United States Department of Agriculture

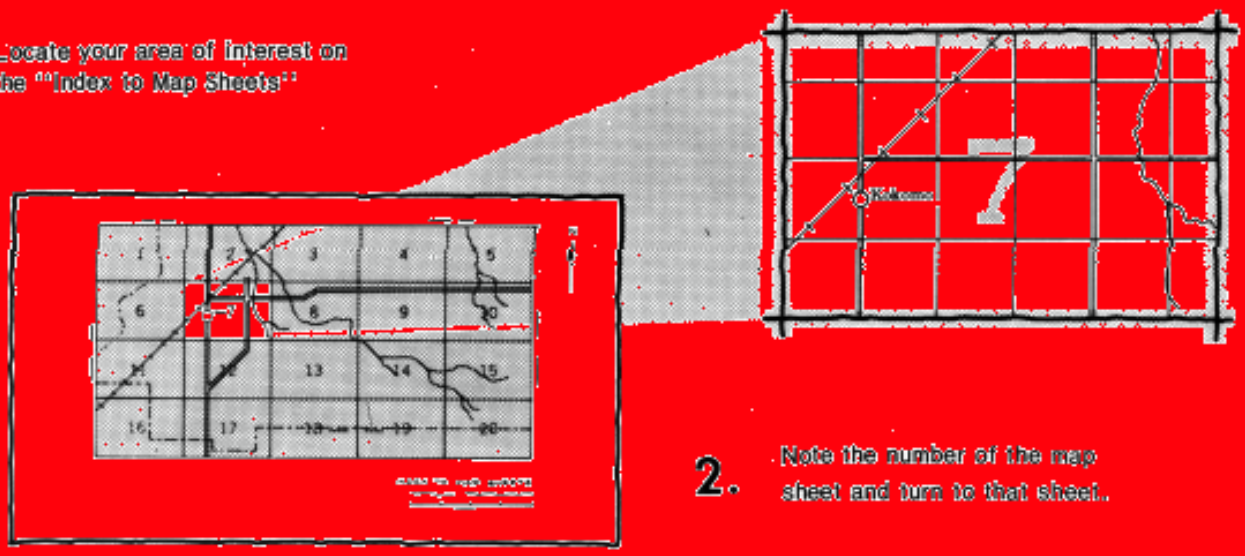
Soil Conservation Service

In Cooperation with the Louisiana Agricultural Experiment Station and the Louisiana Soil and Water Conservation Committee

Soil Survey of Avoyelles Parish, Louisiana

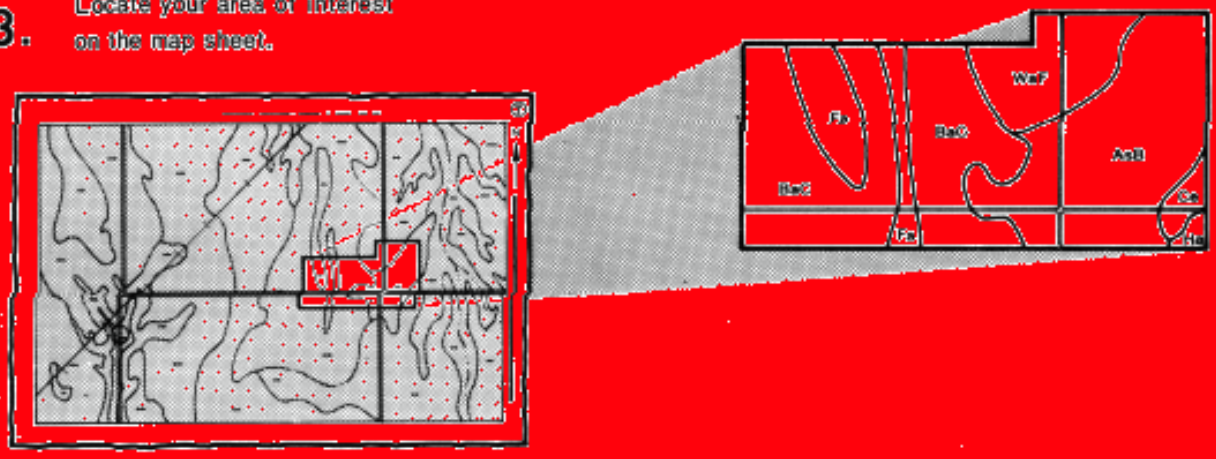
HOW TO USE

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

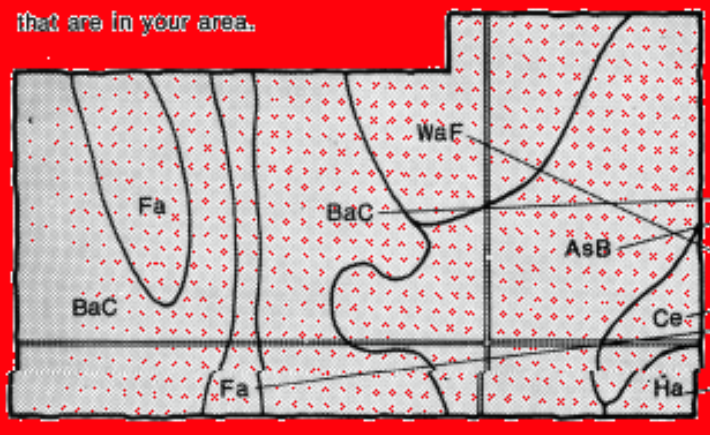


2. Note the number of the map sheet and turn to that sheet.

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



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



Symbols

AsB
BaC
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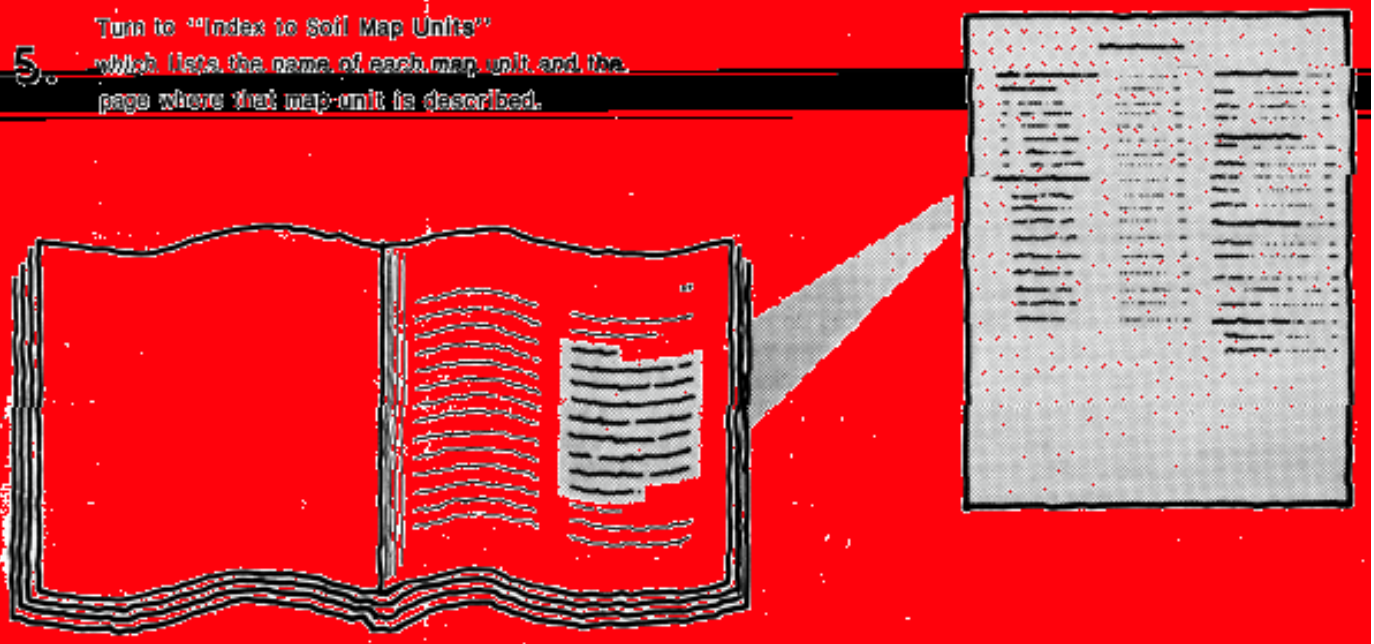
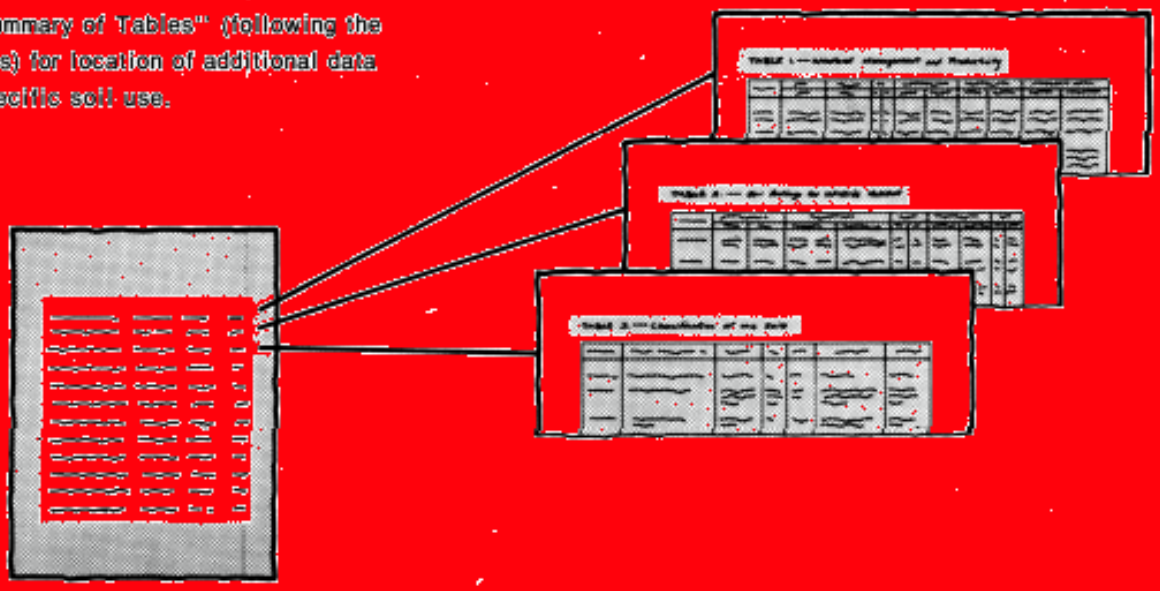
THIS SOIL SURVEY

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



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



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

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

Major fieldwork for this soil survey was performed in the period 1976-80. Soil names and descriptions were approved in 1980. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1980. This survey was made cooperatively by the Soil Conservation Service, the Louisiana Agricultural Experiment Station, and the Louisiana Soil and Water Conservation Committee. It is part of the technical assistance furnished to the Avoyelles Soil and Water Conservation District.

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

Cover: Soybeans planted across the slope help control erosion in a cultivated area of Loring silt loam, 2 to 5 percent slopes.

contents

soil series

Issued September 1986

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foreword

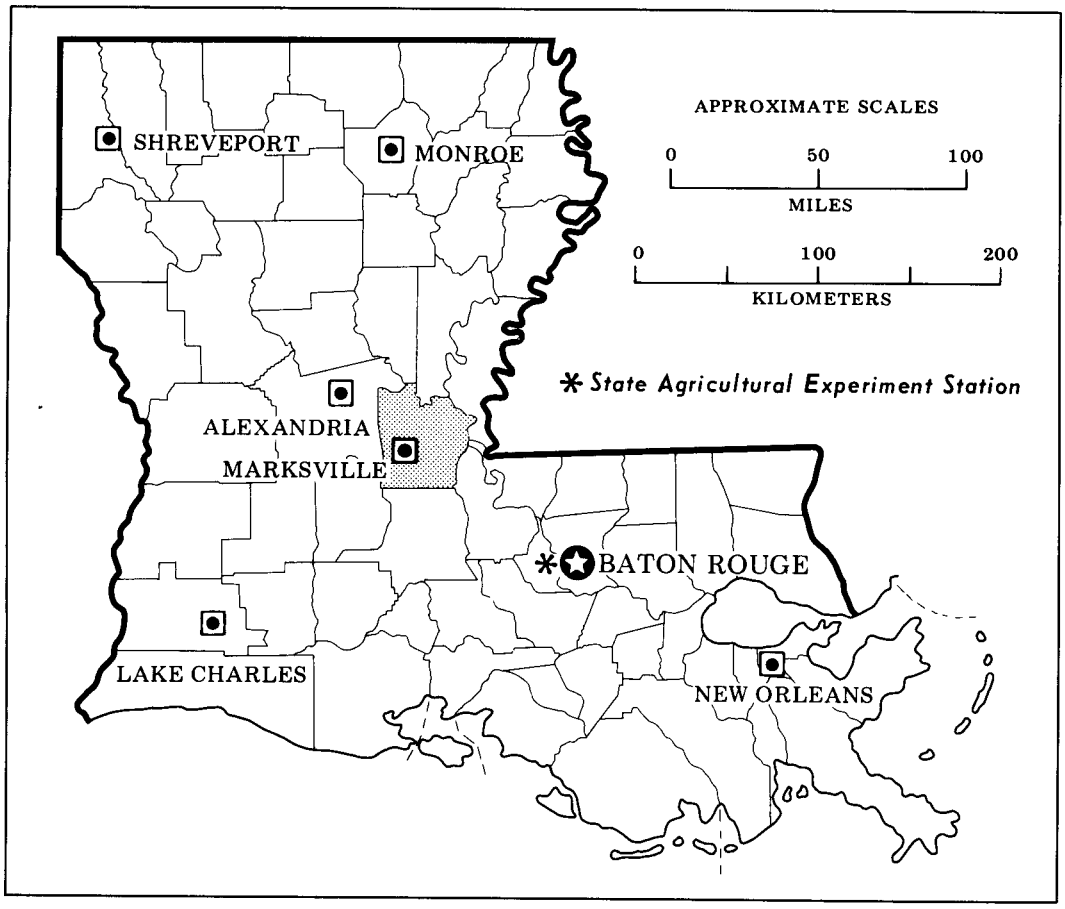
This soil survey contains information that can be used in land-planning programs in Avoyelles Parish. It contains predictions of soil behavior for selected land uses. The survey also highlights limitations and hazards inherent in the soil, improvements needed to overcome the limitations, and the impact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

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

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

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

Harry S. Rucker
State Conservationist
Soil Conservation Service



Location of Avoyelles Parish in Louisiana.

Soil Survey of
Avoyelles Parish, Louisiana

By Paul G. Martin, Soil Conservation Service

Soils surveyed by Paul G. Martin and William H. Boyd,
Soil Conservation Service, and Marc J. Bordelon,
Louisiana Soil and Water Conservation Committee

United States Department of Agriculture, Soil Conservation Service
In cooperation with the Louisiana Agricultural Experiment Station
and the Louisiana Soil and Water Conservation Committee

AVOYELLES PARISH is in the east-central part of Louisiana. Marksville, the parish seat, is near the center of the parish and is about 30 miles southeast of Alexandria. The parish is chiefly rural and had a population of 41,434 in 1980. It has a total area of

The terrace upland makes up the remainder of the parish. It consists of nearly level to moderately steep soils on ridgetops and side slopes and in drainageways. Most of these soils in the northwestern part of the parish have a

climate

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

Table 1 gives data on temperature and precipitation for the survey area as recorded at Bunkie in the period 1957 to 1973. Table 2 shows probable dates of the first freeze in fall and the last freeze in spring. Table 3 provides data on length of the growing season.

In winter the average temperature is 50 degrees F, and the average daily minimum temperature is 39 degrees. The lowest temperature on record, which occurred at Bunkie on January 12, 1963, is 10 degrees. In summer the average temperature is 81 degrees, and the average daily maximum temperature is 92 degrees. The highest recorded temperature, which occurred at Bunkie on August 9, 1962, is 104 degrees.

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

The total annual precipitation is 60 inches. Of this, 30 inches, or 50 percent, usually falls in April through September, which includes the growing season for most crops. In 2 years out of 10, the rainfall in April through September is less than 24 inches. The heaviest 1-day rainfall during the period of record was 7.67 inches at Bunkie on October 28, 1970. Thunderstorms occur on about 70 days each year, and most occur in summer.

Average seasonal snowfall is less than 1 inch. The greatest snow depth at any one time during the period of record was 7 inches. On the average, seldom is there a day that has 1 inch of snow on the ground, but the number of such days varies greatly from year to year.

The average relative humidity in midafternoon is about 60 percent. Humidity is higher at night, and the average at dawn is about 90 percent. The sun shines 60 percent of the time possible in summer and 50 percent in winter. The prevailing wind is from the south. Average windspeed is highest, 9 miles per hour, in spring.

history and development

Avoyelles Parish was established as a political unit in 1807, when the Territory of Orleans was divided into 19 separate parishes. Its name is derived from the Avoyelles Indians, who inhabited the area when the early white settlers arrived. These settlers, mainly French and Acadians, were attracted to Avoyelles Parish by the high, flood-free prairies of the terrace uplands. The earliest permanent settlement, Avoyelles Post, was established in 1780 near the present site of Marksville. The prairies were settled first, but later people settled along the streams where the soils were fertile and produce could be easily transported by water to New Orleans.

Avoyelles Parish is one of the leading agricultural areas in the state. Large areas of its once vast hardwood forests have been drained, cleared, and made available for crops and pasture. Industrial development has been slow; however, several nonagricultural industries are in operation.

The seat of government in Avoyelles Parish is Marksville. Its population in 1980 was 5,162. The main communities are Marksville, Bunkie, Cottonport, Mansura, and Simmesport.

agriculture

Avoyelles Parish has always been an agricultural parish. The early settlers grew a variety of crops and raised livestock for subsistence. For a short period, indigo was the main cash crop of the early settlers. By 1810 and for many years thereafter, cotton was the main crop. Cotton acreage reached its maximum of about 50,000 acres in 1930; however, the crop had declined to about 455 acres in 1979. Sugarcane became an important crop by the middle of the 19th century, but it never rivaled cotton. The acreage of sugarcane has also declined steadily from a peak of about 8,000 acres in 1930 to about 3,000 acres in 1979.

Today, soybeans is the main crop in Avoyelles Parish. In 1979 more than 6 million bushels of soybeans, valued at almost 39 million dollars, were produced on approximately 230,000 acres. In 1979 the four main crops in order of cash value were soybeans, sweet potatoes, rice, and sugarcane. Other commercial crops were corn, cotton, grain sorghum, wheat, squash, cabbage, Irish potatoes, and shallots.

In 1979 the value of farm products produced in the parish was estimated at 51,090,366 million dollars, of which 89 percent was from crops, mostly soybeans, and 10 percent was from livestock. Forest products accounted for about 1 percent.

The present trend in Avoyelles Parish is a decrease in the number of farm units and an increase in the average size of farms. The total acreage of cleared cropland and pasture has increased from about 184,000 acres in 1950 to about 347,000 acres in 1980. This trend in changing land use is expected to continue until all areas of bottom-land hardwood forest not dedicated to wildlife habitat are cleared and cultivated.

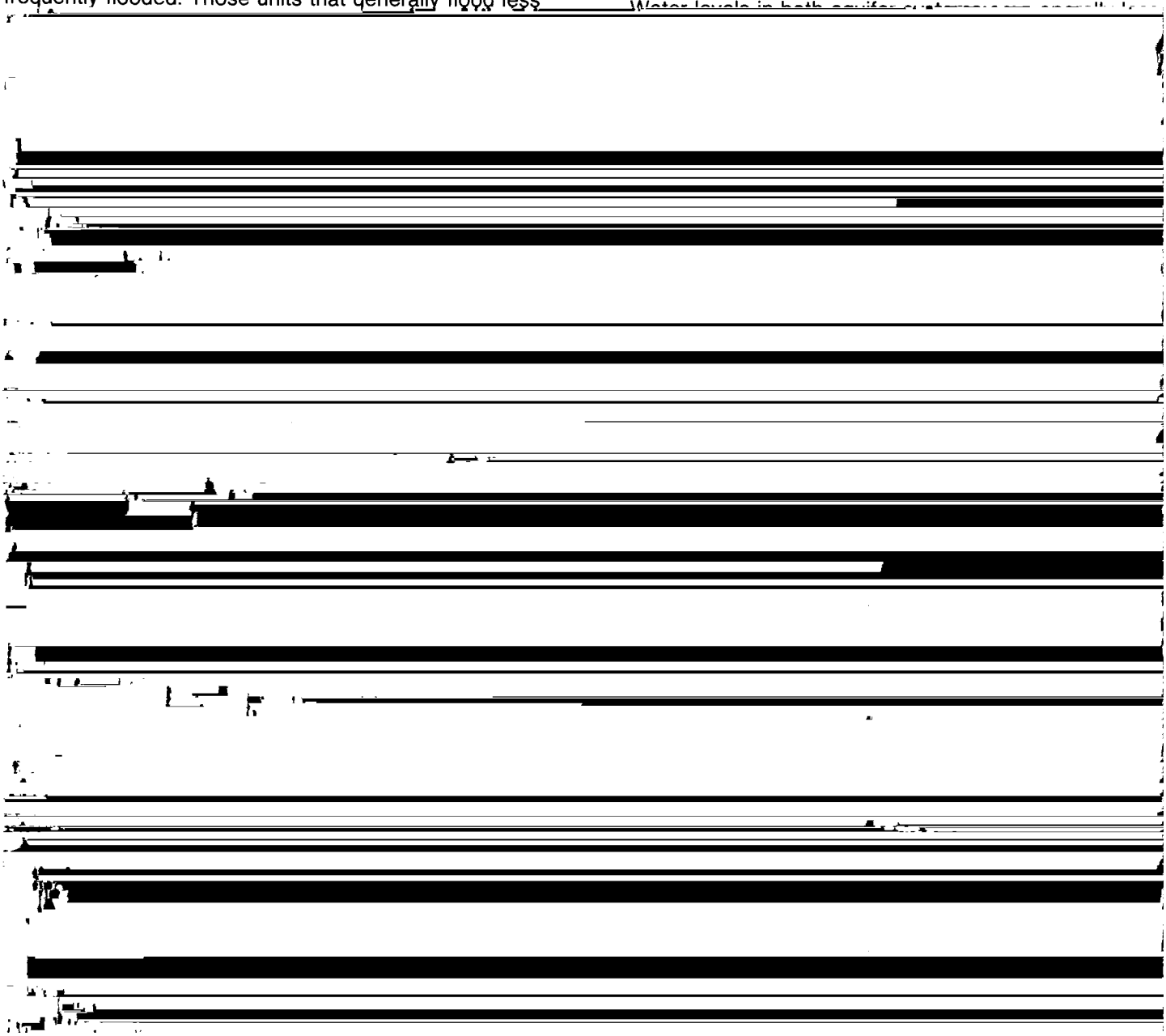
transportation

Avoyelles Parish is served by two major railroads that connect to every major railroad system in the United States. There are two United States highways and numerous other paved state highways and parish roads. Airports near the towns of Bunkie and Marksville serve small private and commercial aircraft.

levee and the levees on either side of the floodway protect it from floodwaters during typical backwater flood stages and from headwater flooding by the Atchafalaya River. The West Atchafalaya Floodway has never been used; however, the federal government owns floodway flow rights and has the authority to release floodwaters into the floodway.

This soil survey can be used to locate the areas that are subject to flooding. They are delineated on the maps, and the frequency and season of flooding are given in the description of the map units. Soil map units that generally flood more often than 2 years out of 5, between June 1 and November 30, are described as frequently flooded. Those units that generally flood less

and are composed principally of well-sorted, fine- to medium-grained sand. Yields ranging from 500 to 1,000 gallons per minute are possible from properly developed wells in the thicker sands. Most of the water in the upper Tertiary aquifer system underlying the Bunkie-Hessmer area has a fluoride content exceeding the recommended limit for public use. The water in the Simmesport-Odenburg area has no qualities restricting its general use and thus offers the greatest potential for public and industrial use in the parish. Saline water-bearing sands occur above the maximum depth of fresh water in both areas, therefore test drilling and electrical logging are advisable to avoid completing a well in a saline aquifer.



management are assembled from farm records and from field or plot experiments on the same kinds of soil.

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

general soil map units

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

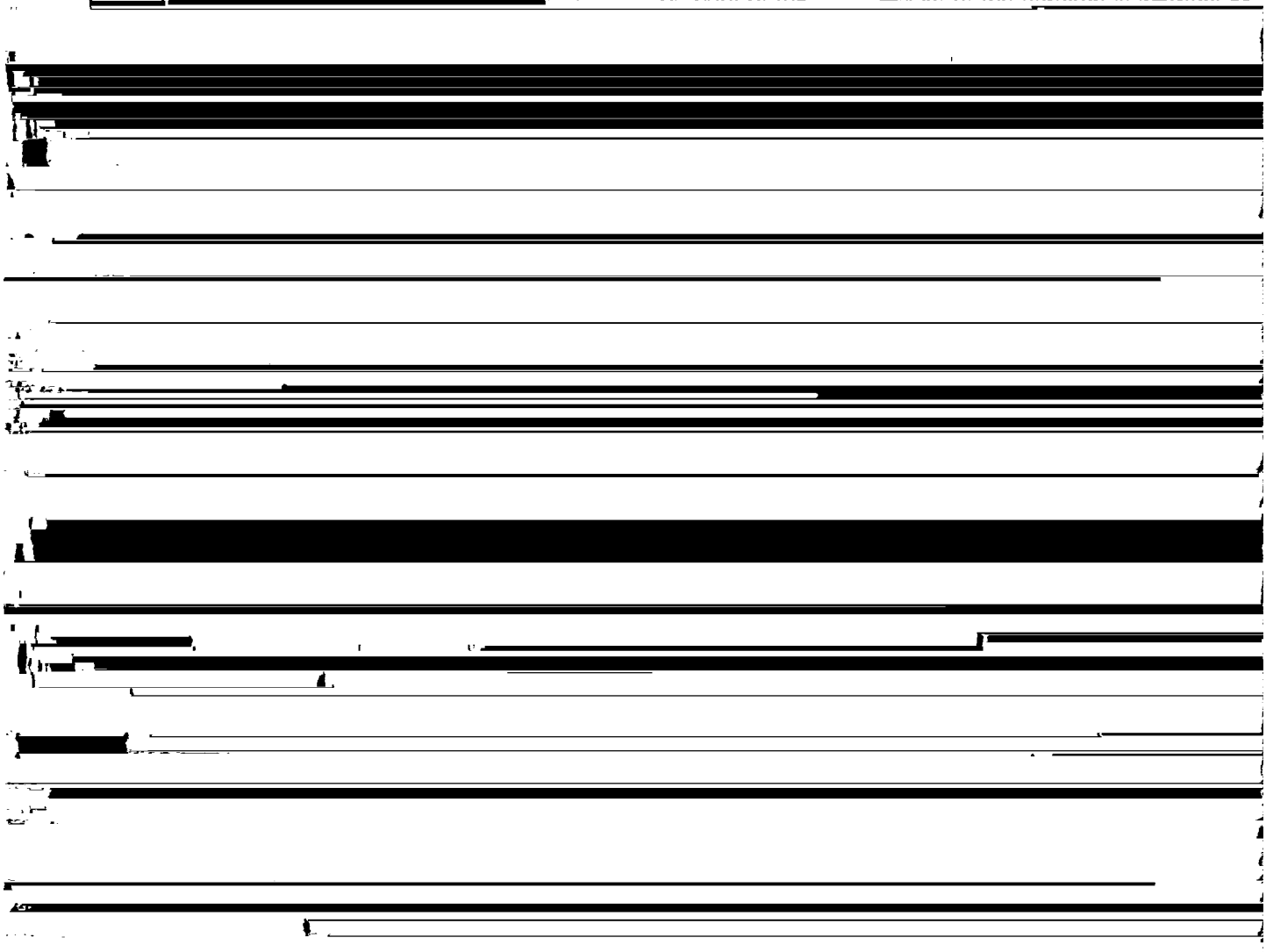
The general soil map can be used to compare the suitability of large areas for general land uses. Areas of

soil descriptions

areas on flood plains dominated by level to undulating, loamy soils

This group of map units consists of well drained and somewhat poorly drained soils that are loamy throughout.

