 percent.

Typical pedon of Deanburg silt loam, 2 to 5 percent slopes, 2.2 miles west of Ramer, 0.5 mile southwest of the intersection of Tennessee Highway 57 and Cypress Creek, 1,200 feet south of the intersection of Tennessee Highway 57 and a farm road, in a field (atlas sheet 36):

Ap—0 to 9 inches; brown (10YR 4/3) silt loam; weak fine granular structure; very friable; many fine roots; medium acid; clear smooth boundary.
Bt1—9 to 28 inches; dark brown (7.5YR 4/4) loam; moderate medium subangular blocky structure; friable; few fine roots; common faint clay films on faces of peds; strongly acid; gradual smooth boundary.
Bt2—28 to 36 inches; dark brown (7.5YR 4/4) sandy clay loam; moderate medium subangular blocky structure; friable; common distinct clay films on faces of peds; strongly acid; clear wavy boundary.
Bt3—36 to 43 inches; dark brown (7.5YR 4/4) sandy clay loam; weak medium subangular blocky structure; friable; common distinct clay films on faces of peds; common pockets of uncoated sand; strongly acid; clear wavy boundary.
2E and Bt—43 to 60 inches; brownish yellow (10YR 6/6) loamy sand stratified with strong brown (7.5YR 5/6) sandy loam lamella; single grain; loose in the 2E part and weak fine subangular blocky structure in the Bt part; very friable; strongly acid.

Reaction ranges from strongly acid to medium acid, except in areas where lime has been added. The depth to a stratified layer ranges from 30 to 50 inches.

The Ap horizon has hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 3 or 4. Texture is loam or silt loam. In severely eroded areas, texture is sandy clay loam or clay loam.

The Bt horizon has hue of 7.5YR, value of 4 or 5, and chroma of 4 or 6. Texture is loam, clay loam, or sandy clay loam.

The 2E and Bt horizon consists of alternating strata of loamy sand and sandy loam lamella. The E material has hue of 10YR or 7.5YR, value of 6 or 7, and chroma of 6 or 8. The Bt lamella is strong brown (7.5YR 5/6) in most pedons but can have colors in shades of yellow or red.

Dulac Series

The Dulac series conists of very deep, moderately well drained soils on uplands in the central part of the county. The soils formed in a mantle of loess overlying clayey marine sediments. They have a fragipan in the subsoil. Slopes range from 2 to 5 percent.

Typical pedon of Dulac silt loam, 2 to 5 percent slopes, severely eroded, 2.9 miles southwest of Stantonville, 0.5 mile west of the intersection of Tennessee Highway 142 and Albert Robinson Road, 400 feet south of the intersection of Tennessee

Highway 142 and Mt. Zion Cemetery Road, in a field (atlas sheet 27):

Ap—0 to 5 inches; dark yellowish brown (10YR 4/4) silt loam; few fine faint brown mottles; weak fine granular structure; very friable; common fine roots; strongly acid; clear smooth boundary.

Bt1—5 to 18 inches; strong brown (7.5YR 5/6) silt loam; few fine distinct brown (10YR 5/3) mottles; friable; moderate medium subangular blocky structure; few fine roots; few distinct clay films on faces of peds; very strongly acid; clear smooth boundary.

Bt2—18 to 22 inches; strong brown (7.5YR 5/6) silt loam; common medium prominent light brownish gray (10YR 6/2) and common fine distinct brown (7.5YR 4/4) mottles; moderate medium subangular blocky structure; friable; few faint clay films on faces of peds; very strongly acid; clear smooth boundary.

Btx—22 to 36 inches; mottled strong brown (7.5YR 5/6), light olive brown (2.5Y 5/6), and light gray (2.5Y 7/2) silty clay loam; moderate very coarse prismatic structure parting to moderate medium subangular blocky; firm, brittle; common prominent grayish films of silt and clay on faces of prisms and in vertical seams; very strongly acid; gradual wavy boundary.

2Bt1—36 to 45 inches; mottled gray (2.5Y 7/2), light olive brown (2.5Y 5/6), strong brown (7.5YR 5/6), and yellowish brown (10YR 5/6) clay; weak coarse prismatic structure parting to weak coarse angular and subangular blocky; firm; many prominent clay films on faces of peds; very strongly acid; gradual wavy boundary.

2Bt2—45 to 60 inches; mottled strong brown (7.5YR 5/6), light olive brown (2.5Y 5/4), red (2.5YR 4/6), and gray (10YR 6/1) clay; weak medium and coarse angular and subangular blocky structure; firm; many prominent clay films on faces of peds; very strongly acid.

Reaction is strongly acid or very strongly acid, except in areas where lime has been added. The depth to the fragipan ranges from 18 to 30 inches.

The Ap or A horizon has hue of 10YR or 7.5YR, value of 4 or 5, and chroma 3 or 4. Texture is silt loam.

The Bt horizon has hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 4 to 6. Most pedons have few to common mottles in shades of brown or gray in the lower part. Texture is silty clay loam or silt loam.

The Btx horizon has hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 2 to 6. Most pedons have an evenly mottled pattern in shades of brown and gray. Texture is silt loam or silty clay loam.

The 2Bt horizon is commonly mottled in shades of gray, brown, and red. Texture is clay or silty clay.

Enville Series

The Enville series consists of very deep, somewhat poorly drained soils on flood plains throughout the county. The soils formed in loamy alluvium. Slopes range from 0 to 2 percent.

Typical pedon of Enville fine sandy loam, occasionally flooded, 3.1 miles west of Milledgeville, 0.6 mile northwest of the intersection of Hardin Graveyard Road and Stanford Road, 500 feet north of Stanford Road, in a field (atlas sheet 4):

Ap—0 to 7 inches; dark yellowish brown (10YR 4/4) fine sandy loam; few medium distinct grayish brown (10YR 5/2) mottles; weak fine granular structure; very friable; many fine roots; strongly acid; clear smooth boundary.

C—7 to 14 inches; brown (10YR 4/3) sandy loam; common medium faint dark yellowish brown (10YR 4/4) and common medium distinct grayish brown (10YR 5/2) mottles; weak medium granular structure; friable; many fine roots; strongly acid; clear smooth boundary.

Cg1—14 to 28 inches; grayish brown (10YR 5/2) sandy loam; common medium distinct dark yellowish brown (10YR 4/4) and yellowish brown (10YR 5/6) mottles; massive; common iron and manganese concretions; few small fragments of ironstone; strongly acid; clear smooth boundary.

Cg2—28 to 40 inches; grayish brown (10YR 5/2) loam; common medium distinct dark yellowish brown (10YR 4/4) and yellowish brown (10YR 5/6) mottles; massive; common iron and manganese concretions; few small fragments of ironstone; very strongly acid; clear smooth boundary.

Cg3—40 to 60 inches; light brownish gray (10YR 6/2) sandy loam; common medium distinct dark yellowish brown (10YR 4/4) and yellowish brown (10YR 5/6) mottles; massive; many iron and manganese concretions; strongly acid.

Reaction is very strongly acid or strongly acid, except in areas where lime has been added.

The Ap and A horizons have hue of 10YR, value of 4 or 5, and chroma of 3 or 4. Texture is fine sandy loam.

The C horizon has hue of 10YR, value of 4 to 6, and chroma of 3 to 6. Most pedons have mottles in shades of brown and gray. Texture is fine sandy loam or sandy loam.

The Cg horizon has hue of 10YR, value of 5 to 7, and chroma of 2 or less. Most pedons are mottled in shades of brown and gray. Many pedons are stratified. Texture is sandy loam, loam, or silt loam.

Freeland Series

The Freeland series consists of very deep, moderately well drained soils on stream terraces throughout the county. The soils formed in a mantle of loess overlying loamy alluvium. They have a fragipan in the lower part of the subsoil. Slopes range from 1 to 4 percent.

Typical pedon of Freeland silt loam, 1 to 4 percent slopes, 1.1 miles southeast of Eastview, 0.3 mile northeast of the intersection of U.S. Highway 45 and Mayflower Road, 0.5 mile west of the intersection of Mayflower Road and Hack Bridge Road, 350 feet north of Mayflower Road, in a field (atlas sheet 37):

Ap—0 to 13 inches; brown (10YR 4/3) silt loam; weak fine granular structure; very friable; many fine roots; medium acid; clear smooth boundary.

Bt1—13 to 20 inches; dark yellowish brown (10YR 4/4) silt loam; weak fine subangular blocky structure; friable; common fine roots; few faint clay films on faces of peds; few dark iron and manganese nodules; strongly acid; clear smooth boundary.

Bt2—20 to 27 inches; yellowish brown (10YR 5/6) silt loam; weak fine and medium subangular blocky structure; friable; few fine roots; few distinct clay films on faces of peds; few dark iron and manganese nodules; strongly acid; gradual smooth boundary.

Bt3—27 to 36 inches; yellowish brown (10YR 5/6) silt loam; few fine distinct pale brown (10YR 6/3) mottles; weak fine and medium subangular blocky structure; friable; few fine roots; few faint clay films on faces of peds; few dark iron and manganese nodules; strongly acid; clear smooth boundary.

E/B—36 to 41 inches; light gray (10YR 7/1) silt loam in the E part and mottled yellowish brown (10YR 5/4), brownish yellow (10YR 6/6), and light brownish gray (10YR 6/2) silt loam in the Btx part; weak fine granular structure in the E part; friable; moderate fine and medium subangular blocky structure in the Btx part; firm, brittle; few fine roots; few dark iron and manganese concretions; very strongly acid; abrupt irregular boundary.

Btx1—41 to 50 inches; mottled yellowish brown (10YR 5/6), gray (10YR 6/1), and strong brown (7.5YR 5/6) silt loam; moderate very coarse prismatic structure parting to moderate medium subangular blocky; very firm, brittle; few fine roots in vertical seams; common prominent clay films on faces of prisms and peds; vertical seams of silt and silt loam about ⅛ to 1½ inches wide; few dark iron and manganese concretions; very strongly acid; gradual smooth boundary.

2Btx2—50 to 60 inches; mottled light gray (2.5Y 7/2), light olive brown (2.5Y 5/6), and light yellowish brown (2.5Y 6/4) loam; moderate very coarse prismatic structure parting to moderate medium subangular blocky; very firm, brittle; common prominent clay films on faces of prisms and peds; grayish vertical seams of silt and silt loam about ⅛ inch to 1½ inches wide; common dark iron and manganese concretions; few mica flakes; strongly acid.

Reaction ranges from very strongly acid to slightly acid, except in areas where lime has been added.

The Ap and A horizons have hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 3 or 4. Texture is silt loam or loam.

The Bt horizon has hue of 10YR, value of 4 or 5, and chroma of 4 to 8. Mottles in shades of yellow or brown range from none to common. Texture is silt loam or silty clay loam.

The E material, or the E horizon (if it occurs), has hue of 10YR, value of 6 or 7, and chroma of 3 or less. Mottles in shades of yellow and brown range from few to common. Texture is silt loam.

The Btx and 2Btx horizons have hue of 10YR or 2.5Y, value of 4 to 8, and chroma of 1 to 6. Most pedons have an evenly mottled matrix of these colors. Texture is commonly silt loam, loam, or clay loam but also includes fine sandy loam and sandy clay loam.

Guyton Series

The Guyton series consists of very deep, poorly drained soils on low stream terraces throughout the county. The soils formed in a mantle of loess overlying loamy alluvium. Slopes range from 0 to 1 percent.

Typical pedon of Guyton silt loam, 2.1 miles northeast of Acton, 0.2 mile east of the intersection of Fox Hunt Road and Liberty Road, 800 feet southwest of the intersection of Fox Hunt Road and a farm path, in a pasture (atlas sheet 44):

Ap—0 to 6 inches; brown (10YR 5/3) silt loam; weak fine granular structure; very friable; few fine and very fine roots; few dark iron and manganese concretions; strongly acid; abrupt smooth boundary.

Eg—6 to 28 inches; gray (10YR 6/1) silt loam; common medium distinct brown (10YR 4/3) mottles; weak fine subangular blocky structure; very friable; few very fine roots; common dark iron and manganese concretions; strongly acid; clear irregular boundary.

B/E—28 to 48 inches; gray (10YR 6/1) silty clay loam; weak coarse prismatic structure parting to weak and moderate medium subangular blocky; friable; common distinct clay films on faces of peds;

tongues of light gray (10YR 7/2) silt loam (E) between peds making up 15 percent of the horizon; common dark iron and manganese concretions and nodules; strongly acid; gradual smooth boundary.

Btg—48 to 60 inches; grayish brown (10YR 5/2) silty clay loam; common medium distinct yellowish brown (10YR 5/6) mottles; weak medium and coarse subangular blocky structure; friable; common distinct clay films on faces of peds; many dark iron and manganese concretions; strongly acid.

Reaction ranges from strongly acid to medium acid, except in areas where lime has been added.

The Ap or A horizon has hue of 10YR, value of 4 to 6, and chroma of 2 or 3. Texture is silt loam.

The Eg horizon has hue of 10YR, value of 6 or 7, and chroma of 2 or less. It is mottled in shades of brown. Texture is silt loam.

The B/E horizon has colors and textures similar to those of the Btg and Eg horizons.

The Btg horizon has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 1 or 2. It has mottles in shades of brown or gray. Texture is silty clay loam or clay loam.

Hatchie Series

The Hatchie series consists of very deep, somewhat poorly drained soils on low stream terraces throughout the county. The soils formed in a mantle of loess overlying loamy alluvium. They have a fragipan in the lower part of the subsoil. Slopes range from 0 to 2 percent.

Typical pedon of Hatchie silt loam, 0.4 mile south of Ramer, 0.5 mile northeast of the intersection of Tennessee Highway 234 and Muddy Creek, 1,000 feet east of the intersection of Tennessee Highway 234 and a farm path, in a field (atlas sheet 36):

Ap—0 to 7 inches; brown (10YR 5/3) silt loam; common medium faint light brownish gray (10YR 6/2), common medium distinct light gray (10YR 7/1), and common medium prominent strong brown (7.5YR 5/6) mottles; weak fine and medium granular structure; very friable; many fine roots; common iron and manganese stains; slightly acid; abrupt smooth boundary.

Bt1—7 to 13 inches; yellowish brown (10YR 5/4) silt loam; few fine distinct light brownish gray (10YR 6/2) mottles; moderate medium subangular blocky structure; friable; few very fine roots; few faint clay films on faces of peds; few dark iron and manganese concretions and stains; strongly acid; clear smooth boundary.

Bt2—13 to 19 inches; yellowish brown (10YR 5/4) silt loam; common medium distinct light brownish gray (10YR 6/2) and few medium distinct light gray (10YR 7/1) mottles; weak medium subangular blocky structure; friable; few faint clay films on faces of peds; few dark iron and manganese concretions and nodules; strongly acid; clear smooth boundary.

B/E—19 to 26 inches; mottled light gray (10YR 7/1), yellowish brown (10YR 5/6) and strong brown (7.5YR 5/6) silt loam in the Btx part and light gray (10YR 7/1) silt loam in the E part; moderate medium subangular blocky structure in the Btx part and weak fine granular structure in the E part; firm, brittle in 40 percent of the mass; common medium faint gray (10YR 6/1) and common fine prominent yellowish brown (10YR 5/6) and strong brown (7.5YR 5/6) mottles in the E part; very friable; common dark iron and manganese concretions and nodules; strongly acid; clear wavy boundary.

2Btx1—26 to 38 inches; mottled light gray (10YR 7/1), strong brown (7.5YR 5/6), and yellowish brown (10YR 5/6) loam; moderate very coarse prismatic structure parting to moderate medium subangular blocky; firm, brittle; common prominent films of silt and clay on faces of prisms and in vertical seams; few dark iron and manganese concretions; very strongly acid; gradual smooth boundary.

2Btx2—38 to 57 inches; yellowish brown (10YR 5/6) loam; common medium distinct light brownish gray (10YR 6/2) mottles; weak very coarse prismatic structure parting to moderate medium subangular blocky; firm, brittle; common prominent films of silt and clay on faces of prisms and in vertical seams; few dark iron and manganese concretions; very strongly acid; gradual smooth boundary.

2Bt—57 to 60 inches; yellowish brown (10YR 5/6) clay loam; common medium distinct gray (10YR 6/1) mottles; moderate medium subangular blocky structure; few distinct clay films on faces of peds; friable; few fine iron and manganese stains; strongly acid.

Reaction ranges from very strongly acid to slightly acid, except in areas where lime has been added. The depth to the fragipan ranges from 18 to 32 inches.

The Ap horizon has hue of 10YR, value of 4 or 5, and chroma of 2 to 4. Texture is silt loam.

The Bt horizon, or the Bw horizon (if it occurs), has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 4 or 6. It has few to common mottles in shades of gray and brown. Texture is silt loam.

The E material, or the E horizon (if it occurs), has hue of 10YR, value of 7 or 8, and chroma of 1 or 2. It has fine mottles in shades of yellow or brown. Texture is silt loam.

The Btx or 2Btx horizon has hue of 10YR or 2.5Y,

value of 5 or 6, and chroma of 2 to 6. It has common to many mottles in shades of gray, yellow, or brown. Most pedons have an evenly mottled pattern in shades of gray, yellow, and brown. Texture is silt loam, loam, or clay loam.

The 2Bt horizon has colors similar to those of the Btx horizon. Texture is clay loam.

Iuka Series

The Iuka series consists of very deep, moderately well drained soils on flood plains throughout the county. The soils formed in loamy alluvium. Slopes range from 0 to 2 percent.

Typical pedon of Iuka fine sandy loam, occasionally flooded, 0.8 mile northwest of Ramer, 0.3 mile east of the intersection of Friendship Road and Blanship Road, 1,200 feet northeast of the intersection of Friendship Road and Cypress Creek, in a field (atlas sheet 31):

Ap—0 to 7 inches; yellowish brown (10YR 5/4) fine sandy loam; weak fine granular structure; very friable; many fine roots; very strongly acid; clear smooth boundary.

C1—7 to 14 inches; brown (10YR 5/3) fine sandy loam; massive; friable; few fine roots; very strongly acid; gradual wavy boundary.

C2—14 to 25 inches; brown (10YR 5/3) loam; few medium faint light brownish gray (10YR 6/2) mottles; massive; friable; very strongly acid; gradual wavy boundary.