The five map units of this group make up about 25 percent of the parish. Most of the acreage is in crops or



This map unit is well suited to crops and pasture. The loamy surface layer and high fertility favor these uses. Land grading or smoothing and a surface drainage system are needed in places. The choice of crops and pasture grasses is limited somewhat in areas that are

This map unit makes up about 3 percent of the parish. It is about 85 percent Gallion soils and 15 percent soils of minor extent.

The Gallion soils have a surface layer of brown, medium acid silt loam or dark brown, slightly acid silty

subject to flooding.

This unit is well suited to woodland. Productivity of eastern cottonwood is very high. Limitations of these soils for this use are few.

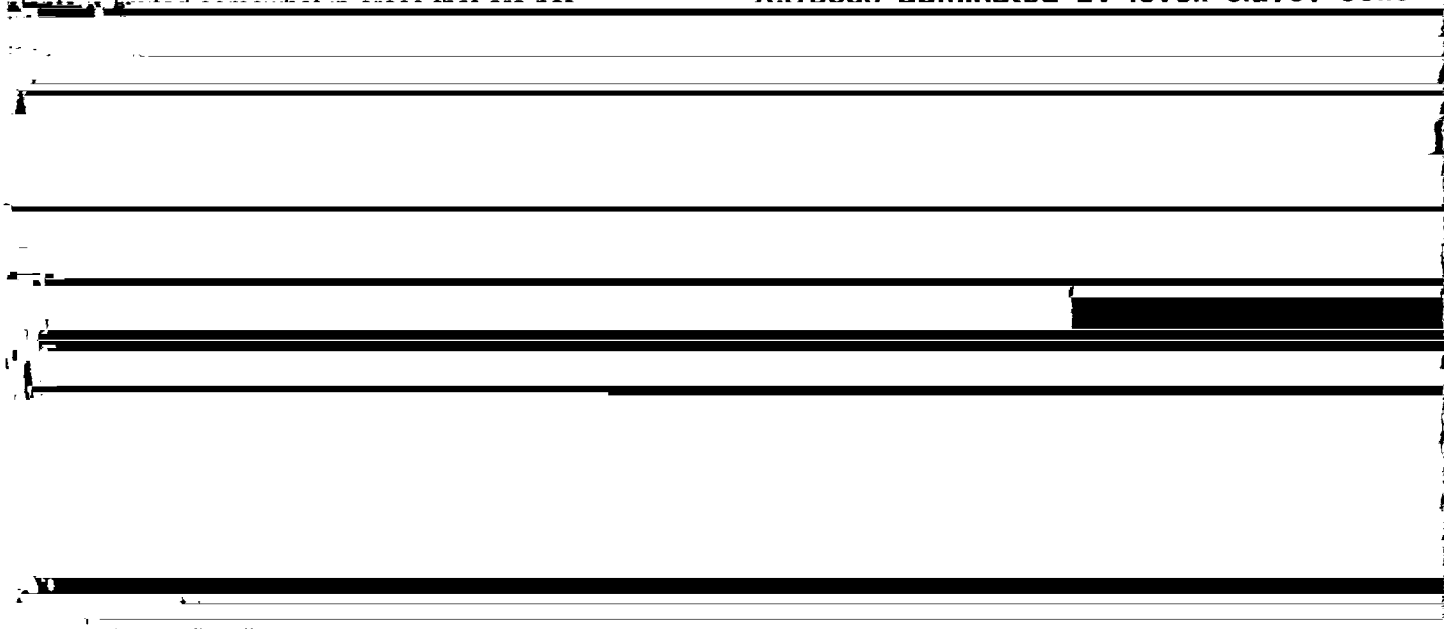
Most areas of this unit are well suited to buildings and sanitary facilities. Areas that are not protected from

clay loam. The subsoil is brown or yellowish red, medium acid to mildly alkaline silt loam, silty clay loam, and very fine sandy loam. The underlying material is yellowish red, slightly acid to moderately alkaline very fine sandy loam.

Of minor extent are the clayey, somewhat poorly drained Latonia and Moreland soils. They are in low

woodland. The uncleared acreage is generally in eastern cottonwood trees and mixed hardwoods.

The soils in this unit are well suited to crops and pasture. The loamy surface layer, high fertility, and level slope favor these uses. Wetness is the main limitation for these uses. A surface drainage system is needed for crops and pasture. The choice of crops and pasture



protected from flooding.

This unit is well suited to woodland. Productivity of eastern cottonwood is very high. Limitations of these soils for this use are few.

The soils in this unit are moderately well suited to buildings and poorly suited to sanitary facilities. Wetness and moderate shrink-swell potential are the main limitations. Areas that are not protected from flooding are poorly suited to these uses.

5. Dundee

Level to gently undulating, somewhat poorly drained, acid soils that are loamy throughout; formed in Mississippi River alluvium

This map unit consists of soils in high positions on natural levees along old distributary channels of the Mississippi River. Relief is slight, and slope ranges from 0 to 3 percent. All areas of this unit are protected from backwater flooding by the Red River and Atchafalaya River levees.

This map unit makes up about 3 percent of the parish.

This unit is moderately well suited to buildings and poorly suited to sanitary facilities. The main limitations of this soil for these uses are wetness, moderately slow permeability, and moderate shrink-swell potential.

areas on flood plains and low stream terraces dominated by level, clayey soils

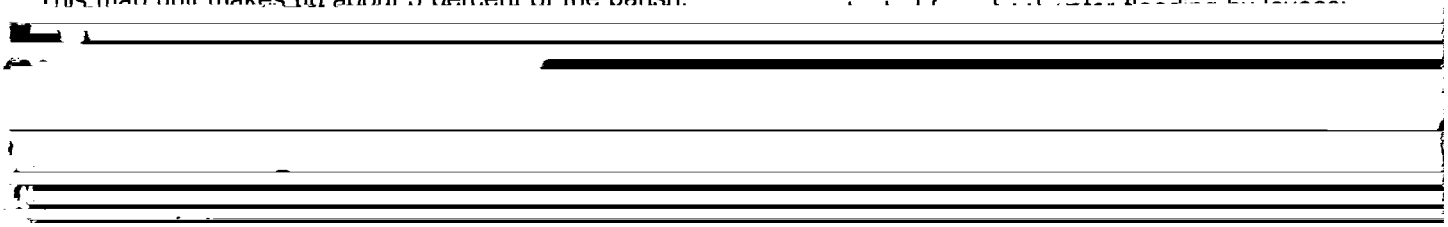
This group of map units consists of somewhat poorly drained and poorly drained soils that mainly have a clayey surface layer and a clayey subsoil or a clayey and loamy subsoil.

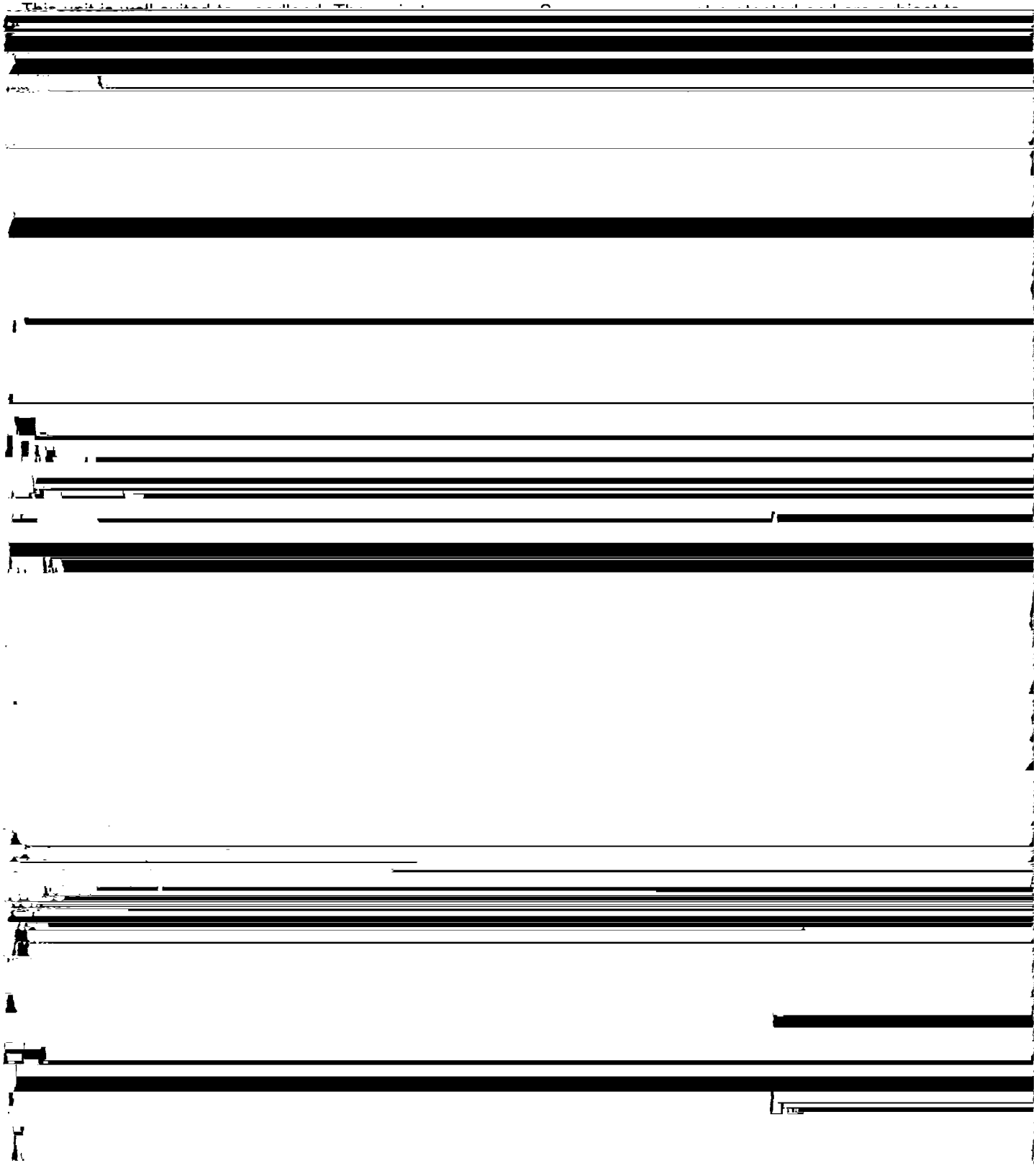
The three map units of this group make up about 31 percent of the parish. Most of the acreage is in cultivated crops or pasture. A few large areas remain in woodland. Wetness, very slow permeability, and very high shrink-swell potential are the main limitations for most uses. Rare flooding is a limitation for some urban uses.

6. Moreland-Lantanier

Level, somewhat poorly drained soils that have a clayey or loamy surface layer and a clayey or clayey and loamy subsoil; formed in Red River alluvium

This map unit consists of broad, level areas in low positions on the Red River alluvial plain. Relief is slight, and slope is generally less that 1 percent. Most areas





management areas. Flooding, wetness, and very slow permeability are the main limitations for most uses.

9. Sharkey-Tensas

Level to undulating, poorly drained and somewhat poorly drained soils that have a clayey surface layer and a clayey or a clayey and loamy subsoil; formed in Mississippi River alluvium

This map unit consists of soils in broad, level areas and in gently undulating and undulating areas on alluvial plains. Many shallow lakes and bayous are in most areas. This unit is occasionally flooded, generally during the months of December through June. Slope is 0 to 5 percent.

This map unit makes up about 19 percent of the parish. It is about 63 percent Sharkey soils, 29 percent Tensas soils, and 8 percent soils of minor extent.

The poorly drained Sharkey soils are in low positions on the flood plain. These soils have a surface layer of dark reddish brown clay and a subsoil of gray and olive gray clay.

The somewhat poorly drained Tensas soils are on low ridges and in intermediate positions on natural levees along drainageways. These soils have a surface layer of dark reddish gray silty clay. The upper part of the subsoil is grayish brown silty clay, and the lower part is grayish brown silty clay loam and loam.

Of minor extent are the somewhat poorly drained Dundee and Moreland soils, the well drained Norwood soils, and the very poorly drained Fausse soils. The Dundee soils are in high positions on natural levees, the Moreland and Norwood soils are adjacent to the Red River, and the Fausse soils are in old channel scars.

Most of the acreage has been cleared and is used for crops. Soybeans is the main crop. The remaining acreage is in woodland that is used for wildlife habitat and timber production.

This map unit is moderately well suited to cultivated crops and pasture. Wetness, poor tilth, and occasional flooding during the growing season are the main limitations. A surface drainage system is needed for crops and pasture. Planting dates are often delayed because of flooding and wetness.

This unit is well suited to woodland. The dominant trees are overcup oak, Nuttall oak, water oak, green ash, sugarberry, and sweetgum. Logging operations are generally limited to the summer and fall because of wetness and flooding during winter and spring.

This unit is poorly suited to buildings and sanitary facilities. The main limitations are flooding, wetness, very slow permeability, and very high shrink-swell potential. Major flood control structures are necessary.

10. Sharkey-Fausse-Moreland

Level, poorly drained, very poorly drained, and somewhat poorly drained soils that are clayey throughout; formed in

This map unit consists of soils in low positions on natural levees and in backswamps on the Red River and Mississippi River alluvial plains. This unit is subject to frequent flooding. Flooding typically occurs during late winter and spring but may occur during any season. Relief is slight, and slope is less than 1 percent.

This map unit makes up about 8 percent of the parish. It is about 46 percent Sharkey soils, 31 percent Fausse soils, 21 percent Moreland soils, and 3 percent soils of minor extent.

The poorly drained Sharkey soils are in low positions on natural levees along old channels of the Mississippi River. These soils have a surface layer of dark reddish brown clay. The subsoil and underlying material are olive gray and gray clay.

The very poorly drained Fausse soils are in depressions and old channel scars. They remain wet throughout the year. The surface layer is dark brown clay. The subsoil and underlying material are gray clay.

The somewhat poorly drained Moreland soils are in low positions on natural levees along present and former channels of the Red River. These soils have a surface layer of dark reddish brown clay. The subsoil is dark reddish brown and reddish brown clay.

Of minor extent are the somewhat poorly drained Latanier soils and the poorly drained Tensas soils. They are in higher positions on the natural levees.

All of the soils in this unit are in woodland and are used for wildlife habitat and timber production.

This unit is poorly suited to commercial woodland. Logging and planting operations are generally limited to the summer and fall because of wetness and flooding during the winter and spring. The dominant trees are water hickory, water locust, green ash, overcup oak, and baldcypress.

This map unit is poorly suited to crops and pasture. Flooding and wetness are the main limitations. The choice of crops and pasture grasses is severely limited because of wetness and the frequency and duration of flooding

This unit is not suited to buildings and sanitary facilities. Flooding and wetness are too severe for these uses, but they can be controlled by the use of major flood control structures.

areas on terrace uplands dominated by level to moderately steep, loamy soils

This group of map units consists of well drained to poorly drained soils that mainly have a loamy surface layer and a loamy or a loamy and clayey subsoil.

The four map units of this group make up about 17 percent of the parish. Most of the acreage is in crops or pasture. Woodland areas are commonly small and scattered. Susceptibility to erosion and wetness are the

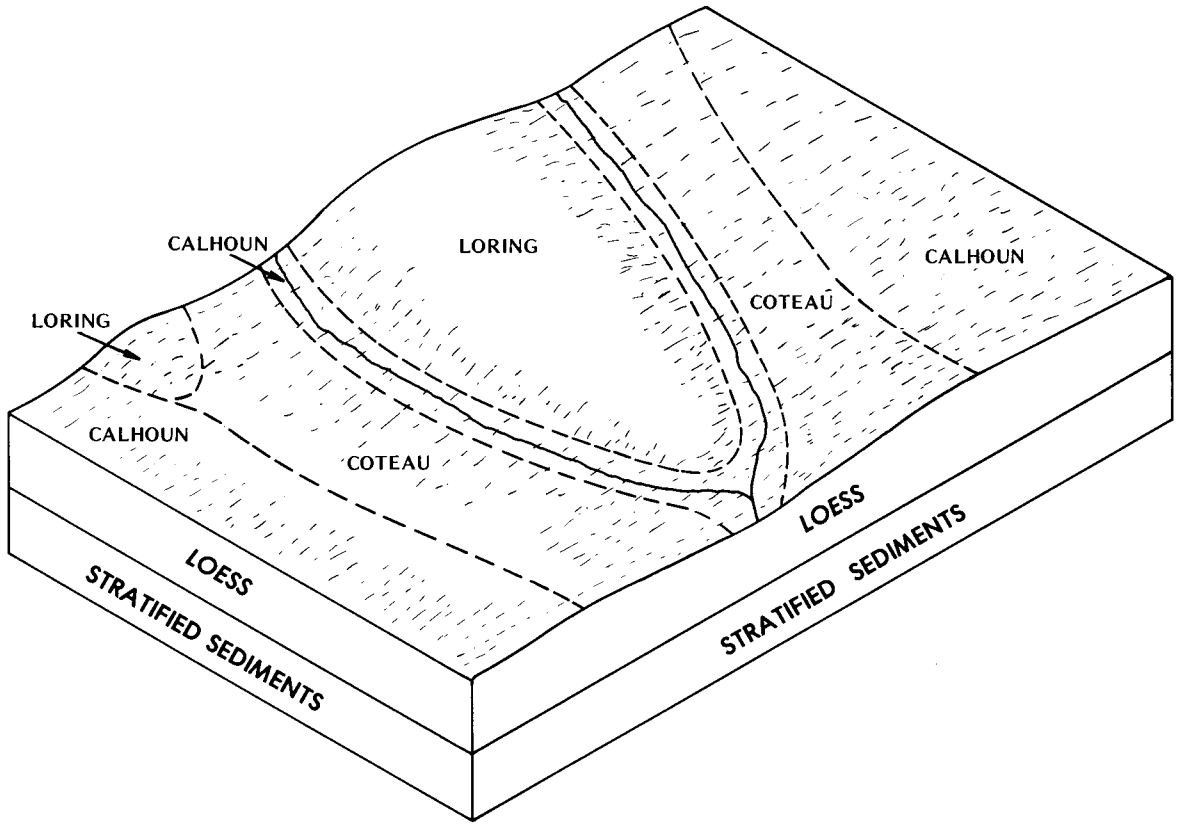


Figure 2.—Pattern of soils, topography, and underlying material in General Soil Map Unit 11.

11. Calhoun-Coteau-Loring

Level to gently sloping, poorly drained, somewhat poorly drained, and moderately well drained soils that are loamy throughout; formed in loess

This map unit consists of soils on broad flats, knolls, and low parallel ridges, and in swales in the terrace uplands. Drainage is provided by small, deeply incised streams. Slopes are generally long and smooth and range from 0 to 5 percent.

This map unit makes up about 10 percent of the parish. It is about 44 percent Calhoun soils, 31 percent Coteau soils, 18 percent Loring soils, and 7 percent soils of minor extent (fig. 2).

The poorly drained Calhoun soils are in broad, level areas and in slightly concave swales. These soils have a surface layer and subsurface layer of grayish brown silt loam. The subsoil is grayish brown silty clay loam and silt loam. The underlying material is yellowish brown silt loam.

The somewhat poorly drained Coteau soils are on gently sloping, slightly convex side slopes and ridgetops. These soils have a surface layer of dark brown silt loam. The subsoil is yellowish brown silty clay loam and silt loam.

The moderately well drained Loring soils are on narrow, convex ridgetops and side slopes. These soils have a surface layer of dark brown silt loam. The subsoil is brown silt loam. A fragipan is at a depth of about 25 inches.

Of minor extent are the well drained Memphis soils on high ridgetops and on the upper parts of side slopes. Also included are the moderately well drained Gore soils on the lower parts of side slopes.

Most of the soils in this unit are used for crops and pasture. Soybeans and sweet potatoes are the main crops. A significant acreage is occupied by towns and villages. A few remaining uncleared areas along drainageways are generally in mixed hardwoods.

This map unit is well suited to crops and pasture. Wetness is the main limitation for these uses in level areas, and erosion is a hazard in sloping areas. A surface drainage system is needed for crops and pasture in level areas. In sloping areas, soil losses from erosion can be minimized by minimum tillage, ccntour farming,

and grassed waterways. Moderately high levels of exchangeable aluminum are in the rooting zone of the Coteau soils. This aluminum is potentially toxic to most crops.

This unit is well suited to woodland. Limitations for this use are few. The potential production of loblolly and slash pine is high to very high.

This unit is moderately well suited to buildings and sanitary facilities. Wetness and moderately slow and slow permeability are the main limitations.

12. Memphis-Loring

Nearly level to moderately steep, well drained and moderately well drained soils that are loamy throughout; formed in loess

This map unit consists of soils on convex ridgetops and side slopes along the edges of the loess-mantled terrace uplands. The ridges are generally long and narrow. The map unit is dissected by numerous drainages. Slopes are generally short and smooth and range from 0 to 20 percent.

This map unit makes up 1.5 percent of the parish. It is about 80 percent Memphis soils, 15 percent Loring soils, and 5 percent soils of minor extent.

The well drained Memphis soils are on convex, high ridgetops and on the steeper side slopes. These soils have a surface layer of brown silt loam and a subsoil of brown silt loam and silty clay loam. The underlying material is also brown silt loam.

The moderately well drained Loring soils are on ridgetops and gentle side slopes. These soils have a surface layer of dark brown silt loam and a subsoil of brown silt loam. A fragipan is at a depth of about 25 inches.

Of minor extent are the poorly drained Coteau soils. They are on broad, nearly level ridgetops.

Most of the soils in this unit are used for crops and pasture. A small acreage is used for homesites. Soybeans and sweet potatoes are the main crops. A few remaining uncleared areas on short, steep slopes along drainageways are in mixed hardwoods.

This map unit is well suited to crops and pasture. Fertilizer and lime are generally needed for crops and pastures. In the sloping areas, soil losses from erosion can be minimized by minimum tillage, contour farming, and grassed waterways.

This unit is well suited to woodland. The potential production of loblolly and slash pine is high to very high. There are few limitations for this use; however, erosion control is needed during the planting or harvesting of trees.

This unit is moderately well suited to buildings and sanitary facilities. Slow permeability and slope are the main limitations.

13. Kolin-Vick

Level to gently sloping, moderately well drained and somewhat poorly drained soils that have a loamy surface layer and a clayey and loamy subsoil; formed in old alluvium

This map unit consists of soils on broad ridgetops and upper side slopes in the terrace uplands. It occupies some of the highest elevations in the parish. The unit is drained by numerous small streams. Slope ranges from 0 to 5 percent.

This map unit makes up about 3 percent of the parish. It is about 58 percent Kolin soils, 35 percent Vick soils, and 7 percent soils of minor extent (fig. 3).

The moderately well drained Kolin soils are on the upper parts of side slopes and on convex ridgetops. These soils have a surface layer of dark grayish brown silt loam. The upper part of the subsoil is strong brown and yellowish brown silt loam and silty clay loam, and the lower part is strong brown and yellowish brown silty clay.

The somewhat poorly drained Vick soils are on broad, level ridgetops. These soils have a surface layer of dark grayish brown silt loam and a subsurface layer of pale brown silt loam.The upper part of the subsoil is yellowish brown silt loam and silty clay loam, and the lower part is yellowish brown silty clay and brown silt loam.

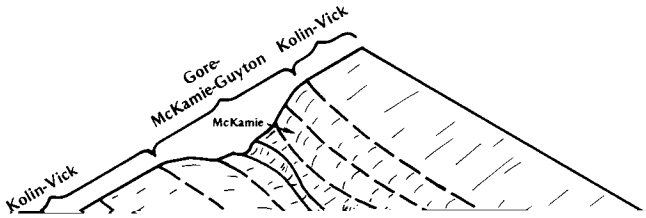
Of minor extent are the somewhat poorly drained Crowley Variant soils on broad ridgetops and the moderately well drained Gore soils on lower side slopes. Also included are the poorly drained Guyton soils in drainageways and the poorly drained Wrightsville soils in depressions.

Most of the soils in this unit are in woodland. A few large areas have been cleared and are used for pasture and crops. Soybeans is the main crop. The uncleared areas are generally in loblolly pine, shortleaf pine, and mixed hardwood.

This map unit is moderately well suited to crops and well suited to pasture. Wetness is a limitation on nearly level soils, and erosion is a hazard on the gently sloping soils. In addition, high levels of exchangeable aluminum in the rooting zone of both soils are potentially toxic to most crops. Where used for cultivated crops, soil loss by erosion can be reduced by minimum tillage, contour farming, and grassed waterways. Surface drainage is needed for nearly level soils. Lime and fertilizer are needed for crops and pasture.

This unit is well suited to woodland. The potential production of loblolly pine and shortleaf pine is high. Logging operations during the winter and early in the spring are limited by wetness. Erosion is a hazard along logging roads and skid trails in gently sloping areas.

The soils in this unit are moderately well suited to buildings and sanitary facilities. Wetness and slow and very slow permeability are the main limitations.


Kolin-Vick
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drainageways. The potential production is moderately high. Flooding restricts logging operations during the winter and spring in the low lying areas. Complex slopes restrict the use of logging equipment. Erosion is a hazard along logging roads and skid trails.

This unit is poorly suited to sanitary facilities and buildings. Very slow permeability, high shrink-swell potential, flooding, and complex slopes are the main

Loring soils. The erosion hazard and moderately steep slopes are the chief limitations in the Memphis, Gore, and McKamie soils of units 12 and 13.

About 4 percent of the land in the parish is in pasture. All of the map units in the parish, except units 8, 9, 10, and 14, are well suited to pasture. Soils in units 8, 9, and 14 are moderately well suited to pasture. The soils in

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 "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.