C3—25 to 60 inches; yellowish brown (10YR 5/4) loam; many medium distinct gray (10YR 5/1) and common medium faint grayish brown (10YR 5/2) mottles; massive; friable; very strongly acid.

Reaction is strongly acid or very strongly acid, except in areas where lime has been added.

The Ap horizon has hue of 10YR, value of 4 or 5, and chroma of 3 or 4. Texture is fine sandy loam or sandy loam.

The C horizon has hue of 10YR or 7.5YR, value of 4 to 6, and chroma of 3 to 6. It has few to many mottles in shades of brown, gray, and yellow. Some pedons are dominantly gray below a depth of 20 inches. Thin strata of contrasting textures are common in most pedons. Texture is fine sandy loam, sandy loam, silt loam, or loam.

Lexington Series

The Lexington series consists of very deep, well drained soils on undulating uplands in the central and western parts of the county. The soils formed in a mantle of loess overlying loamy marine sediments. Slopes range from 1 to 4 percent.

Typical pedon of Lexington silt loam, 1 to 4 percent slopes, eroded, 1.8 miles east of Finger, 0.5 mile southeast of the intersection of Hutchinson Road and Hilliard Gann Road, 400 feet east of Hilliard Road, in a field (atlas sheet 2):

Ap—0 to 4 inches; yellowish brown (10YR 5/4) silt loam; common fine prominent yellowish red (5YR 5/6) mottles; weak fine granular structure; very friable; common fine and medium roots; strongly acid; clear smooth boundary.

Bt1—4 to 35 inches; yellowish red (5YR 5/6) silty clay loam; moderate medium subangular blocky structure; friable; few fine roots; common distinct clay films on faces of peds; strongly acid; clear smooth boundary.

2Bt2—35 to 42 inches; yellowish red (5YR 5/6) loam; common medium prominent brownish yellow (10YR 6/6) and common medium distinct strong brown (7.5YR 5/6) mottles; moderate medium subangular blocky structure; friable; few distinct clay films on faces of peds; strongly acid; gradual smooth boundary.

2Bt3—42 to 60 inches; yellowish red (5YR 4/6) sandy loam; moderate medium subangular blocky structure; friable; few distinct clay films on faces of peds; strongly acid.

Reaction ranges from medium acid to very strongly acid, except in areas where lime has been added.

The Ap horizon has hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 2 to 4. It has few to common mottles in shades of brown or red. Texture is silt loam.

The Bt horizon has hue of 7.5YR or 5YR, value of 4 or 5, and chroma of 4 or 6. Texture is silt loam or silty clay loam.

The 2Bt horizon has hue of 2.5YR to 7.5YR, value of 4 or 5, and chroma of 4 to 8. It has few to common mottles in shades of yellow and brown. Texture is loam, sandy loam, or sandy clay loam. Some pedons have a 2E/Bt horizon that has hue of 10YR, value of 5 or 6, and chroma of 3 to 6. Texture is stratified sandy loam and loamy sand.

Luverne Series

The Luverne series consists of very deep, well drained soils on dissected uplands in the central part of the county. The soils formed in stratified marine sediments. Slopes range from 8 to 30 percent.

Typical pedon of Luverne fine sandy loam, 12 to 30 percent slopes, 4.9 miles southeast of Selmer, 2.2 miles

east of the intersection of U.S. Highway 45 and Tennessee Highway 142, 900 feet northeast of the intersection of Tennessee Highway 142 and North Fork Oxford Creek, in a wooded area (atlas sheet 27):

A—0 to 2 inches; dark grayish brown (10YR 4/2) fine sandy loam; weak medium granular structure; very friable; many fine and medium roots; extremely acid; abrupt smooth boundary.
E—2 to 5 inches; yellowish brown (10YR 5/4) fine sandy loam; weak fine granular structure; many fine roots; extremely acid; abrupt smooth boundary.
Bt1—5 to 10 inches; reddish brown (5YR 4/4) clay loam; moderate medium subangular blocky structure; firm; few fine roots; common prominent clay films on faces of peds; few fine flakes of mica; extremely acid; gradual smooth boundary.
Bt2—10 to 24 inches; red (2.5YR 5/6) clay loam; moderate fine and medium subangular blocky structure; firm; common distinct clay films on faces of peds; few fine flakes of mica; few fragments of ironstone; extremely acid; gradual wavy boundary.
BC—24 to 34 inches; yellowish red (5YR 5/6) sandy clay loam; common medium distinct strong brown (7.5YR 5/6) and common medium prominent light yellowish brown (10YR 6/4) mottles; weak medium and coarse subangular blocky structure; common distinct clay films on faces of peds; common fine flakes of mica; few ironstone fragments; extremely acid; gradual wavy boundary.
C—34 to 60 inches; light gray (10YR 7/1) clay that has thin strata of sandy clay loam; common medium prominent yellowish red (5YR 4/6) and red (2.5YR 4/6) mottles; massive; firm; common fine flakes of mica; extremely acid.

Reaction ranges from extremely acid to strongly acid, except in areas where lime has been added.

The A horizon and the Ap horizon, if it occurs, have hue of 10YR or 7.5YR, value of 4 to 6, and chroma of 2 to 4. Texture is fine sandy loam. Pedons in severely eroded areas have colors similar to those of the Bt horizon and have a texture of clay loam.

The E horizon has hue of 10YR or 7.5YR, value of 5 or 6, and chroma of 3 or 4. Texture is fine sandy loam.

The Bt horizon has hue of 5YR or 2.5YR, value of 4 or 5, and chroma of 4 to 8. Some pedons have mottles in shades of brown, red, and yellow in the lower part. Texture is clay loam.

The BC horizon has hue of 5YR or 2.5YR, value of 4 or 5, and chroma of 4 to 8. It is mottled in shades of red, brown, and yellow. Texture is sandy clay loam or clay loam.

The C horizon is commonly gray clay that has strata of sandy clay loam. It has common to many mottles in shades of brown, red, and yellow. Some pedons are stratified sandy clay loam and loamy sand and have colors of red, brown, yellow, and gray.

Ochlockonee Series

The Ochlockonee series consists of very deep, well drained soils on flood plains throughout the county. The soils formed in loamy alluvium. Slopes range from 0 to 2 percent.

Typical pedon of Ochlocknee fine sandy loam, occasionally flooded, 0.8 mile northwest of Eastview, 0.7 mile southwest of the intersection of Tom Baker Road and U.S. Highway 45, about 1,700 feet south of the intersection of Tom Baker Road and Roland Creek, in a field (atlas sheet 32):

Ap—0 to 8 inches; brown (10YR 4/3) fine sandy loam; weak fine granular structure; very friable; many fine roots; very strongly acid; clear smooth boundary.
C1—8 to 26 inches; brown (10YR 4/3) fine sandy loam; massive; very friable; many fine roots; very strongly acid; gradual smooth boundary.
C2—26 to 45 inches; brown (10YR 4/3) sandy loam; common medium distinct brown (7.5YR 4/4) and yellowish brown (10YR 5/6) and common medium faint pale brown (10YR 6/3) mottles; massive; very friable; few fine and very fine roots; very strongly acid; gradual smooth boundary.
C3—45 to 60 inches; brown (7.5YR 4/4) sandy loam; common medium and coarse distinct yellowish brown (10YR 5/4) and common medium distinct pale brown (10YR 6/3) mottles; massive; very friable; very strongly acid.

Reaction is very strongly acid or strongly acid, except in areas where lime has been added.

The Ap horizon has hue of 10YR, value of 4 or 5, and chroma of 2 to 4. Texture is fine sandy loam.

The C horizon has hue of 10YR or 7.5YR, value of 4 to 6, and chroma of 3 to 6. Most pedons have few to common mottles in shades of brown or yellow below a depth of 20 inches. Some pedons have thin strata of loamy sandy or loamy fine sandy. Texture is fine sandy loam or sandy loam.

Oktibbeha Series

The Oktibbeha series consists of very deep, moderately well drained soils on uplands in the eastern part of the county. The soils formed in clayey sediments overlying the marly clays of the Demopolis Formation. Slopes range from 2 to 20 percent.

Typical pedon of Oktibbeha clay loam, 2 to 5 percent

slopes, 0.7 mile northeast of New Hope, 0.3 mile northeast of the intersection of New Hope Road and Hubert Manus Road, 0.8 mile northwest of the intersection of Hubert Manus Road and Clyde Prather Road, 200 feet north of Hubert Manus Road, in a field (atlas sheet 38):

Ap—0 to 4 inches; dark brown (7.5YR 4/4) clay loam; weak medium granular structure; friable; many fine roots; very strongly acid; abrupt smooth boundary.
Bt1—4 to 16 inches; red (2.5YR 4/6) clay; common medium distinct yellowish red (5YR 4/8) mottles; moderate medium subangular blocky structure; firm; few fine roots; common prominent clay films on faces of peds; very strongly acid; clear smooth boundary.
Bt2—16 to 24 inches; yellowish red (5YR 5/6) clay; common medium prominent light brownish gray (10YR 6/2) and light yellowish brown (10YR 6/4) mottles; strong medium subangular and angular blocky structure; firm; common prominent clay films on faces of peds; common pressure faces on peds; very strongly acid; gradual smooth boundary.
Bt3—24 to 40 inches; mottled light olive brown (2.5Y 5/4), light brownish gray (10YR 6/2), and yellowish red (5YR 5/8) clay; strong medium subangular and angular blocky structure; firm; common prominent clay films on faces of peds; common pressure faces; few prominent slickensides that do not intersect; very strongly acid; clear smooth boundary.
2C—40 to 60 inches; pale yellow (5Y 7/3) marly clay; common medium distinct light brownish gray (2.5Y 6/2) and common medium prominent strong brown (7.5YR 5/6) mottles; massive; firm; many soft calcium carbonate nodules; common shell fragments; moderately alkaline; strongly effervescent.

Reaction is strongly acid or very strongly acid in the A and B horizons and ranges from neutral to moderately alkaline in the 2C horizon. The depth to marly clay and soft chalk ranges from 20 to 50 inches.

The Ap or A horizon has hue of 10YR or 7.5YR, value of 3 to 5, and chroma of 2 to 4. Texture is clay loam or silty clay loam. In severely eroded areas, the texture is clay.

The Bt horizon has hue of 7.5YR to 2.5YR, value of 4 or 5, and chroma of 3 to 6. It has few to common mottles in shades of brown and gray. In the lower part of the horizon, most pedons have an evenly mottled pattern in shades of brown, gray, and red. Texture is clay or silty clay.

The 2C horizon has hue of 10YR to 5Y, value of 5 to 7, and chroma of 3 to 8. It has few to common mottles in shades of gray, brown, and olive. In some pedons the C horizon is soft chalk and marly clay. Texture is silty clay or clay.

Paden Series

The Paden series consists of very deep, moderately well drained soils in the eastern part of the county on old high terraces of the Tennessee River. The soils formed in a silty mantle overlying old alluvium. They have a fragipan in the lower part of the subsoil. Slopes range from 2 to 5 percent.

Typical pedon of Paden silt loam, 2 to 5 percent slopes, 1.9 miles east of Stantonville, 0.4 mile southwest of the intersection of Dennie Barber Road and Gray Store Road, 900 feet west of Gray Store Road, in a field (atlas sheet 28):

Ap—0 to 8 inches; dark brown (10YR 4/3) silt loam; few fine faint brown mottles; weak fine granular structure; very friable; many fine roots; strongly acid; clear smooth boundary.
E—8 to 12 inches; brown (10YR 5/3) silt loam; weak fine granular structure; very friable; common fine roots; strongly acid; clear wavy boundary.
Bw1—12 to 18 inches; strong brown (7.5YR 5/6) silt loam; moderate medium subangular blocky structure; friable; common fine roots; strongly acid; clear smooth boundary.
Bw2—18 to 28 inches; yellowish brown (10YR 5/6) silt loam; few fine distinct grayish brown (10YR 5/2) and strong brown (7.5YR 5/6) mottles; moderate fine and medium subangular blocky structure; friable; strongly acid; clear wavy boundary.
E′/B—28 to 32 inches; light brownish gray (10YR 6/2) silt loam in the E part and yellowish brown (10YR 5/4) silt loam in the B part; common fine faint grayish brown (10YR 5/2) mottles; weak fine subangular blocky structure in the E part and moderate fine and subangular blocky structure in the B part; very friable; firm, brittle; few fine roots; strongly acid; clear irregular boundary.
Btx—32 to 46 inches; yellowish brown (10YR 5/4) silty clay loam; common medium distinct light brownish gray (10YR 6/2), common medium prominent strong brown (7.5YR 5/6), and few fine prominent red (2.5YR 4/6) mottles; moderate coarse and very coarse prismatic structure parting to moderate medium subangular blocky; very firm, brittle; few fine roots in vertical seams; common prominent grayish films of silt and clay on faces of prisms and in vertical seams; few dark iron and manganese concretions; strongly acid; clear wavy boundary.
2Bt—46 to 60 inches; mottled red (2.5YR 4/6), yellowish brown (10YR 5/6), and gray (10YR 6/1) clay loam;

strong fine and medium subangular and angular blocky structure; firm; common distinct clay films on faces of peds; few fine iron and manganese nodules; strongly acid.

Reaction is strongly acid or very strongly acid, except in areas where lime has been added. The depth to the fragipan ranges from 18 to 36 inches.

The Ap horizon has hue of 10YR, value of 4 or 5, and chroma of 2 to 4. Texture is silt loam.

The E horizon, if it occurs, has hue of 10YR, value of 5 or 6, and chroma of 3 or 4. Texture is silt loam.

The Bw horizon has hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 4 or 6. It has mottles in shades of brown and gray. Texture is silt loam or silty clay loam.

The E part of the E′/Btx horizon has hue of 10YR or 2.5Y, value of 6 or 7, and chroma of 1 to 3. It has mottles in shades of brown and gray. The Btx part has colors similar to those of the Btx horizon. Texture is silt loam.

The Btx horizon has hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 3 to 6. It has common to many mottles in shades of brown, red, or gray. Texture is silt loam or silty clay loam.

The 2Bt horizon has hue of 5YR or 2.5YR, value of 3 to 5, and chroma of 6 or 8. Most pedons have an evenly mottled pattern in shades of red, brown, and gray. Texture is commonly clay loam or sandy clay loam but can range to clay.

Pickwick Series

The Pickwick series consists of very deep, well drained soils in the eastern part of the county on old terraces of the Tennessee River. The soils formed in a silty mantle overlying old alluvium. Slopes range from 2 to 12 percent.

Typical pedon of Pickwick silt loam, 2 to 5 percent slopes, 1.3 miles southeast of Stantonville, 0.5 mile north of the intersection of Joe Dillion Road and Lawrence Soul Road, 50 feet east of Lawrence Soul Road, in a field (atlas sheet 28):

Ap—0 to 7 inches; dark brown (7.5YR 4/4) silt loam; weak medium granular structure; very friable; many fine roots; strongly acid; clear smooth boundary.

Bt1—7 to 21 inches; yellowish red (5YR 5/6) silty clay loam; moderate medium subangular blocky structure; friable; common fine roots; common distinct clay films on faces of peds; strongly acid; clear smooth boundary.

Bt2—21 to 40 inches; yellowish red (5YR 4/6) silty clay loam; common fine prominent yellowish brown (10YR 5/4) mottles; moderate medium subangular blocky structure; friable; many distinct clay films on faces of peds; very strongly acid; gradual smooth boundary.

Bt3—40 to 60 inches; yellowish red (5YR 4/6) clay loam; common fine prominent yellowish brown (10YR 5/4) mottles; moderate medium and coarse subangular blocky structure; friable; few distinct clay films on faces of peds; very strongly acid.

Reaction is strongly acid or very strongly acid, except in areas where lime has been added.

The Ap horizon has hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 4 to 6. Texture is silt loam or, in severely eroded areas, silty clay loam.

The Bt horizon has hue of 5YR or 2.5YR, value of 4 or 5, and chroma of 4 to 8. It has mottles that range from none to common in shades of brown. Texture is silt loam or silty clay loam in the upper part and silty clay loam or clay loam in the lower part.

Providence Series

The Providence series consists of very deep, moderately well drained soils on uplands and high terraces in the central and western parts of the county. The soils formed in a silty mantle overlying loamy coastal plain sediments. They have a fragipan in the subsoil. Slopes range from 2 to 15 percent.

Typical pedon of Providence silt loam, 2 to 5 percent slopes, 1.4 miles north of McNairy, 0.3 mile east of the intersection of U.S. Highway 45 and Smith Road, 0.1 mile west of the intersection of Smith Road and Ward Road, 200 feet south of Smith Road, in a field (atlas sheet 5):

Ap—0 to 5 inches; yellowish brown (10YR 5/4) silt loam; weak fine granular structure; very friable; many fine roots; strongly acid; abrupt smooth boundary.

Bt1—5 to 22 inches; reddish brown (5YR 4/4) silty clay loam; moderate medium subangular blocky structure; friable; few fine roots; few faint clay films on faces of peds; strongly acid; clear smooth boundary.

Btx1—22 to 35 inches; yellowish red (5YR 5/6) silty clay loam; common medium prominent pale brown (10YR 6/3) and pinkish gray (7.5YR 6/2) mottles; weak coarse and very coarse prismatic structure parting to moderate medium subangular blocky; firm, brittle; common prominent grayish films of silt and clay on faces of prisms and in vertical seams; very strongly acid; clear wavy boundary.

2Btx2—35 to 52 inches; yellowish red (5YR 4/6) loam; common medium distinct strong brown (7.5YR 5/6) and common medium prominent pale brown (10YR 6/3) and light gray (10YR 7/2) mottles; weak coarse

and very coarse prismatic structure parting to moderate medium subangular blocky; firm, brittle; common prominent grayish films of silt and clay on faces of prisms and in vertical seams; very strongly acid; gradual wavy boundary.

2Bt—52 to 60 inches; mottled yellowish red (5YR 4/6), gray (10YR 6/1), and brownish yellow (10YR 6/8) sandy clay loam; weak medium and coarse subangular blocky structure; common faint clay films on faces of peds; very strongly acid.

Reaction is strongly acid or very strongly acid, except in areas where lime has been added. The depth to the fragipan ranges from 18 to 30 inches.

The Ap horizon has hue of 10YR, value of 4 or 5, and chroma of 3 to 6. Some pedons have an A horizon that has hue of 10YR, value of 3 or 4, and chroma of 1 to 3. Texture is silt loam. In severely eroded areas, texture is silty clay loam.