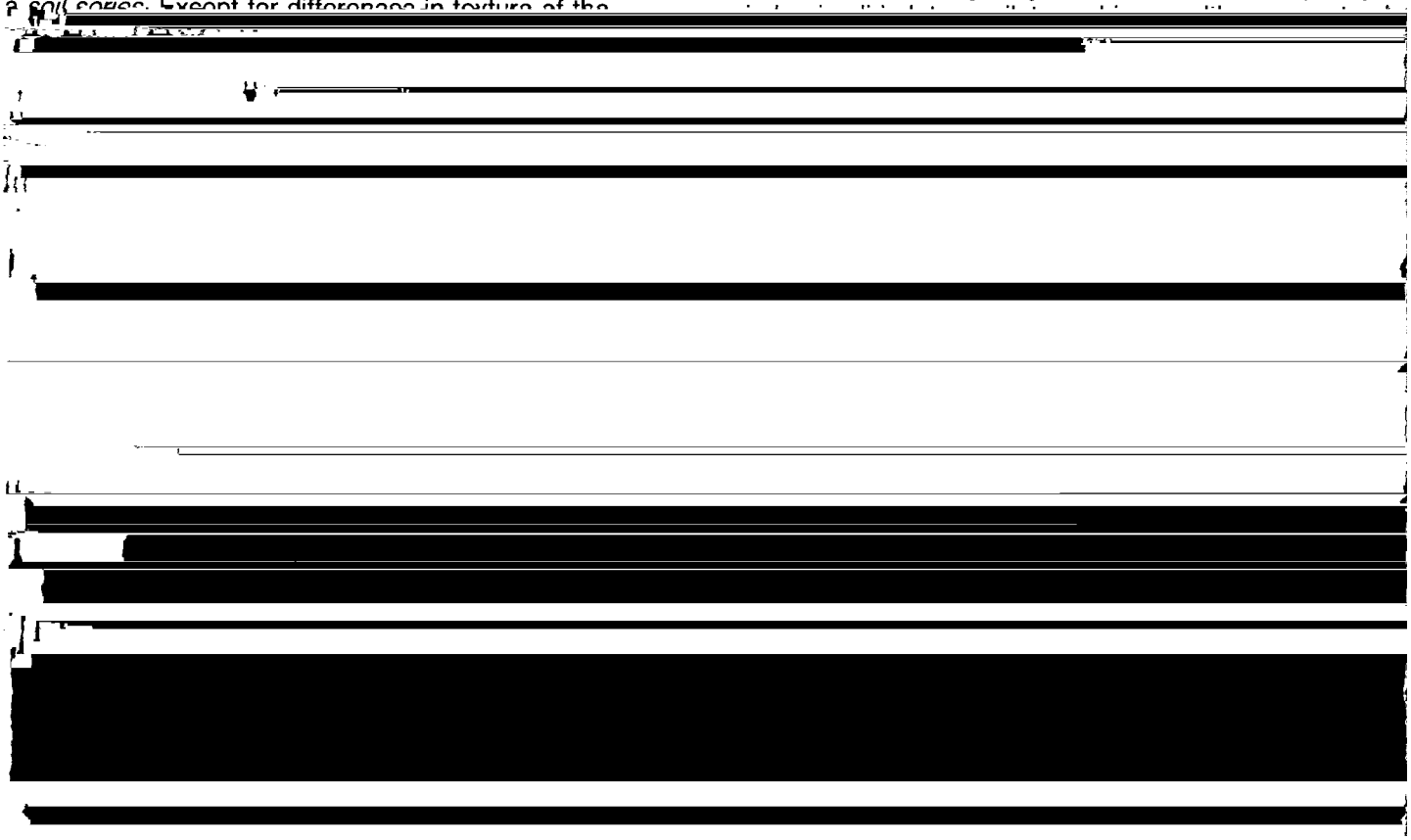
Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the

The boundaries of map units in Avoyelles Parish were matched, wherever possible, with those of the published surveys of Evangeline and Rapides Parishes. In a few places the lines do not join, and there are some differences in the names of the map units. These differences result mainly from changes in soil series concepts, differences in map unit design, and changes in soil patterns near survey area boundaries.

Table 5 gives the acreage and proportionate extent of each map unit. Other tables (see "Summary of tables") give properties of the soils and the limitations, capabilities, and potentials for many uses. The Glossary defines many of the terms used in describing the soils.

soil descriptions

Bd—Baldwin silty clay loam. This is a level, poorly



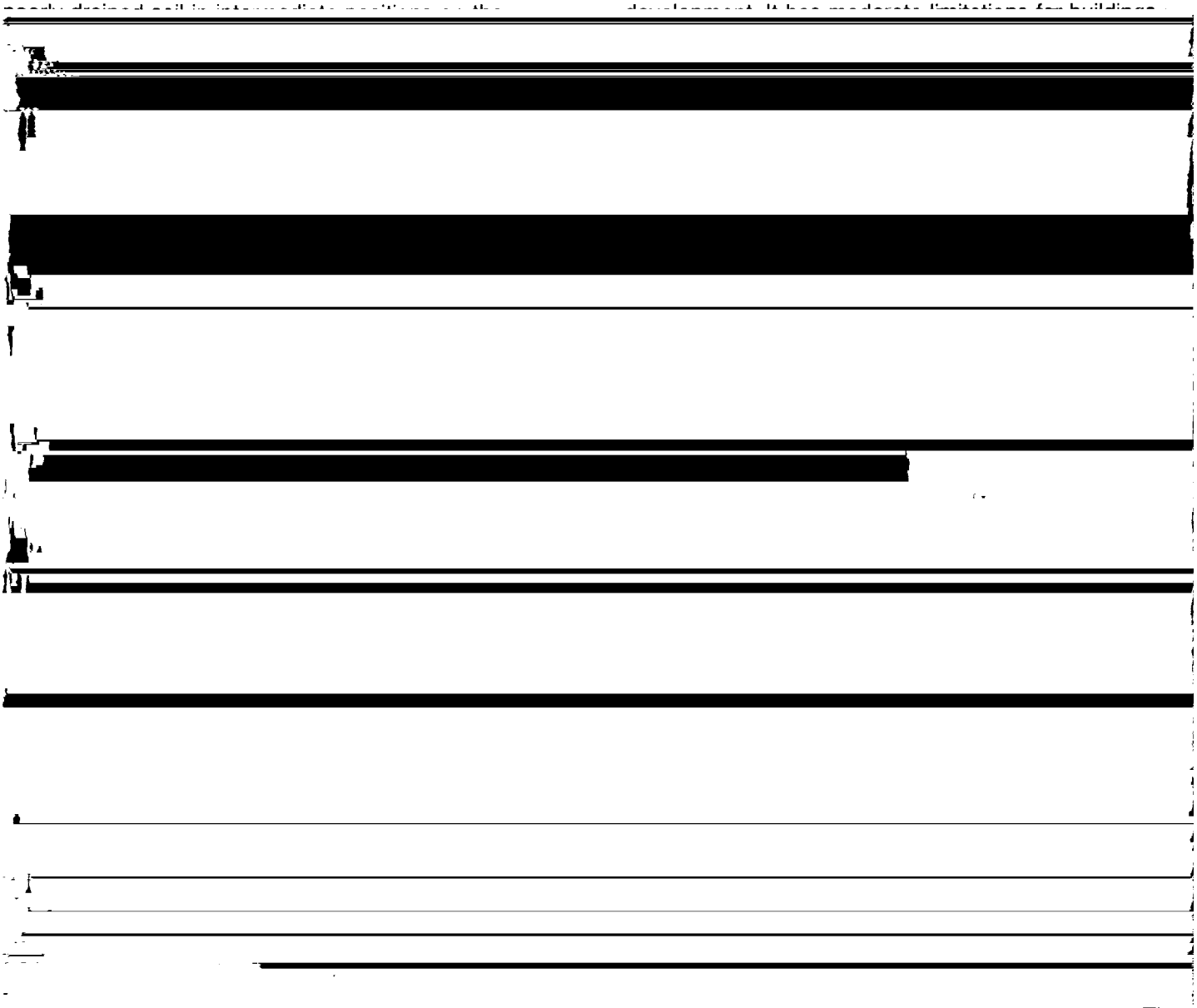
and poor tilth. The main crop is soybeans; but rice, sugarcane, corn, and grain sorghum are also suitable crops. This soil is difficult to keep in good tilth and can be worked only within a narrow range of moisture content. Proper row arrangement, field ditches, and vegetated outlets are needed to remove excess surface water. Using minimum tillage and returning all crop residue to the soil or regularly adding other organic

are subject to occasional flooding. These included soils make up about 10 percent of the map unit.

This Calhoun soil has medium fertility. Water and air move through it at a slow rate. Water runs off the surface at a slow rate and stands in low places for long periods after heavy rains. A seasonal high water table fluctuates between a depth of 2 feet and the soil surface

Cm—Commerce silt loam. This is a level, somewhat poorly drained soil in intermediate positions on the

This soil is moderately well suited to urban development. It has moderate limitations for buildings



natural levees of the Atchafalaya River. Areas are long and narrow and range from 10 to more than 100 acres. Slope is less than 1 percent.

Typically, the soil is dark grayish brown and grayish brown, mildly alkaline and moderately alkaline silt loam and silty clay loam to a depth of about 68 inches. In places the subsoil contains thin strata of brown or reddish brown silt loam.

Included in mapping are a few small areas of the Convent and Sharkey soils. The Convent soils are in slightly higher positions than the Commerce soil and contain less clay in the underlying material. The poorly drained Sharkey soils are in lower positions and are more clayey throughout. These included soils make up about 10 percent of this map unit.

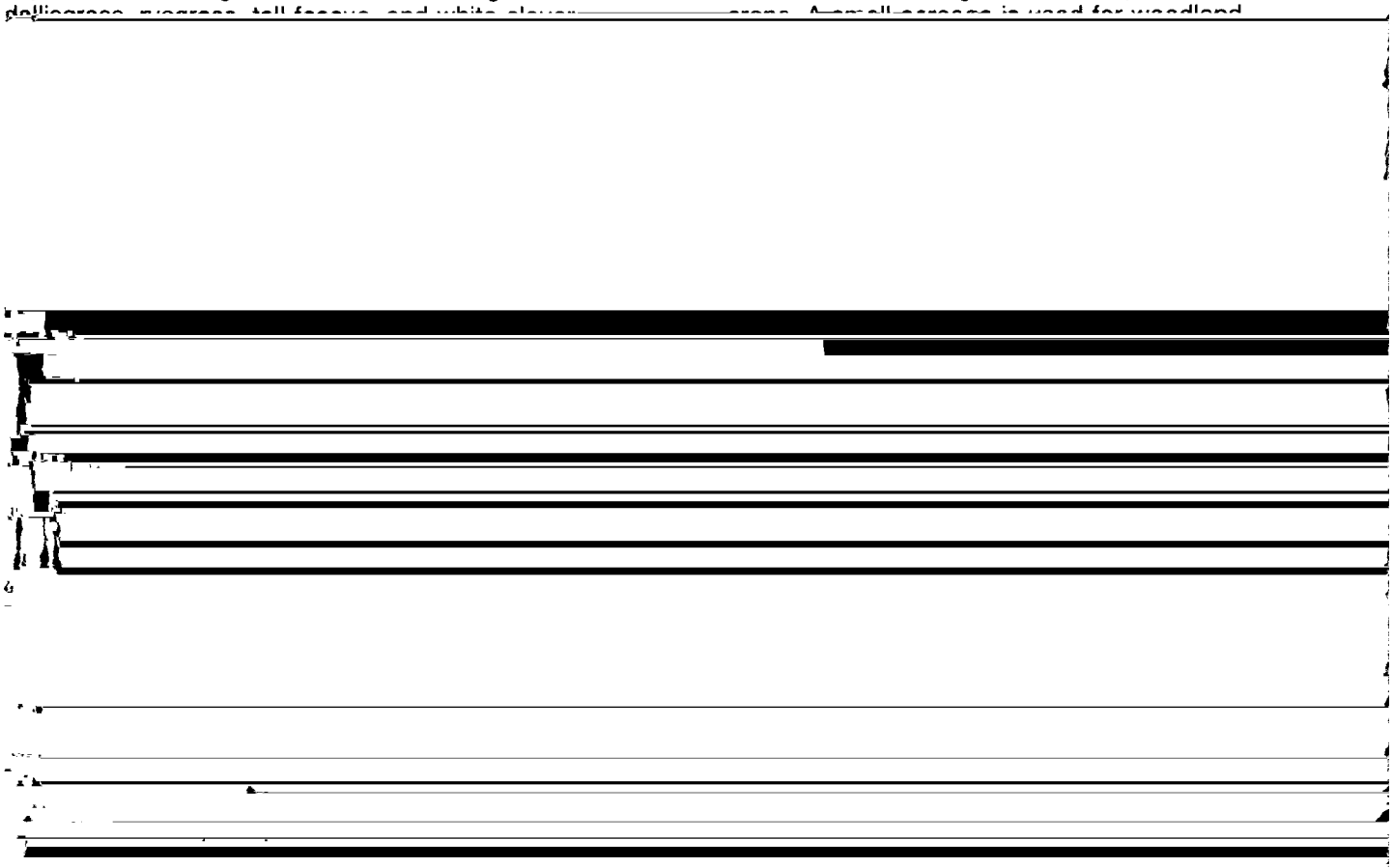
local roads and streets, and most sanitary facilities. The main limitation is wetness. Drainage is needed if roads and buildings are constructed. Excess water can be removed by shallow drains and proper grading. Unless internal drainage is improved, septic tank absorption fields will not function properly in this wet and moderately slowly permeable soil during rainy periods.

This Commerce soil is in capability subclass IIw and woodland group 1w5.

Cn—Convent very fine sandy loam. This is a level, somewhat poorly drained soil in high positions on the natural levees of the Atchafalaya River. Areas are long and narrow and range from 10 to more than 100 acres. Slope is less than 1 percent.

improved bermudagrass, Pensacola bahiagrass, dallisgrass, ryegrass, tall fescue, and white clover.

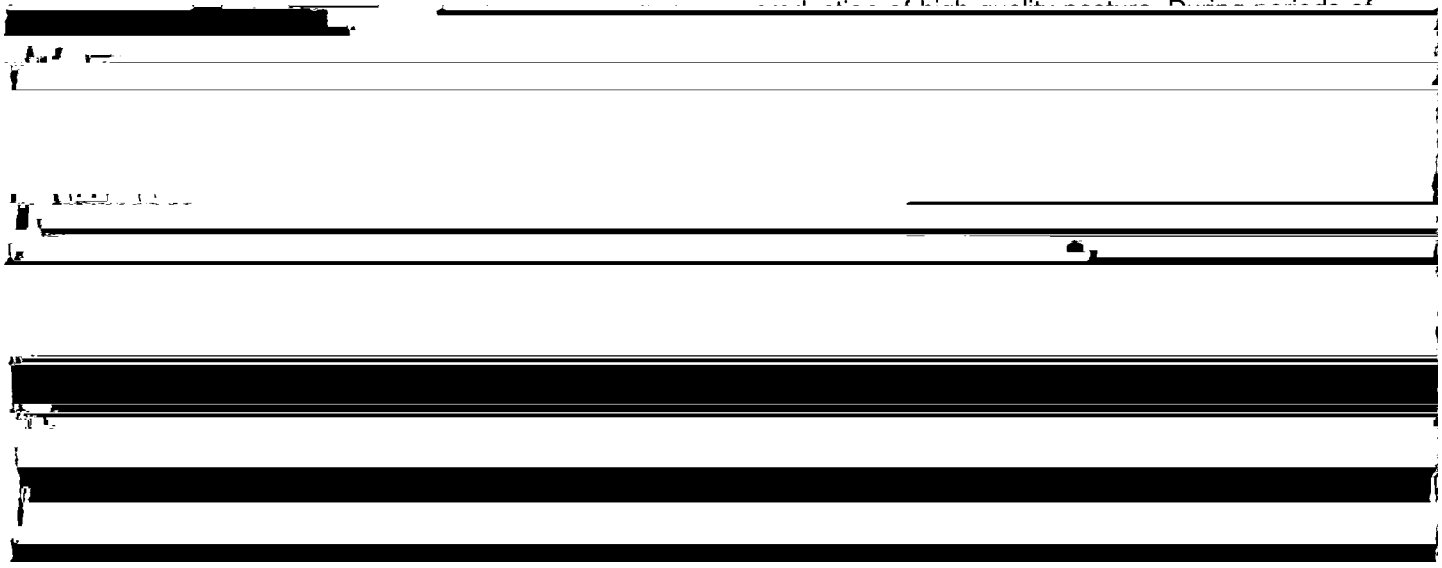
Most of the acreage is used for pasture and cultivated crops. A small acreage is used for woodland.



Excess surface water can be removed by shallow drains. Proper stocking, pasture rotation, and restricted grazing during wet periods help keep the pasture and the soil in good condition. Nitrogen fertilizer is needed for sustained production of high quality pasture.

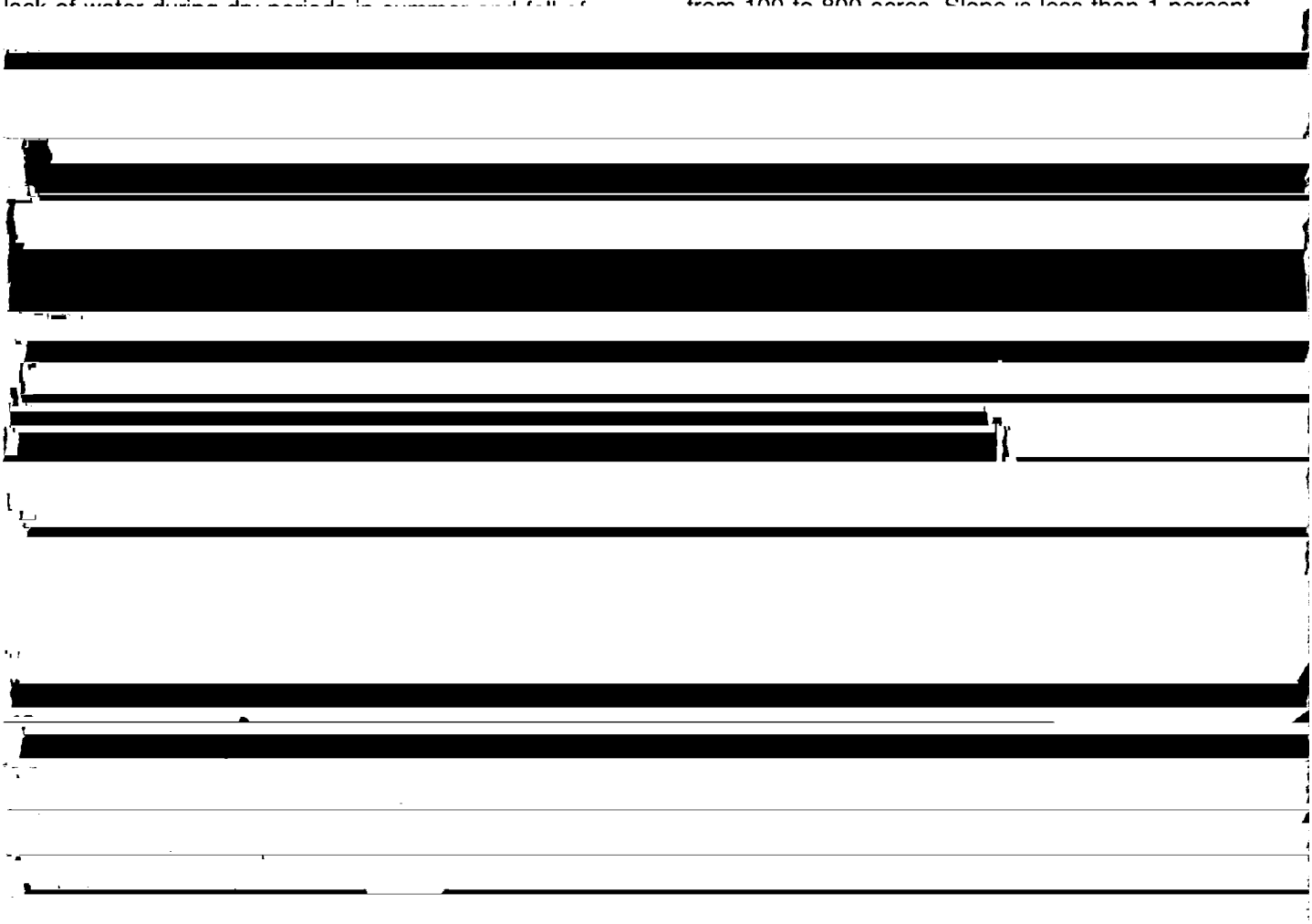
This soil is well suited to woodland; however, only a

This soil is well suited to pasture. The main limitation of the soil for this use is flooding. Suitable pasture plants are common bermudagrass, vetch, and wild winter peas. Proper stocking, pasture rotation, and restricted grazing during wet periods help to keep the pasture and soil in good shape. Nitrogen fertilizer is needed for sustained production of high quality pasture. During periods of



off the surface at a slow to medium rate. A seasonal high water table is at a depth of 1 1/2 to 3 feet during the months of December through April. This soil has a moderate shrink-swell potential. Plants are damaged by lack of water during dry periods in summer and fall of

Cw—Crowley Variant silt loam. This is a level, somewhat poorly drained soil on broad flats on the terrace uplands. It contains high concentrations of sodium salts in the subsoil. Areas are oblong and range from 100 to 800 acres. Slope is less than 1 percent.



most years.

Most of the acreage is used for cultivated crops and pasture. A few areas are used for homesites.

This soil is well suited to cultivated crops. The main crop is soybeans; but sweet potatoes, cotton, corn, Irish potatoes, and vegetable crops are also suitable crops. This soil is friable and easy to keep in good tilth. It can be worked over a wide range of moisture content. A tillage pan forms easily if this soil is tilled when wet but can be broken up by chiseling or subsoiling. If this soil is used for cultivated crops, the main limitations are droughtiness, moderate erosion hazard, and toxic levels of exchangeable aluminum in the subsoil. All tillage should be on the contour or across the slope to reduce soil loss by erosion. The organic matter content can be maintained and the rate of water intake can be increased by using all crop residue, plowing under cover crops, and using a suitable cropping system. Crop

Typically, the surface layer is dark grayish brown, strongly acid silt loam about 7 inches thick. The subsurface layer is dark grayish brown, strongly acid silt loam about 9 inches thick. The subsoil is red and yellowish red, medium acid clay in the upper part and yellowish brown, slightly acid and mildly alkaline clay and silty clay loam in the lower part. The underlying material to a depth of about 96 inches is dark red, moderately alkaline clay.

Included in mapping are a few small areas of the Vick and Wrightsville soils. The Vick soils are in slightly higher positions than the Crowley Variant and do not have red colors in the subsoil. The poorly drained Wrightsville soils are in slight depressions near the heads of drainageways. These included soils make up about 5 percent of the map unit.

This Crowley Variant soil has low fertility. Moderately high levels of exchangeable aluminum in the rooting

supplemental irrigation can prevent damage of crops during dry periods of the year.

This soil is moderately well suited to pasture. The main limitations are wetness and droughtiness in summer. Suitable pasture plants are common and improved bermudagrass, Pensacola bahiagrass, ryegrass, and white clover. Excess surface water can be removed by shallow ditches. Proper stocking, pasture rotation, and restricted grazing during wet periods help keep the pasture and the soil in good condition. Fertilizer and lime are needed for optimum growth of grasses and legumes.

This soil is moderately well suited to woodland. The main suitable tree is loblolly pine. Wetness severely limits the use of equipment. The sodium concentration in the subsoil also limits the growth of trees.

sodium in the subsoil. This soil has a moderate shrink-swell potential. Plants generally are damaged by a lack of water during dry periods in summer and fall of most years.

Most of the acreage is used for cultivated crops and pasture.

This soil is moderately well suited to cultivated crops. The main limitations are wetness and excessive sodium in the subsoil. This soil is also droughty during the summer months of most years. Soybeans is the main crop; but cotton, corn, and small grains are also suitable crops. This soil is friable and easy to keep in good tilth. It can be worked over a wide range of moisture content. A tillage pan forms easily if this soil is tilled when wet but

loam. The [redacted]

cutting, or girdling. The limitations on the use of equipment are a concern unless drainage is provided. This soil is moderately well suited to urban

are damaged by floods in some years. This soil is somewhat difficult to keep in good tilth and becomes

The somewhat poorly drained Dundee soil is on the ridges, and the poorly drained Sharkey soil is in the swales. The soils are so intricately intermingled that it was not practical to map them separately.

Typically, the Dundee soil has a surface layer about 8 inches thick. It is brown, slightly acid silt loam in the upper part and dark grayish brown, slightly acid silty clay loam in the lower part. The subsoil extends to a depth of about 60 inches. It is grayish brown, medium acid silty clay loam in the upper part; grayish brown, medium acid clay loam in the middle part; and gray, slightly acid clay loam in the lower part. In places the surface layer is silty clay loam.

The Dundee soil has medium fertility. Water and air move through it at a moderately slow rate. Water runs off the surface at a slow to medium rate. A seasonal high water table is at a depth of 1 1/2 to 3 1/2 feet during the months of January through April. This soil has a moderate shrink-swell potential. An adequate supply of water is available to plants in most years.

Typically, the Sharkey soil has a surface layer of dark grayish brown, slightly acid clay about 9 inches thick. The subsoil extends to a depth of about 60 inches. It is dark gray, slightly acid clay and silty clay in the upper part and gray, neutral clay in the lower part. In places the surface layer is dark brown.

The Sharkey soil has high fertility. Water and air move through it at a very slow rate. Water runs off the surface at a very slow rate and ponds in low places for long periods after heavy rains. A seasonal high water table fluctuates between a depth of 2 feet and the soil surface during the months of December through April. Flooding is rare, but it can occur during prolonged, intense storms. The soil swells and shrinks markedly upon wetting and drying. An adequate supply of water is available to plants in most years.

Included in mapping are a few small areas of the Baldwin and Fausse soils. The poorly drained Baldwin soils are on the lower parts of the ridges and are more clayey than the Dundee soils. [illegible]

or regularly adding other organic matter improve fertility and help maintain soil tilth and content of organic matter.

The soils of this map unit are moderately well suited to pasture. The main limitation is wetness. Suitable pasture plants are common and improved bermudagrass, Pensacola bahiagrass, tall fescue, ryegrass, and white clover. Proper stocking, pasture rotation, and restricted grazing during wet periods help keep the pasture and the soil in good condition. Fertilizer and lime are generally needed for optimum growth of grasses and legumes.

These soils are well suited to woodland. The potential production of eastern cottonwood, sweetgum, and water oak is high. Limitations to the use of equipment are a management concern unless drainage is provided.

The soils of this map unit are poorly suited to urban development. The main limitations are wetness, flooding, low strength, and moderate to very high shrink-swell potential. If areas of this unit are used for building construction, the Dundee soils are better suited than the Sharkey soils. Drainage or other water control systems are needed to remove excess water. Buildings and roads should be designed to overcome the effects of shrinking and swelling of the soils. Unless internal drainage is improved, septic tank absorption fields will not function properly in these wet and moderately slowly to very slowly permeable soils during rainy periods.

These Dundee and Sharkey soils are in capability subclass IIIw. The Dundee soil is in woodland group 2w5 and the Sharkey soil is in 2w6.

Dv—Dundee Variant clay. This is a level, somewhat poorly drained soil on natural levees of old distributary channels of the Mississippi River. The West Atchafalaya Basin levee protects this soil from flooding. Areas are long and narrow and range from 100 to 600 acres. Slope is less than 1 percent.

Typically, the surface layer is about 7 inches thick. It is dark reddish brown, slightly acid clay in the upper part and dark reddish gray, slightly acid clay in the lower part. [illegible]

surface during the months of January through April. The surface layer is very sticky when wet and very hard when dry. This soil has a high shrink-swell potential. An adequate supply of water is available to plants in most years.

Most of the acreage is used for cultivated crops. A small acreage is used for pasture and woodland use;

periods of ponding and flooding during any season of the year, but it is generally flooded continuously from late fall to early summer. Depth of floodwaters is typically 1 to 3 feet, but it may exceed 10 feet in places. During nonflood periods, a seasonal high water table fluctuates between a depth of 2 feet and the surface. This soil has

Figure 4.—The main trees in this area of Fausse clay are baldcypress and green ash. This soil is poorly suited to commercial timber.

subsoiling. Using minimum tillage and returning all crop residue to the soil or regularly adding other organic matter improve fertility and help maintain soil tilth and

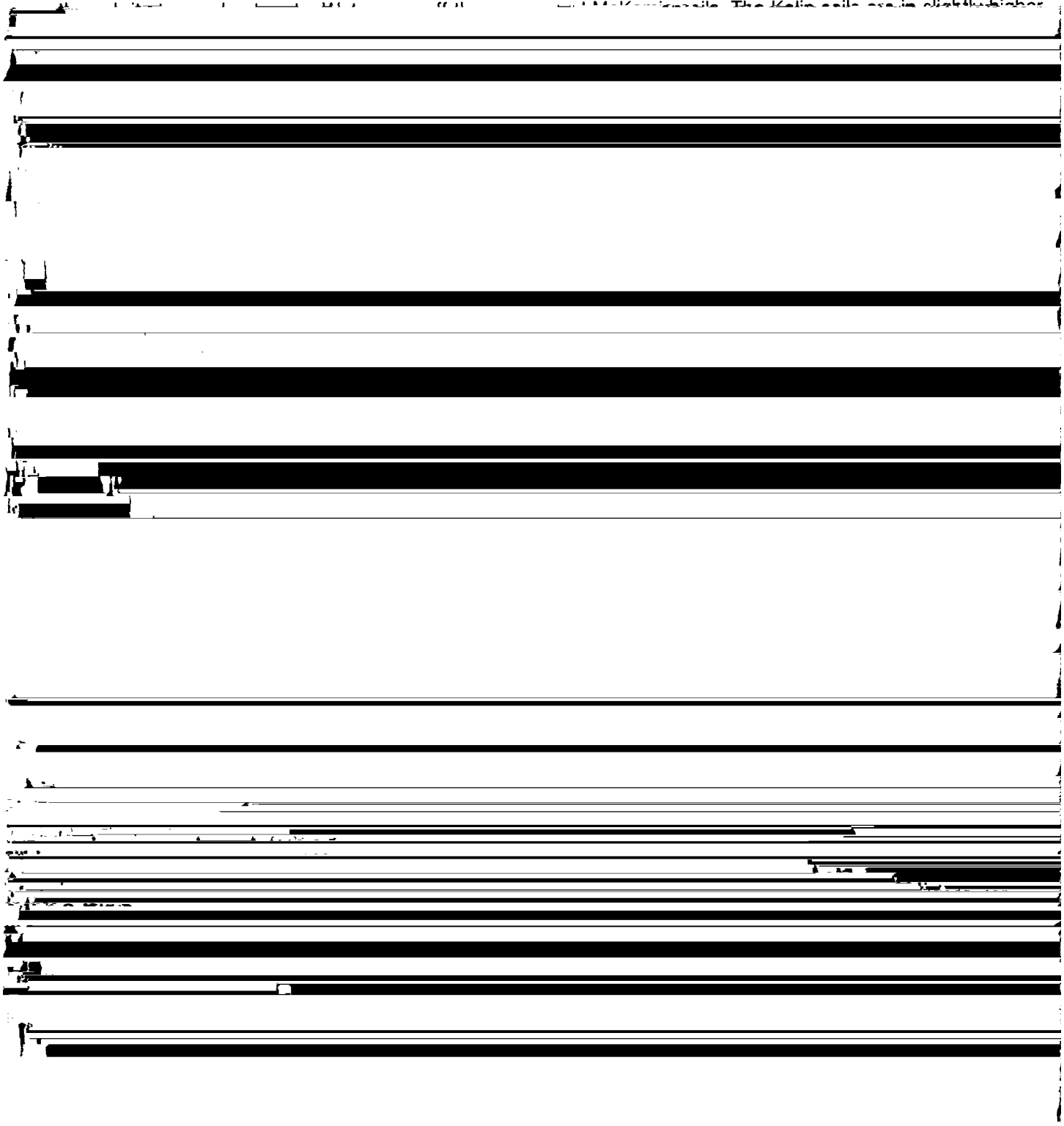
slow permeability. This limitation can be overcome by increasing the size of the absorption field. Buildings and roads can be designed to offset the effects of shrinking

clayey surface layer and subsoil. The Moreland soils are in lower positions and are clayey throughout. These included soils make up about 10 percent of the map unit.

This Gallion soil has medium fertility. Water and air

and clay in the lower part. The underlying material to a depth of about 66 inches is reddish brown, neutral clay. In places the subsoil is yellowish brown.

Included in mapping are a few small areas of the Kolin



the contour or across the slope. Maintaining crop residue on or near the surface reduces runoff and helps maintain soil tilth and organic matter content. Most crops respond to fertilizer and liming programs designed to overcome the low fertility and the high levels of aluminum in the rooting zone.

This soil is poorly suited to urban development. It has severe limitations for buildings, local roads and streets, and most sanitary facilities. If buildings are constructed on this soil, foundations and footings must be properly designed and runoff must be diverted away from buildings to prevent structural damage caused by shrinking and swelling. Septic tank absorption fields will not function properly in this wet and very slowly permeable soil during rainy periods. Sewage lagoons should be constructed where this soil is used for homesites. Preserving the existing plant cover during construction helps to control erosion. Plant cover can be established and maintained by proper shaping, fertilizing, seeding, and mulching of the slopes.

This Gore soil is in capability subclass IVe and woodland group 3c2.

Gy—Guyton silt loam, frequently flooded. This is a level, poorly drained soil on the flood plains of streams that drain the terrace uplands. It is subject to frequent flooding. Areas are long and narrow and range from 20 to more than 500 acres. Slope is less than 1 percent.

Typically, the surface layer is brown, very strongly acid silt loam about 5 inches thick. The subsurface layer is light brownish gray, mottled, very strongly acid silt loam about 24 inches thick. The subsoil to a depth of about 63 inches is light brownish gray, very strongly acid silt loam and silty clay loam. In places the lower part of the subsoil is mildly alkaline.

Included in mapping are a few small areas of soils similar to the Guyton soils except that they are moderately well drained or somewhat poorly drained. These soils are in slightly higher positions than the Guyton soils. Also included are a few small areas of Guyton soils in slightly higher positions, which do not flood frequently. These included soils make up about 15 percent of the map unit.

This Guyton soil has low fertility. High levels of exchangeable aluminum in the rooting zone are potentially toxic to most crops. Water and air move through this soil at a slow rate. Water runs off the surface at a slow rate and ponds in low places for long periods after heavy rains. A seasonal high water table of water during dry periods in summer and fall of most years.

Most of the acreage is used for woodland and pasture. A small acreage is used for cultivated crops.

This soil is well suited to the production of red oak, sweetgum, water oak, and loblolly pine. The site index for loblolly pine ranges from 85 to 90. The main management concerns in producing and harvesting timber are flooding and wetness. Conventional methods of harvesting timber generally can be used, but their use may be limited during rainy periods, generally from December through May. After harvesting, reforestation must be carefully managed to reduce competition from undesirable understory plants. Proper site preparation and spraying, cutting, or girdling can eliminate unwanted weeds, brush, or trees.

This soil is poorly suited to pasture. The main limitations are flooding and wetness. In addition, this soil is droughty in summer of most years. Wetness in winter and spring limits the choice of plants and the period of grazing. Suitable pasture plants are common bermudagrass, singletary peas, and vetch. Grazing when the soil is wet puddles the surface layer and damages the plant community. Fertilizer and lime are needed for optimum growth of grasses and legumes.

This soil is poorly suited to cultivated crops. It is limited mainly by wetness that results from frequent flooding and a seasonal high water table. Toxic levels of exchangeable aluminum can also be limiting. If the soil is drained and protected from flooding, most climatically adapted crops can be grown. Most crops and pasture plants respond well to fertilizers. Lime is generally needed.

This soil is not suited to urban development. Wetness from frequent flooding and a seasonal high water table are severe limitations for buildings, local roads and streets, and most sanitary facilities. Major flood control structure and extensive local drainage systems are needed.

This Guyton soil is in capability subclass Vw and woodland group 2w9.

Ko—Kolin silt loam, 1 to 5 percent slopes. This is a gently sloping, moderately well drained soil on convex ridgetops and upper side slopes in the terrace uplands. Areas are irregular and range from 10 to more than 300 acres.

Typically, the surface layer is dark grayish brown, medium acid silt loam about 4 inches thick. The subsoil is strong brown, strongly acid silt loam and silty clay

Figure 5.—A well managed stand of loblolly pine on Kolin silt loam, 1 to 5 percent slopes.

Vick soils are less sloping and are in slightly higher positions. These included soils make up about 15 percent of the map unit.

This Kolin soil has low fertility. High levels of exchangeable aluminum in the rooting zone are potentially toxic to most crops. Water and air move through this soil at a very slow rate. Water runs off the surface at a medium rate. A perched seasonal high water table is above the clayey part of the subsoil during the months of December through April. This soil has a high shrink-swell potential in the lower part of the subsoil. Plants are damaged by lack of water during dry periods in summer and fall of some years.

Most of the acreage is used for woodland and pasture. A small acreage is used for cultivated crops and homesites.

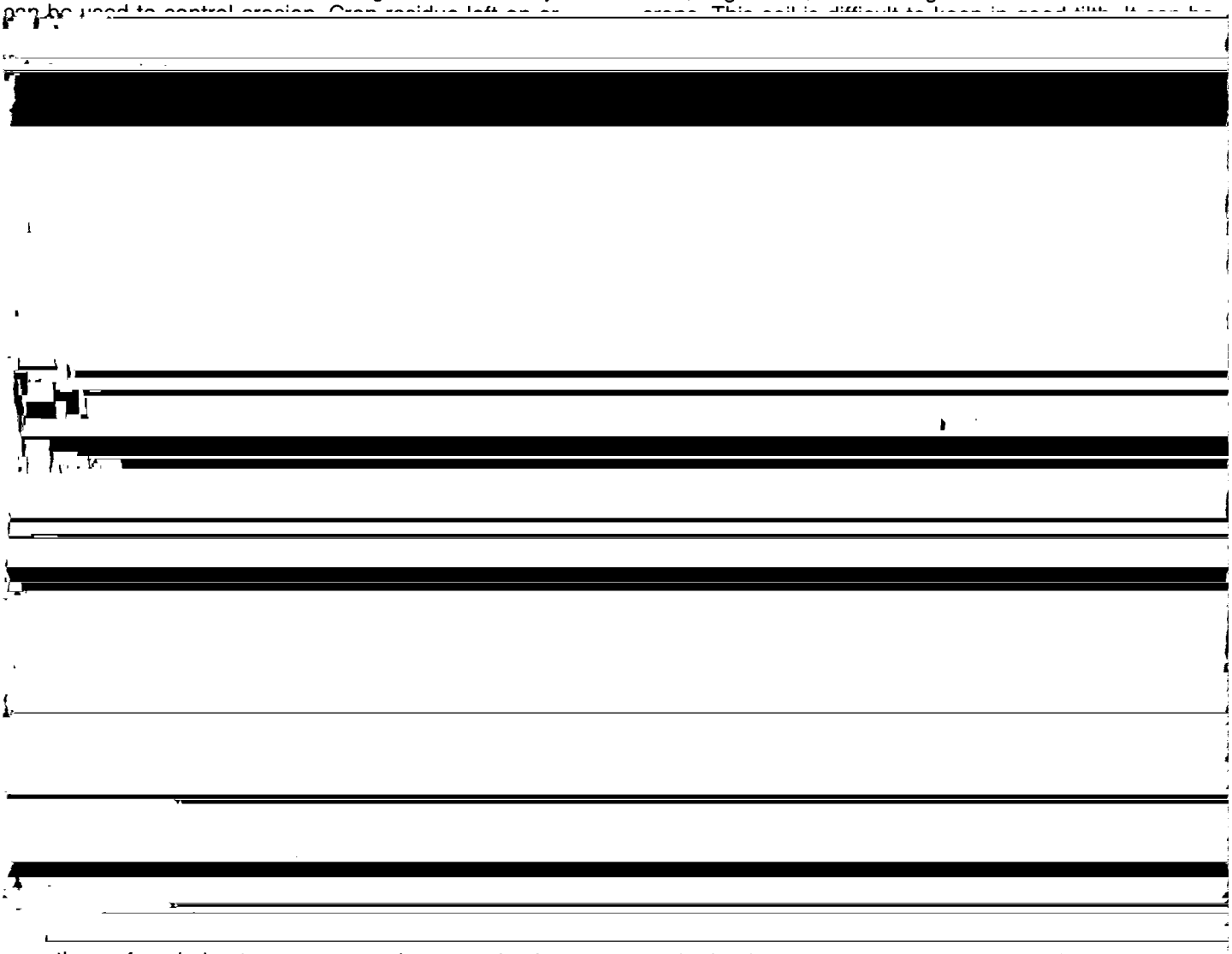
This soil is well suited to the production of loblolly pine and shortleaf fine (fig. 5). The site index for loblolly pine ranges from 85 to 90. The main management concerns in producing and harvesting timber are wetness and a slight erosion hazard. Conventional methods of harvesting timber generally can be used, but their use may be limited during rainy periods, generally from December through April. Roads and landings can be protected from erosion by constructing diversions and by seeding cuts and fills.

This soil is well suited to pasture. Suitable pasture plants are common and improved bermudagrass, Pensacola bahiagrass, ryegrass, ball clover, and crimson clover. Proper stocking, pasture rotation, and restricted grazing during wet periods help keep the pasture and the soil in good condition. Fertilizer and lime are needed for optimum growth of grasses and legumes.

This soil is moderately well suited to cultivated crops. The main limitations are droughtiness and a moderate erosion hazard. Soybeans is the main crop; but cotton, corn, small grains, and vegetables are also suitable crops. This soil is friable and easy to keep in good tilth. It can be worked over a wide range of moisture content. A tillage pan forms easily if this soil is tilled when wet but

can be broken up by chiseling or subsoiling. Minimum tillage and terraces, diversions, and grassed waterways can be used to control erosion. Crop residue left on or

permeability. Soybeans is the main crop; but rice, cotton, corn, sugarcane, and small grains are also suitable crops. This soil is difficult to keep in good tilth. It can be



near the surface helps to conserve moisture, maintain tilth, and control erosion. All tillage should be on the contour or across the slope. Most crops respond to fertilizer and liming programs designed to overcome the low fertility and the high levels of aluminum.

This soil is moderately well suited to urban development. Wetness and slow permeability are moderate to severe limitations for buildings, local roads and streets, and most sanitary facilities. A perched seasonal high water table is above the clayey part of the subsoil, and drainage should be provided if buildings are constructed on this soil. Very slow permeability and the high water table increase the possibility of failure of septic tank absorption fields. Sewage lagoons or public sewer systems are needed if this soil is used for homesites.

This Kolin soil is in capability subclass IIIe and

worked only within a narrow range of moisture content and becomes cloddy if farmed when it is too wet or too dry. Proper row arrangement, field ditches, and vegetated outlets are needed to remove excess surface water. Land grading and smoothing improve surface drainage, allow for more uniform application of irrigation water, and permit more efficient use of farm equipment. Using minimum tillage and returning all crop residue to the soil or regularly adding other organic matter improve fertility and help maintain soil tilth and content of organic matter. Crops respond well to nitrogen fertilizer. Lime is generally not needed.

This soil is well suited to pasture. Suitable pasture plants are common and improved bermudagrass, Pensacola bahiagrass, tall fescue, johnsongrass, ryegrass, and white clover. The main limitations of this soil are wetness and poor tilth. Excess surface water can

distributaries. It is subject to occasional flooding for brief periods. Areas are long and narrow and range from 20 to more than 200 acres. Slope is less than 1 percent.

Typically, the surface layer is dark reddish brown, moderately alkaline clay about 6 inches thick. The subsoil is dark reddish brown, moderately alkaline clay. The underlying material to a depth of about 60 inches is reddish brown and yellowish red silt loam and very fine sandy loam.

Included in mapping are a few small areas of the Gallion, Moreland, and Norwood soils. The well drained Gallion and Norwood soils are in slightly higher positions than the Latanier soil. The Moreland soils are in lower positions and are clayey throughout. These included soils [redacted] about 10 percent of the map unit.

[redacted]

This Latanier soil has high fertility. Water and air move through it at a very slow rate. Water runs off the surface at a slow rate and stands in low places for long periods after heavy rains. A seasonal high water table is at a

After harvesting, reforestation must be carefully managed to reduce competition from undesirable understory plants. Only trees that can tolerate seasonal wetness should be planted. Proper site preparation and spraying, cutting, or girdling can eliminate unwanted weeds, brush, or trees.

This soil is poorly suited to urban development. Flooding, wetness, very slow permeability, and very high shrink-swell potential are severe limitations to use of this soil for buildings, local roads and streets, and most sanitary facilities. Major flood control structures and extensive local drainage systems are needed to protect this soil from flooding. The effects of shrinking and swelling can be minimized by using proper engineering designs and by backfilling with material that has low

shrink-swell potential.

This Latanier soil is in capability subclass IVw and woodland group 2w6.

under cover crops, and using a suitable cropping system. Crusting of the surface layer and compaction of the soil can be reduced by returning the crop residue to the soil and by using minimum tillage. Most crops and pasture plants respond well to lime and fertilizer. Where water of suitable quality is available, supplemental irrigation can prevent damage to crops during dry periods of some years.

This soil is well suited to pasture. The main limitation is droughtiness. Suitable pasture plants are common and improved bermudagrass, Pensacola bahiagrass, ryegrass, and crimson clover. Proper stocking, pasture rotation, and restricted grazing during wet periods help keep the pasture and the soil in good condition. Fertilizer and lime are needed for optimum growth of grasses and legumes.

This soil is well suited to woodland; however, only a few areas remain in native hardwoods and pine. This soil has few limitations for the use. After harvesting, however, reforestation must be carefully managed to reduce competition from undesirable understory plants.

This soil is moderately well suited to urban development. It has moderate limitations for buildings, local roads and streets, and most sanitary facilities. The main limitation is wetness. A perched seasonal high water table is above the fragipan, and drainage should be provided if buildings are constructed on this soil. Excess water can be removed by shallow ditches and proper grading. Unless internal drainage is improved, septic tank absorption fields will not function properly during rainy periods because of the seasonal high water table and moderately slow permeability.

This Loring soil is in capability class I and woodland group 2o7.

Lr—Loring silt loam, 2 to 5 percent slopes. This is a gently sloping, moderately well drained soil on side slopes in the terrace uplands. Areas are irregular and range from 10 to 100 acres.

Typically, the surface layer is dark brown, very strongly acid silt loam about 6 inches thick. The subsoil is brown, very strongly acid silty clay loam and silt loam. The next layer to a depth of about 65 inches is a fragipan of

the fragipan. Water runs off the surface at a medium rate. A perched water table is above the fragipan during the months of December through March. This soil dries quickly after rains. It has a low shrink-swell potential. Plants are damaged by lack of water during dry periods in summer and fall of some years.

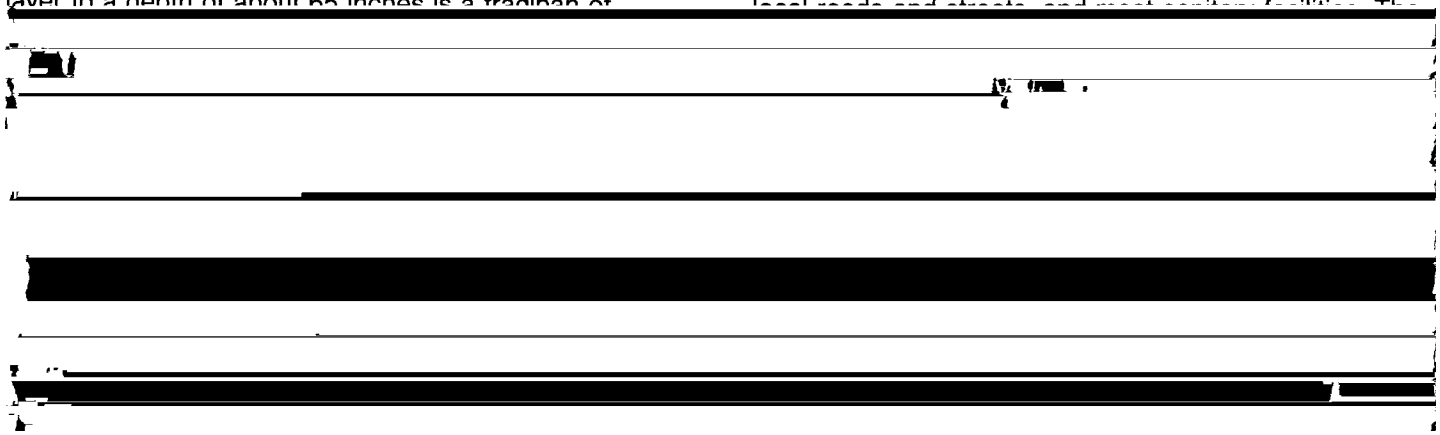
Most of the acreage is used for cultivated crops and pasture. A small acreage is used for homesites.

This soil is well suited to cultivated crops. It is limited mainly by a moderate erosion hazard and droughtiness. Sweet potatoes is the main crop; but soybeans, cotton, Irish potatoes, corn, and vegetables are also suitable crops. This soil is friable and easy to keep in good tilth. It can be worked over a wide range of moisture content. A tillage pan forms easily if this soil is tilled when wet but can be broken up by chiseling or subsoiling. Maintaining crop residue on or near the surface reduces runoff and helps conserve moisture and maintain soil tilth and organic matter content. Minimum tillage, terraces, diversions, and grassed waterways help control erosion. Drop structures placed in grassed waterways help prevent gullying. All tillage should be on the contour or across the slope. Most crops and pasture plants respond well to lime and fertilizer. Where water of suitable quality is available, supplemental irrigation can prevent damage to crops during dry periods of some years.

This soil is well suited to pasture. The main limitation is droughtiness. Suitable pasture plants are common and improved bermudagrass, Pensacola bahiagrass, ryegrass, and crimson clover. Maintaining a good vegetative cover controls erosion. Seedbed preparation should be on the contour or across the slope where practical. Proper stocking, pasture rotation, and restricted grazing during wet periods help keep the pasture and the soil in good condition. Fertilizer and lime are needed for optimum growth of grasses and legumes.

This soil is well suited to woodland; however, only a few areas remain in native pine and hardwoods. After harvesting, reforestation must be carefully managed to reduce competition from undesirable understory plants.

This soil is moderately well suited to urban development. It has moderate limitations for buildings,



from 10 to 150 acres. Many well-defined drainageways dissect most areas.

Typically, the surface layer is dark grayish brown and dark brown, strongly acid silt loam about 6 inches thick. The subsoil is red and yellowish red, strongly acid silty clay in the upper part and yellowish red, medium acid silty clay loam in the lower part. The underlying material to a depth of about 71 inches is stratified, reddish brown and yellowish red silt loam and silty clay loam.

Included in mapping are a few small areas of the Gore, Buyton, and Kolin soils. The moderately well drained Gore soils are on the upper parts of the slopes. The poorly drained Guyton soils are in drainageways.

exchangeable aluminum. Irregular slopes can hinder tillage operations. Crop residue left on or near the surface helps to conserve moisture, maintain tilth, and control erosion. Minimum tillage, terraces, diversions, and grassed waterways can also be used to control erosion. All tillage should be on the contour or across the slope. Most crops respond to fertilizer and liming programs designed to overcome the low fertility and the moderately high levels of aluminum in the rooting zone.

This soil is poorly suited to urban development. Short, steep slopes, high shrink-swell potential, and very slow permeability are severe limitations for buildings, local roads and streets, and most sanitary facilities. Structures

The moderately well drained Kolin soils are on ridgetops and upper side slopes. Also included, in some places, are a few small areas of the severely eroded McKamie soils. These included soils make up about 15 percent of the map unit.

This McKamie soil has low fertility. Moderately high levels of exchangeable aluminum in the rooting zone are potentially toxic to most crops. Water and air move through this soil at a very slow rate. Runoff is rapid, and the hazard of water erosion is severe. This soil has a high shrink-swell potential. Plants are damaged by lack of water during dry periods in summer and fall of most years.

This soil is used mainly for woodland. It is also used for pasture and cultivated crops.

This soil is moderately well suited to the production of loblolly pine and shortleaf pine. The site index for loblolly pine ranges from 80 to 85. The main management concerns in producing and harvesting timber are equipment use limitations and difficulty in establishing seedlings. Because the clayey subsoil is sticky when wet, most planting and harvesting equipment can be used only during dry periods. Gullies also limit the use of equipment in places. Roads and landings can be protected from erosion by constructing diversions and by seeding cuts and fills. After harvesting, reforestation must be carefully managed to reduce competition from undesirable understory plants. Proper site preparation and spraying, cutting, or girdling can eliminate unwanted weeds, brush, or trees.

This soil is moderately well suited to pasture. The main limitations are complex slopes, a severe erosion hazard during seedbed preparation, and droughtiness. Suitable pasture plants are common and improved bermudagrass, Pensacola bahiagrass, ryegrass, and crimson clover. Erosion can be controlled by maintaining a good vegetative cover. Seedbed preparation should be on the contour or across the slope where practical. The use of equipment is limited by strongly sloping, complex slopes

to divert runoff are needed if buildings and roads are constructed on this soil. Revegetating disturbed areas around construction sites as soon as possible helps to control soil erosion. Roads should be graded and cut and drainageways vegetated to control surface runoff and erosion. The effects of shrinking and swelling can be minimized by using proper engineering designs and by backfilling with material that has low shrink-swell potential. Septic tank absorption fields will not function properly in this wet and very slowly permeable soil during rainy periods. Sewage lagoons or public sewer systems should be used if the soil is used for homesites.

This McKamie soil is in capability subclass VIe and woodland group 3c2.

Me—Memphis silt loam, 0 to 2 percent slopes. This is a nearly level, well drained soil on convex ridgetops in the terrace uplands. Areas are irregular and range from 5 to 50 acres.

Typically, the soil is brown, medium acid and strongly acid silt loam and silty clay loam to a depth of about 68 inches.

Included in mapping are a few small areas of the Calhoun, Coteau, and Loring soils. The poorly drained Calhoun soils are in slight depressions and drainageways. The somewhat poorly drained Coteau soils are at the heads of drainageways. The moderately well drained Loring soils are in slightly lower positions than the Memphis soil.