The Bt horizon has hue of 10YR to 5YR, value of 4 or 5, and chroma of 4 to 8. Texture is silt loam or silty clay loam.

The Btx and 2Btx horizons have hue of 5YR or 7.5YR, value of 4 or 5, and chroma of 6 or 8. They have mottles in shades of gray, brown, and red. Many pedons have an evenly mottled pattern in these colors. Texture in the Btx horizon is silty clay loam or silt loam, and texture in the 2Btx horizon is sandy clay loam, clay loam, sandy loam, or loam.

In most pedons the 2Bt horizon is mottled in shades of red, gray, yellow, and brown. Texture is sandy clay loam, sandy loam, loam, or clay loam.

Saffell Series

The Saffell series consists of very deep, well drained soils on high Tennessee River terraces that are in and around the communities of Michie and Pebble Hill. The soils formed in loamy and gravelly fluvial and coastal plain sediments. Slopes range from 5 to 30 percent.

Typical pedon of Saffell gravelly sandy loam, 12 to 30 percent slopes, 0.2 mile northeast of Pebble Hill, 0.6 mile west of the intersection of Ted Dammons Road and Chambers Store Road, 500 feet north of Chambers Store Road, in a wooded area (atlas sheet 34):

A—0 to 2 inches; dark brown (10YR 4/3) gravelly sandy loam; weak fine granular structure; very friable; many fine roots; about 20 percent gravel by volume; strongly acid; abrupt smooth boundary.

E—2 to 6 inches; brown (10YR 5/3) gravelly sandy loam; weak medium granular structure; very friable; common fine roots; about 20 percent gravel by volume; strongly acid; clear smooth boundary.

BE—6 to 16 inches; yellowish red (5YR 5/8) gravelly fine sandy loam; weak fine and medium subangular blocky structure; friable; few fine roots; about 25 percent gravel by volume; strongly acid; gradual wavy boundary.

Bt1—16 to 22 inches; yellowish red (5YR 5/6) very gravelly sandy clay loam; moderate fine and medium subangular blocky structure; friable; common distinct clay films on faces of peds and coating fragments; about 50 percent gravel by volume; strongly acid; gradual smooth boundary.

Bt2—22 to 46 inches; red (2.5YR 4/6) very gravelly sandy clay loam; moderate fine and medium subangular blocky structure; friable; common distinct clay films on faces of peds and coating fragments; about 50 percent gravel by volume; strongly acid; gradual wavy boundary.

BC—46 to 60 inches; red (2.5YR 4/6) very gravelly sandy loam; weak fine and medium subangular blocky structure; friable; friable; about 55 percent gravel by volume; strongly acid.

Reaction is strongly acid or very strongly acid.

The A horizon has hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 2 to 4. Texture is gravelly sandy loam.

The E horizon has hue of 10YR, value of 4 or 5, and chroma of 4 or 6. Texture is gravelly sandy loam.

The BE horizon, if it occurs, has hue of 7.5YR or 5YR, value of 4 or 5, and chroma of 4 to 8. Texture of the fine-earth fraction is sandy loam, fine sandy loam, or sandy clay loam.

The Bt horizon has hue of 7.5YR, 5YR, or 2.5YR, value of 4 to 6, and chroma of 4 to 8. Texture of the fine-earth fraction is sandy clay loam, clay loam, and loam.

The BC horizon has colors that are similar to those of the Bt horizon. Texture of the fine-earth fraction is sandy loam or loamy sand.

Silerton Series

The Silerton series consists of very deep, well drained soils on uplands in the central part of the county. The soils formed in a silty mantle overlying clayey marine sediments. Slopes range from 2 to 8 percent.

Typical pedon of Silerton silt loam, 2 to 5 percent slopes, 4.5 miles southeast of Selmer, 1.2 miles southeast of the intersection of U.S. Highway 45 and Lake Field Road, 2.4 miles west of the intersection of Lake Field Road and Pleasant Sight Road, 1,000 feet south of Lake Field Road, in a field (atlas sheet 32):

Ap—0 to 8 inches; brown (10YR 5/3) silt loam; few fine prominent strong brown (7.5YR 5/6) and few fine

faint pale brown mottles; weak medium granular structure; very friable; many fine roots; strongly acid; clear smooth boundary.

Bt1—8 to 18 inches; strong brown (7.5YR 5/6) silty clay loam; moderate medium subangular blocky structure; friable; few fine roots; few distinct clay films on faces of peds; few dark iron and manganese concretions; few fine gravels; strongly acid; clear smooth boundary.

Bt2—18 to 28 inches; strong brown (7.5YR 5/6) silty clay loam; common medium distinct yellowish brown (10YR 5/6) and common medium prominent pale brown (10YR 6/3) mottles; moderate medium subangular blocky structure; friable; few distinct clay films on faces of peds; few fine gravels; very strongly acid; clear wavy boundary.

2Bt3—28 to 35 inches; mottled yellowish brown (10YR 5/6), yellowish red (5YR 5/6), red (2.5YR 4/6), and pale brown (10YR 6/3) clay; strong medium angular blocky structure; firm; common prominent clay films on faces of peds; few dark iron concretions; few ironstone fragments; very strongly acid; gradual smooth boundary.

2Bt4—35 to 60 inches; mottled gray (10YR 6/1), strong brown (7.5YR 5/6), red (2.5YR 4/6), and brownish yellow (10YR 6/6) clay; strong medium angular blocky structure; firm; common prominent clay films on faces of peds; few dark iron stains; few ironstone fragments; very strongly acid.

Reaction is strongly acid or very strongly acid, except in areas where lime has been added.

The Ap or A horizon has hue of 10YR, value of 4 or 5, and chroma of 3 or 4. Texture is silt loam.

The Bt horizon has hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 4 or 6. Most pedons have few to common mottles in shades of brown, yellow, or red in the lower part. Texture is silt loam or silty clay loam.

The 2Bt horizon has an evenly mottled pattern in shades of brown, yellow, and red in the upper part and in shades of gray in the lower part. Texture is clay or sandy clay.

Smithdale Series

The Smithdale series consists of very deep, well drained soils on dissected uplands throughout the county. The soils formed in loamy marine sediments. Slopes range from 5 to 30 percent.

Typical pedon of Smithdale fine sandy loam, 15 to 30 percent slopes, 3.2 miles southeast of Finger, 0.5 mile southeast of the intersection of Finger-Leapwood Road and Ed Barham Road, 1,200 feet southeast of the intersection of Ed Barham Road and Albert Owens Road, in a wooded area (atlas sheet 6):

A—0 to 3 inches; dark grayish brown (10YR 4/2) fine sandy loam; weak medium granular structure; very friable; common fine and medium roots; strongly acid; clear smooth boundary.

E—3 to 11 inches; yellowish brown (10YR 5/4) fine sandy loam; weak medium granular structure; very friable; common fine and medium roots; strongly acid; clear smooth boundary.

Bt1—11 to 22 inches; yellowish red (5YR 4/6) sandy clay loam; moderate medium subangular blocky structure; friable; few fine and medium roots; few distinct clay films on faces of peds; strongly acid; clear smooth boundary.

Bt2—22 to 43 inches; red (2.5YR 4/6) sandy clay loam; moderate medium subangular blocky structure; friable; few fine and medium roots; common distinct clay films on faces of peds; very strongly acid; gradual wavy boundary.

Bt3—43 to 60 inches; yellowish red (5YR 5/6) sandy loam that has pockets of loamy sand and sand; weak medium subangular blocky structure; friable; few faint clay films on faces of peds; very strongly acid.

Reaction is very strongly acid or strongly acid, except in areas where lime has been added.

The A horizon has hue of 10YR or 7.5YR, value of 4, and chroma of 3 or less. The Ap horizon, if it occurs, has hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 2 to 6. Texture of the A or Ap horizon is fine sandy loam. In severely eroded areas, the texture is loam.

The E horizon has hue of 10YR, value of 5 or 6, and chroma of 2 to 4. Texture is fine sandy loam.

The Bt horizon has hue of 5YR or 2.5YR, value of 4 or 5, and chroma of 6 or 8. Texture is dominantly sandy clay loam or clay loam in the upper part and sandy loam in the lower part. Most pedons have pockets or thin strata of loamy sand or sand in the lower part.

Sumter Series

The Sumter series consists of moderately deep, well drained soils on hillsides in the eastern part of the county. The soils formed in the marly clays and chalk of the Demopolis Formation. Slopes range from 5 to 20 percent.

Typical pedon of Sumter silty clay, in an area of Oktibbeha and Sumter soils, 8 to 20 percent slopes; 2.1 miles northeast of Guys, 0.4 mile northeast of the intersection of U.S. Highway 45 and Smith's Store Road, 0.4 mile southwest of the intersection of Hack Bridge Road and Smith's Store Road, 400 feet north of Smith's Store Road, in a wooded area (atlas sheet 38):

A—0 to 4 inches; grayish brown (2.5Y 5/2) silty clay; common medium distinct light yellowish brown (2.5Y 6/4) mottles; moderate medium granular structure; friable; common fine roots; few fine soft calcium carbonate nodules; common shell fragments; mildly alkaline; strongly effervescent; clear smooth boundary.

Bw1—4 to 10 inches; olive (5Y 5/4) silty clay; common fine prominent dark yellowish brown (10YR 4/4) and common fine distinct pale yellow (5Y 7/4) mottles; strong medium angular and subangular blocky structure; firm; few fine roots; common fine soft calcium carbonate nodules; moderately alkaline; strongly effervescent; clear smooth boundary.

Bw2—10 to 23 inches; pale yellow (5Y 7/4) silty clay; common medium prominent olive brown (2.5Y 4/4), olive yellow (2.5Y 6/6), and light gray (2.5Y 7/2) mottles; strong medium angular and subangular blocky structure; firm; common fine soft calcium carbonate nodules; few shell fragments; moderately alkaline; strongly effervescent; gradual smooth boundary.

C—23 to 32 inches; variegated light olive brown (2.5Y 5/4), light olive gray (5Y 6/2), light gray (5Y 7/2), and olive yellow (2.5Y 6/6) marly silty clay; massive; firm; many soft calcium carbonate nodules; moderately alkaline; strongly effervescent; gradual wavy boundary.

Cr—32 to 60 inches; light gray (2.5Y 7/2) chalk; few fine prominent strong brown (7.5YR 5/6) and yellowish brown (10YR 5/6) and common medium faint light olive gray (5Y 6/2) mottles and streaks; moderately alkaline; strongly effervescent.

Reaction ranges from neutral to moderately alkaline. The depth to marly clay or chalk ranges from 20 to 40 inches.

The A horizon has hue of 10YR to 5Y, value of 2 to 5, and chroma of 1 or 2. Texture is silty clay loam or silty clay.

The Bw horizon has hue of 2.5Y or 5Y, value of 4 to 7, and chroma of 3 to 6. It has mottles in shades of brown, gray, yellow, and olive. Texture is silty clay or clay.

The C horizon, if it occurs, has hue of 10YR to 5Y, value of 6 or 7, and chroma of 1 to 4 or is neutral in hue. Most pedons have variegated colors in shades of olive, brown, gray, and yellow. Texture is silty clay or clay.

The Cr horizon is light gray chalk.

Una Series

The Una series consists of very deep, poorly drained soils on flood plains in the southern part of the county. The soils formed in clayey alluvium. Slopes range from 0 to 2 percent.

Typical pedon of Una silty clay loam, occasionally flooded, 2.4 miles northeast of Guys, 1.1 miles northeast of the intersection of U.S. Highway 45 and Smith's Store Road, 1.2 miles southeast of the intersection of Mayflower Road and Hack Bridge Road, 1,800 feet east of the intersection of Hack Bridge Road and Muddy Creek, in a field (atlas field sheet 38):

Ap—0 to 4 inches; very dark grayish brown (10YR 3/2) silty clay loam; moderate medium granular structure; friable; many fine and very fine roots; very strongly acid; abrupt smooth boundary.

Bg1—4 to 13 inches; dark grayish brown (10YR 4/2) clay; common fine faint very dark grayish brown and medium prominent yellowish brown (10YR 5/8) mottles; moderate medium subangular blocky structure; firm; many fine roots; common pressure faces on peds; very strongly acid; clear smooth boundary.

Bg2—13 to 60 inches; gray (10YR 5/1) clay; common medium prominent yellowish brown (10YR 5/8) and strong brown (7.5YR 5/6) mottles; firm; common fine roots; common pressure faces on peds; common iron and manganese concretions; very strongly acid.

Reaction is very strongly acid or strongly acid, except in areas where lime has been added.

The Ap has hue of 10YR or 2.5Y, value of 3 to 5, and chroma of 1 or 2. Texture is silty clay loam.

The Bg horizon has hue of 10YR or 2.5Y, value of 4 to 7, and chroma of 1 or 2. Most pedons have mottles in shades of brown. Texture is clay.

Formation of the Soils

The combined influence of the five factors of soil formation, which are parent material, time, climate, topography, and living organisms, determine the characteristics and properties of a soil.

Parent Material

Parent material is the unconsolidated mass in which a soil forms. The character of the mass affects the kind of profile and the degree of development. Differences in soil characteristics, such as thickness and texture of horizons, mineralogy, color, and reaction, are determined by differences in the parent material.

Parent material has been an important factor in the formation of soils in McNairy County. The soils formed in silty material, possibly wind-blown loess, in the surficial sediments of a transgressive and regressive marine shoreline, in the older alluvial deposits of the Tennessee River, and in recent alluvium.

A silty mantle, ranging from one to three feet in thickness, caps many of the upland ridges in the county. This silty material is the parent material in which the upper part of the Providence, Lexington, Silerton, and Dulac soils formed. The lower part of the soils formed in unconsolidated and stratified marine sediments.

Oktibbeha and Sumter soils formed in clayey marine sediments containing marl that has a high content of calcium carbonate. Smithdale and Luverne soils formed in loamy and clayey marine sediments. Pickwick, Paden, and Saffell soils formed in loamy and gravelly alluvium deposited by the Tennessee River. Hatchie, Freeland, and Guyton soils formed in a mixture of silty material and alluvium on stream terraces. The least developed soils in the county formed in recent alluvium along drainageways. Iuka, Bibb, Enville, Una, and Ochlockonee soils formed in recent alluvium.

Time

The age of soils varies considerably, and the length of time that a soil profile has been forming is reflected in the profile development. Some of the differences among the soils in McNairy County reflect a difference in age and changes in relief caused by natural and geologic erosion.

The older soils, such as Lexington, Silerton, Dulac, and Providence soils, are in more stable, interstream areas. They have well developed horizons and a thick profile. Pickwick and Paden soils, on old high terraces of the Tennessee River, also have been in place long enough to have well developed profiles. In contrast, the younger soils, such as Bibb, Iuka, Ochlockonee, and Enville soils, formed in recent sediments on flood plains. They show little evidence of horizon development and continue to acquire new material annually. Some soils, such as Luverne and Saffell soils, have relatively thin profile development as a result of slope and the stratification of parent materials. Soils of intermediate age, such as Freeland and Hatchie soils, formed in silty and loamy materials deposited on stream terraces.

Climate

Climate, as a factor of soil formation, affects the physical, chemical, and biological relationships in the soil, primarily through the influence of precipitation and temperature. These relationships exert much influence on the rates of soil weathering, erosion, and organic matter decomposition. The leaching of nutrients in a soil is related to the amount of rainfall and its movement through the soil. The effects of climate control the kinds of plants and animals on and in the soil. Temperature influences the kind and growth of organisms and the speed of chemical and physical reactions in a soil.

McNairy County has a warm, humid climate characteristic of the climate of the southeastern part of the United States. The climate varies so little within the county that it has not caused differences in soils. The mild temperatures and abundant rainfall cause intense leaching of soluble and colloidal material and a rapid decomposition of organic matter. As it moves downward in a soil, some of the translocated material accumulates in the lower layers and some moves out of the soil. Generally the older, well developed soils in the county are strongly weathered, highly leached, acid, and low in fertility.

Topography

Topography, including relief, slope, landform, and aspect, influences or modifies the effects of the other soil-forming factors. The gradient, shape, and length of slopes directly influence the rates of water infiltration and runoff. Areas that have a higher runoff rate generally are more eroded than other areas. The steeper slopes in many areas of the county are a result of the rapid downcutting by stream action that exposed the parent material to soil-forming factors. The soils in these sloping areas have profiles that are developing. They have not reached the maturity that soils on more stable landscapes have reached. Soils on stream terraces have a loamy profile of intermediate age. They formed out of silty and loamy material that was washed from adjacent uplands and out of alluvium deposited during flooding. These areas are relatively stable, and the soils are undergoing profile development. Concave slopes tend to concentrate water, and more water infiltrates the soil on gentler slopes. In many areas, free water moving downward through the soils is trapped or perched above a relatively impermeable fragipan layer, where it stands for days or weeks or in places moves away laterally. Soils on flood plains are periodically covered with fresh sediment washed from the adjacent uplands or deposited by stream overflow. This repeated deposition results in stratified soils characterized by minimum profile development.

Living Organisms

Plants and large and small animals are active forces of soil formation. Living organisms transfer soil material in many ways. When a tree falls, the roots bring soil material to the surface. Ants and crayfish construct mounds that generally contain material from the subsoil. The moving animals and growing plants blend soil ingredients into a uniform mixture. The plant roots break up stratified sediments and dislodge rock fragments.

Microscopic organisms contribute to the chemical environment within the soil. They are essential for plant growth and survival. Old root holes provide channels for the movement of air and water. Decaying plants release nutrients and organic acids. Living roots absorb water and nutrients, increase carbon dioxide levels, lower oxygen levels, and increase acidity.

Living organisms also affect the color of soils. Well drained soils are red, yellow, and brown, and poorly drained soils are gray. Yellow and brown iron and manganese compounds coat mineral grains. When the soil is saturated and roots and microorganisms use oxygen faster that it can be replenished, some iron compounds dissolve and are translocated downward. Manganese compounds become indurated, and small nodules and concretions develop. The mineral grains turn gray as they lose their coatings, and gray mottles form at the depth of the seasonal high water table.

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Glossary

Aggregate, soil. Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

Alkali (sodic) soil. Soil having so high a degree of alkalinity (pH 8.5 or higher) or so high a percentage of exchangeable sodium (15 percent or more of the total exchangeable bases), or both, that plant growth is restricted.

Alluvium. Material, such as sand, silt, or clay, deposited on land by streams.