This Memphis soil has medium fertility. Water and air move through it at a moderate rate. Water runs off the surface at a slow rate. Effective rooting depth is 60 inches or more. This soil dries quickly after rains. The shrink-swell potential is low. Plants are damaged by lack of water during dry periods in summer and fall of some years.

Most of the acreage is used for cultivated crops and pasture. A small acreage is used for homesites.

This soil is well suited to cultivated crops. Soybeans is

broken up by chiseling or subsoiling. The organic matter content can be maintained by using all crop residue

This soil is well suited to cultivated crops. It is limited mainly by a moderate erosion hazard. It is in the

places most of the surface layer has been removed by

should be installed on the contour. Access roads must

is needed where grasses are grown alone. Lime is generally not needed.

This soil is well suited to the production of southern hardwoods; however, only a few areas remain in native hardwoods. Wetness is a severe limitation for equipment use. Trees should be water tolerant, and they should be planted or harvested during dry periods. Proper site preparation and spraying, cutting, or girdling can eliminate unwanted weeds, brush, or trees.

This soil is poorly suited to urban development. Wetness, flooding, low strength, and very high shrink-swell potential are severe limitations for buildings, local roads and streets, and most sanitary facilities. Drainage is needed if roads and buildings are constructed on the

permeability. The main crops are soybeans and grain sorghum. This soil is somewhat difficult to keep in good tilth because the clayey subsoil is mixed into the plow layer in most places. A drainage system is needed for most cultivated crops and pasture plants. Land grading and smoothing remove excess surface water; however, grading may also remove the loamy surface layer in some places. Returning crop residue to the soil or regularly adding other organic matter improves fertility, reduces crusting, and increases the water intake rate.

This soil is moderately well suited to pasture. The main limitations are flooding and wetness. The main pasture plant is common bermudagrass. Livestock must be moved to protected areas during periods of flood

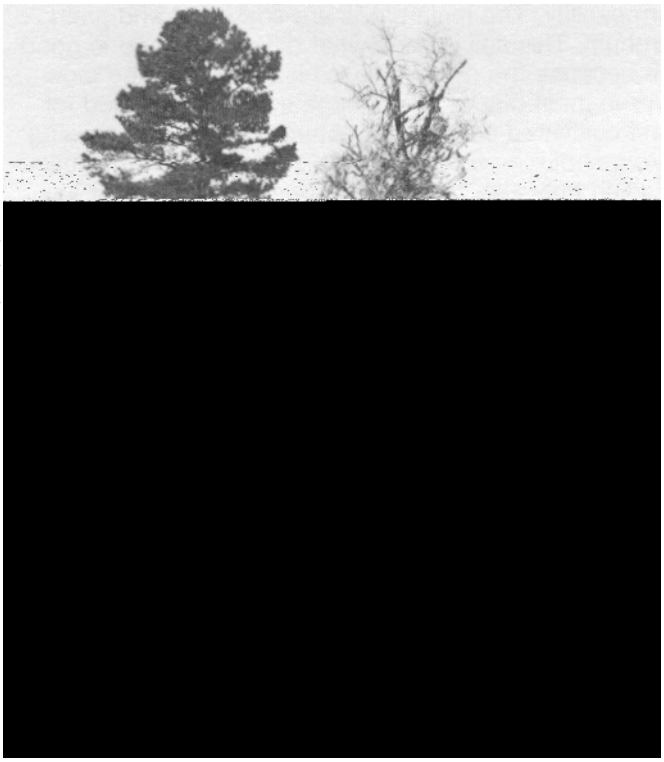


Figure 6.—The residue provided by wheat stubble increases the organic matter in this Moreland clay soil. The pasture in the background is on Memphis silt loam, 2 to 5 percent slopes.

This Moreland soil has high fertility. Water and air move through it at a very slow rate. Water runs off the surface at a slow rate and stands in low places for long periods after heavy rains. A seasonal high water table fluctuates between a depth of 1 1/2 feet and the soil surface during the months of December through April

adding other organic matter improves fertility, reduces crusting, and increases the water intake rate (fig. 6).

This soil is well suited to pasture. The main limitations are wetness and very slow permeability. Suitable pasture plants are common and improved bermudagrass, tall fescue, Pensacola bahiagrass, johnsongrass, ryegrass, and white clover. Excess surface water can be removed by shallow ditches. Grazing when the soil is wet causes compaction of the surface layer and damage to the plant community. Proper stocking, pasture rotation, and restricted grazing during wet periods help keep the pasture and the soil in good condition. Nitrogen fertilizer is needed where grasses are grown alone. Lime is generally not needed.

This soil is well suited to woodland; however, only a few areas remain in native hardwoods. Wetness and the clayey surface layer severely limit the use of equipment. Only water-tolerant trees should be planted, and they should be planted and harvested during dry periods.

This soil is poorly suited to urban development. Wetness, flooding, low strength, and very high shrink-swell potential are severe limitations for buildings, local roads and streets, and most sanitary facilities. Drainage is needed if roads and buildings are constructed on this soil. Excess water can be removed by shallow ditches and proper grading. The effects of shrinking and swelling can be minimized by using proper engineering designs and by backfilling with material that has low shrink-swell potential. Septic tank absorption fields will not function properly in this wet and very slowly permeable soil during rainy periods. Sewage lagoons or public sewer systems should be constructed if this soil is used for homesites.

This Moreland soil is in capability subclass IIIw and woodland group 2w6.

Mt—Moreland clay, occasionally flooded. This is a level, somewhat poorly drained soil in low positions on the natural levees of the Red River and its distributaries.

fluctuates between a depth of 1 1/2 feet and the soil surface during the months of December through April. This soil is subject to brief to more-than-a-month-long periods of flooding in winter, spring, and early summer of some years. Floodwaters typically are 1 to 3 feet deep, but the depth exceeds 10 feet in places. This soil has a very high shrink-swell potential. An adequate supply of water is available to plants in most years.

Most of the acreage is used for woodland and cultivated crops. A small acreage is used for pasture.

This soil is well suited to the production of southern hardwoods. The main management concerns in producing and harvesting timber are wetness and flooding, which limit the use of equipment and cause seedling mortality. Because this clayey soil is sticky when wet, most planting and harvesting equipment can be used only during dry periods. Only trees that can tolerate seasonal wetness should be planted. After harvesting, reforestation must be carefully managed to reduce competition from undesirable understory plants.

This soil is moderately well suited to cultivated crops. It is limited mainly by flooding, wetness, and poor tilth. The main crops are soybeans and grain sorghum. This soil is difficult to keep in good tilth. It can be worked only within a narrow range of moisture content and becomes cloddy if farmed when it is too wet or too dry. Proper row arrangement, field ditches, and vegetated outlets are needed to remove excess surface water. Returning crop residue to the soil or regularly adding other organic matter improves fertility, reduces crusting, and increases the water intake rate. Land grading and smoothing improve surface drainage and permit more efficient use of farm equipment.

This soil is moderately well suited to pasture. The main limitations are flooding and wetness. The main suitable pasture plant is common bermudagrass. During flood periods, cattle need to be moved to adjacent protected areas or to pastures at high elevations. Excess surface water can be removed by shallow ditches if suitable outlets are available. Proper stocking, pasture rotation, and restricted grazing during wet periods help keep the pasture and the soil in good condition.

This soil is poorly suited to urban development. Flooding, wetness, low strength, and very high shrink-swell potential are severe limitations for buildings, local roads and streets, and most sanitary facilities. Major flood control structures and extensive local drainage systems are needed to protect this map unit from flooding. The effects of shrinking and swelling can be minimized by using proper engineering designs and by backfilling with material that has low shrink-swell potential. Septic tank absorption fields will not function properly in this wet and very slowly permeable soil during rainy periods. Sewage lagoons or public sewer systems are needed if this soil is used for homesites.

This Moreland soil is in capability subclass IVw and woodland group 3w6.

Mu—Moreland clay, gently undulating, occasionally flooded. This is a gently undulating, somewhat poorly drained soil on low ridges and in swales of the Red River alluvial plain. The ridges are 1 to 3 feet high and 100 to 250 feet wide. The swales are about 75 to 150 feet wide. This soil is subject to occasional flooding for brief to long periods. Areas range from about 200 to more than 700 acres. Slopes are short and choppy and range from 0 to 3 percent.

Typically, the soil is dark reddish brown and reddish brown, mildly alkaline and moderately alkaline clay and silty clay to a depth of about 60 inches. In places the underlying material is gray or grayish brown silt loam, silty clay loam, or clay between depths of 40 and 60 inches.

Included in mapping are a few small areas of the Latanier and Norwood soils. The Latanier soils are in slightly higher positions than the Moreland soil and are underlain by loamy materials. The well drained Norwood soils are also in higher positions and are loamy throughout. Also included are a few small areas of Moreland soils that have slopes of more than 3 percent.

This Moreland soil has high fertility. Water and air move through it at a very slow rate. Water runs off the surface at a slow rate and ponds in low places for long periods after heavy rains. A seasonal high water table fluctuates between a depth of 1 1/2 feet and the soil surface during the months of December through April. This soil is subject to brief to more-than-a-month-long periods of flooding in winter, spring, and early summer. Floodwaters typically are 1 to 3 feet deep, but the depth exceeds 10 feet in places. This soil has a very high shrink-swell potential. An adequate supply of water is available to plants in most years.

Most of the acreage is used for woodland and cultivated crops. A small acreage is used for pasture.

This soil is well suited to the production of southern hardwoods. The main management concerns in producing and harvesting timber are wetness and flooding, which limit the use of equipment and cause seedling mortality. Because the clayey soil is sticky when wet, most planting and harvesting equipment can be used only during dry periods. Only trees that can tolerate seasonal wetness should be planted. After harvesting, reforestation must be carefully managed to reduce competition from undesirable understory plants.

This soil is moderately well suited to cultivated crops. It is limited mainly by flooding, wetness, poor tilth, and short, choppy slopes. The main crops are soybeans and grain sorghum. This soil is sticky when wet and hard when dry and becomes cloddy if farmed when too wet or too dry. Flooding can be controlled by levees, dikes, and pumps. Proper row arrangement, field ditches, and vegetated outlets are needed to remove excess surface water. Land grading and smoothing also improve surface drainage, but in places large volumes of soil must be

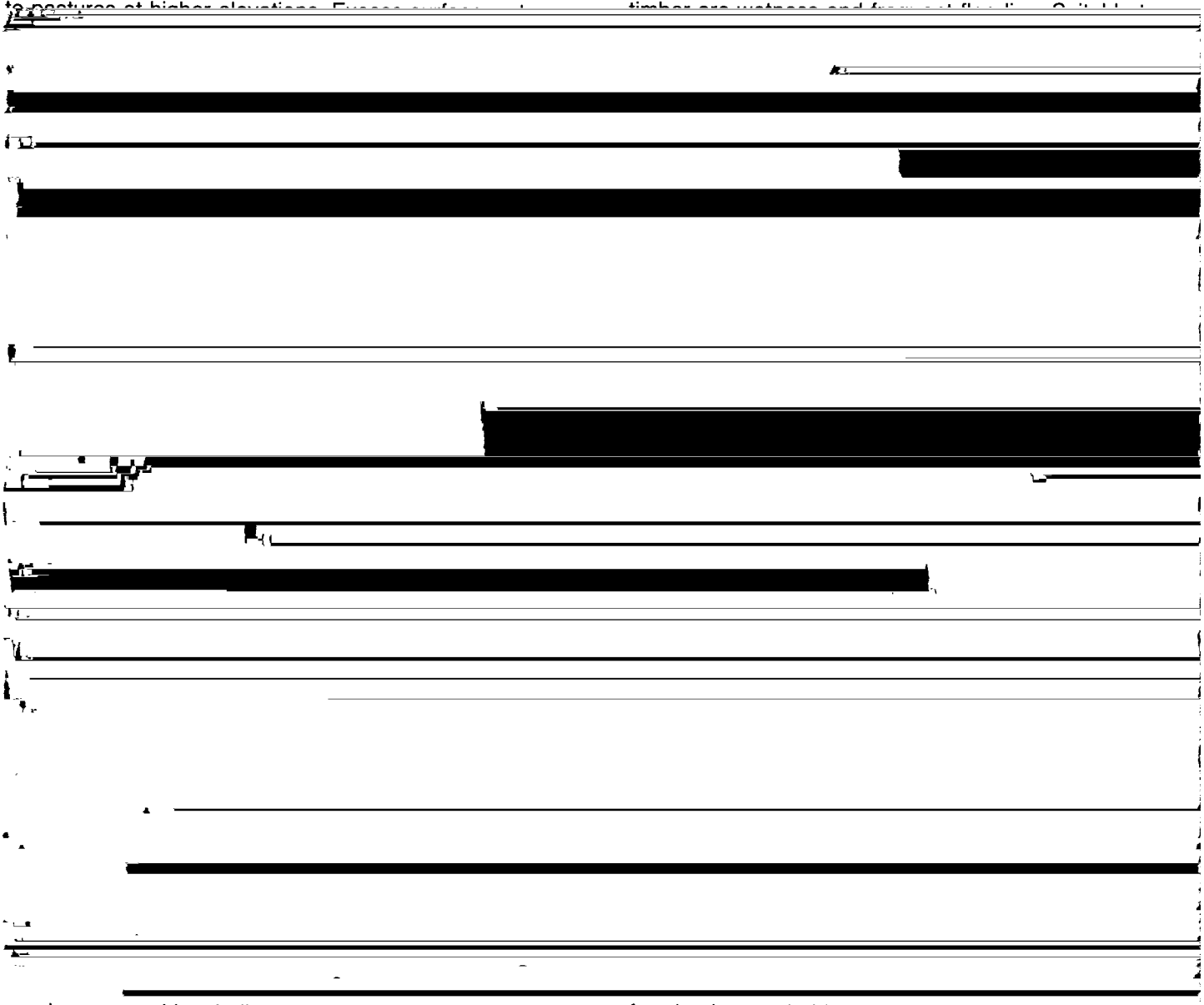
moved. Tilth and fertility can be improved by returning crop residue to the soil.

This soil is moderately well suited to pasture. The main limitations are flooding and wetness. The main pasture plant is common bermudagrass. During flood periods, cattle need to be moved to adjacent protected areas or to pastures at higher elevations. Excess surface water

very sticky when wet and dries slowly. This soil has a very high shrink-swell potential.

Most of the acreage is in woodland and used for wildlife habitat.

This soil is moderately well suited to woodland. The main management concerns in producing and harvesting timber are wetness and frequent flooding. Suitable trees



can be removed by shallow ditches if suitable outlets are available. Proper stocking, pasture rotation, and restricted grazing during wet periods help keep the pasture and the soil in good condition.

This soil is poorly suited to urban development. Flooding, wetness, low strength, and very high shrink-swell potential are severe limitations for buildings, local roads and streets, and most sanitary facilities. Major flood control structures and extensive local drainage systems are needed to protect this map unit from

for planting are baldcypress and green ash.

This soil is poorly suited to cultivated crops. It is limited mainly by wetness and frequent flooding. Crops are damaged by floodwaters in most years.

This soil is poorly suited to pasture. Flooding and a seasonal high water table limit the choice of plants and grazing period. The main pasture plant is common bermudagrass. Cattle need to be moved to pasture at higher elevations during flood periods.

This soil is not suited to urban development. Wetness

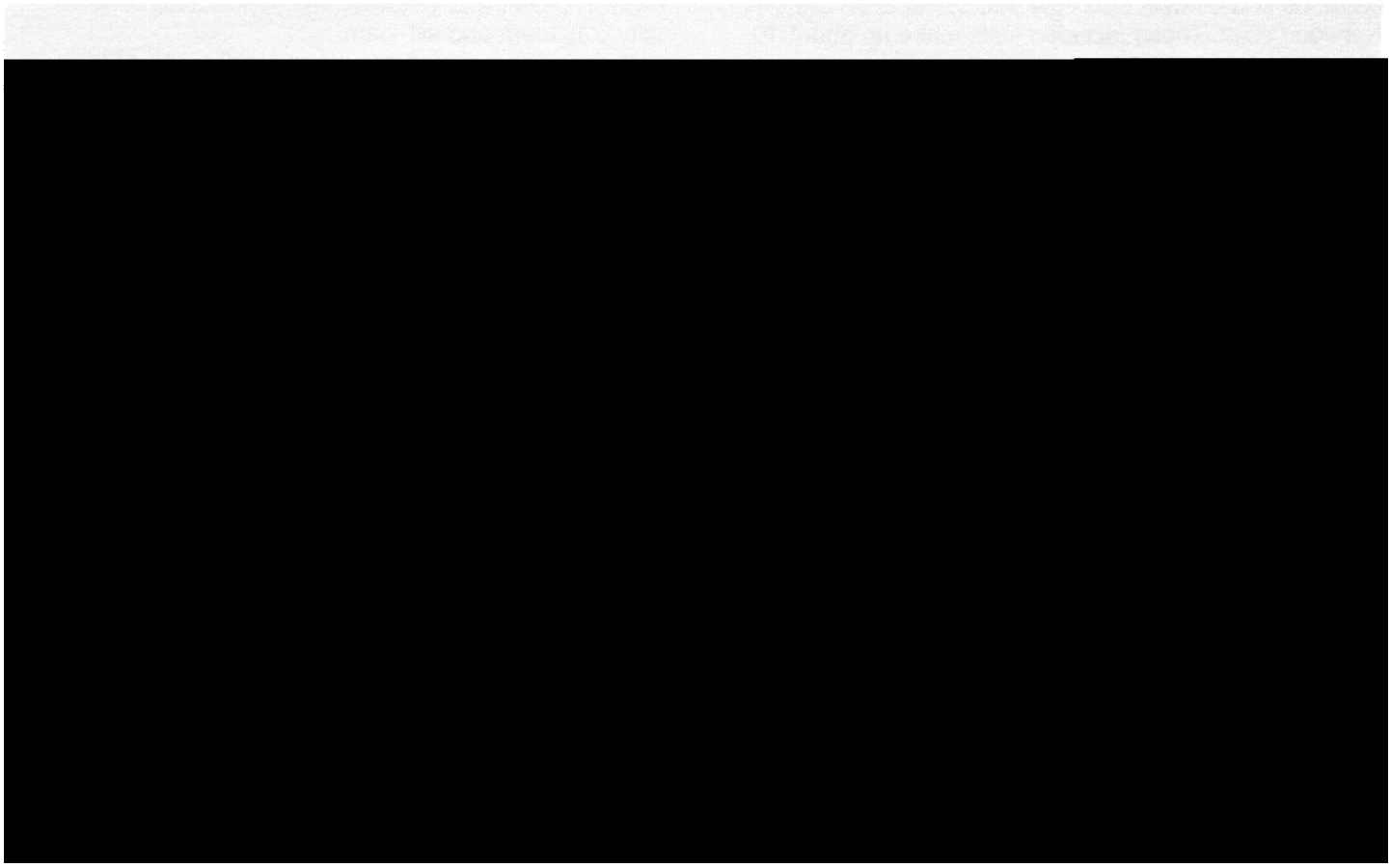


Figure 7.—Norwood silt loam is well suited to cultivated crops, including soybeans and sugarcane.

residue, plowing under cover crops, and using a suitable cropping system. Crusting of the surface and compaction of the soil can be reduced by returning the crop residue to the soil and by using minimum tillage.

This soil is well suited to pasture. It has few limitations.

permeability. This limitation can be overcome by increasing the size of the absorption field.

This Norwood soil is in capability class I and woodland group 1o4.

positions and contain less clay throughout than the Norwood soils. These included soils make up about 10 percent of the map unit.

This Norwood soil has high fertility. Water and air move through it at a moderate rate. Water runs off the surface at a slow rate. This soil is subject to brief to long

reddish brown and yellowish red, moderately alkaline silty clay loam and silt loam.

Included in mapping are a few small areas of the Latanier soils. The Latanier soils are in slightly lower positions than the Norwood soil and have a clayey surface layer and subsoil. These included soils make up

Nw—Norwood silty clay loam, occasionally flooded. This is a level, well drained soil in high positions on the natural levees of the Red River and its distributaries. It is subject to occasional flooding. Areas are long and narrow and range from 20 to more than 150 acres. Slope is less than 1 percent.

Typically, the surface layer is dark brown, moderately alkaline silty clay loam about 6 inches thick. The subsoil is reddish brown, moderately alkaline silty clay loam. The underlying material to a depth of about 60 inches is reddish brown, moderately alkaline silt loam and contains thin strata of very fine sandy loam and silty clay loam. In places the underlying material is clay between depths of 20 and 60 inches.

Included in mapping are a few small areas of the Latanier soils. The Latanier soils are in slightly lower positions than the Norwood soil and have a clayey surface layer and subsoil. These included soils make up about 10 percent of the map unit.

This Norwood soil has high fertility. Water and air move through it at a moderate rate. Water runs off the surface at a slow rate and stands in low places for short periods after heavy rains. This soil is subject to brief to long periods of flooding during the months of December

This soil is poorly suited to urban development. The main limitations are flooding, wetness, and low strength. Flooding can be controlled only by the use of major flood control structures. Streets and roads should be designed to offset the limited ability of the soil to support a load.

This Norwood soil is in capability subclass IIIw and woodland group 1o4.

Ra—Roxana very fine sandy loam. This is a level, well drained soil in high positions on the natural levees of the Red River. Areas are long and narrow and range from 20 to more than 500 acres. Most areas of this soil are protected from flooding by levees. Slope is dominantly less than 1 percent.

Typically, the surface layer is reddish brown, slightly acid very fine sandy loam about 5 inches thick. The underlying material to a depth of about 62 inches is stratified yellowish red and reddish brown very fine sandy loam, loamy very fine sand, and silt loam. In places the surface layer is calcareous.

Included in mapping are a few small areas of the Norwood soils. The Norwood soils are in slightly lower positions than the Roxana soil and contain more clay in

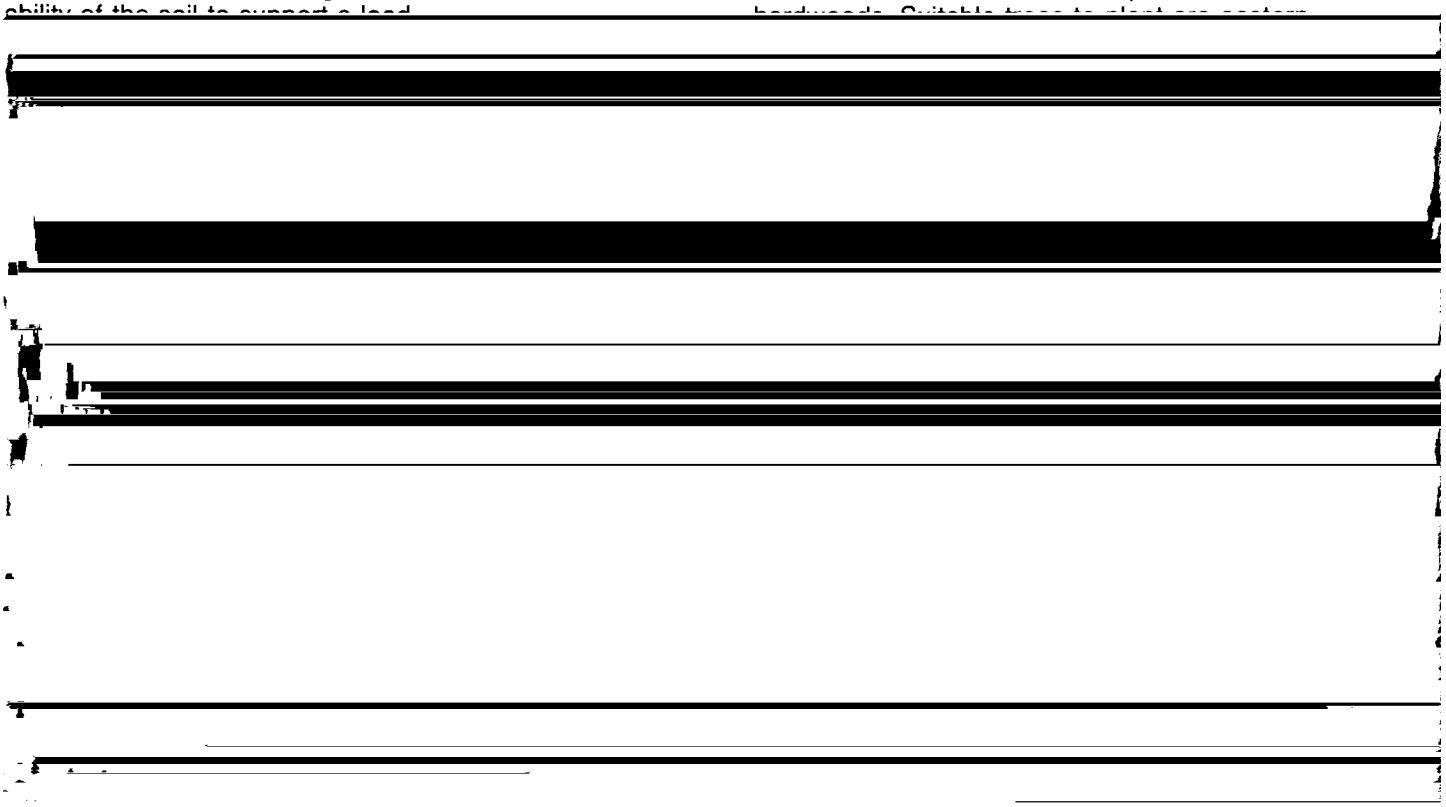
This soil is well suited to woodland. It has a very high production potential; however, only a few areas remain in native hardwoods. Suitable trees to plant are eastern cottonwood and American sycamore.

This map unit is well suited to urban development. It has slight to moderate limitations for buildings, local roads and streets, and most sanitary facilities. If the density of housing is moderate to high, community sewage systems are needed to prevent contamination of the water supplies as a result of seepage. Local roads and streets should be designed to offset the limited ability of the soil to support a load.

moisture, maintain tilth, and control erosion. Minimum tillage and winter cover crops will also reduce the amount of soil lost through erosion.

This soil is well suited to pasture. Suitable pasture plants are common and improved bermudagrass, Pensacola bahiagrass, tall fescue, johnsongrass, ryegrass, small grains, and white clover. Proper stocking, pasture rotation, and restricted grazing during wet periods help keep the pasture and the soil in good condition.

This soil is well suited to the production of southern hardwoods. Suitable trees to plant are eastern

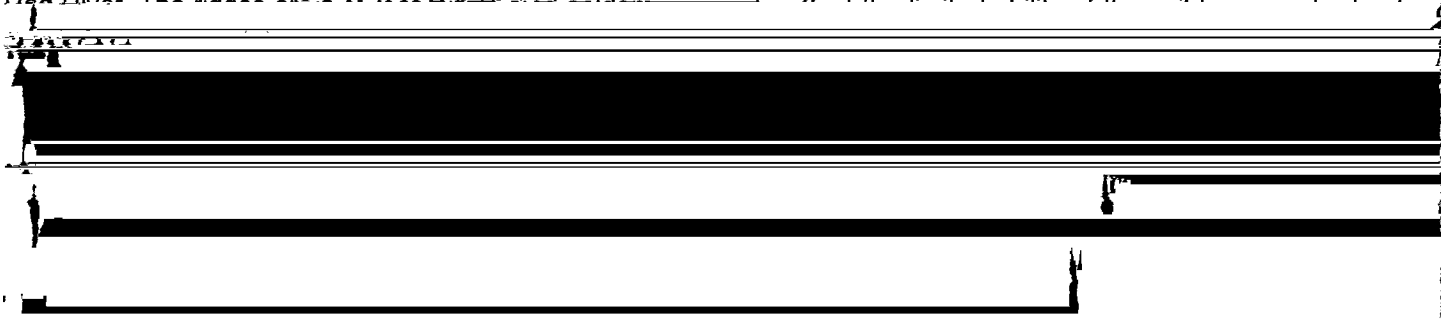


This Roxana soil is in capability class I and woodland group 1o4.