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 40-inch profile or to a limiting layer is expressed as:

Very low	less than 2.0
Low	2.0 to 4.0
Moderate	4.0 to 6.0
High	6.0

Base saturation. The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, and K), expressed as a percentage of the total cation-exchange capacity.

Bedding planes. Fine stratifications, less than 5 millimeters thick, in unconsolidated alluvial, eolian, lacustrine, or marine sediments.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Bisequum. Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.

Bottom land. The normal flood plain of a stream, subject to flooding.

Capillary water. Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.

Cation. An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.

Cation-exchange capacity. The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay film. A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.

Coarse fragments. If round, mineral or rock particles 2 millimeters to 25 centimeters (10 inches) in diameter; if flat, mineral or rock particles (flagstone) 15 to 38 centimeters (6 to 15 inches) long.

Cobblestone (or cobble). A rounded or partly rounded fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter.

Colluvium. Soil material, rock fragments, or both moved by creep, slide, or local wash and deposited at the base of steep slopes.

Complex slope. Irregular or variable slope. Planning or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.

Complex, soil. A map unit of two or more kinds of soil in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils are somewhat similar in all areas.

Concretions. Grains, pellets, or nodules of various sizes, shapes, and colors consisting of concentrated compounds or cemented soil grains. The composition of most concretions is unlike that of the surrounding soil. Calcium carbonate and iron oxide are common compounds in concretions.

Conservation tillage. A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

Consistence, soil. The feel of the soil and the ease with which a lump can be crushed by the fingers. Terms commonly used to describe consistence are:

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.

Cover crop. A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

Cutbanks cave (in tables). The walls of excavations tend to cave in or slough.

Deferred grazing. Postponing grazing or resting grazing land for a prescribed period.

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:

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.

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.

Eolian soil material. Earthy parent material accumulated through wind action; commonly refers

to sandy material in dunes or to loess in blankets on the surface.

Erosion. The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.
Erosion (geologic)—Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.
Erosion (accelerated)—Erosion much more rapid than geologic erosion, mainly as a result of the human or animal activities or of a catastrophe in nature, such as fire, that exposes the surface.

Excess fines (in tables). Excess silt and clay in the soil. The soil is not a source of gravel or sand for construction purposes.

Fertility, soil. The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

Fine textured soil. Sandy clay, silty clay, or clay.

First bottom. The normal flood plain of a stream, subject to frequent or occasional flooding.

Flood plain. A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

Foot slope. The inclined surface at the base of a hill.

Forb. Any herbaceous plant that is not a grass or a sedge.

Fragipan. A loamy, brittle subsurface horizon low in porosity and content of organic matter and low or moderate in clay but high in silt or very fine sand. A fragipan appears cemented and restricts roots. When dry, it is hard or very hard and has a higher bulk density than the horizon or horizons above. When moist, it tends to rupture suddenly under pressure rather than to deform slowly.

Genesis, soil. The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors and mottles.

Grassed waterway. A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.

Gravel. Rounded or angular fragments of rock up to 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.

Gravelly soil material. Material that is 15 to 50 percent, by volume, rounded or angular rock fragments, not prominently flattened, up to 3 inches (7.6 centimeters) in diameter.

Gully. A miniature valley with steep sides cut by running water and through which water ordinarily runs only after rainfall. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the "Soil Survey Manual." The major horizons of mineral soil are as follows:
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.
E horizon.—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.
B horizon.—The mineral horizon below an O, A, or E horizon. The B horizon is, in part, a layer of transition from the overlying horizon to the underlying C horizon. The B horizon also has distinctive characteristics, such as accumulation of clay, sesquioxides, humus, or a combination of these; prismatic or blocky structure; redder or browner colors than those in the A horizon; or 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, an Arabic numeral, commonly a 2, precedes the letter C.

Cr horizon.—Soft, consolidated bedrock beneath the soil.

R layer.—Consolidated rock (unweathered bedrock) beneath the soil. The bedrock 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.

Impervious soil. A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Irrigation. Application of water to soils to assist in production of crops. Methods of irrigation are:

Basin.—Water is applied rapidly to nearly level plains surrounded by levees or dikes.

Border.—Water is applied at the upper end of a strip in which the lateral flow of water is controlled by small earth ridges called border dikes, or borders.

Controlled flooding.—Water is released at intervals from closely spaced field ditches and distributed uniformly over the field.

Corrugation.—Water is applied to small, closely spaced furrows or ditches in fields of close-growing crops or in orchards so that it flows in only one direction.

Drip (or trickle).—Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.

Furrow.—Water is applied in small ditches made by cultivation implements. Furrows are used for tree and row crops.

Sprinkler.—Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

Subirrigation.—Water is applied in open ditches or tile lines until the water table is raised enough to wet the soil.

Wild flooding.—Water, released at high points, is allowed to flow onto an area without controlled distribution.

Large stones (in tables). Rock fragments that are 3 inches (7.6 centimeters) or more across. Large stones adversely affect the specified use of the soil.

Leaching. The removal of soluble material from soil or other material by percolating water.

Liquid limit. The moisture content at which the soil passes from a plastic to a liquid state.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Loess. Fine grained material, dominantly of silt-sized particles, deposited by wind.

Low strength. The soil is not strong enough to support loads.

Medium textured soil. Very fine sandy loam, loam, silt loam, or silt.

Minimum tillage. Only the tillage essential to crop production and prevention of soil damage.

Miscellaneous area. An area that has little or no natural soil and supports little or no vegetation.

Moderately coarse textured soil. Coarse sandy loam, sandy loam, or fine sandy loam.

Moderately fine textured soil. Clay loam, sandy clay loam, or silty clay loam.

Morphology, soil. The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mottling, soil. Irregular spots of different colors that vary in number and size. Mottling generally indicates poor aeration and impeded drainage. Descriptive terms are as follows: abundance—*few, common,* and *many*; size—*fine, medium,* and *coarse*; and contrast—*faint, distinct,* and *prominent.* The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium,* from 5 to 15

millimeters (about 0.2 to 0.6 inch); and *coarse*, more than 15 millimeters (about 0.6 inch).

Munsell notation. A designation of color by degrees of the three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.

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.

Pan. A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan, fragipan, claypan, plowpan,* and *traffic pan.*

Parent material. The unconsolidated organic and mineral material in which soil forms.

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Pedon. The smallest volume that can be called "a soil." A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

Percolation. The downward movement of water through the soil.

Percs slowly (in tables). The slow movement of water through the soil adversely affects the specified use.

Permeability. The quality of the soil that enables water to move through the profile. Permeability is measured as the number of inches per hour that water moves through the saturated soil. Terms describing permeability are:

Very slow	less than 0.06 inch
Slow	0.06 to 0.2 inch
Moderately slow	0.2 to 0.6 inch
Moderate	0.6 inch to 2.0 inches
Moderately rapid	2.0 to 6.0 inches
Rapid	6.0 to 20 inches
Very rapid	more than 20 inches

Phase, soil. A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and thickness.

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Piping (in tables). Subsurface tunnels or pipelike cavities are formed by water moving through the soil.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Plowpan. A compacted layer formed in the soil directly below the plowed layer.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poor filter (in tables). Because of rapid permeability, the soil may not adequately filter effluent from a waste disposal system.

Poorly graded. Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

Poor outlets (in tables). Refers to areas where surface or subsurface drainage outlets are difficult or expensive to install.

Productivity, soil. The capability of a soil for producing a specified plant or sequence of plants under specific management.

Profile, soil. A vertical section of the soil extending through all its horizons and into the parent material.

Reaction, soil. A measure of the acidity or alkalinity of a soil expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Extremely acid	below 4.5
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
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.

Residuum (residual soil material). Unconsolidated, weathered or partly weathered mineral material that accumulated as consolidated rock disintegrated in place.

Rill. A steep-sided channel resulting from accelerated

erosion. A rill is generally a few inches deep and not wide enough to be an obstacle to farm machinery.

Rippable. Rippable bedrock or hardpan can be excavated using a single-tooth ripping attachment mounted on a tractor with a 200-300 drawbar horsepower rating.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

Rooting depth (in tables). Shallow root zone. The soil is shallow over a layer that greatly restricts roots.

Root zone. The part of the soil that can be penetrated by plant roots.

Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

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.

Sedimentary rock. Rock made up of particles deposited from suspension in water. The chief kinds of sedimentary rock are conglomerate, formed from gravel; sandstone, formed from sand; shale, formed from clay; and limestone, formed from soft masses of calcium carbonate. There are many intermediate types. Some wind-deposited sand is consolidated into sandstone.

Seepage (in tables). The movement of water through the soil adversely affects the specified use.

Sequum. A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)

Series, soil. A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer or of the underlying material. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Shale. Sedimentary rock formed by the hardening of a clay deposit.

Sheet erosion. The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

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.

Silica. A combination of silicon and oxygen. The mineral form is called quartz.

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.

Siltstone. Sedimentary rock made up of dominantly silt-sized particles.

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.

Slippage (in tables). The soil mass is susceptible to movement downslope when loaded, excavated, or wet.

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.

Slope (in tables). Slope is great enough that special practices are required to ensure satisfactory performance of the soil for a specific use.

Slow refill (in tables). The slow filling of ponds, resulting from restricted permeability in the soil.

Small stones (in tables). Rock fragments less than 3 inches (7.6 centimeters) in diameter. Small stones adversely affect the specified use of the soil.

Soil. A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief over periods of time.

Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand	2.0 to 1.0
Coarse sand	1.0 to 0.5
Medium sand	0.5 to 0.25
Fine sand	0.25 to 0.10
Very fine sand	0.10 to 0.05
Silt	0.05 to 0.002
Clay	less than 0.002

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of

the underlying material. The living roots and plant and animal activities are largely confined to the solum.

Stones. Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.

Stony. Refers to a soil containing stones in numbers that interfere with or prevent tillage.

Stripcropping. Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to wind and water erosion.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular. Structureless* soils are either *single grained* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Stubble mulch. Stubble or other crop residue left on the soil or partly worked into the soil. It protects the soil from wind erosion and water erosion after harvest, during preparation of a seedbed for the next crop, and during the early growing period of the new crop.

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Subsoiling. Breaking up a compact subsoil by pulling a special chisel through the soil.

Substratum. The part of the soil below the solum.

Subsurface layer. Technically, the E horizon. Generally refers to a leached horizon lighter in color and lower in organic matter content than the overlying surface layer.

Surface layer. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the "plow layer," or the "Ap horizon."

Talus. The straight part of a slope below a free face. It consists of rock fragments from the free face and the upper slope.

Taxadjuncts. Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior.

Terrace. An embankment, or ridge, constructed on the contour or at a slight angle to the contour across sloping soils. The terrace intercepts surface runoff, so that water soaks into the soil or flows slowly to a prepared outlet.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay.* The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Toe slope. The outermost inclined surface at the base of a hill; part of a foot slope.

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.

Toxicity (in tables). An excessive amount of toxic substances in the soil, such as sodium or sulfur, severely hinders the establishment of vegetation or severely restricts plant growth.

Unstable fill (in tables). There is a risk of caving or sloughing on banks of fill material.

Upland (geology). Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

Valley fill. In glaciated regions, material deposited in stream valleys by glacial meltwater. In nonglaciated regions, alluvium deposited in stream valleys by heavily loaded streams.

Variegation. Refers to patterns of contrasting colors that are assumed to be inherited from the parent material rather than to be the result of poor drainage.

Weathering. All physical and chemical changes produced by atmospheric agents in rocks or other deposits at or near the earth's surface. These changes result in disintegration and decomposition of the material.

Well graded. Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

Wilting point (or permanent wilting point). The moisture content of soil, on an ovendry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

Tables

TABLE 1.--TEMPERATURE AND PRECIPITATION

(Recorded in the period 1961-90 at Selmer, Tennessee)

Month	Temperature						Precipitation				
				2 years in 10 will have--		Average		2 years in 10 will have--		Average	
	Average daily maximum	Average daily minimum	Average daily	Maximum temperature higher than--	Minimum temperature lower than--	number of growing degree days*	Average	Less than--	More than--	number of days with 0.10 inch or more	Average snowfall
	°F	°F	°F	°F	°F	Units	In	In	In		In
January-----	47.1	24.8	35.9	72	-5	90	4.57	2.15	6.66	7	1.8
February----	52.3	28.1	40.2	77	3	133	4.73	2.52	6.68	7	1.0
March-------	62.2	37.1	49.7	83	14	334	5.90	3.62	7.94	8	.5
April-------	72.5	45.6	59.0	89	25	573	5.42	3.11	7.47	7	.0
May---------	79.8	54.2	67.0	92	34	836	5.74	3.54	7.72	7	.0
June--------	86.8	61.9	74.4	97	44	1031	3.83	2.29	5.45	5	.0
July--------	90.2	65.8	78.0	99	51	1155	4.62	2.79	6.26	6	.0
August------	89.6	64.0	76.8	100	49	1102	2.66	1.28	3.86	5	.0
September---	83.5	57.3	70.4	96	36	852	3.92	1.91	5.67	5	.0
October-----	73.8	44.3	59.1	89	25	589	3.31	1.93	4.76	4	.0
November----	62.4	37.0	49.7	82	14	313	5.51	3.13	7.62	6	.1
December----	51.6	29.2	40.4	73	3	144	5.84	2.94	8.37	7	.6
Yearly:											
Average---	71.0	45.8	58.4	---	---	---	---	---	---	---	---
Extreme---	105	-21	---	101	-7	---	---	---	---	---	---
Total-----	---	---	---	---	---	7,151	56.05	48.95	62.25	74	4.0

* 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 (40 degrees F).

TABLE 2.--FREEZE DATES IN SPRING AND FALL

(Recorded in the period 1961-90 at Selmer, Tennessee)

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--	Apr. 6	Apr. 13	May 1
2 years in 10 later than--	March 31	Apr. 10	Apr. 26
5 years in 10 later than--	March 22	Apr. 3	Apr. 15
First freezing temperature in fall:			
1 year in 10 earlier than--	Oct. 27	Oct. 15	Sept. 29
2 years in 10 earlier than--	Nov. 1	Oct. 20	Oct. 4
5 years in 10 earlier than--	Nov. 10	Oct. 30	Oct. 15

TABLE 3.--GROWING SEASON

(Recorded in the period 1961-90 at Selmer, Tennessee)

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	194	186	163
8 years in 10	202	191	170
5 years in 10	217	202	181
2 years in 10	233	213	193
1 year in 10	241	218	199

TABLE 4.--ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS

Map symbol	Soil name	Acres	Percent
Bb	Bibb fine sandy loam, frequently flooded	25,492	7.1
DeB	Deanburg silt loam, 2 to 5 percent slopes	919	0.3
DeC3	Deanburg sandy clay loam, 5 to 8 percent slopes, severely eroded	1,503	0.4
DuB	Dulac silt loam, 2 to 5 percent slopes	4,401	1.2
DuB3	Dulac silt loam, 2 to 5 percent slopes, severely eroded	6,444	1.8
En	Enville fine sandy loam, occasionally flooded	26,575	7.4
FrB	Freeland silt loam, 1 to 4 percent slopes	7,635	2.1
FrB3	Freeland silt loam, 1 to 4 percent slopes, severely eroded	4,588	1.3
Gu	Guyton silt loam	3,565	1.0
Ha	Hatchie silt loam	7,012	2.0
Iu	Iuka fine sandy loam, occasionally flooded	22,884	6.4
LeB2	Lexington silt loam, 1 to 4 percent slopes, eroded	1,150	0.3
LuD	Luverne fine sandy loam, 8 to 12 percent slopes	8,076	2.2
LuD3	Luverne clay loam, 8 to 12 percent slopes, severely eroded	11,827	3.3
LuE	Luverne fine sandy loam, 12 to 30 percent slopes	20,933	5.8
Oc	Ochlockonee fine sandy loam, occasionally flooded	2,175	0.6
OkB	Oktibbeha clay loam, 2 to 5 percent slopes	3,154	0.9
OkC3	Oktibbeha clay, 5 to 8 percent slopes, severely eroded	2,070	0.6
OsD	Oktibbeha and Sumter soils, 8 to 20 percent slopes	11,075	3.1
PaB	Paden silt loam, 2 to 5 percent slopes	5,498	1.5
PaB3	Paden silt loam, 2 to 5 percent slopes, severely eroded	4,358	1.2
PkB	Pickwick silt loam, 2 to 5 percent slopes	705	0.2
PkC3	Pickwick silty clay loam, 5 to 12 percent slopes, severely eroded	1,504	0.4
PrB	Providence silt loam, 2 to 5 percent slopes	5,468	1.5
PrC3	Providence silty clay loam, 5 to 8 percent slopes, severely eroded	4,933	1.4
PrD3	Providence silty clay loam, 8 to 15 percent slopes, severely eroded	699	0.2
Pt	Pits, gravel	296	0.1
SaC	Saffell gravelly sandy loam, 5 to 12 percent slopes	1,210	0.3
SaE	Saffell gravelly sandy loam, 12 to 30 percent slopes	2,282	0.6
SeB	Silerton silt loam, 2 to 5 percent slopes	12,169	3.4
SeC2	Silerton silt loam, 5 to 8 percent slopes, eroded	2,632	0.7
SmC	Smithdale fine sandy loam, 5 to 8 percent slopes	22,227	6.2
SmD	Smithdale fine sandy loam, 8 to 15 percent slopes	14,965	4.2
SmD3	Smithdale loam, 8 to 15 percent slopes, severely eroded	22,056	6.1
SmE	Smithdale fine sandy loam, 15 to 30 percent slopes	50,056	13.9
SmE3	Smithdale loam, 15 to 30 percent slopes, severely eroded	26,575	7.4
Ud	Udorthents, loamy	6,145	1.7
Un	Una silty clay loam, occasionally flooded	2,813	0.8
Ur	Urban land	1,331	0.4
	Total	359,400	100.0

TABLE 5.--PRIME FARMLAND

(Only the soils considered prime farmland are listed. Urban or built-up areas of the soils listed are not considered prime farmland. If a soil is prime farmland only under certain conditions, the conditions are specified in parentheses after the soil name)

Map symbol	Soil name
DeB	Deanburg silt loam, 2 to 5 percent slopes
DuB	Dulac silt loam, 2 to 5 percent slopes
FrB	Freeland silt loam, 1 to 4 percent slopes
Ha	Hatchie silt loam
Iu	Iuka fine sandy loam, occasionally flooded
LeB2	Lexington silt loam, 1 to 4 percent slopes, eroded
Oc	Ochlockonee fine sandy loam, occasionally flooded
PaB	Paden silt loam, 2 to 5 percent slopes
PkB	Pickwick silt loam, 2 to 5 percent slopes
PrB	Providence silt loam, 2 to 5 percent slopes
SeB	Silerton silt loam, 2 to 5 percent slopes

TABLE 6.--LAND CAPABILITY CLASSES AND YIELDS PER ACRE OF CROPS AND PASTURE

(Yields are those that can be expected under a high level of management. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil)

Soil name and map symbol	Land capability	Corn	Soybeans	Cotton	Grain sorghum	Wheat	Tall fescue-ladino	Common bermudagrass
		Bu	Bu	Lbs	Bu	Bu	AUM*	AUM*
Bb---------- Bibb	Vw	---	---	---	---	---	---	---
DeB---------- Deanburg	IIe	85	40	700	85	50	6.5	7.5
DeC3---------- Deanburg	IVe	60	25	450	60	30	5.5	7.0
DuB---------- Dulac	IIe	85	40	700	75	40	8.5	7.5
DuB3---------- Dulac	IIIe	70	30	600	65	35	8.0	7.0
En---------- Enville	IIw	95	40	---	90	---	9.0	---
FrB---------- Freeland	IIe	85	40	750	80	40	8.5	---
FrB3---------- Freeland	IIIe	70	30	700	65	35	8.0	---
Gu---------- Guyton	IIIw	---	25	---	75	---	7.0	5.0
Ha---------- Hatchie	IIw	85	35	650	80	35	9.0	---
Iu---------- Iuka	IIw	110	45	750	105	---	8.0	7.0
LeB2---------- Lexington	IIe	90	40	700	85	50	8.0	9.5
LuD---------- Luverne	VIe	---	---	---	---	---	---	7.0
LuD3---------- Luverne	VIe	---	---	---	---	---	---	6.5
LuE---------- Luverne	VIIe	---	---	---	---	---	---	5.5
Oc---------- Ochlockonee	IIw	110	45	750	105	---	9.0	8.0
OkB---------- Oktibbeha	IIIe	55	35	550	50	35	8.5	7.5
OkC3---------- Oktibbeha	VIe	---	---	---	---	---	7.0	6.0

See footnotes at end of table.

TABLE 6.--LAND CAPABILITY CLASSES AND YIELDS PER ACRE OF CROPS AND PASTURE--Continued

Soil name and map symbol	Land capability	Corn	Soybeans	Cotton	Grain sorghum	Wheat	Tall fescue-ladino	Common bermudagrass
		Bu	Bu	Lbs	Bu	Bu	AUM*	AUM*
OsD---------- Oktibbeha and Sumter	VIIe	---	---	---	---	---	5.5	5.0
PaB---------- Paden	IIe	85	40	750	80	45	8.5	7.5
PaB3---------- Paden	IIIe	75	25	500	70	25	8.0	7.0
PkB---------- Pickwick	IIe	95	38	850	90	55	8.0	8.5
PkC3---------- Pickwick	IVe	65	30	500	55	---	6.0	7.0
PrB---------- Providence	IIe	85	40	750	75	40	8.5	9.5
PrC3---------- Providence	IVe	55	20	400	50	25	7.0	8.5
PrD3---------- Providence	VIe	---	---	---	---	---	6.5	7.5
Pt**. Pits, gravel								
SaC---------- Saffell	IVs	---	---	---	---	---	---	4.0
SaE---------- Saffell	VIIs	---	---	---	---	---	---	3.5
SeB---------- Silerton	IIe	90	40	750	85	40	6.5	7.0
SeC2---------- Silerton	IIIe	75	30	625	65	30	5.5	5.0
SmC---------- Smithdale	IIIe	65	30	500	65	40	---	5.5
SmD---------- Smithdale	IVe	55	25	400	50	25	---	5.0
SmD3---------- Smithdale	VIe	---	---	---	---	---	---	4.5
SmE---------- Smithdale	VIIe	---	---	---	---	---	---	---
SmE3---------- Smithdale	VIIe	---	---	---	---	---	---	---
Ud**. Udorthents, loamy								

See footnotes at end of table.

TABLE 6.--LAND CAPABILITY CLASSES AND YIELDS PER ACRE OF CROPS AND PASTURE--Continued

Soil name and map symbol	Land capability	Corn	Soybeans	Cotton	Grain sorghum	Wheat	Tall fescue-ladino	Common bermudagrass
		Bu	Bu	Lbs	Bu	Bu	AUM*	AUM*
Un---------- Una	IIIw	85	35	---	75	---	6.5	7.5
Ur**. Urban land								

* 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.--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	Management concerns				Potential productivity			Trees to plant
	Erosion hazard	Equipment limitation	Seedling mortality	Plant competition	Common trees	Site index	Volume*	
Bb---------- Bibb	Slight	Severe	Severe	Severe	Sweetgum----------	90	100	American sycamore, sweetgum, water oak, cherrybark oak, swamp white oak, green ash, shagbark hickory, blackgum.
					Water oak----------	90	86	
					Blackgum----------	---	---	
DeB---------- Deanburg	Slight	Slight	Slight	Moderate	Southern red oak----	70	57	Loblolly pine, white oak, mockernut hickory, cherrybark oak.
					Mockernut hickory---	---	---	
					White oak----------	70	57	
					Cherrybark oak------	80	86	
DeC3---------- Deanburg	Slight	Slight	Moderate	Moderate	Southern red oak----	70	57	Loblolly pine, cherrybark oak, white oak, mockernut hickory.
					Mockernut hickory---	---	---	
DuB, DuB3------- Dulac	Slight	Slight	Slight	Moderate	Southern red oak----	70	4	Southern red oak, loblolly pine, yellow-poplar, cherrybark oak.
					Loblolly pine-------	80	8	
En---------- Enville	Slight	Moderate	Slight	Severe	Yellow-poplar-------	100	114	Yellow-poplar, American sycamore, sweetgum, swamp white oak, green ash, shagbark hickory.
					Sweetgum----------	100	143	
					Water oak----------	95	86	
FrB, FrB3------- Freeland	Slight	Slight	Slight	Moderate	Loblolly pine-------	84	114	Loblolly pine, white oak, sweetgum, yellow-poplar, black walnut, cherrybark oak.
					Sweetgum----------	90	100	
Gu---------- Guyton	Slight	Severe	Moderate	Severe	Loblolly pine-------	85	114	American sycamore, yellow-poplar, willow oak, swamp white oak, cherrybark oak, sweetgum.
					Sweetgum----------	---	---	
					Green ash----------	---	---	
					Cherrybark oak------	---	---	
					Water oak----------	---	---	
					Willow oak----------	78	72	
Ha---------- Hatchie	Slight	Moderate	Slight	Moderate	Cherrybark oak------	90	114	Cherrybark oak, American sycamore, sweetgum, swamp white oak, green ash, yellow-poplar, pin oak.
					Loblolly pine-------	90	129	
					Sweetgum----------	80	100	
					Water oak----------	90	86	

See footnotes at end of table.

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Management concerns				Potential productivity			Trees to plant
	Erosion hazard	Equipment limitation	Seedling mortality	Plant competition	Common trees	Site index	Volume*	
Iu---------- Iuka	Slight	Moderate	Slight	Severe	Loblolly pine-------	100	129	American sycamore, sweetgum, swamp white oak, green ash, cherrybark oak, yellow-poplar, pin oak.
					Sweetgum----------	100	143	
					Water oak----------	100	100	
LeB2---------- Lexington	Slight	Slight	Slight	Moderate	Southern red oak----	70	57	Cherrybark oak, yellow-poplar, mockernut hickory, loblolly pine, cherrybark oak, southern red oak.
					Cherrybark oak------	80	86	
					Loblolly pine-------	80	114	
					Yellow-poplar-------	90	86	
LuD, LuD3------- Luverne	Slight	Moderate	Slight	Moderate	Loblolly pine-------	81	114	Loblolly pine, white oak, mockernut hickory, chestnut oak, eastern redcedar.
LuE---------- Luverne	Moderate	Moderate	Slight	Moderate	Loblolly pine-------	81	114	Loblolly pine, white oak, mockernut hickory, chestnut oak, eastern redcedar.
Oc---------- Ochlockonee	Slight	Slight	Slight	Moderate	Loblolly pine-------	100	157	Loblolly pine, black walnut, American sycamore, sweetgum, cherrybark oak, yellow-poplar.
					Yellow-poplar-------	110	129	
					Sweetgum----------	90	100	
					Water oak----------	80	72	
OkB, OkC3------- Oktibbeha	Slight	Moderate	Moderate	Moderate	Loblolly pine-------	76	100	Loblolly pine, southern red oak, white oak, eastern redcedar, mockernut hickory.
					Eastern redcedar----	45	57	
					Southern red oak----	70	57	
OsD**:								
Oktibbeha------	Moderate	Moderate	Moderate	Moderate	Loblolly pine-------	76	100	Loblolly pine, southern red oak, white oak, eastern redcedar, mockernut hickory.
					Eastern redcedar----	45	57	
					Southern red oak----	70	57	
Sumter---------	Moderate	Moderate	Severe	Moderate	Eastern redcedar----	40	43	Eastern redcedar, white oak, chestnut oak, loblolly pine, Virginia pine.

See footnotes at end of table.

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Management concerns				Potential productivity			Trees to plant
	Erosion hazard	Equipment limitation	Seedling mortality	Plant competition	Common trees	Site index	Volume*	
PaB, PaB3--- Paden	Slight	Slight	Slight	Moderate	Southern red oak----	70	57	Southern red oak, black walnut, white oak, loblolly pine, yellow-poplar.
					Sweetgum----------	80	86	
					Loblolly pine-------	80	114	
PkB--- Pickwick	Slight	Slight	Slight	Moderate	Southern red oak----	70	57	Yellow-poplar, black walnut, white oak, loblolly pine, mockernut hickory, eastern white pine, southern red oak.
					Yellow-poplar-------	95	100	
					White oak----------	73	57	
					Loblolly pine-------	80	114	
PkC3--- Pickwick	Moderate	Slight	Slight	Moderate	Southern red oak----	70	57	Yellow-poplar, black walnut, loblolly pine, white oak, mockernut hickory, eastern white pine, southern red oak.
					Yellow-poplar-------	95	100	
					White oak----------	73	57	
					Loblolly pine-------	80	114	
PrB--- Providence	Slight	Slight	Slight	Moderate	Loblolly pine-------	84	114	Loblolly pine, black walnut, white oak, southern red oak, yellow-poplar.
PrC3, PrD3--- Providence	Moderate	Slight	Slight	Moderate	Loblolly pine-------	84	114	Loblolly pine, black walnut, white oak, southern red oak, yellow-poplar.
SaC--- Saffell	Slight	Slight	Slight	Moderate	Loblolly pine-------	68	86	Loblolly pine, white oak, chestnut oak, mockernut hickory, eastern redcedar.
					White oak----------	---	---	
SaE--- Saffell	Moderate	Moderate	Moderate	Moderate	Loblolly pine-------	68	86	Loblolly pine, white oak, chestnut oak, mockernut hickory, eastern redcedar.
					White oak----------	---	---	
SeB--- Silerton	Slight	Moderate	Slight	Moderate	Southern red oak----	70	57	Yellow-poplar, black walnut, white oak, southern red oak, loblolly pine, mockernut hickory.
					Yellow-poplar-------	90	86	
					White oak----------	70	57	
					Loblolly pine-------	80	114	

See footnotes at end of table.

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Management concerns				Potential productivity			Trees to plant
	Erosion hazard	Equipment limitation	Seedling mortality	Plant competition	Common trees	Site index	Volume*	
SeC2---------- Silerton	Moderate	Moderate	Slight	Moderate	Southern red oak----	70	57	Yellow-poplar, black walnut, white oak, southern red oak, loblolly pine, mockernut hickory.
					Yellow-poplar-------	90	86	
					White oak----------	70	57	
					Loblolly pine-------	80	114	
SmC, SmD, SmD3-- Smithdale	Slight	Slight	Slight	Slight	Loblolly pine-------	80	8	Loblolly pine, eastern redcedar, chestnut oak white oak.
SmE, SmE3------- Smithdale	Moderate	Moderate	Slight	Slight	Loblolly pine-------	80	8	Loblolly pine, eastern redcedar, chestnut oak white oak.
Un---------- Una	Slight	Moderate	Moderate	Severe	Cherrybark oak------	90	8	Cherrybark oak, green ash, water oak, sweetgum.
					Green ash----------	75	3	
					Sweetgum----------	90	7	
					Water oak----------	90	6	
					Water tupelo--------	80	8	

* Productivity class is the yield in cubic feet per acre per year calculated at the age of culmination of mean annual increment for fully stocked natural stands.

** See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 8.--RECREATIONAL DEVELOPMENT

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not rated)

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
Bb Bibb	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.	Severe: wetness, flooding.
DeB Deanburg	Slight	Slight	Moderate: slope.	Severe: erodes easily.	Slight.
DeC3 Deanburg	Slight	Slight	Severe: slope.	Slight	Slight.
DuB, DuB3 Dulac	Severe: wetness.	Moderate: wetness, percs slowly.	Severe: wetness.	Severe: erodes easily.	Moderate: wetness.
En Enville	Severe: flooding, wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness, droughty, flooding.
FrB, FrB3 Freeland	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Moderate: slope, wetness, percs slowly.	Severe: erodes easily.	Moderate: wetness.
Gu Guyton	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
Ha Hatchie	Severe: wetness.	Moderate: wetness, percs slowly.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.
Iu Iuka	Severe: flooding, wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness, flooding.
LeB2 Lexington	Slight	Slight	Moderate: slope.	Severe: erodes easily.	Slight.
LuD, LuD3 Luverne	Moderate: slope, percs slowly.	Moderate: slope, percs slowly.	Severe: slope.	Slight	Moderate: slope.
LuE Luverne	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
Oc Ochlockonee	Severe: flooding.	Slight	Moderate: flooding.	Slight	Moderate: flooding.
OkB Oktibbeha	Severe: percs slowly.	Severe: percs slowly.	Severe: percs slowly.	Slight	Slight.
OkC3 Oktibbeha	Severe: percs slowly, too clayey.	Severe: too clayey, percs slowly.	Severe: slope, too clayey, percs slowly.	Severe: too clayey.	Severe: too clayey.

See footnote at end of table.

TABLE 8.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
OsD*: Oktibbeha	Severe: percs slowly.	Severe: percs slowly.	Severe: slope, percs slowly.	Slight	Moderate: slope.
Sumter	Severe: too clayey.	Severe: too clayey.	Severe: slope, too clayey.	Severe: too clayey, erodes easily.	Severe: too clayey.
PaB, PaB3 Paden	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Moderate: slope, wetness, percs slowly.	Moderate: wetness.	Moderate: wetness.
PkB Pickwick	Slight	Slight	Moderate: slope.	Slight	Slight.
PkC3 Pickwick	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: erodes easily.	Moderate: slope.
PrB Providence	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Moderate: slope, wetness, percs slowly.	Severe: erodes easily.	Moderate: wetness.
PrC3 Providence	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Severe: slope.	Severe: erodes easily.	Moderate: wetness.
PrD3 Providence	Moderate: slope, wetness, percs slowly.	Moderate: slope, wetness, percs slowly.	Severe: slope.	Severe: erodes easily.	Moderate: wetness, slope.
Pt*. Pits, gravel					
SaC Saffell	Moderate: slope, small stones.	Moderate: slope, small stones.	Severe: slope, small stones.	Slight	Moderate: small stones, droughty, slope.
SaE Saffell	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Moderate: slope.	Severe: slope.
SeB Silerton	Moderate: percs slowly.	Moderate: percs slowly.	Moderate: slope, percs slowly.	Slight	Slight.
SeC2 Silerton	Moderate: percs slowly.	Moderate: percs slowly.	Severe: slope.	Slight	Slight.
SmC Smithdale	Slight	Slight	Severe: slope.	Slight	Slight.
SmD, SmD3 Smithdale	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight	Moderate: slope.
SmE, SmE3 Smithdale	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.

See footnote at end of table.

TABLE 8.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
Ud*. Udorthents, loamy					
Un---------- Una	Severe: flooding, wetness, percs slowly.	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.	Severe: wetness.
Ur*. Urban land					

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 9.--WILDLIFE HABITAT

(See text for definitions of "good," "fair," "poor," and "very poor." Absence of an entry indicates that the soil was not rated)

Soil name and map symbol	Potential for habitat elements								Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Shrubs	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
Bb---------- Bibb	Poor	Fair	Fair	Fair	Fair	---	Good	Good	Fair	Fair	Good.
DeB---------- Deanburg	Good	Good	Good	Good	Good	---	Poor	Very poor.	Good	Good	Very poor.
DeC3---------- Deanburg	Fair	Fair	Fair	Fair	Fair	---	Poor	Very poor.	Fair	Fair	Very poor.
DuB, DuB3---------- Dulac	Good	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
En---------- Enville	Fair	Good	Good	Good	Good	---	Fair	Fair	Good	Fair	Fair.
FrB, FrB3---------- Freeland	Good	Good	Good	Good	Good	---	Poor	Very poor.	Good	Good	Very poor.
Gu---------- Guyton	Fair	Fair	Fair	Fair	Fair	Good	Good	Good	Fair	Fair	Good.
Ha---------- Hatchie	Fair	Good	Good	Good	Good	---	Fair	Fair	Good	Good	Fair.
Iu---------- Iuka	Good	Good	Good	Good	Good	---	Poor	Poor	Good	Good	Poor.
LeB2---------- Lexington	Good	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
LuD, LuD3---------- Luverne	Fair	Good	Good	Good	Good	---	Very poor.	Very poor.	Good	Good	Very poor.
LuE---------- Luverne	Poor	Fair	Good	Good	Good	---	Very poor.	Very poor.	Fair	Good	Very poor.
Oc---------- Ochlockonee	Good	Good	Good	Good	Good	---	Poor	Very poor.	Good	Good	Very poor.
OkB---------- Oktibbeha	Fair	Fair	Fair	Good	Good	---	Poor	Very poor.	Fair	Good	Poor.
OkC3---------- Oktibbeha	Fair	Fair	Fair	Good	Good	---	Very poor.	Very poor.	Fair	Good	Very poor.
OsD*: Oktibbeha---------	Fair	Fair	Fair	Good	Good	---	Very poor.	Very poor.	Fair	Good	Very poor.
Sumter----------	Fair	Fair	Fair	Fair	Fair	---	Very poor.	Very poor.	Fair	Fair	Very poor.
PaB, PaB3---------- Paden	Fair	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.