Rn—Roxana very fine sandy loam, gently undulating. This is a well drained soil on low, parallel ridges and in swales on the recent natural levees of the Red River. The ridges are 1 to 2 feet high and are

cottonwood and American sycamore.

This soil is well suited to urban development. It has slight to moderate limitations for buildings, local roads and streets, and most sanitary facilities. Seepage is a limitation where this soil is used for sewage lagoons and sanitary landfills. Streets and roads should be designed to offset the limited ability of the soil to support a load.



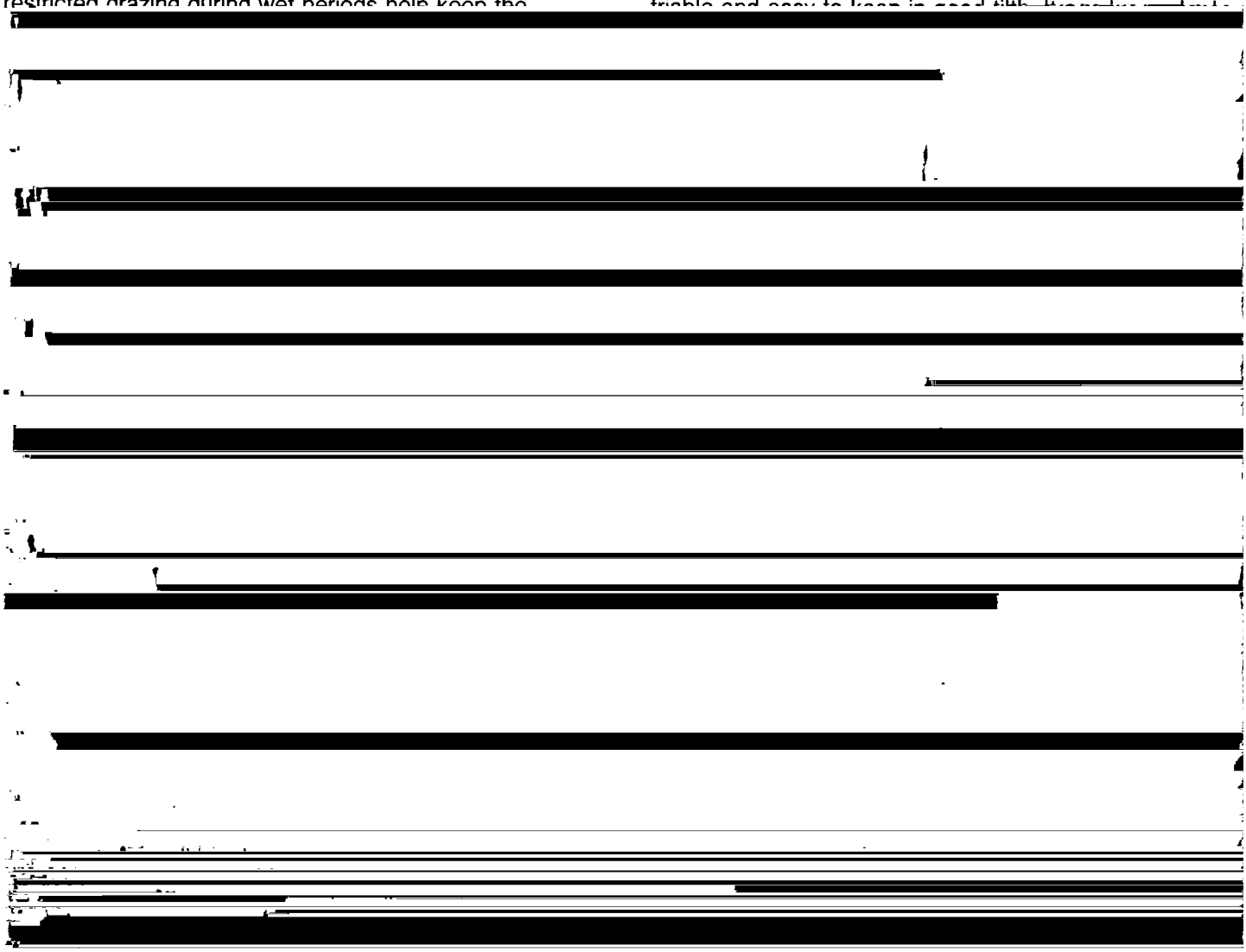
suitable crops. This soil is friable and easy to keep in good tilth. It can be worked over a wide range of moisture content. Irregular slopes hinder tillage operations. Land grading and smoothing reduce the amount of soil lost through erosion and permit more efficient use of farm equipment, but in places large volumes of earth need to be moved. Traffic pans develop easily but can be broken up by deep plowing or chiseling. Crop residue left on or near the surface helps conserve moisture, maintain tilth, and control erosion. Minimum tillage and winter cover crops will also reduce soil loss caused by erosion.

This soil is well suited to pasture. Suitable pasture plants are common and improved bermudagrass, Pensacola bahiagrass, johnsongrass, tall fescue, ryegrass, small grains, and white clover. Seedbed preparation should be on the contour or across the slope where practical. Proper stocking, pasture rotation, and restricted grazing during wet periods help keep the

This Roxana soil has high fertility. Water and air move through it at a moderate rate. Water runs off the surface at a slow rate and stands in low places for short periods after heavy rains. A seasonal high water table is at a depth of 4 to 6 feet during the months of December to April. This soil dries quickly after rains. The shrink-swell potential is low. This soil is subject to brief to long periods of flooding during the months of December through June of some years. Flooding occurs in approximately 2 years out of 15 during the crop growing season. An adequate supply of water is available to plants in most years.

Most of the acreage is used for woodland; however, it is rapidly being cleared and put into cultivation. A small acreage is used for pasture.

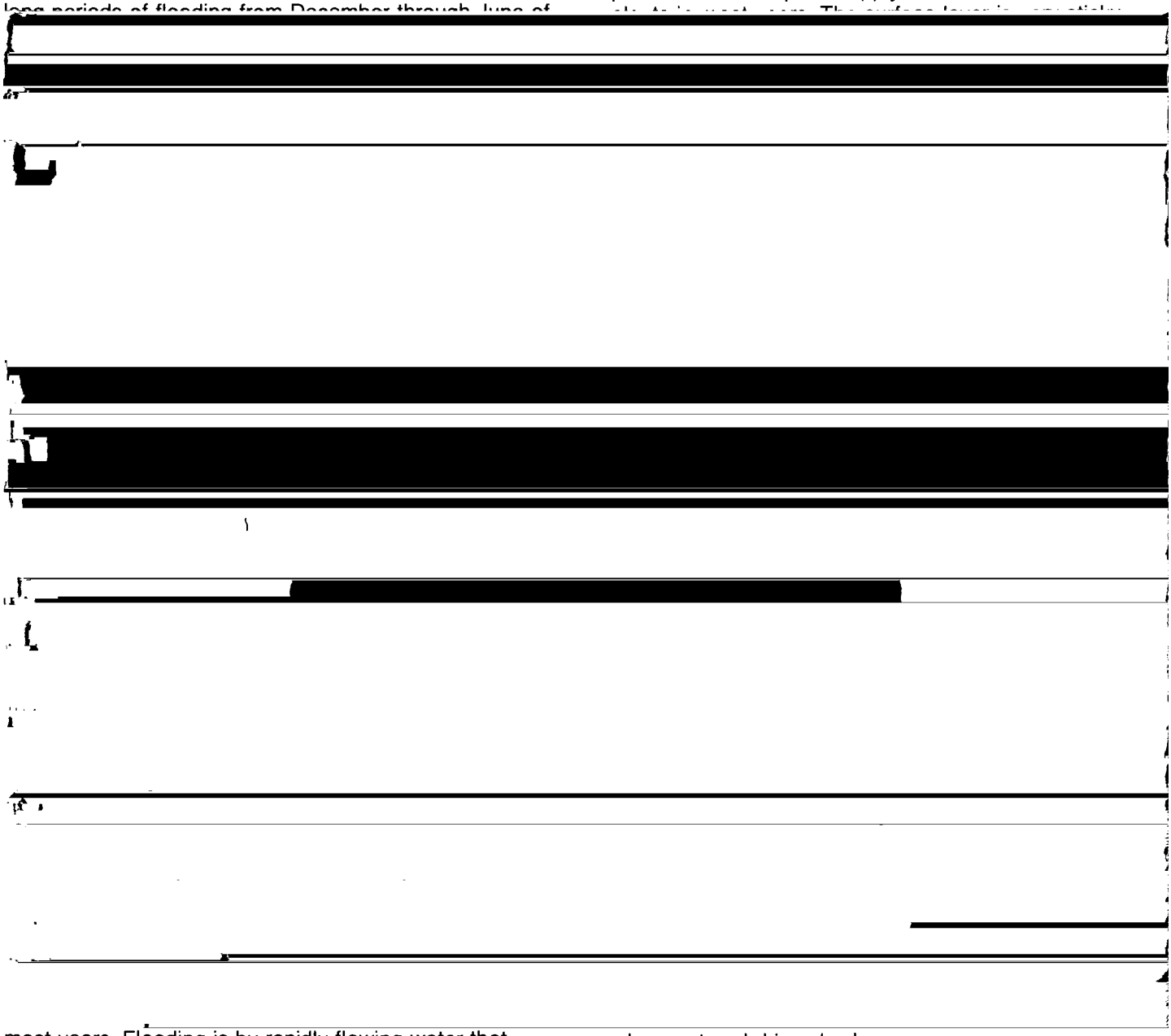
This soil is well suited to cultivated crops. It is limited mainly by occasional flooding. The main crops are soybeans, cotton, corn, and small grains. This soil is



Included in mapping are a few small areas of the Roxana soils that have undulating slopes. Also included are soils similar to the Roxana soil but more sandy. These areas make up about 10 percent of the map unit.

This Roxana soil has high fertility. Water and air move through it at a moderate rate. Water runs off the surface at a slow rate. This soil is subject to frequent brief to long periods of flooding from December through June of

periods of unusually prolonged, intense rainfall. A seasonal high water table fluctuates between a depth of 2 feet and the soil surface during the months of December through April. Some low-lying areas are subject to flooding from local run-in during prolonged, intense rainfall. This soil has a very high shrink-swell potential. An adequate supply of water is available to



most years. Flooding is by rapidly flowing water that causes scouring and deposition. Areas of this soil are sometimes destroyed when banks are cut as the Red River changes its course. Depth of floodwater may exceed 10 feet. During nonflood periods a seasonal high water table is at a depth of 4 to 6 feet. An adequate supply of water is available to plants in most years.

when wet and dries slowly.

Most of the acreage is used for woodland; however, it is rapidly being cleared for use as cropland. A small acreage is used for pasture.

This soil is moderately well suited to cultivated crops. It is limited mainly by wetness, very slow permeability, and poor tilth. The main crop is soybeans; but rice, corn

Figure 8.—This Sharkey clay soil is well suited to rice. The levees allow an efficient and uniform application of irrigation water.

to very long periods. Areas range from about 50 to more than 1,500 acres. Slope is less than 1 percent.

Typically, the surface layer is dark reddish brown, neutral clay about 12 inches thick. Below this is dark grayish brown, neutral clay about 11 inches thick. The subsoil is olive gray and gray, mottled, neutral and slightly acid clay. The underlying material to a depth of about 66 inches is gray, mottled silty clay loam.

Included in mapping are a few small areas of the Tensas soils. The somewhat poorly drained Tensas soils are in slightly higher positions than the Sharkey soils. Also included are a few small areas of Sharkey soils in swales that frequently flood. These included soils make up about 10 percent of the map unit.

This Sharkey soil has high fertility. Water and air move through it at a very slow rate. Water runs off the surface at a slow rate and stands in low places for long periods after heavy rains. This soil is subject to brief to very long periods of flooding in winter, spring, and early summer. They may last for longer than a month. Floodwaters typically are 1 to 3 feet deep, but the depth exceeds 10 feet in places. A seasonal high water table fluctuates between a depth of 2 feet and the soil surface during the months of December through April. This soil has a very high shrink-swell potential. An adequate supply of water is available to plants in most years.

This soil is used mainly for cultivated crops and woodland. A small acreage is managed for wildlife habitat.

This soil is moderately well suited to cultivated crops. It is limited mainly by flooding, wetness, and poor tilth. The main crops are soybeans and grain sorghum. This soil is difficult to keep in good tilth. It can be worked only within a narrow range of moisture content and becomes cloddy if farmed when it is too wet or too dry. Flooding can be controlled by levees, dikes, and pumps. Proper row arrangement, field ditches, and vegetated outlets are needed to remove excess surface water. Tilth and fertility can be improved by returning crop residue to the soil.

This soil is well suited to the production of southern hardwoods. The main management concerns in producing and harvesting timber are flooding, wetness, and clayey textures. The clay texture of the surface layer

limits the use of equipment. Conventional methods of harvesting timber generally can be used, but their use is limited during rainy periods, generally from December to April. After harvesting, reforestation must be carefully managed to reduce competition from undesirable understory plants. Only trees that can tolerate seasonal wetness should be planted.

This soil is moderately well suited to pasture. The main limitations are flooding and wetness. The main pasture plant is common bermudagrass. Excess surface water can be removed by shallow ditches if suitable outlets are available. During flood periods cattle need to be moved to adjacent protected areas or to pastures at higher elevations. Proper stocking, pasture rotation, and restricted grazing during wet periods help keep the pasture and the soil in good condition.

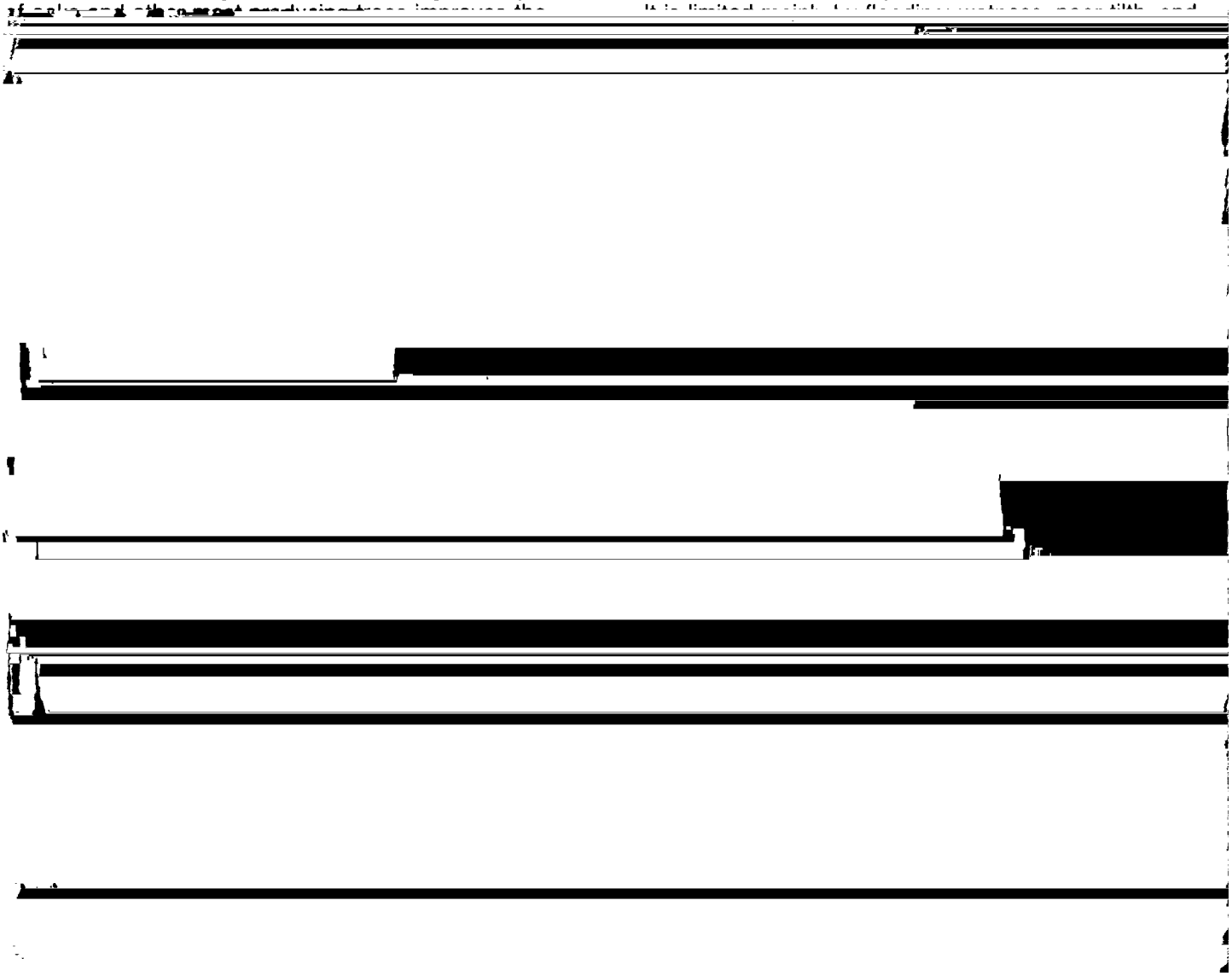
This soil is well suited to woodland and wetland wildlife habitat. Management that encourages the growth

the Sharkey soils. These included soils make up about 10 percent of the map unit.

This Sharkey soil has high fertility. Water and air move through it at a very slow rate. Water runs off the surface at a slow rate and ponds in low places for long periods after heavy rains. This soil is subject to brief to very long periods of flooding in late winter, spring, and early summer. They may last for longer than a month. Floodwaters typically are 1 to 3 feet deep, but the depth exceeds 10 feet in places. A seasonal high water table fluctuates between a depth of 2 feet and the soil surface during the months of December through April. This soil has a very high shrink-swell potential. An adequate supply of water is available to plants in most years.

Most of the acreage is used for cultivated crops and woodland. A small acreage is managed for wildlife habitat.

This soil is moderately well suited to cultivated crops.



[redacted]

Flooding, wetness, and very high shrink-swell potential are severe limitations for buildings, local roads and streets, and most sanitary facilities. Major flood control structures and extensive local drainage systems are needed to protect this map unit from flooding. Septic tank absorption fields will not function properly in this wet and very slowly permeable soil during rainy periods. Sewage lagoons are needed if this soil is used for homesites. The effects of shrinking and swelling can be minimized by using proper engineering designs and by

wetland wildlife habitat. Management that encourages the growth of oaks and other mast-producing trees improves the habitat for squirrels, white-tailed deer, and many nongame birds. Habitat for wetland wildlife can be improved by constructing shallow ponds for waterfowl and furbearers.

This soil is not suited to urban development. Wetness and frequent flooding are severe limitations for this use. Flooding can be controlled only by the use of major flood control structures.

[redacted]

water. Returning crop residue to the soil or regularly

Most of the acreage is used for cultivated crops and

crusting, and increases the water intake rate.

This soil is well suited to pasture. The main limitations are wetness and very slow permeability. Suitable pasture plants are common and improved bermudagrass, tall fescue, Pensacola bahiagrass, ryegrass, and white

This unit is moderately well suited to cultivated crops. It is limited mainly by wetness, flooding, and poor tilth. The main crops are soybeans and grain sorghum. This soil is difficult to keep in good tilth. It can be worked only within a narrow range of moisture content and becomes

The Sharkey soils are in lower positions than the Tensas soil and are clayey throughout. These included soils make up about 10 percent of the map unit.

This Tensas soil has medium fertility. Water and air move through it at a very slow rate. Water runs off the surface at a slow rate and stands in low places for long periods after heavy rains. A seasonal high water table is

Te—Tensas silty clay, overwash, occasionally flooded. This is a level, somewhat poorly drained soil on the natural levees of old distributary channels of the Mississippi River. It is subject to occasional flooding for brief to long periods. Areas range from about 20 to 300 acres. Slope is less than 1 percent.

Typically, the surface layer is dark reddish brown,

through April. Flooding is rare, but it can occur during periods of unusually prolonged and intense rainfall. The surface layer is very sticky when wet, and it dries slowly. The soil swells and shrinks markedly upon wetting and

part of the subsoil is dark grayish brown and grayish brown, medium acid silty clay. The lower part to a depth of about 60 inches is grayish brown, medium acid and slightly acid silty clay loam, loam, and very fine sandy

Figure 9.—Flooding is a hazard to buildings on this Tensas silty clay, overwash, occasionally flooded.

This soil is moderately well suited to pasture. The main limitations of the soil for this use are flooding and wetness. The main suitable pasture plant is common bermudagrass. Excess surface water can be removed by shallow ditches. During flood periods, cattle need to be moved to adjacent protected areas or to pastures at higher elevations. Proper stocking, pasture rotation, and restricted grazing during wet periods help keep the pasture and the soil in good condition. Fertilizer and lime are needed for optimum production of grasses and legumes.

This soil is well suited to woodland and wetland wildlife habitat. Management that encourages the growth of oaks and other mast-producing trees improves the habitat for squirrels, white-tailed deer, and many nongame birds. Habitat for wetland wildlife can be improved by construction of shallow ponds for waterfowl and furbearers.

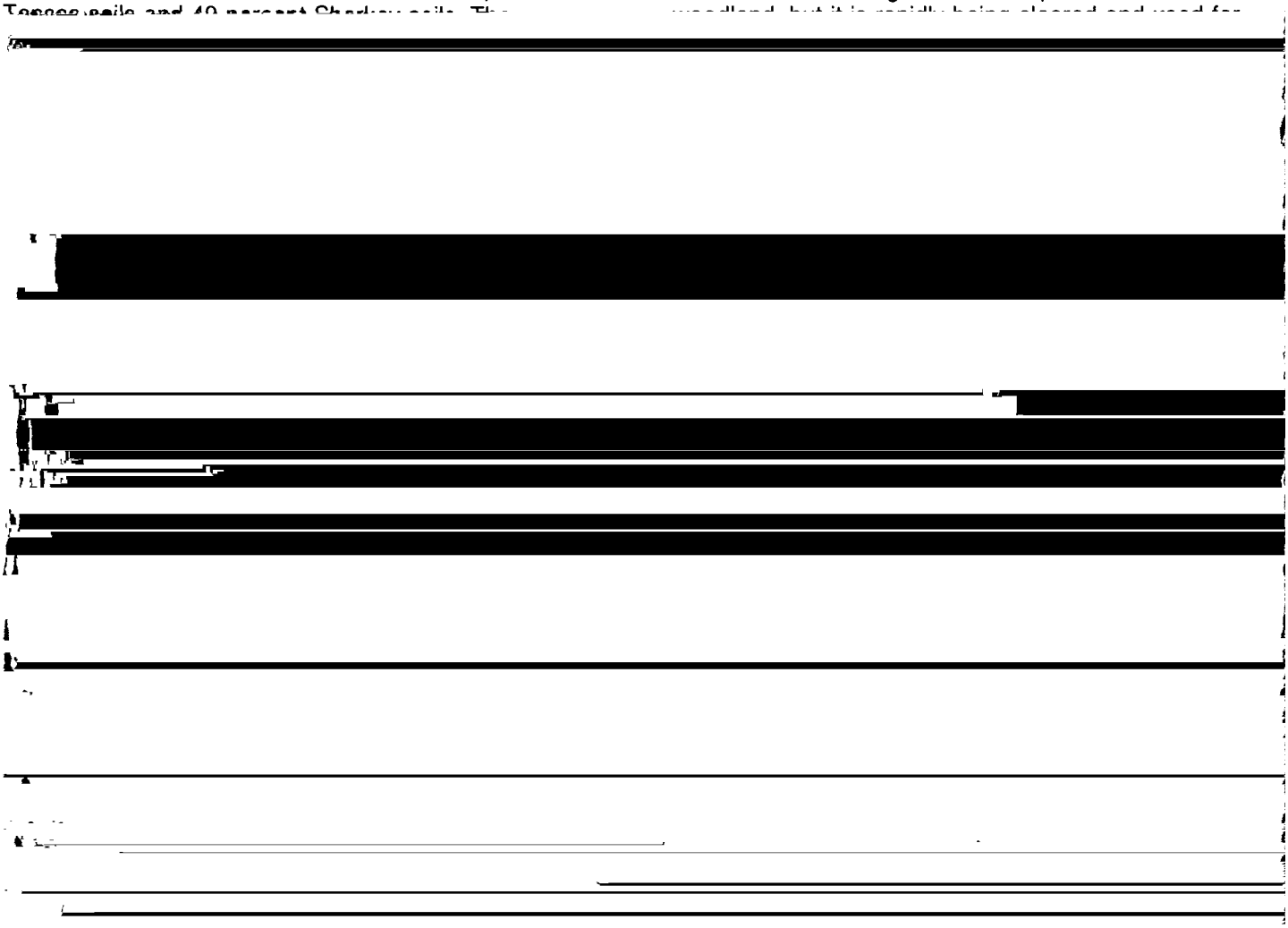
This soil is poorly suited to urban development. Flooding, wetness, low strength, and very high shrink-swell potential are severe limitations of the soil for buildings (fig. 9), local roads and streets, and most sanitary facilities. Major flood control structures and extensive local drainage systems are needed to protect this map unit from flooding. Unless internal drainage is improved, septic tank absorption fields will not function properly in this wet and very slowly permeable soil during rainy periods. The effects of shrinking and swelling can be minimized by using proper engineering designs and by backfilling with material that has low shrink-swell potential.

This Tensas soil is in capability subclass IVw and woodland group 3w6.

Tn—Tensas-Sharkey complex, undulating. These undulating, somewhat poorly drained and poorly drained soils are on the natural levees of old distributary channels of the Mississippi River. This complex is protected from backwater flooding by the West Atchafalaya Basin levees. Areas of this complex range

from 100 to 500 acres and contain about 50 percent

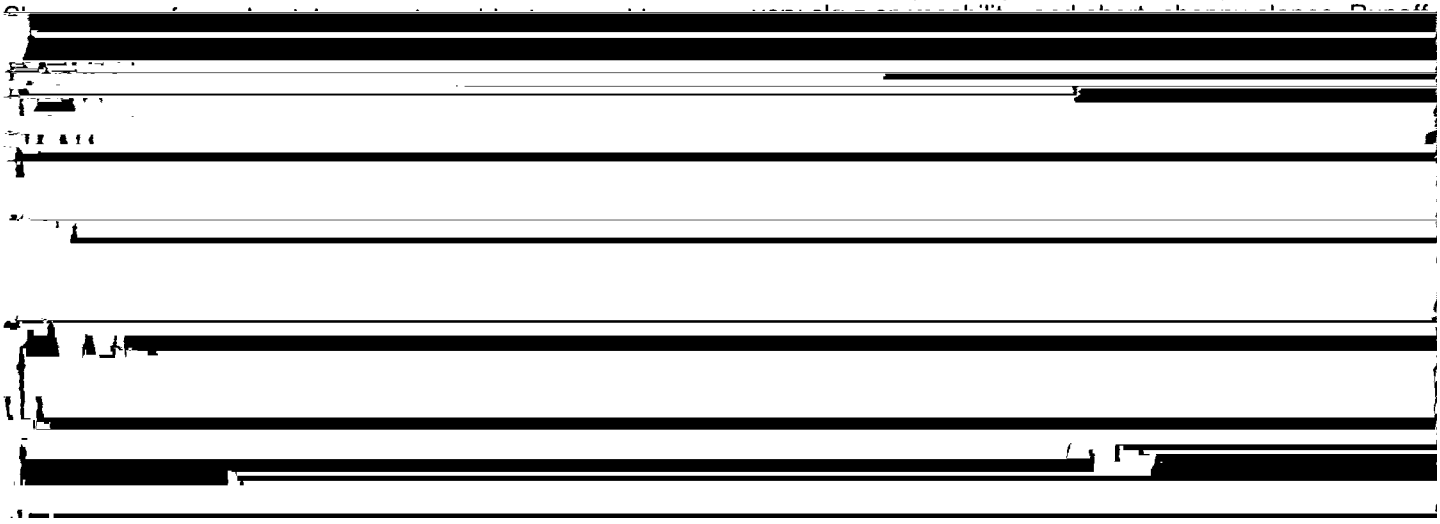
Most of the acreage of this complex is used for



landscape consists of low, parallel ridges and swales. The ridges are 3 to 5 feet high and about 150 to 300 feet wide. The swales are about 75 to 300 feet wide.

cultivated crops or pasture.

The soils of this map unit are moderately well suited to cultivated crops. They are limited mainly by wetness,



about 1 percent on ridgetops and in swales to about 5 percent on the sides of ridges.

The somewhat poorly drained Tensas soil is on the convex ridges, and the poorly drained Sharkey soil is in the swales between the ridges. The soils of this map unit are so intricately intermingled that it was not practical to map them separately.

This Tensas-Sharkey complex is subject to brief to more-than-a-month-long periods of flooding in winter, spring, and early summer. Floodwaters typically are 1 to 3 feet deep, but the depth exceeds 10 feet in places.

Typically, the Tensas soil has a surface layer of dark reddish gray, medium acid silty clay about 4 inches thick. The subsoil is about 47 inches thick. It is grayish brown, strongly acid silty clay in the upper part and grayish brown, slightly acid silty clay loam and loam in the lower part. The underlying material to a depth of about 60 inches is grayish brown, slightly acid loam.

The Tensas soil has medium fertility. Water and air move through it at a very slow rate. Water runs off the surface at a medium rate. During the nonflood period of December through April, a seasonal high water table is at a depth of 1 to 3 feet. The surface layer is very sticky when wet, and it dries slowly. The soil swells and shrinks markedly upon wetting and drying. An adequate supply of water is available to plants in most years.

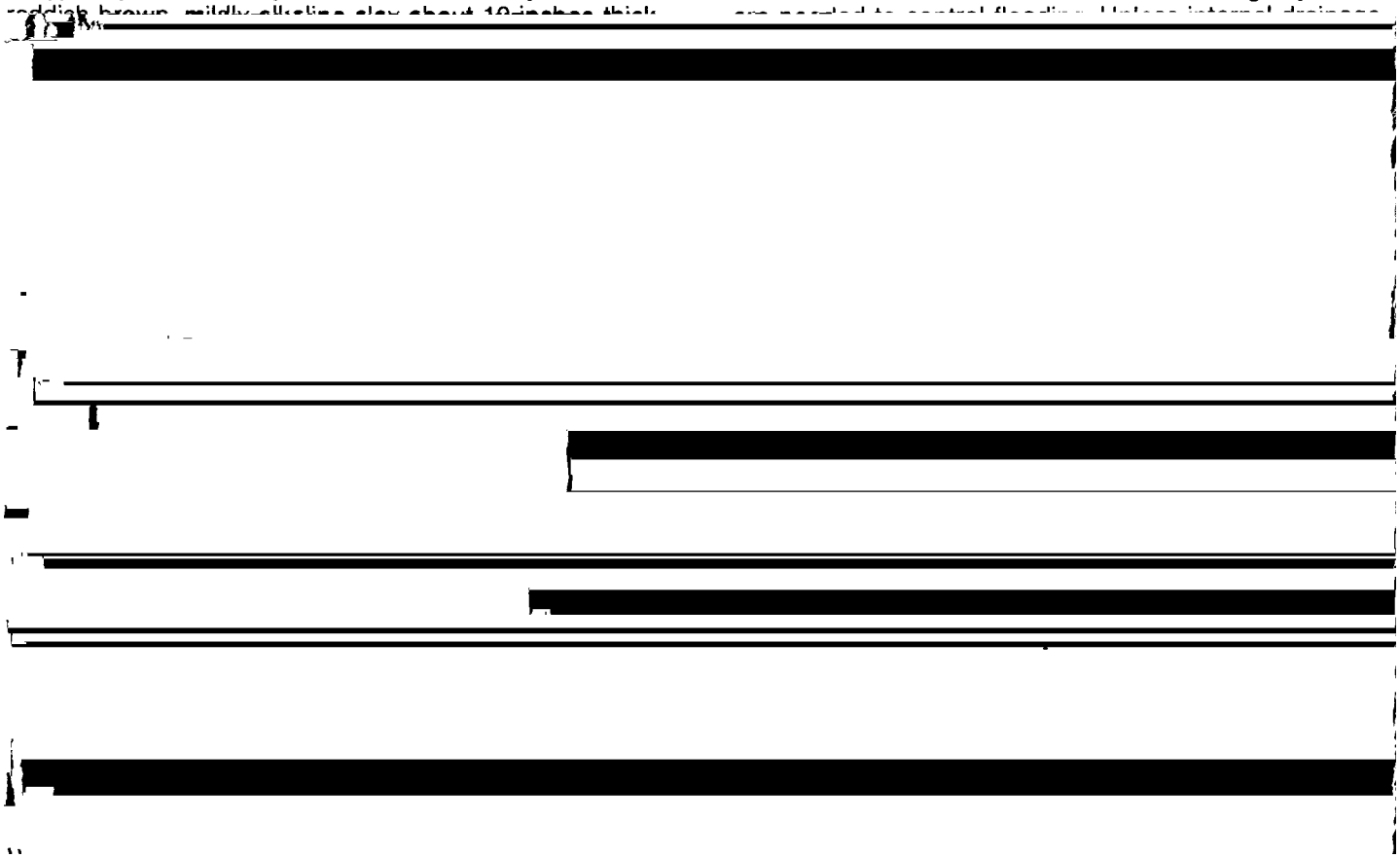
Typically, the Sharkey soil has a surface layer of dark reddish brown, mildly alkaline clay about 10 inches thick;

April. After harvesting, reforestation must be carefully managed to reduce competition from undesirable understory plants. Only trees that can tolerate seasonal wetness should be planted.

These soils are moderately well suited to cultivated crops. They are limited mainly by flooding, wetness, and short, choppy slopes. The main crops are soybeans and grain sorghum. These soils are sticky when wet and hard when dry, and they become cloddy if farmed when too wet or too dry. Flooding can be controlled by the use of levees, dikes, and pumps.

This unit is moderately well suited to pasture. The main limitations of the soils for this use are flooding and wetness. The main suitable pasture plant is common bermudagrass. Excess surface water can be removed by shallow ditches where suitable outlets are available. During flood periods, cattle need to be moved to adjacent protected areas or to pastures at higher elevations. Proper stocking, pasture rotation, and restricted grazing during wet periods help keep the pasture and the soil in good condition.

This map unit is poorly suited to urban development. The main limitations of the soils for this use are flooding, wetness, and very high shrink-swell potential. If areas of this unit are used for building construction, the Tensas soils are better suited than the Sharkey soils. Major flood control structures and extensive local drainage systems are needed to control flooding. Unless internal drainage



potentially toxic to most crops. Water and air move through this soil at a slow rate. Water runs off the surface at a slow rate. A perched high water table is above the clayey IIB horizon during the months of December through April. This soil has a high shrink-swell potential. Plants are damaged by lack of water during dry periods in summer and fall of most years.

Most of the acreage is used for woodland and pasture. A small acreage is used for cultivated crops and homesites.

This soil is well suited to the production of hardwoods and pine. The main management concerns in producing and harvesting timber are equipment use limitations, seedling mortality, and plant competition. Conventional methods of harvesting timber generally can be used, but their use may be limited during rainy periods, generally from December to April. After harvesting, reforestation must be carefully managed to reduce competition from undesirable understory plants. Proper site preparation and spraying, cutting, or girdling can eliminate unwanted weeds, brush, or trees.

subsoil, and drainage should be provided if buildings are constructed. Excess water can be removed by shallow ditches and proper grading. Unless internal drainage is improved, septic tank absorption fields will not function properly in this wet and slowly permeable soil during rainy periods. Buildings and roads can be designed to offset shrinking and swelling and the limited ability of the soil to support a load.

This Vick soil is in capability subclass IIw and woodland group 2w8.

Wr—Wrightsville silt loam. This is a level, poorly drained soil on flats and in slight depressions in the terrace uplands. Areas are irregular and range from 10 to more than 100 acres. Slope is less than 1 percent.

Typically, the surface layer is grayish brown, strongly acid silt loam about 3 inches thick. The subsurface layer is light brownish gray, strongly acid and very strongly acid silt loam about 12 inches thick. The subsoil to a depth of about 68 inches is light brownish gray, mottled, very strongly acid and strongly acid silty clay

surface water can be removed by shallow ditches. Fertilizer and lime are needed for optimum growth of grasses and legumes. Proper stocking, pasture rotation, and restricted grazing during wet periods help keep the pasture and the soil in good condition.

This soil is moderately well suited to cultivated crops. It is limited mainly by wetness in spring and droughtiness

Prime farmland usually has an adequate and dependable supply of moisture from precipitation or irrigation. It also has a favorable temperature and growing season and acceptable levels of acidity or alkalinity. It has few or no rocks and is permeable to water and air. Prime farmland is not excessively erodible or saturated for long periods and generally is not flood-

Dv Dundee Variant clay
Ga Gallion silt loam
Go Gallion silty clay loam
Ko Kolin silt loam, 1 to 5 percent slopes
La Latanier clay
Lo Loring silt loam, 0 to 2 percent slopes
Me Memphis silt loam, 0 to 2 percent slopes
Mh Memphis silt loam, 2 to 5 percent slopes
Mo Moreland silt loam
Ms Moreland clay
Nd Norwood silt loam
No Norwood silt loam, occasionally flooded
Nr Norwood silty clay loam
Nw Norwood silty clay loam, occasionally flooded
Ra Roxana very fine sandy loam
Rn Roxana very fine sandy loam, gently undulating
Ro Roxana very fine sandy loam, undulating
Ru Roxana very fine sandy loam, gently undulating, occasionally flooded
Sa Sharkey clay
So Solier clay
Ta Tensas silty clay
Tn Tensas-Sharkey complex, undulating
Vk Vick silt loam
Wr Wrightsville silt loam

[1] Urban or built-up land is any contiguous unit of 10 acres or more that is used for residences, industrial sites, commercial sites, institutional sites, public administrative sites, railroad yards, small parks, cemeteries, airports, golf courses, sanitary landfills, sewage treatment plants, water control structures and spillways, and similar uses.

use and management of the soils

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

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

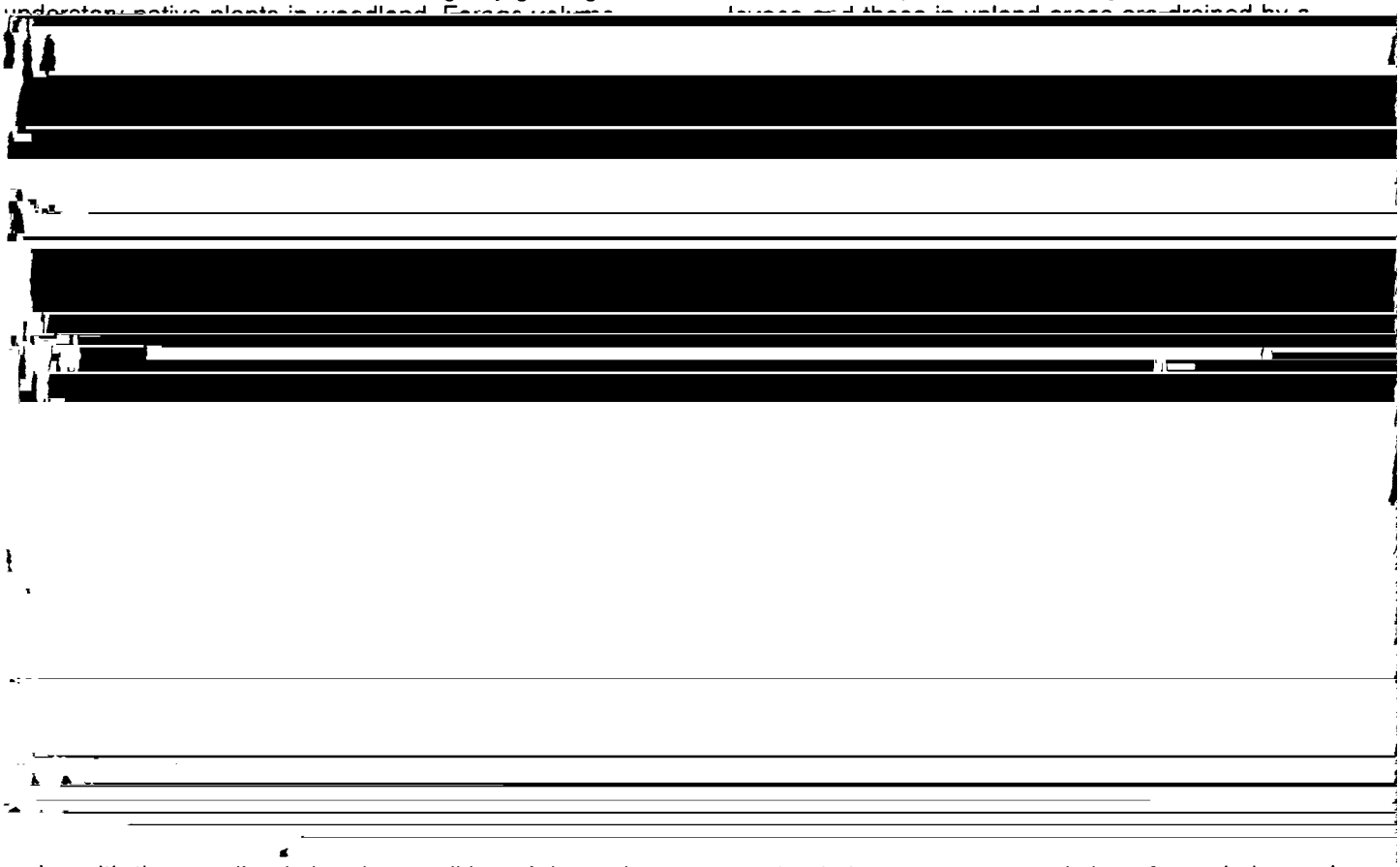
Information in this section can be used to plan the use and management of soils for crops and pasture; as woodland; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreation facilities; and for wildlife habitat. It can be used to identify the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

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

About 272,000 acres of the 347,000 acres of cleared land in Avoyelles Parish was used for crops and pasture in 1980. About 250,000 acres was used for row crops, mainly soybeans, and about 22,000 acres was used for pasture. The cropland acreage is increasing as bottom land hardwood forests are drained and cleared and pastures are converted to cropland.

Differences in crop suitability and management needs result from differences in soil characteristics, such as fertility level, erodibility, organic matter content, availability of water for plants, drainage, and flooding hazard. Cropping systems and soil tillage are also an important part of management. Each farm has a unique soil pattern; therefore, each has unique management problems. Some principles of farm management

Some farmers obtain additional forage by grazing the understory native plants in woodland. Forage volume



suitable for crops. The soils in high positions on natural levees and those in upland areas are drained by a

varies with the woodland site, the condition of the native forage, and the density of the timber stand. Although most woodland is managed mainly for timber, substantial volumes of forage can be obrained from these areas under good management. Stocking rates and grazing periods need to be carefully managed for optimum forage production and to maintain an adequate cover of understory plants to control erosion.

Fertilization and liming. The soils of the parish range from strongly acid to moderately alkaline in the surface layer. Most soils that are used for crops are low in content of organic matter and in available nitrogen. Soils of the botton lands, such as the Norwood, Moreland, Commerce, and Sharkey soils, generally need only nitrogen fertilizer for nonleguminous crops. Some of these soils may become deficient in potassium after many years of continuous row crops. Some bottom-land soils, such as the Dundee, Gallion, and Tensas soils, may need lime and a complete fertilizer for nonleguminous crops. Soils of the uplands generally need lime and a complete fertilizer for crops and pasture plants. The amount of fertilizer needed depends on the kind of crop to be grown, on past cropping history, on the level of yield desired, and on the kind of soil. It should be determined on the basis of soil test results. Information and instructions on collecting and testing soil

gravity drainage system consisting of row drains and field drains. The clayey soils in low positions on the natural levees are drained by a gravity drainage system consisting of a series of mains, or principal pipelines, and laterals, or smaller drains that branch out from them. The success of the systems depend on the availability of adequate outlets. Another method used to improve drainage is land grading, or precisely leveling the fields to a uniform grade. Land grading improves surface drainage, eliminates cross ditches, and makes longer rows possible.

Large areas of the parish are protected from flooding by levees of the Red River and Atchafalaya River; however, many acres are not protected from backwater flooding or are flooded by runoff from higher areas. Levees and pumps are needed to drain many of the flooded soils that are at low elevations.

Cropping system. A good cropping system includes a legume for nitrogen, a cultivated crop to aid in weed control, a deep-rooted crop to utilize substratum fertility and maintain substratum permeability, and a close-growing crop to help maintain organic matter content. The sequence of crops should keep the soil covered as much of the year as possible.

In Avoyelles Parish, a variety of cropping systems are

Figure 10.—Wild winter peas provide an excellent cover crop on this Memphis silt loam, 0 to 2 percent slopes.

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.

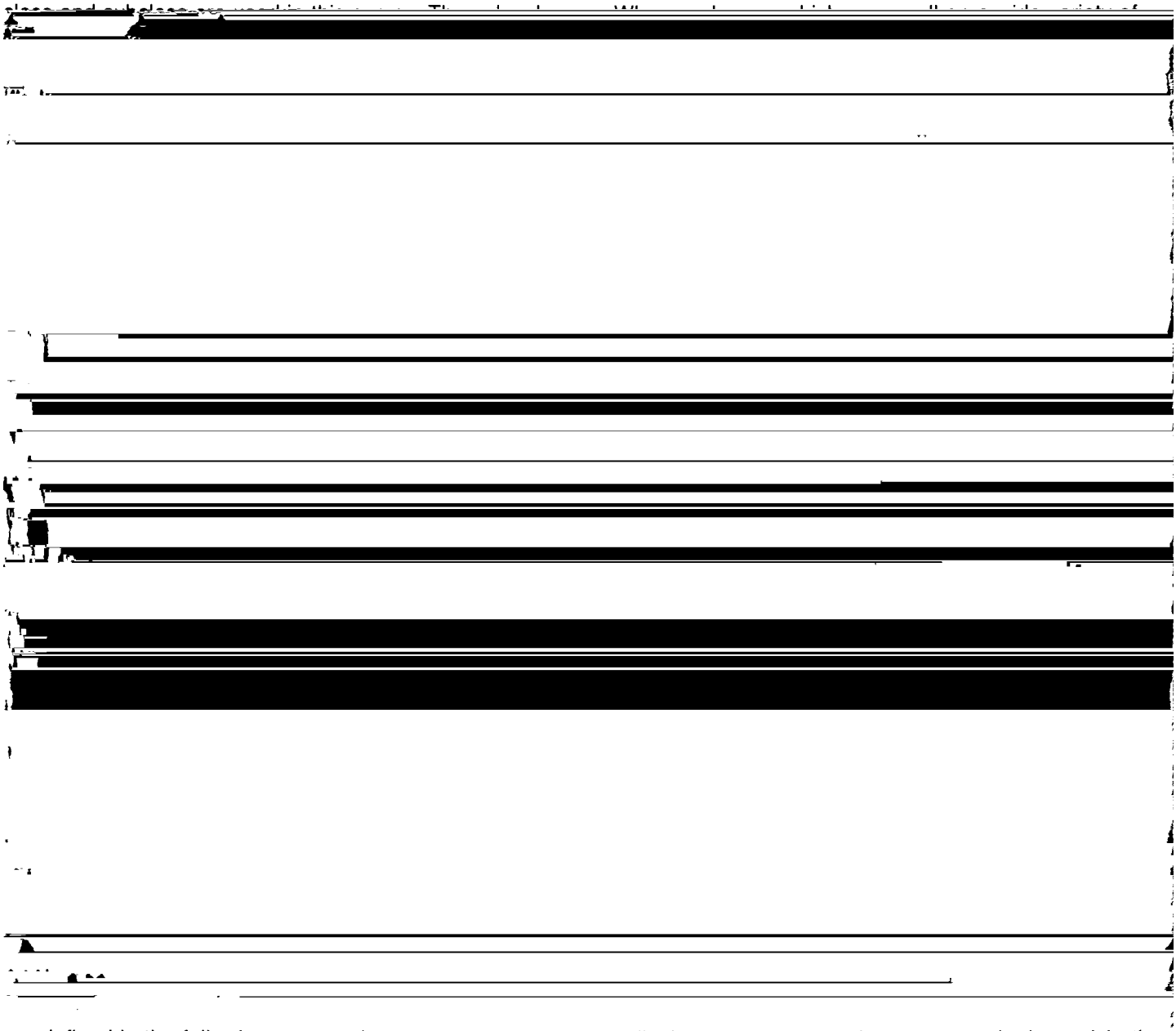
The yields are based mainly on the experience and records of farmers, conservationists, and extension

results of field trials and demonstrations are also considered.

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

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

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



are defined in the following paragraphs.

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

Class I soils have few limitations that restrict their use.

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

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

Class IV soils have very severe limitations that reduce soils, became a commonly grown crop in the parish, the clearing of bottom-land hardwoods accelerated. Today the forested area is rapidly decreasing as many more acres are cleared for cultivation.

About 34 percent of the land in Avoyelles Parish, or 177,000 acres, is woodland. About 90 percent of this acreage is privately owned, and the remaining 10 percent is in state-owned wildlife management areas.

Bottom-land hardwood forests make up about 162,000 acres, or 92 percent of the total woodland in the parish. The largest areas of bottom-land hardwood forests are in general soil map units 6, 8, 9, and 10, described in the section "General soil map for broad land use planning." The most common trees on the bottom lands are

suitability for needleleaf trees. The numerals 4, 5, and 6 indicate slight, moderate, and severe limitations, respectively, and suitability for broadleaf trees. The numerals 7, 8, and 9 indicate slight, moderate, and severe limitations, respectively, and suitability for both needleleaf and broadleaf trees.

In table 8, *slight, moderate,* and *severe* indicate the degree of the major soil limitations to be considered in management.

Ratings of the *erosion hazard* indicate the risk of loss of soil in well managed woodland. The risk is *slight* if the expected soil loss is small, *moderate* if measures are needed to control erosion during logging and road construction, and *severe* if intensive management or cuttings. They are selected on the basis of growth rate, quality, value, and marketability.

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

recreation

Avoyelles Parish has many areas of scenic and historic interest. These areas are used for camping, hunting, fishing, sightseeing, picnicking, and boating. Public areas available for recreation include Grassy Lake, Spring Bayou, the Pomme de Terre Wildlife Management Areas, and the Marksville Prehistoric Indian Park and Museum.

soils have mild slopes and are not wet or subject to flooding during the period of use. The surface has few or no stones or boulders, absorbs rainfall readily but remains firm, and is not dusty when dry. Strong slopes and stones or boulders can greatly increase the cost of constructing campsites.

Picnic areas are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The best soils for picnic areas are firm when wet, are not dusty when dry, are not subject to flooding

hardwood forest. Numerous small lakes, bayous, and wetlands provide feeding and resting areas for large populations of herons, ibis, egrets, wood duck, and migrating waterfowl. Endangered or threatened species, such as the bald eagle, alligator, and southern panther, also find food and cover in the bottom-land hardwood areas. The upland pine forests in the northwestern part of the parish provide good habitat for bobwhite quail, cottontail rabbit, and white-tailed deer.

The many ponds, lakes, bayous, and rivers of the

Figure 11.—This area of bottom-land hardwoods on Baldwin silty clay loam provides excellent habitat for wildlife.

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

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

Grasses and legumes are domestic perennial grasses and herbaceous legumes. Soil properties and features that affect the growth of grasses and legumes are depth of the root zone, texture of the surface layer, available water capacity, wetness, flood hazard, and slope. Soil temperature and soil moisture are also considerations. Examples of grasses and legumes are fescue, bahiagrass, bermudagrass, clover, and vetch.

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, and flood hazard. Soil temperature and soil moisture are also considerations. Examples of wild herbaceous plants are bluestem, goldenrod, paspalum, wooly croton, and uniola.

Hardwood trees and woody understory produce nuts or other fruit, buds, catkins, twigs, bark, and foliage. Soil properties and features that affect the growth of hardwood trees and shrubs are depth of the root zone, the available water capacity, and wetness. Examples of these plants are oak, sugarberry, water hickory, sweetgum, persimmon, hawthorn, dogwood, hickory, blackberry, and greenbrier. Examples of fruit-producing shrubs that are suitable for planting on soils rated *good* are tree huckleberry, redbay, and mayhaw.

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

Examples of coniferous plants are baldcypress, pine, and cedar.

Shrubs are bushy woody plants that produce fruit, buds, twigs, bark, and foliage. Soil properties and features that affect the growth of shrubs are depth of the root zone, available water capacity, and soil moisture. Examples of shrubs are American beautyberry, waxmyrtle, American elder, and sumac.

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, 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

For example, estimates and other data generally apply only to that part of the soil within a depth of 5 or 6 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

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

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

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about grain-size distribution, liquid limit, plasticity index, soil reaction, soil wetness,

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

sanitary facilities

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

excavated to provide material for the embankments. The ratings are based on soil properties, site features, and observed performance of the soils. Considered in the ratings are slope, permeability, a high water table, flooding, and content of organic matter.

Excessive seepage due to rapid permeability of the soil or a water table that is high enough to raise the level

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 and embankments, dikes, and levees. The limitations are considered *slight* if soil properties and site

sodium. 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, intercepting runoff. Slope and wetness 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

soil properties

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

Soil properties are determined by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine grain-size distribution, plasticity, and compaction characteristics.

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

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

engineering index properties

Table 14 gives estimates of the engineering classification and of the [illegible]

adopted by the American Association of State Highway and Transportation Officials *(3)*.