See footnote at end of table.

TABLE 9.--WILDLIFE HABITAT--Continued

Soil name and map symbol	Potential for habitat elements								Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Shrubs	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
PkB---------- Pickwick	Good	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
PkC3---------- Pickwick	Fair	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
PrB---------- Providence	Good	Good	Good	Good	Good	---	Poor	Very poor.	Good	Good	Very poor.
PrC3, PrD3--------- Providence	Fair	Good	Good	Good	Good	---	Poor	Very poor.	Good	Good	Very poor.
Pt*. Pits, gravel											
SaC---------- Saffell	Fair	Fair	Fair	Fair	Fair	---	Very poor.	Very poor.	Fair	Fair	Very poor.
SaE---------- Saffell	Poor	Fair	Fair	Fair	Fair	---	Very poor.	Very poor.	Fair	Fair	Very poor.
SeB---------- Silerton	Good	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
SeC2---------- Silerton	Fair	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
SmC, SmD, SmD3----- Smithdale	Fair	Good	Good	Good	Good	---	Very poor.	Very poor.	Good	Good	Very poor.
SmE, SmE3---------- Smithdale	Poor	Fair	Good	Good	Good	---	Very poor.	Very poor.	Fair	Good	Very poor.
Ud*. Udorthents, loamy											
Un---------- Una	Poor	Fair	Good	Fair	---	Fair	Good	Good	Fair	Fair	Good.
Ur*. Urban land											

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 10.--BUILDING SITE DEVELOPMENT

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
Bb Bibb	Severe: wetness, flooding.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.	Severe: wetness, flooding.
DeB Deanburg	Severe: cutbanks cave.	Slight	Slight	Slight	Moderate: low strength.	Slight.
DeC3 Deanburg	Severe: cutbanks cave.	Slight	Slight	Moderate: slope.	Moderate: low strength.	Slight.
DuB, DuB3 Dulac	Severe: wetness.	Severe: wetness.	Severe: wetness, shrink-swell.	Severe: wetness.	Severe: low strength.	Moderate: wetness.
En Enville	Severe: wetness, flooding.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding.	Moderate: wetness, droughty, flooding.
FrB, FrB3 Freeland	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: low strength, wetness.	Moderate: wetness.
Gu Guyton	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: low strength, wetness.	Severe: wetness.
Ha Hatchie	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Moderate: low strength, wetness.	Moderate: wetness.
Iu Iuka	Severe: wetness, flooding.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding.	Moderate: wetness, flooding.
LeB2 Lexington	Slight	Slight	Slight	Slight	Severe: low strength.	Slight.
LuD, LuD3 Luverne	Moderate: too clayey, slope.	Moderate: shrink-swell, slope.	Moderate: slope, shrink-swell.	Severe: slope.	Severe: low strength.	Moderate: slope.
LuE Luverne	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope.	Severe: slope.
Oc Ochlockonee	Moderate: wetness, flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Moderate: flooding.
OkB Oktibbeha	Moderate: too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Slight.

See footnote at end of table.

TABLE 10.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
OkC3---------- Oktibbeha	Moderate: too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Severe: too clayey.
OsD*: Oktibbeha--------	Moderate: too clayey, slope.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength.	Moderate: slope.
Sumter----------	Moderate: depth to rock, too clayey, slope.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength.	Severe: too clayey.
PaB, PaB3--------- Paden	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Severe: low strength.	Moderate: wetness.
PkB---------- Pickwick	Slight---------	Slight---------	Slight---------	Slight---------	Severe: low strength.	Slight.
PkC3---------- Pickwick	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: low strength.	Moderate: slope.
PrB---------- Providence	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Severe: low strength.	Moderate: wetness.
PrC3---------- Providence	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Severe: low strength.	Moderate: wetness.
PrD3---------- Providence	Severe: wetness.	Moderate: wetness, slope.	Severe: wetness.	Severe: slope.	Severe: low strength.	Moderate: wetness, slope.
Pt*. Pits, gravel						
SaC---------- Saffell	Severe: cutbanks cave.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: small stones, droughty, slope.
SaE---------- Saffell	Severe: cutbanks cave, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
SeB---------- Silerton	Moderate: too clayey.	Slight---------	Moderate: shrink-swell.	Slight---------	Severe: low strength.	Slight.
SeC2---------- Silerton	Moderate: too clayey.	Slight---------	Moderate: shrink-swell.	Slight---------	Severe: low strength.	Slight.
SmC---------- Smithdale	Slight---------	Slight---------	Slight---------	Slight---------	Slight---------	Slight.
SmD, SmD3--------- Smithdale	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: slope.
SmE, SmE3--------- Smithdale	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.

See footnote at end of table.

TABLE 10.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
Ud*. Udorthents, loamy						
Un---------- Una	Severe: wetness, flooding.	Severe: flooding, wetness, shrink-swell.	Severe: flooding, wetness, shrink-swell.	Severe: flooding, wetness, shrink-swell.	Severe: shrink-swell, low strength, wetness.	Severe: wetness.
Ur*. Urban land						

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 11.--SANITARY FACILITIES

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "good," and other terms. Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
Bb Bibb	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
DeB, DeC3 Deanburg	Moderate: percs slowly.	Severe: seepage.	Severe: seepage.	Slight	Fair: too clayey, thin layer.
DuB, DuB3 Dulac	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness, too clayey.	Severe: wetness.	Poor: too clayey, hard to pack, wetness.
En Enville	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
FrB, FrB3 Freeland	Severe: wetness, percs slowly.	Moderate: seepage, slope.	Severe: wetness.	Moderate: wetness.	Fair: too clayey, wetness.
Gu Guyton	Severe: wetness, percs slowly.	Moderate: seepage.	Severe: wetness.	Severe: wetness.	Poor: wetness.
Ha Hatchie	Severe: wetness, percs slowly.	Moderate: seepage.	Severe: wetness.	Severe: wetness.	Poor: wetness.
Iu Iuka	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Fair: wetness.
LeB2 Lexington	Moderate: percs slowly.	Severe: seepage.	Severe: seepage.	Severe: seepage.	Fair: too clayey.
LuD, LuD3 Luverne	Severe: percs slowly.	Severe: slope.	Severe: too clayey.	Moderate: slope.	Poor: too clayey, hard to pack.
LuE Luverne	Severe: percs slowly, slope.	Severe: slope.	Severe: slope, too clayey.	Severe: slope.	Poor: too clayey, hard to pack, slope.
Oc Ochlockonee	Severe: flooding, wetness.	Severe: seepage, flooding, wetness.	Severe: flooding, seepage, wetness.	Severe: flooding, wetness.	Fair: wetness.
OkB, OkC3 Oktibbeha	Severe: percs slowly.	Moderate: slope.	Severe: too clayey.	Slight	Poor: too clayey, hard to pack.

See footnote at end of table.

TABLE 11.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
OsD*:					
Oktibbeha	Severe: percs slowly.	Severe: slope.	Severe: too clayey.	Moderate: slope.	Poor: too clayey, hard to pack.
Sumter	Severe: depth to rock, percs slowly.	Severe: depth to rock, slope.	Severe: depth to rock, too clayey.	Severe: depth to rock.	Poor: depth to rock, too clayey, hard to pack.
PaB, PaB3 Paden	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.	Moderate: wetness.	Fair: too clayey, wetness.
PkB Pickwick	Moderate: percs slowly.	Moderate: seepage, slope.	Moderate: too clayey.	Slight	Fair: too clayey.
PkC3 Pickwick	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope, too clayey.	Moderate: slope.	Fair: slope, too clayey.
PrB, PrC3 Providence	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.	Moderate: wetness.	Fair: too clayey, wetness.
PrD3 Providence	Severe: wetness, percs slowly.	Severe: slope, wetness.	Severe: wetness.	Moderate: wetness, slope.	Fair: too clayey, slope, wetness.
Pt*. Pits, gravel					
SaC Saffell	Moderate: slope.	Severe: seepage, slope.	Severe: seepage.	Moderate: slope.	Poor: small stones.
SaE Saffell	Severe: slope.	Severe: seepage, slope.	Severe: seepage, slope.	Severe: slope.	Poor: small stones, slope.
SeB, SeC2 Silerton	Severe: percs slowly.	Moderate: seepage, slope.	Severe: too clayey.	Slight	Poor: too clayey, hard to pack.
SmC Smithdale	Slight	Severe: seepage.	Severe: seepage.	Severe: seepage.	Fair: too clayey.
SmD, SmD3 Smithdale	Moderate: slope.	Severe: seepage, slope.	Severe: seepage.	Severe: seepage.	Fair: too clayey, slope.
SmE, SmE3 Smithdale	Severe: slope.	Severe: seepage, slope.	Severe: seepage, slope.	Severe: seepage, slope.	Poor: slope.
Ud*. Udorthents, loamy					

See footnote at end of table.

TABLE 11.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
Un---------- Una	Severe: flooding, wetness, percs slowly.	Severe: flooding.	Severe: flooding, wetness, too clayey.	Severe: flooding, wetness.	Poor: too clayey, hard to pack, wetness.
Ur*. Urban land					

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 12.--CONSTRUCTION MATERIALS

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "good," "fair," and other terms. Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
Bb Bibb	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
DeB, DeC3 Deanburg	Good	Probable	Improbable: too sandy.	Fair: too clayey.
DuB, DuB3 Dulac	Poor: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Fair: thin layer.
En Enville	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: too sandy.
FrB, FrB3 Freeland	Fair: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
Gu Guyton	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
Ha Hatchie	Fair: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
Iu Iuka	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Good.
LeB2 Lexington	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
LuD, LuD3 Luverne	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
LuE Luverne	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, slope.
Oc Ochlockonee	Good	Improbable: excess fines.	Improbable: excess fines.	Good.
OkB Oktibbeha	Poor: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
OkC3 Oktibbeha	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
OsD*: Oktibbeha	Poor: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.

See footnote at end of table.

TABLE 12.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
OsD*: Sumter	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
PaB, PaB3 Paden	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones, area reclaim.
PkB Pickwick	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
PkC3 Pickwick	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, slope.
PrB, PrC3 Providence	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
PrD3 Providence	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, slope.
Pt*. Pits, gravel				
SaC Saffell	Good	Improbable: excess fines.	Favorable	Poor: small stones, area reclaim.
SaE Saffell	Fair: slope.	Improbable: excess fines.	Favorable	Poor: small stones, area reclaim, slope.
SeB, SeC2 Silerton	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, thin layer.
SmC Smithdale	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
SmD, SmD3 Smithdale	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, slope.
SmE, SmE3 Smithdale	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Ud*. Udorthents, loamy				
Un Una	Poor: low strength, wetness, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.

See footnote at end of table.

TABLE 12.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
Ur*. Urban land				

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 13.--WATER MANAGEMENT

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not evaluated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Soil name and map symbol	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
Bb---------- Bibb	Moderate: seepage.	Severe: piping, wetness.	Moderate: slow refill.	Flooding-------	Wetness--------	Erodes easily, wetness.	Wetness, erodes easily.
DeB---------- Deanburg	Severe: seepage.	Severe: piping.	Severe: no water.	Deep to water	Slope, erodes easily.	Erodes easily	Erodes easily.
DeC3---------- Deanburg	Severe: seepage.	Severe: piping.	Severe: no water.	Deep to water	Slope----------	Favorable------	Favorable.
DuB, DuB3--------- Dulac	Moderate: seepage, slope.	Severe: hard to pack.	Severe: no water.	Percs slowly, slope.	Wetness, percs slowly, rooting depth.	Erodes easily, wetness.	Wetness, erodes easily.
En---------- Enville	Moderate: seepage.	Severe: piping, wetness.	Severe: cutbanks cave.	Flooding, cutbanks cave.	Wetness, droughty.	Wetness, too sandy.	Wetness, droughty.
FrB, FrB3--------- Freeland	Moderate: seepage.	Severe: piping.	Severe: no water.	Percs slowly---	Wetness, percs slowly.	Erodes easily, wetness.	Erodes easily, rooting depth.
Gu---------- Guyton	Moderate: seepage.	Severe: piping, wetness.	Severe: no water.	Percs slowly---	Wetness, percs slowly, erodes easily.	Erodes easily, wetness, percs slowly.	Wetness, erodes easily, percs slowly.
Ha---------- Hatchie	Moderate: seepage.	Severe: piping.	Severe: no water.	Percs slowly---	Wetness, percs slowly.	Erodes easily, wetness, rooting depth.	Wetness, erodes easily, rooting depth.
Iu---------- Iuka	Moderate: seepage.	Severe: piping, wetness.	Moderate: slow refill.	Flooding-------	Wetness, flooding.	Wetness--------	Wetness.
LeB2---------- Lexington	Severe: seepage.	Severe: thin layer.	Severe: no water.	Deep to water	Slope, erodes easily.	Erodes easily	Erodes easily.
LuD, LuD3, LuE---- Luverne	Severe: slope.	Severe: hard to pack.	Severe: no water.	Deep to water	Slope----------	Slope----------	Slope.
Oc---------- Ochlockonee	Severe: seepage.	Severe: piping.	Severe: cutbanks cave.	Deep to water	Flooding-------	Favorable------	Favorable.

TABLE 13.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
OkB---------- Oktibbeha	Moderate: slope.	Moderate: hard to pack.	Severe: no water.	Deep to water	Percs slowly, slope.	Percs slowly---	Percs slowly.
OkC3---------- Oktibbeha	Moderate: slope.	Moderate: hard to pack.	Severe: no water.	Deep to water	Slow intake, percs slowly, slope.	Percs slowly---	Percs slowly.
OsD*:							
Oktibbeha--------	Severe: slope.	Moderate: hard to pack.	Severe: no water.	Deep to water	Percs slowly, slope.	Slope, percs slowly.	Slope, percs slowly.
Sumter----------	Severe: slope.	Severe: thin layer.	Severe: no water.	Deep to water	Slope, slow intake, percs slowly.	Slope, depth to rock, erodes easily.	Slope, erodes easily, depth to rock.
PaB, PaB3--------- Paden	Moderate: seepage.	Severe: piping.	Severe: no water.	Percs slowly, slope.	Slope, wetness, percs slowly.	Erodes easily, wetness.	Erodes easily, rooting depth.
PkB---------- Pickwick	Moderate: seepage.	Severe: hard to pack.	Severe: no water.	Deep to water	Slope, erodes easily.	Erodes easily	Erodes easily.
PkC3---------- Pickwick	Moderate: seepage.	Severe: hard to pack.	Severe: no water.	Deep to water	Slope, erodes easily.	Slope, erodes easily.	Slope, erodes easily.
PrB, PrC3--------- Providence	Moderate: seepage, slope.	Moderate: thin layer, piping, wetness.	Severe: no water.	Slope----------	Slope, wetness, rooting depth.	Erodes easily, wetness.	Erodes easily, rooting depth.
PrD3---------- Providence	Severe: slope.	Moderate: thin layer, piping, wetness.	Severe: no water.	Slope----------	Slope, wetness, rooting depth.	Slope, erodes easily, wetness.	Slope, erodes easily, rooting depth.
Pt*. Pits, gravel							
SaC, SaE---------- Saffell	Severe: seepage, slope.	Moderate: thin layer.	Severe: no water.	Deep to water	Slope, droughty, soil blowing.	Slope, soil blowing.	Slope, droughty.
SeB, SeC2--------- Silerton	Moderate: seepage.	Severe: hard to pack.	Severe: no water.	Deep to water	Percs slowly, slope, erodes easily.	Erodes easily, percs slowly.	Erodes easily, percs slowly.

See footnote at end of table.

TABLE 13.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
SmC---------- Smithdale	Severe: seepage.	Severe: piping.	Severe: no water.	Deep to water	Slope----------	Favorable------	Favorable.
SmD, SmD3, SmE, SmE3---------- Smithdale	Severe: seepage, slope.	Severe: piping.	Severe: no water.	Deep to water	Slope----------	Slope----------	Slope.
Ud*. Udorthents, loamy							
Un---------- Una	Slight---------	Severe: wetness.	Severe: slow refill.	Percs slowly, flooding.	Wetness, percs slowly.	Wetness, percs slowly.	Wetness, percs slowly.
Ur*. Urban land							

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 14.--ENGINEERING INDEX PROPERTIES

(The symbol < means less than; > means more than. Absence of an entry indicates that data were not estimated)

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	3-10 inches	4	10	40	200		
	In				Pct					Pct	
Bb---------- Bibb	0-13	Fine sandy loam	SM, SC-SM, ML, CL-ML	A-2, A-4	0-5	95-100	90-100	60-90	30-60	<25	NP-7
	13-60	Sandy loam, loam, silt loam.	SM, SC-SM, ML, CL-ML	A-2, A-4	0-10	60-100	50-100	40-100	30-90	<30	NP-7
DeB---------- Deanburg	0-9	Silt loam--------	ML, CL-ML, CL	A-4	0	100	100	90-100	65-90	<30	3-10
	9-43	Clay loam, sandy clay loam, loam.	ML, CL, SC, CL-ML	A-4, A-6, A-7	0	100	100	80-95	40-80	25-48	6-25
	43-60	Sand, loamy sand	SM, SP-SM	A-2	0	100	100	50-75	11-30	---	NP
DeC3---------- Deanburg	0-5	Sandy clay loam	CL, SC	A-6, A-7	0	100	100	80-100	40-80	28-48	11-25
	5-34	Clay loam, sandy clay loam, loam.	ML, CL, SC, CL-ML	A-4, A-6, A-7	0	100	100	80-95	40-80	25-48	6-25
	34-60	Sand, loamy sand	SM, SP-SM	A-2	0	100	100	50-75	11-30	---	NP
DuB---------- Dulac	0-6	Silt loam--------	ML, CL-ML	A-4	0	100	100	95-100	85-95	20-25	2-7
	6-28	Silt loam, silty clay loam.	CL	A-6, A-7	0	100	100	90-100	85-95	30-45	11-25
	28-48	Silt loam, silty clay loam.	CL	A-6, A-7	0	100	95-100	90-100	85-95	30-45	11-25
	48-60	Clay, silty clay	CH, MH	A-7	0	95-100	90-100	85-100	80-95	55-85	25-50
DuB3---------- Dulac	0-5	Silt loam--------	ML, CL-ML	A-4	0	100	100	95-100	85-95	20-25	2-7
	5-22	Silt loam, silty clay loam.	CL	A-6, A-7	0	100	100	90-100	85-95	30-45	11-25
	22-36	Silt loam, silty clay loam.	CL	A-6, A-7	0	100	95-100	90-100	85-95	30-45	11-25
	36-60	Clay, silty clay	CH, MH	A-7	0	95-100	90-100	85-100	80-95	55-85	25-50
En---------- Enville	0-7	Fine sandy loam	SM, SC-SM, ML, CL-ML	A-2, A-4	0	100	95-100	65-85	30-60	<20	NP-7
	7-60	Sandy loam, loam, silt loam.	SM, SC-SM, ML, CL-ML	A-2, A-4	0	100	95-100	60-100	30-85	<30	NP-7
FrB---------- Freeland	0-13	Silt loam--------	ML, CL-ML, CL	A-4	0	100	100	85-100	60-95	<30	NP-10
	13-36	Silt loam, silty clay loam.	CL-ML, CL	A-4, A-6	0	100	100	95-100	75-100	20-38	6-15
	36-60	Loam, clay loam, silt loam.	CL-ML, CL	A-4, A-6	0	100	100	85-95	65-95	20-40	5-18
FrB3---------- Freeland	0-6	Silt loam--------	ML, CL-ML, CL	A-4	0	100	100	85-100	60-95	<30	NP-10
	6-23	Silt loam, silty clay loam.	CL-ML, CL	A-4, A-6	0	100	100	95-100	75-100	20-38	6-15
	23-60	Loam, clay loam, silt loam.	CL-ML, CL	A-4, A-6	0	100	100	85-95	65-95	20-40	5-18
Gu---------- Guyton	0-28	Silt loam--------	ML, CL-ML	A-4	0	100	100	95-100	65-90	<27	NP-7
	28-48	Silt loam, silty clay loam, clay loam.	CL, CL-ML	A-6, A-4	0	100	100	94-100	75-95	22-40	6-18
	48-60	Silty clay loam, clay loam.	CL, CL-ML, ML	A-6, A-4	0	100	100	95-100	50-95	<40	NP-18

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	3-10 inches	4	10	40	200		
	In				Pct					Pct	
Ha Hatchie	0-7	Silt loam	ML, CL-ML, CL	A-4	0	100	100	95-100	70-95	<25	3-10
	7-19	Silt loam, silty clay loam.	CL-ML, CL	A-4, A-6	0	100	100	95-100	70-95	20-32	6-14
	19-57	Silt loam, loam, clay loam.	CL-ML, CL	A-4, A-6	0	100	95-100	90-100	60-85	22-34	6-15
	57-60	Clay loam	CL-ML, CL	A-4, A-6	0	100	95-100	90-100	51-80	20-38	6-18
Iu Iuka	0-14	Fine sandy loam	SM, SC-SM, ML, CL-ML	A-4, A-2	0	95-100	90-100	70-100	30-60	<20	NP-7
	14-25	Fine sandy loam, loam, sandy loam.	SM, SC-SM, ML, CL-ML	A-4	0	95-100	85-100	65-100	36-75	<30	NP-7
	25-60	Sandy loam, fine sandy loam, loam.	SM, ML	A-2, A-4	0	95-100	90-100	70-100	25-60	<30	NP-7
LeB2 Lexington	0-4	Silt loam	ML, CL, CL-ML	A-4, A-6, A-7	0	100	95-100	90-100	70-100	25-42	5-16
	4-35	Silty clay loam, silt loam.	CL	A-6, A-7	0	100	95-100	90-100	75-100	27-45	11-25
	35-42	Sandy loam, loam, sandy clay loam.	SC, SC-SM, CL, CL-ML	A-2, A-4, A-6	0	100	95-100	50-85	20-65	22-35	5-15
	42-60	Loamy sand, sandy loam, loam.	SC, SC-SM	A-2, A-4, A-6	0	100	95-100	50-70	20-40	22-35	5-15
LuD Luverne	0-7	Fine sandy loam	ML, SM, CL-ML, SC-SM	A-4, A-2	0-5	87-100	84-100	70-100	30-60	<20	NP-7
	7-24	Clay loam, sandy clay, clay.	ML, MH, CH, CL	A-6, A-7	0-5	95-100	90-100	85-100	50-95	38-70	12-34
	24-34	Clay loam, sandy clay loam.	SC, CL	A-4, A-7, A-6	0-5	95-100	85-100	85-100	36-76	27-43	8-18
	34-60	Stratified sandy clay loam to clay.	ML, CL, MH, CH	A-6, A-7	0-5	95-100	90-100	85-100	60-95	39-61	16-28
LuD3 Luverne	0-4	Clay loam	SM, ML, SC-SM, CL-ML	A-4, A-6	0-5	90-100	90-100	75-100	40-70	22-38	3-16
	4-20	Clay loam, sandy clay, clay.	ML, MH, CH, CL	A-6, A-7	0-5	95-100	90-100	85-100	50-95	38-70	12-34
	20-30	Clay loam, sandy clay loam.	SC, CL	A-4, A-7, A-6	0-5	95-100	85-100	85-100	36-76	27-43	8-18
	30-60	Stratified sandy clay loam to clay.	ML, CL, MH, CH	A-6, A-7	0-5	95-100	90-100	85-100	60-95	39-61	16-28
LuE Luverne	0-7	Fine sandy loam	ML, SM, CL-ML, SC-SM	A-4, A-2	0-5	87-100	84-100	70-100	30-60	<20	NP-7
	7-24	Clay loam, sandy clay, clay.	ML, MH, CH, CL	A-6, A-7	0-5	95-100	90-100	85-100	50-95	38-70	12-34
	24-34	Clay loam, sandy clay loam.	SC, CL	A-4, A-7, A-6	0-5	95-100	85-100	85-100	36-76	27-43	8-18
	34-60	Stratified sandy clay loam to clay.	ML, CL, MH, CH	A-6, A-7	0-5	95-100	90-100	85-100	60-95	39-61	16-28

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	3-10 inches	4	10	40	200		
	In				Pct					Pct	
Oc---------- Ochlockonee	0-8	Fine sandy loam	SM, ML, SC-SM, CL-ML	A-4, A-2	0	100	95-100	65-90	40-70	<26	NP-5
	8-60	Fine sandy loam, sandy loam.	SM, ML, SC, CL	A-4	0	100	95-100	95-100	36-75	<32	NP-9
OkB---------- Oktibbeha	0-4	Clay loam--------	CL	A-6, A-7	0	100	95-100	90-100	70-100	32-50	12-28
	4-40	Clay----------	CH	A-7	0	100	95-100	95-100	95-100	55-65	30-40
	40-60	Clay, silty clay	CL	A-7	0-5	95-100	90-100	90-100	90-100	41-49	25-30
OkC3---------- Oktibbeha	0-5	Clay----------	CL, ML, CH	A-7	0	100	95-100	90-100	75-95	42-64	19-34
	5-38	Clay----------	CH	A-7	0	100	95-100	95-100	95-100	55-65	30-40
	38-60	Clay, silty clay	CL	A-7	0-5	95-100	90-100	90-100	90-100	41-49	25-30
OsD*: Oktibbeha-------	0-4	Clay loam--------	CL	A-6, A-7	0	100	95-100	90-100	70-100	32-50	12-28
	4-40	Clay----------	CH	A-7	0	100	95-100	95-100	95-100	55-65	30-40
	40-60	Clay, silty clay	CL	A-7	0-5	95-100	90-100	90-100	90-100	41-49	25-30
Sumter----------	0-10	Silty clay-------	CL	A-7, A-6	0	90-100	85-100	80-98	75-90	35-50	16-25
	10-23	Silty clay, clay	CH, CL	A-7, A-6	0	85-100	78-98	75-95	75-95	35-55	16-32
	23-32	Channery silty clay loam, clay, silty clay.	CH, CL	A-6, A-7	0	80-100	65-98	60-95	55-95	35-55	16-32
	32-60	Weathered bedrock	---	---	---	---	---	---	---	---	---
PaB---------- Paden	0-12	Silt loam--------	ML, CL, CL-ML	A-4, A-6	0	95-100	90-100	85-95	75-90	20-40	3-15
	12-28	Silt loam, silty clay loam.	CL, CL-ML, ML	A-4, A-6	0	95-100	90-100	85-95	75-95	25-40	6-15
	28-46	Silt loam, clay loam, silty clay loam.	CL, CL-ML, ML	A-4, A-6	0	95-100	90-100	85-95	70-90	25-40	6-16
	46-60	Clay, clay loam, sandy clay loam.	CL, SC, GC	A-6, A-7	0-10	60-100	50-100	45-90	36-90	34-50	13-25
PaB3---------- Paden	0-5	Silt loam--------	ML, CL, CL-ML	A-4, A-6	0	95-100	90-100	85-95	75-90	20-40	3-15
	5-21	Silt loam, silty clay loam.	CL, CL-ML, ML	A-4, A-6	0	95-100	90-100	85-95	75-95	25-40	6-15
	21-41	Silt loam, clay loam, silty clay loam.	CL, CL-ML, ML	A-4, A-6	0	95-100	90-100	85-95	70-90	25-40	6-16
	41-60	Clay, clay loam, sandy clay loam.	CL, SC, GC	A-6, A-7	0-10	60-100	50-100	45-90	36-90	34-50	13-25
PkB---------- Pickwick	0-7	Silt loam--------	ML, CL-ML, CL	A-4, A-6	0	100	95-100	90-100	70-95	18-32	2-11
	7-40	Silty clay loam, silt loam.	CL	A-6, A-7	0	95-100	95-100	90-100	75-95	30-42	11-17
	40-60	Silty clay loam, clay loam.	CL, ML, MH	A-6, A-7	0-5	80-100	75-100	65-95	55-80	33-52	12-22
PkC3---------- Pickwick	0-3	Silty clay loam	CL, ML	A-6, A-7	0	95-100	95-100	90-100	80-95	32-42	11-18
	3-38	Silty clay loam, silt loam.	CL	A-6, A-7	0	95-100	95-100	90-100	75-95	30-42	11-17
	38-60	Silty clay loam, clay loam.	CL, ML, MH	A-6, A-7	0-5	80-100	75-100	65-95	55-80	33-52	12-22

See footnote at end of table.

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	3-10 inches	4	10	40	200		
	In				Pct					Pct	
PrB---------- Providence	0-5	Silt loam--------	ML, CL, CL-ML	A-4	0	100	100	100	85-100	<30	NP-10
	5-22	Silty clay loam, silt loam.	CL	A-7, A-6	0	100	100	95-100	85-100	30-45	11-20
	22-35	Silt loam, silty clay loam.	CL	A-6	0	100	100	90-100	70-90	25-40	11-20
	35-52	Loam, clay loam, sandy clay loam.	CL, SC	A-6, A-4	0	100	95-100	70-95	40-80	20-35	8-18
	52-60	Sandy loam, sandy clay loam, loam.	SM, SC, CL, ML	A-2, A-4	0	100	95-100	60-85	30-80	<30	NP-10
PrC3, PrD3------- Providence	0-4	Silty clay loam	CL	A-6, A-7	0	100	100	95-100	85-100	30-45	11-20
	4-18	Silty clay loam, silt loam.	CL	A-7, A-6	0	100	100	95-100	85-100	30-45	11-20
	18-28	Silt loam, silty clay loam.	CL	A-6	0	100	100	90-100	70-90	25-40	11-20
	28-50	Loam, clay loam, sandy clay loam.	CL, SC	A-6, A-4	0	100	95-100	70-95	40-80	20-35	8-18
	50-60	Sandy loam, sandy clay loam, loam.	SM, SC, CL, ML	A-2, A-4	0	100	95-100	60-85	30-80	<30	NP-10
Pt*. Pits, gravel											
SaC, SaE--------- Saffell	0-6	Gravelly sandy loam.	SM, SC-SM, GM, GM-GC	A-1, A-2, A-4	0-5	50-80	50-75	40-70	20-50	<25	NP-5
	6-16	Gravelly fine sandy loam, gravelly sandy clay loam, gravelly sandy loam.	GC, SC, SC-SM, GM-GC	A-2, A-1, A-4, A-6	0-10	30-75	25-75	20-70	12-50	20-40	4-18
	16-46	Very gravelly sandy clay loam, very gravelly clay loam, very gravelly loam.	GC, GP-GC, GM-GC	A-2, A-1, A-4, A-6	0-10	25-55	25-50	20-50	12-40	20-40	4-15
	46-60	Very gravelly sandy loam, gravelly loamy sand.	GW, GM-GW	A-1, A-2, A-3	0-15	15-80	10-75	10-65	5-35	<35	NP-15
SeB---------- Silerton	0-8	Silt loam--------	ML, CL-ML, CL	A-4	0	100	95-100	95-100	70-95	20-35	3-13
	8-28	Silty clay loam, silt loam.	ML, CL	A-6, A-4	0	95-100	95-100	90-100	85-95	25-40	8-16
	28-60	Clay, sandy clay	MH, CL, CH	A-7	0-10	95-100	90-100	80-95	55-90	40-60	15-30
SeC2---------- Silerton	0-6	Silt loam--------	ML, CL-ML, CL	A-4	0	100	95-100	95-100	70-95	20-35	3-13
	6-22	Silty clay loam, silt loam.	ML, CL	A-6, A-4	0	95-100	95-100	90-100	85-95	25-40	8-16
	22-60	Clay, sandy clay	MH, CL, CH	A-7	0-10	95-100	90-100	80-95	55-90	40-60	15-30

See footnote at end of table.

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	3-10 inches	4	10	40	200		
	In				Pct					Pct	
SmC, SmD---------	0-11	Fine sandy loam	SM, SC-SM	A-4, A-2	0	100	85-100	60-95	28-49	<20	NP-5
Smithdale	11-43	Clay loam, sandy clay loam, sandy loam.	SC-SM, SC, CL, CL-ML	A-6, A-4	0	100	85-100	80-96	45-75	23-38	7-16
	43-60	Loam, sandy loam	SM, ML, CL, SC	A-4	0	100	85-100	65-95	36-70	<30	NP-10
SmD3-------------	0-3	Loam-------------	SM, SC-SM	A-4, A-2	0	100	85-100	60-95	28-49	<20	NP-5
Smithdale	3-22	Clay loam, sandy clay loam, sandy loam.	SC-SM, SC, CL, CL-ML	A-6, A-4	0	100	85-100	80-96	45-75	23-38	7-16
	22-60	Loam, sandy loam	SM, ML, CL, SC	A-4	0	100	85-100	65-95	36-70	<30	NP-10
SmE--------------	0-11	Fine sandy loam	SM, SC-SM	A-4, A-2	0	100	85-100	60-95	28-49	<20	NP-5
Smithdale	11-43	Clay loam, sandy clay loam, sandy loam.	SC-SM, SC, CL, CL-ML	A-6, A-4	0	100	85-100	80-96	45-75	23-38	7-16
	43-60	Loam, sandy loam	SM, ML, CL, SC	A-4	0	100	85-100	65-95	36-70	<30	NP-10
SmE3-------------	0-3	Loam-------------	SM, SC-SM	A-4, A-2	0	100	85-100	60-95	28-49	<20	NP-5
Smithdale	3-22	Clay loam, sandy clay loam, sandy loam.	SC-SM, SC, CL, CL-ML	A-6, A-4	0	100	85-100	80-96	45-75	23-38	7-16
	22-60	Loam, sandy loam	SM, ML, CL, SC	A-4	0	100	85-100	65-95	36-70	<30	NP-10
Ud*. Udorthents, loamy											
Un---------------	0-4	Silty clay loam	CH, CL	A-7	0	100	100	90-100	75-95	41-65	20-40
Una	4-60	Clay-------------	CH, CL	A-7	0	100	100	90-100	75-95	41-65	20-40
Ur*. Urban land											

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 15.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS

(The symbol < means less than; > means more than. Entries under "Erosion factors--T" apply to the entire profile. Entries under "Organic matter" apply only to the surface layer. Absence of an entry indicates that data were not available or were not estimated)

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors		Organic matter
								K	T	
	In	Pct	g/cc	In/hr	In/in	pH				Pct
Bb	0-13	2-18	1.50-1.70	0.6-2.0	0.12-0.18	4.5-5.5	Low	0.20	5	1-3
Bibb	13-60	2-18	1.45-1.75	0.6-2.0	0.10-0.20	4.5-5.5	Low	0.37		
DeB	0-9	10-25	1.40-1.60	0.6-2.0	0.16-0.22	5.1-6.0	Low	0.37	4	<.5
Deanburg	9-43	15-35	1.40-1.60	0.6-2.0	0.10-0.20	5.1-6.0	Low	0.24		
	43-60	5-15	1.30-1.50	2.0-20	0.02-0.10	5.1-6.0	Low	0.20		
DeC3	0-5	20-35	1.40-1.60	0.6-2.0	0.15-0.20	5.1-6.0	Low	0.32	4	<.5
Deanburg	5-34	15-35	1.40-1.60	0.6-2.0	0.10-0.20	5.1-6.0	Low	0.24		
	34-60	5-15	1.30-1.50	2.0-20	0.02-0.10	5.1-6.0	Low	0.20		
DuB	0-6	6-18	1.20-1.40	0.6-2.0	0.20-0.22	4.5-5.5	Low	0.49	3	.5-2
Dulac	6-28	20-30	1.40-1.60	0.6-2.0	0.20-0.22	4.5-5.5	Low	0.43		
	28-48	20-35	1.60-1.80	0.06-0.2	0.10-0.13	4.5-5.5	Low	0.43		
	48-60	40-55	1.50-1.70	0.2-0.6	0.10-0.14	4.5-5.5	High	0.20		
DuB3	0-5	6-18	1.20-1.40	0.6-2.0	0.20-0.22	4.5-5.5	Low	0.49	3	.5-2
Dulac	5-22	20-30	1.40-1.60	0.6-2.0	0.20-0.22	4.5-5.5	Low	0.43		
	22-36	20-35	1.60-1.80	0.06-0.2	0.10-0.13	4.5-5.5	Low	0.43		
	36-60	40-55	1.50-1.70	0.2-0.6	0.10-0.14	4.5-5.5	High	0.20		
En	0-7	5-18	1.30-1.45	2.0-6.0	0.06-0.15	5.1-6.5	Low	0.24	5	.5-2
Enville	7-60	10-18	1.30-1.55	0.6-2.0	0.10-0.20	4.5-5.5	Low	0.28		
FrB	0-13	10-25	1.40-1.60	0.6-2.0	0.14-0.24	5.1-6.5	Low	0.49	3	.5-2
Freeland	13-36	18-35	1.40-1.60	0.6-2.0	0.18-0.22	4.5-5.5	Low	0.49		
	36-60	10-35	1.60-1.75	0.06-0.2	0.09-0.12	5.1-6.5	Low	0.43		
FrB3	0-6	10-25	1.40-1.60	0.6-2.0	0.14-0.24	5.1-6.5	Low	0.49	3	.5-2
Freeland	6-23	18-35	1.40-1.60	0.6-2.0	0.18-0.22	4.5-5.5	Low	0.49		
	23-60	10-35	1.60-1.75	0.06-0.2	0.09-0.12	5.1-6.5	Low	0.43		
Gu	0-28	7-25	1.35-1.65	0.6-2.0	0.20-0.23	5.1-6.0	Low	0.43	5	.5-4
Guyton	28-48	20-35	1.35-1.70	0.06-0.2	0.15-0.22	5.1-6.0	Low	0.37		
	48-60	20-35	1.35-1.70	0.06-0.2	0.15-0.22	5.1-6.0	Low	0.37		
Ha	0-7	10-25	1.40-1.60	0.6-2.0	0.17-0.22	5.6-6.5	Low	0.49	3	.5-2
Hatchie	7-19	18-30	1.40-1.60	0.6-2.0	0.17-0.22	4.5-5.5	Low	0.49		
	19-57	20-30	1.60-1.80	0.06-0.2	0.09-0.12	4.5-5.5	Low	0.43		
	57-60	20-35	1.55-1.60	0.6-2.0	0.12-0.17	5.1-6.5	Low	0.43		
Iu	0-14	6-15	1.40-1.60	2.0-6.0	0.10-0.15	5.1-6.0	Low	0.24	5	.5-2
Iuka	14-25	8-18	1.40-1.60	0.6-2.0	0.10-0.20	4.5-5.5	Low	0.28		
	25-60	5-15	1.40-1.60	0.6-2.0	0.10-0.20	4.5-5.5	Low	0.20		
LeB2	0-4	12-27	1.30-1.50	0.6-2.0	0.17-0.22	4.5-6.0	Low	0.49	3	.1-2
Lexington	4-35	20-33	1.40-1.55	0.6-2.0	0.16-0.21	4.5-6.0	Low	0.43		
	35-42	15-29	1.30-1.50	2.0-6.0	0.06-0.12	4.5-6.0	Low	0.24		
	42-60	9-30	1.20-1.55	2.0-6.0	0.05-0.10	4.5-6.0	Low	0.24		
LuD	0-7	7-20	1.35-1.65	2.0-6.0	0.11-0.15	4.5-5.5	Low	0.24	4	.5-1
Luverne	7-24	35-60	1.25-1.55	0.2-0.6	0.12-0.18	3.6-5.5	Moderate	0.28		
	24-34	20-40	1.35-1.65	0.2-0.6	0.12-0.18	3.6-5.5	Low	0.28		
	34-60	35-60	1.10-1.40	0.2-0.6	0.05-0.10	3.6-5.5	Moderate	0.32		

TABLE 15.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors		Organic matter
								K	T	
	In	Pct	g/cc	In/hr	In/in	pH				Pct
LuD3----------	0-4	20-45	1.35-1.65	0.2-0.6	0.12-0.16	4.5-5.5	Low----------	0.28	4	<.5
Luverne	4-20	35-60	1.25-1.55	0.2-0.6	0.12-0.18	3.6-5.5	Moderate-----	0.28		
	20-30	20-40	1.35-1.65	0.2-0.6	0.12-0.18	3.6-5.5	Low----------	0.28		
	30-60	35-60	1.10-1.40	0.2-0.6	0.05-0.10	3.6-5.5	Moderate-----	0.32		
LuE----------	0-7	7-20	1.35-1.65	2.0-6.0	0.11-0.15	4.5-5.5	Low----------	0.24	4	.5-1
Luverne	7-24	35-60	1.25-1.55	0.2-0.6	0.12-0.18	3.6-5.5	Moderate-----	0.28		
	24-34	20-40	1.35-1.65	0.2-0.6	0.12-0.18	3.6-5.5	Low----------	0.28		
	34-60	35-60	1.10-1.40	0.2-0.6	0.05-0.10	3.6-5.5	Moderate-----	0.32		
Oc----------	0-8	3-18	1.40-1.60	2.0-6.0	0.07-0.14	4.5-6.5	Low----------	0.20	5	.5-2
Ochlockonee	8-60	8-18	1.40-1.60	0.6-2.0	0.10-0.20	4.5-5.5	Low----------	0.20		
OkB----------	0-4	27-40	1.20-1.50	0.06-2.0	0.13-0.17	4.5-6.5	Moderate-----	0.32	4	3-6
Oktibbeha	4-40	60-80	1.00-1.30	<0.06	0.12-0.16	4.5-6.5	High---------	0.32		
	40-60	50-70	1.10-1.40	<0.06	0.05-0.10	6.6-8.4	High---------	0.32		
OkC3----------	0-5	40-60	1.10-1.40	<0.06	0.12-0.16	4.5-6.5	Moderate-----	0.32	4	3-7
Oktibbeha	5-38	60-77	1.00-1.30	<0.06	0.12-0.16	4.5-6.5	High---------	0.32		
	38-60	50-65	1.10-1.40	<0.06	0.05-0.10	6.6-8.4	High---------	0.32		
OsD*:										
Oktibbeha-------	0-4	27-40	1.20-1.50	0.06-2.0	0.13-0.17	4.5-6.5	Moderate-----	0.32	4	3-6
	4-40	60-80	1.00-1.30	<0.06	0.12-0.16	4.5-6.5	High---------	0.32		
	40-60	50-70	1.10-1.40	<0.06	0.05-0.10	6.6-8.4	High---------	0.32		
Sumter----------	0-10	35-50	1.30-1.60	0.06-2.0	0.12-0.17	6.6-8.4	High---------	0.37	2	2-5
	10-23	35-57	1.15-1.55	0.06-2.0	0.12-0.17	7.4-8.4	High---------	0.37		
	23-32	35-57	1.15-1.50	0.06-2.0	0.11-0.16	7.4-8.4	Moderate-----	0.32		
	32-60	---	---	0.00-0.01	---	---	----------	----		
PaB----------	0-12	12-27	1.30-1.45	0.6-2.0	0.18-0.23	4.5-5.5	Low----------	0.43	3	.5-3
Paden	12-28	20-32	1.40-1.55	0.6-2.0	0.18-0.22	4.5-5.5	Low----------	0.43		
	28-46	20-35	1.60-1.80	0.06-0.2	0.07-0.12	4.5-5.5	Low----------	0.43		
	46-60	25-45	1.60-1.80	0.6-2.0	0.07-0.12	4.5-5.5	Low----------	0.24		
PaB3----------	0-5	12-27	1.30-1.45	0.6-2.0	0.18-0.23	4.5-5.5	Low----------	0.43	3	.5-3
Paden	5-21	20-32	1.40-1.55	0.6-2.0	0.18-0.22	4.5-5.5	Low----------	0.43		
	21-41	20-35	1.60-1.80	0.06-0.2	0.07-0.12	4.5-5.5	Low----------	0.43		
	41-60	25-45	1.60-1.80	0.6-2.0	0.07-0.12	4.5-5.5	Low----------	0.24		
PkB----------	0-7	12-27	1.30-1.50	0.6-2.0	0.20-0.23	4.5-5.5	Low----------	0.43	5	.5-3
Pickwick	7-40	22-35	1.40-1.65	0.6-2.0	0.19-0.22	4.5-5.5	Low----------	0.37		
	40-60	32-45	1.45-1.65	0.6-2.0	0.15-0.20	4.5-5.5	Moderate-----	0.37		
PkC3----------	0-3	27-35	1.30-1.50	0.6-2.0	0.18-0.22	4.5-5.5	Low----------	0.37	5	.5-2
Pickwick	3-38	22-35	1.40-1.65	0.6-2.0	0.19-0.22	4.5-5.5	Low----------	0.37		
	38-60	32-45	1.45-1.65	0.6-2.0	0.15-0.20	4.5-5.5	Moderate-----	0.37		
PrB----------	0-5	12-27	1.30-1.40	0.6-2.0	0.20-0.22	4.5-6.0	Low----------	0.49	3	.5-3
Providence	5-22	18-30	1.40-1.50	0.6-2.0	0.20-0.22	4.5-6.0	Low----------	0.43		
	22-35	20-30	1.40-1.60	0.2-0.6	0.08-0.10	4.5-6.0	Low----------	0.32		
	35-52	12-30	1.40-1.60	0.2-0.6	0.08-0.10	4.5-6.0	Low----------	0.32		
	52-60	10-27	1.40-1.60	0.6-2.0	0.10-0.15	4.5-6.0	Low----------	0.32		
PrC3, PrD3-------	0-4	27-35	1.40-1.60	0.6-2.0	0.18-0.22	4.5-6.0	Low----------	0.43	3	.5-1
Providence	4-18	18-30	1.40-1.50	0.6-2.0	0.20-0.22	4.5-6.0	Low----------	0.43		
	18-28	20-30	1.40-1.60	0.2-0.6	0.08-0.10	4.5-6.0	Low----------	0.32		
	28-50	12-30	1.40-1.60	0.2-0.6	0.08-0.10	4.5-6.0	Low----------	0.32		
	50-60	10-27	1.40-1.60	0.6-2.0	0.10-0.15	4.5-6.0	Low----------	0.32		

See footnote at end of table.

TABLE 15.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors		Organic matter
								K	T	
	In	Pct	g/cc	In/hr	In/in	pH				Pct
Pt*. Pits, gravel										
SaC, SaE--------- Saffell	0-6 6-16 16-46 46-60	12-20 10-35 12-35 10-25	1.35-1.60 1.35-1.60 1.35-1.60 1.40-1.65	2.0-6.0 0.6-2.0 0.6-2.0 0.6-6.0	0.07-0.17 0.06-0.15 0.06-0.12 0.04-0.11	4.5-5.5 4.5-5.5 4.5-5.5 4.5-5.5	Low---------- Low---------- Low---------- Low----------	0.20 0.28 0.28 0.17	4	1-2
SeB-------------- Silerton	0-8 8-28 28-60	12-27 24-35 40-60	1.40-1.55 1.40-1.55 1.40-1.55	0.6-2.0 0.6-2.0 0.06-0.2	0.18-0.22 0.16-0.20 0.13-0.17	4.5-5.5 4.5-5.5 4.5-5.5	Low---------- Low---------- Moderate-----	0.49 0.43 0.24	5	.5-2
SeC2------------- Silerton	0-6 6-22 22-60	12-27 24-35 40-60	1.40-1.55 1.40-1.55 1.40-1.55	0.6-2.0 0.6-2.0 0.06-0.2	0.18-0.22 0.16-0.20 0.13-0.17	4.5-5.5 4.5-5.5 4.5-5.5	Low---------- Low---------- Moderate-----	0.49 0.43 0.24	5	.5-2
SmC, SmD--------- Smithdale	0-11 11-43 43-60	5-20 18-33 12-27	1.40-1.50 1.40-1.55 1.40-1.55	2.0-6.0 0.6-2.0 2.0-6.0	0.14-0.16 0.15-0.17 0.14-0.16	4.5-5.5 4.5-5.5 4.5-5.5	Low---------- Low---------- Low----------	0.28 0.24 0.28	5	.5-2
SmD3------------- Smithdale	0-3 3-22 22-60	7-27 18-33 12-27	1.40-1.50 1.40-1.55 1.40-1.55	2.0-6.0 0.6-2.0 2.0-6.0	0.14-0.16 0.15-0.17 0.14-0.16	4.5-5.5 4.5-5.5 4.5-5.5	Low---------- Low---------- Low----------	0.28 0.24 0.28	5	.5-2
SmE-------------- Smithdale	0-11 11-43 43-60	5-20 18-33 12-27	1.40-1.50 1.40-1.55 1.40-1.55	2.0-6.0 0.6-2.0 2.0-6.0	0.14-0.16 0.15-0.17 0.14-0.16	4.5-5.5 4.5-5.5 4.5-5.5	Low---------- Low---------- Low----------	0.28 0.24 0.28	5	.5-2
SmE3------------- Smithdale	0-3 3-22 22-60	7-27 18-33 12-27	1.40-1.50 1.40-1.55 1.40-1.55	2.0-6.0 0.6-2.0 2.0-6.0	0.14-0.16 0.15-0.17 0.14-0.16	4.5-5.5 4.5-5.5 4.5-5.5	Low---------- Low---------- Low----------	0.28 0.24 0.28	5	.5-2
Ud*. Udorthents, loamy										
Un--------------- Una	0-4 4-60	27-40 28-55	1.40-1.60 1.40-1.60	<0.06 <0.06	0.15-0.20 0.15-0.20	4.5-5.5 4.5-5.5	High--------- High---------	0.32 0.28	5	1-3
Ur*. Urban land										

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 16.--SOIL AND WATER FEATURES

("Flooding" and "water table" and terms such as "rare," "brief," "apparent," and "perched" are explained in the text. The symbol < means less than; > means more than. Absence of an entry indicates that the feature is not a concern or that data were not estimated)

Soil name and map symbol	Hydrologic group	Flooding			High water table			Bedrock		Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness	Uncoated steel	Concrete
					Ft			In			
Bb---------- Bibb	D	Frequent----	Long------	Dec-May	0.5-1.0	Apparent	Dec-Apr	>60	---	High-----	Moderate.
DeB, DeC3--------- Deanburg	B	None--------	---	---	>6.0	---	---	>60	---	Moderate	Moderate.
DuB, DuB3--------- Dulac	C	None--------	---	---	1.0-2.0	Perched	Dec-Apr	>60	---	Moderate	High.
En---------- Enville	C	Occasional	Brief-----	Nov-Apr	1.0-1.5	Apparent	Dec-Apr	>60	---	Moderate	High.
FrB, FrB3--------- Freeland	C	None--------	---	---	1.5-2.5	Perched	Jan-Apr	>60	---	High-----	Moderate.
Gu---------- Guyton	D	None--------	---	---	0-1.5	Perched	Dec-May	>60	---	High-----	High.
Ha---------- Hatchie	C	None--------	---	---	1.0-2.0	Perched	Jan-Apr	>60	---	High-----	Moderate.
Iu---------- Iuka	C	Occasional	Brief-----	Dec-Apr	1.0-3.0	Apparent	Dec-Apr	>60	---	Moderate	High.
LeB2---------- Lexington	B	None--------	---	---	>6.0	---	---	>60	---	Moderate	Moderate.
LuD, LuD3, LuE---- Luverne	C	None--------	---	---	>6.0	---	---	>60	---	High-----	High.
Oc---------- Ochlockonee	B	Occasional	Very brief	Dec-Apr	3.0-5.0	Apparent	Dec-Apr	>60	---	Low------	High.
OkB, OkC3--------- Oktibbeha	D	None--------	---	---	>6.0	---	---	>60	---	High-----	High.
OsD*: Oktibbeha-------- Sumter----------	D C	None-------- None--------	--- ---	--- ---	>6.0 >6.0	--- ---	--- ---	>60 20-40	--- Soft	High----- Moderate	High. Low.
PaB, PaB3--------- Paden	C	None--------	---	---	1.5-3.0	Perched	Dec-Mar	>60	---	High-----	Moderate.
PkB, PkC3--------- Pickwick	B	None--------	---	---	>6.0	---	---	>60	---	Moderate	Moderate.
PrB, PrC3, PrD3--- Providence	C	None--------	---	---	1.5-3.0	Perched	Jan-Mar	>60	---	Moderate	Moderate.
Pt*. Pits, gravel											
SaC, SaE---------- Saffell	B	None--------	---	---	>6.0	---	---	>60	---	Low------	Moderate.

See footnote at end of table.

TABLE 16.--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			
SeB, SeC2--------- Silerton	B	None---------	---	---	>6.0	---	---	>60	---	Moderate	Moderate.
SmC, SmD, SmD3, SmE, SmE3-------- Smithdale	B	None---------	---	---	>6.0	---	---	>60	---	Low------	Moderate.
Ud* Udorthents, loamy											
Un---------- Una	D	Occasional	Brief-----	Jan-Mar	0.5-1.0	Apparent	Nov-Apr	>60	---	High-----	High.
Ur*. Urban land											

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 17.--CLASSIFICATION OF THE SOILS

Soil name	Family or higher taxonomic class
Bibb	Coarse-loamy, siliceous, acid, thermic Typic Fluvaquents
Deanburg	Fine-loamy, mixed, thermic Ultic Hapludalfs
Dulac	Fine-silty, mixed, thermic Typic Fragiudalfs
Enville	Coarse-loamy, siliceous, acid, thermic Aeric Fluvaquents
Freeland	Fine-silty, siliceous, thermic Typic Fraglossudalfs
Guyton	Fine-silty, siliceous, thermic Typic Glossaqualfs
Hatchie	Fine-silty, siliceous, thermic Aquic Fraglossudalfs
Iuka	Coarse-loamy, siliceous, acid, thermic Aquic Udifluvents
Lexington	Fine-silty, mixed, thermic Typic Paleudalfs
Luverne	Clayey, mixed, thermic Typic Hapludults
Ochlockonee	Coarse-loamy, siliceous, acid, thermic Typic Udifluvents
Oktibbeha	Very-fine, montmorillonitic, thermic Vertic Hapludalfs
Paden	Fine-silty, mixed, thermic Glossic Fragiudults
Pickwick	Fine-silty, mixed, thermic Typic Hapludults
Providence	Fine-silty, mixed, thermic Typic Fragiudalfs
Saffell	Loamy-skeletal, siliceous, thermic Typic Hapludults
Silerton	Fine-silty, siliceous, thermic Typic Paleudults
Smithdale	Fine-loamy, siliceous, thermic Typic Hapludults
Sumter	Fine-silty, carbonatic, thermic Rendollic Eutrochrepts
Una	Fine, mixed, acid, thermic Typic Haplaquepts

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