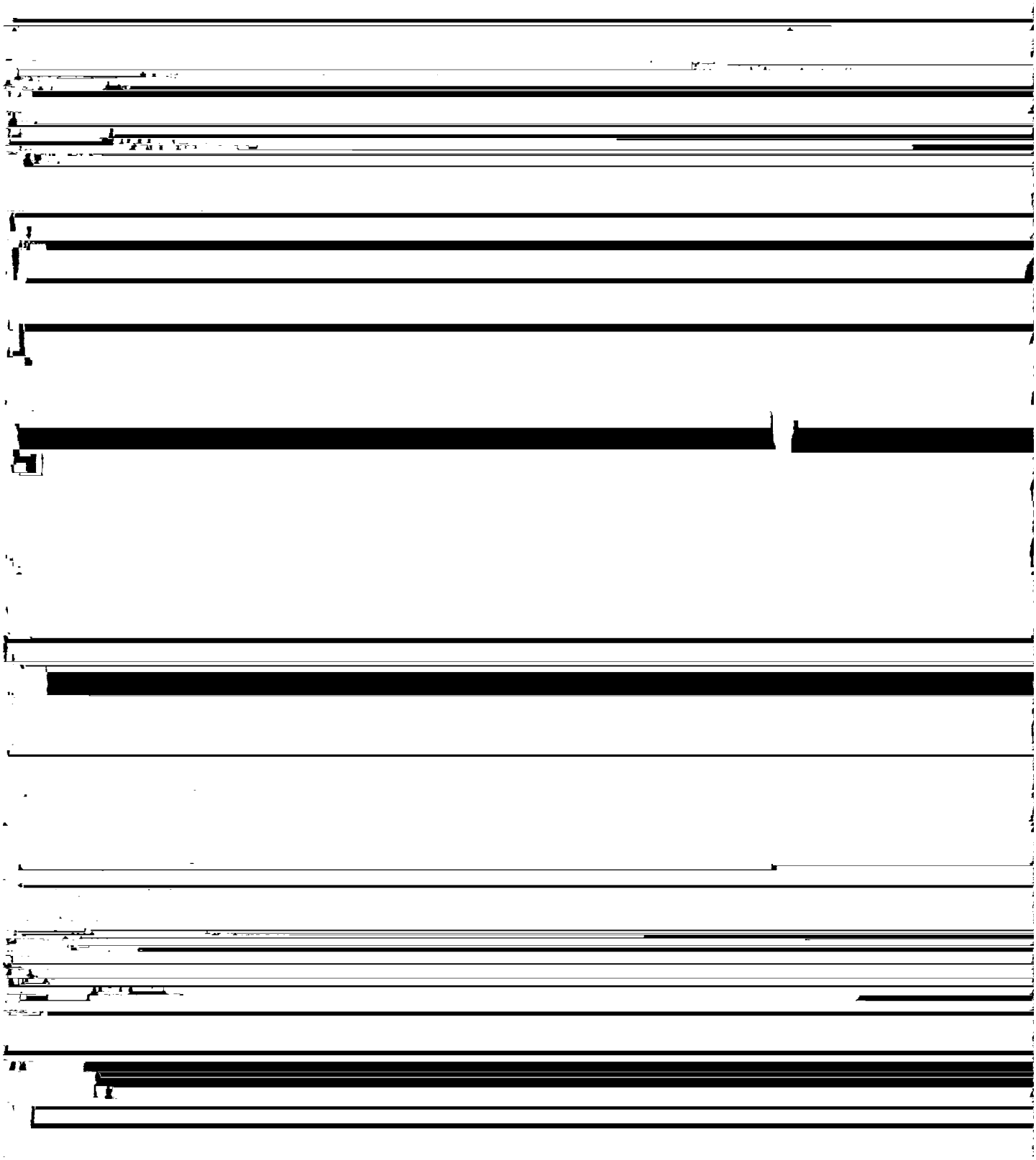
The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to grain-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly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

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

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

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

soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of

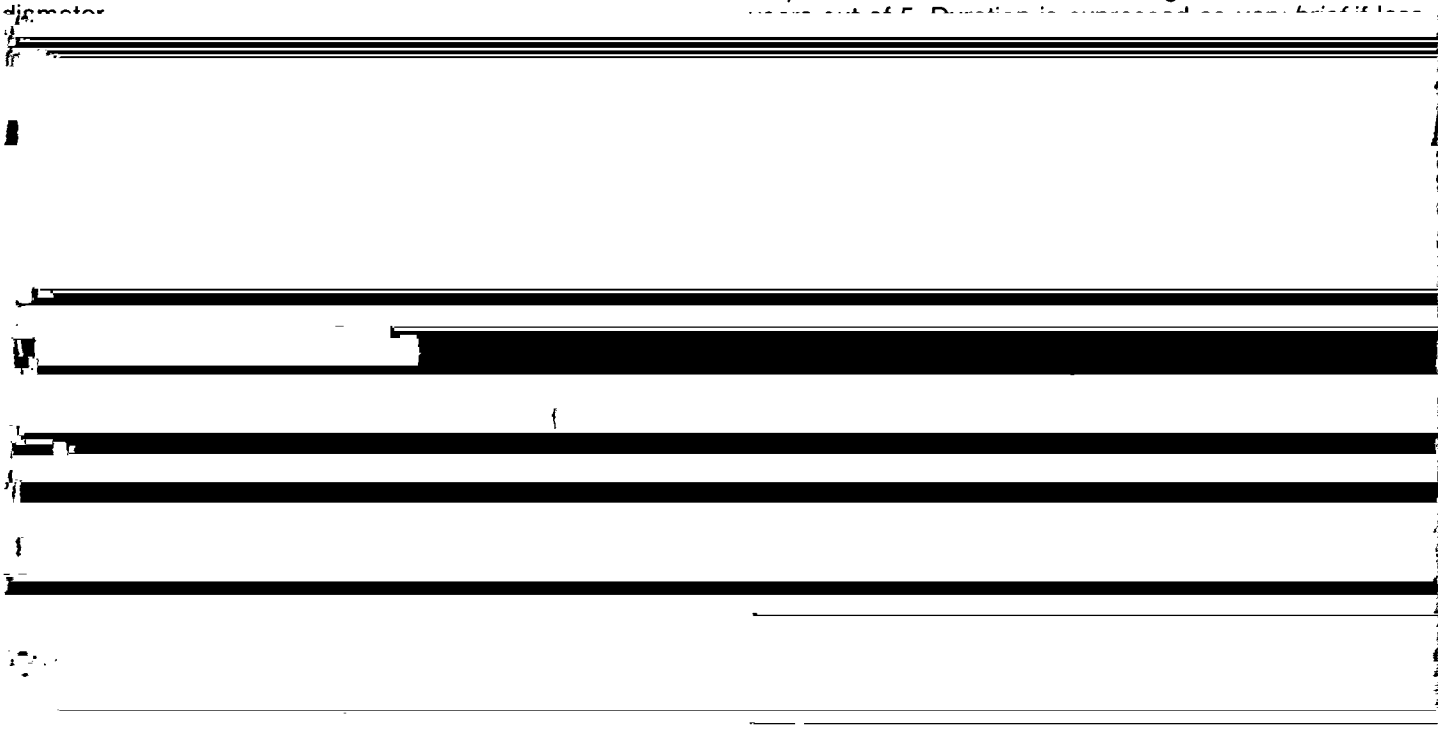


organic matter (up to 4 percent) and on soil structure and permeability. Values of K range from 0.05 to 0.69. The higher the value the more susceptible the soil is to sheet and rill erosion by water.

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

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

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



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

soil and water features

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

Hydrologic soil groups are used to estimate runoff from precipitation. Soils not protected by vegetation are assigned to one of four groups. They are grouped according to the intake of water when the soils are thoroughly wet and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff slopes, or by tides. Water standing for short periods after rainfall or snowmelt and water in swamps and marshes are not considered flooding.

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

Frequency, duration, and probable dates of occurrence are estimated. Frequency is expressed as none, rare, common, occasional, and frequent. *None* means that flooding is not probable; *rare* that it is unlikely but possible under unusual weather conditions; *common* that it is likely under normal conditions; *occasional* that it occurs on an average of 2 years or less out of 5; and *frequent* that it occurs on an average of more than 2 years out of 5. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, *long* if 7 days to 1 month, and *very long* if more than 1 month. Probable dates are expressed in months; December-June, for example, means that flooding can occur during the period December through June.

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and absence of distinctive horizons that form in soils that are not subject to flooding.

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

High water table (seasonal) is the highest level of a

the water rises above the surface. The second numeral indicates the depth below the surface.

soil fertility levels

By Bobby J. Miller, Department of Agronomy, Agricultural Experiment Station, Louisiana State University.

Soil fertility commonly refers to the available nutrients in the soil together with other chemical conditions that influence growth of plants. It is one of the major factors determining a soil's potential for crop production. The natural fertility level is a reflection of the soil's inherent capacity to supply the nutrients required by plants to provide a favorable chemical environment for roots of plants. Plant nutrient deficiencies as well as excessive quantities of some elements limit yields of crops grown on some soils in Avoyelles Parish.

Evaluation of the soil's fertility requires consideration of the quantities of available plant nutrient elements as indicated by soil test or plant tissue analyses. Special consideration is also given to other soil chemical characteristics that might have a detrimental effect on plant growth. During the survey, samples were collected from each horizon, to a depth of at least 40 inches, of many of the soils mapped. The samples were analyzed to determine soil reaction, the content of organic matter, [redacted]

are required to give a high exchangeable calcium saturation if the cation exchange capacity of a soil horizon is high than if it is low. Louisiana Agricultural Experiment Station publications (*7,20*) contain additional information about soil fertility.

Soil cation exchange capacity is almost entirely a result of the amount and kind of clay and organic matter present. The Sharkey soils contain large amounts of clay and have a maximum cation exchange capacity of 41.0 milliequivalents per 100 grams of soil. In contrast, the Convent soils contain relatively small amounts of clay throughout and have a maximum cation exchange capacity of 13.9 milliequivalents per 100 grams of soil. Many of the soils mapped in the parish have subsoil horizons that are more clayey than surface horizons. As a result, they have a greater cation exchange capacity in the subsoil than in surface horizons. The cation exchange capacity in the Memphis soil, for example, is 7.0 milliequivalents per 100 grams of soil in the surface layer and as high as 19.8 milliequivalents per 100 grams of soil in the subsoil.

The distribution pattern of the essential plant nutrient elements in most soils shown in table 17 indicates that weathering of minerals, decomposition of organic matter, and other possible natural sources of nutrient elements do not maintain high levels of these elements in the [redacted]

magnesium. Quantities of sodium large enough to have a detrimental effect are taken up by some plants. High

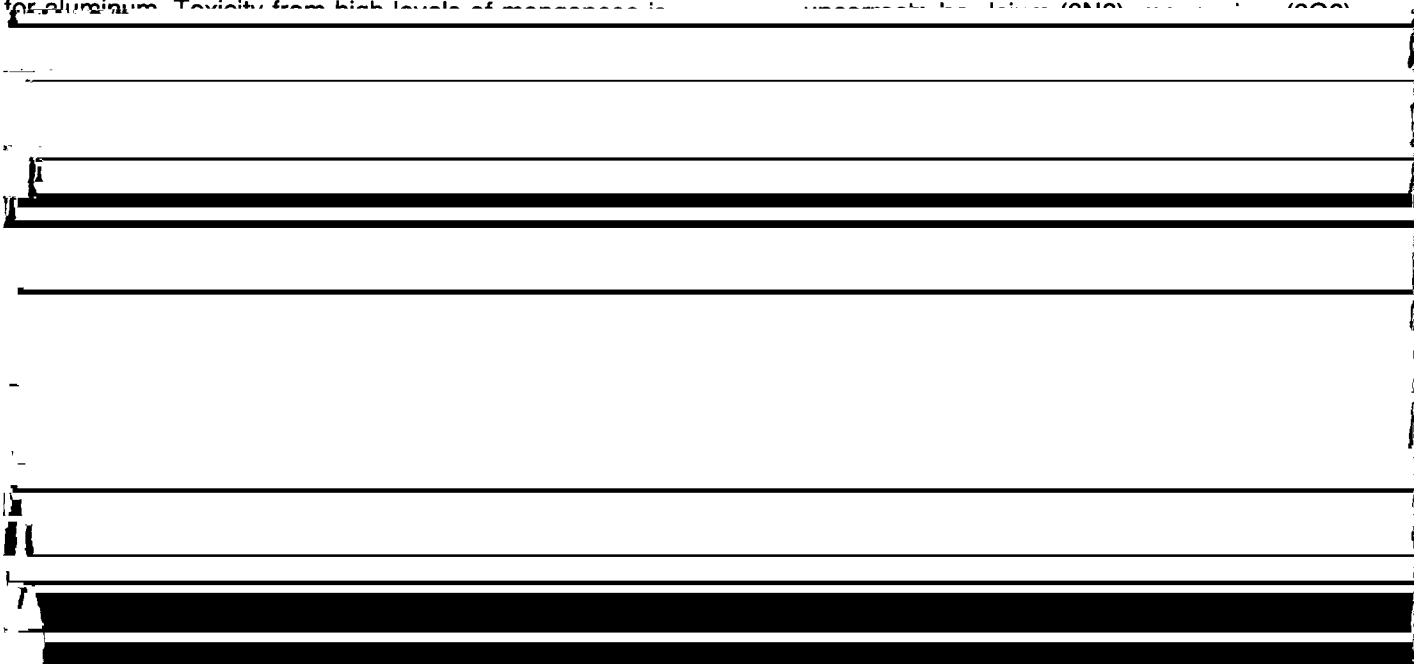
was either not present in measurable quantities or the soil was less than 10 percent saturated with

to some plants. Bicarbonate associated with the large

Important relationships exist between saturation with

surface horizons are more common for manganese than for aluminum. Toxicity from high levels of manganese is

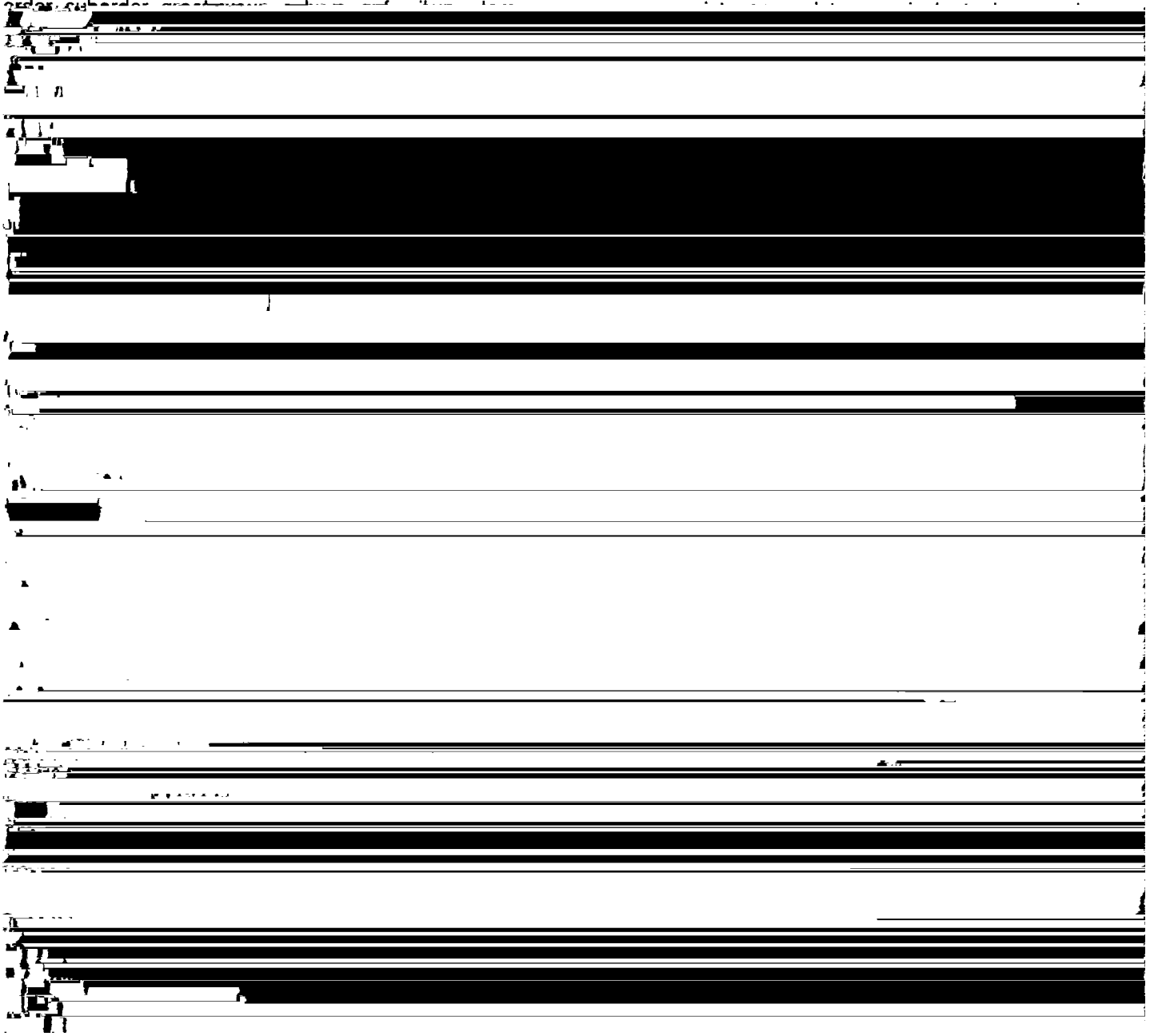
Extractable cations—ammonium acetate pH 7.0,



classification of the soils

The system of soil classification used by the National Cooperative Soil Survey has six categories (*30*). Beginning with the broadest, these categories are the

there is much biological activity. Among the properties and characteristics considered are particle-size class, mineral content, temperature regime, depth of the root



The Baldwin soils commonly are near the Dundee and Sharkey soils and are similar to the Tensas soils. The

Dundee soils are in slightly higher positions on the natural levees than the Baldwin soils, and they are fine-silty. The Sharkey soils, in lower positions, do not have an argillic horizon. The Tensas soils formed in younger sediments than the Baldwin soils, are more acid in the lower part of the subsoil, and do not have dark coatings on the faces of peds.

Typical pedon of Baldwin silty clay loam, 7 miles southeast of Cottonport, 1.4 miles southwest on Louisiana Highway 1179 from Dupont, 0.5 mile south on field road, 0.5 mile east and south along edge of woods

Calhoun series

The Calhoun series consists of poorly drained, slowly permeable soils. These soils formed in loess or similar material in flat areas and depressions on the terrace uplands. A perched seasonal high water table is within 2 feet of the soil surface during the months of December through April of most years. Slope is less than 1 percent.

The soils of the Calhoun series are fine-silty, mixed, thermic Typic Glossaqualfs.

The Calhoun soils commonly are near the Coteau and Loring soils and are similar to the Guyton and Wrightsville soils. The somewhat poorly drained Coteau

surfaces of peds; few tongues of A2 material in upper part; few fine black concretions; medium acid; clear smooth boundary.

C—55 to 76 inches; yellowish brown (10YR 5/4) silt loam; many medium distinct grayish brown (10YR 5/2) and common medium distinct dark yellowish brown (10YR 4/4) mottles; massive; friable; few thin seams of light brownish gray silt loam; few fine black concretions; medium acid.

The thickness of the solum ranges from 40 to 80 inches. Tongues of the A2 horizon extend deeply into the B horizon.

The A1 or Ap horizon has hue of 10YR, value of 4 to 6, and chroma of 2 or 3. It is 3 to 8 inches thick and ranges from very strongly acid to medium acid unless limed.

The A2g horizon has hue of 10YR, value of 5 or 6, and chroma of 1 or 2. It ranges from very strongly acid

B2—12 to 22 inches; dark grayish brown (10YR 4/2) silt loam; common fine faint brown and grayish brown mottles; weak medium subangular blocky structure; very friable; common fine and very fine roots; very dark grayish brown coatings on surfaces of some peds; few fine soft dark bodies; moderately alkaline; clear smooth boundary.

B3—22 to 32 inches; dark grayish brown (10YR 4/2) silt loam; many fine faint brown and few fine faint grayish brown mottles; weak coarse subangular blocky structure; very friable; few very fine roots; few fine soft dark bodies; moderately alkaline; clear smooth boundary.

C1—32 to 51 inches; grayish brown (10YR 5/2) silt loam; many fine distinct brown and few fine faint dark grayish brown mottles; weak coarse subangular blocky structure; very friable; few very fine roots; few fine soft dark bodies; mildly alkaline; clear smooth

Typical pedon of Convent very fine sandy loam, 1.9 miles south of Odenburg, 1.9 miles south of the intersection of Louisiana Highways 105 and 1183, 50 feet west of the centerline of Louisiana Highway 105, 20 feet north of field road, NW1/4SW1/4 sec. 12, T. 2 S., R. 6 E.

Ap1—0 to 5 inches; dark brown (10YR 4/3) very fine sandy loam; common fine faint dark grayish brown and few fine distinct dark yellowish brown mottles; weak fine granular structure; very friable; many fine and very fine roots; medium acid; clear smooth boundary.

Ap2—5 to 10 inches; dark brown (10YR 4/3) very fine sandy loam; common fine faint dark grayish brown and dark yellowish brown mottles; weak medium subangular blocky structure; very friable; many fine and very fine roots; slightly acid; clear smooth boundary.

C1—10 to 20 inches; dark grayish brown (10YR 4/2) very fine sandy loam; common medium distinct yellowish brown (10YR 5/4) and few fine distinct dark yellowish brown mottles; massive; very friable; common fine and very fine roots; distinct thin bedding planes; thin dark brown stratum; mildly alkaline; gradual smooth boundary.

C2—20 to 35 inches; grayish brown (10YR 5/2) very fine

The Coteau soils commonly are near the Calhoun, Loring, and Memphis soils and are similar to the Vick soils. The poorly drained Calhoun soils are in slightly lower positions than the Coteau soils. The moderately well drained Loring soils and the well drained Memphis soils are in slightly higher positions on ridgetops and side slopes. The Vick soils are in higher positions and have a clayey IIB horizon.

Typical pedon of Coteau silt loam, 1 to 3 percent slopes, 3.5 miles southwest of Hessmer, south from Hessmer on Louisiana Highway 115 to Highway 3041, southwest 1.4 miles on Highway 3041 to intersection, south and west 0.9 mile to large barn on east side of road, 25 feet east of road in field, SW1/4SE1/4 sec. 33, T. 1 N., R. 3 E.

Ap—0 to 6 inches; dark brown (10Yr 4/3) silt loam; weak medium granular structure; very friable; many fine roots; medium acid; abrupt smooth boundary.

B21t—6 to 12 inches; yellowish brown (10YR 5/4) silty clay loam; common fine distinct strong brown mottles; moderate medium subangular blocky structure; friable; common thin patchy clay films on surfaces of peds; common fine soft black bodies; strongly acid; clear smooth boundary.

B22t—12 to 15 inches; yellowish brown (10YR 5/4) silty

The thickness of the solum ranges from 50 to 72 inches.

The Ap horizon has hue of 10YR, value of 3 to 5, and chroma of 2 or 3. It is 3 to 9 inches thick and ranges from strongly acid to slightly acid unless limed. Exchangeable aluminum makes up 20 percent or more of the exchangeable cations within some part of the B horizon

The B2t horizon has hue of 10YR, value of 3 to 5, and chroma of 3 or 4. Texture is silt loam or silty clay loam

[redacted]

and reaction ranges from strongly acid to slightly acid

[redacted]

krotovinas of grayish brown (10YR 5/2) silt loam; medium acid; clear wavy boundary.

IIB22t—26 to 35 inches; yellowish red (5YR 4/6) clay; common medium prominent dark grayish brown (10YR 4/2) mottles; moderate medium subangular blocky structure; very firm; few very fine roots; thick continuous clay films; few irregularly shaped krotovinas of grayish brown (10YR 5/2) silt loam; medium acid; clear wavy boundary.

IIB22t—35 to 47 inches; yellowish brown (10YR 5/6)

[redacted]

clay; moderate medium subangular blocky structure;

[redacted]

age. They have a seasonal high water table at a depth of 1/2 to 1 1/2 feet during the months of December through April in most years. Slope ranges from 0 to 2 percent.

The soils of the Deerford series are fine-silty, mixed, thermic Albic Glossic Natraqualfs.

The Deerford soils commonly are near the Calhoun and Solier soils. The poorly drained Calhoun soils are in flat areas and depressional areas, are acid throughout, and do not have a natric horizon. The Solier soils are in slightly lower positions than the Deerford soils and have a clayey surface layer.

Typical pedon of Deerford silty loam, 7 miles northeast of North Point, 7 miles east on farm road from Louisiana Highway 115, 2 miles north on field road to levee, 20 feet west to field road, 100 feet south of center of levee, NE1/4NE1/4 sec. 15, T. 4 N., R. 4 E.

Ap—0 to 4 inches; dark brown (10YR 4/3) silt loam; many fine distinct strong brown and few fine faint dark grayish brown mottles; moderate medium granular structure; friable; many fine and very fine roots; many very fine pores; medium acid; abrupt smooth boundary.

A2—4 to 7 inches; pale brown (10YR 6/3) silt loam; common medium distinct strong brown (7.5YR 5/6) and yellowish brown (10YR 5/6) mottles; weak medium subangular blocky structure; friable; common fine and very fine roots; medium acid; clear irregular boundary.

B21t—7 to 13 inches; dark grayish brown (10YR 4/2) silty clay loam; many medium distinct strong brown (7.5YR 5/8) mottles; moderate medium subangular blocky structure; firm; many very fine and common fine roots; distinct continuous clay films on surfaces of peds; common tongues of light brownish gray (10YR 6/2) silt loam 1 to 3 inches wide; strongly acid; clear irregular boundary.

B22t—13 to 24 inches; dark yellowish brown (10YR 4/4) ped interiors, dark grayish brown (10YR 4/2) ped exteriors; silty clay loam; common medium distinct strong brown (7.5YR 5/6) mottles and common medium faint grayish brown (10YR 5/2) mottles; weak medium prismatic and moderate medium subangular blocky structure; firm; common fine roots; very few fine tubular pores; continuous thin clay films on surfaces of peds; tongues of A2 material 1 to 3 inches wide extend to a depth of 20 inches; neutral; clear wavy boundary.

B23t—24 to 39 inches; dark yellowish brown (10YR 4/4), grayish brown (10YR 5/2), and yellowish brown (10YR 5/6) silt loam; weak medium subangular blocky structure; friable; few fine roots; common fine tubular pores; discontinuous thin clay films on vertical surfaces of peds; common black stains on surfaces of peds; common soft dark nodules; common crystals of salt; mildly alkaline; clear smooth boundary.

B3—39 to 55 inches; dark yellowish brown (10YR 4/4) silt loam; common medium distinct strong brown (7.5YR 5/6) mottles; weak coarse prismatic structure; friable; few thin patchy clay films on vertical surfaces of peds; common black stains on surfaces of peds; thin coatings, 7 to 14 millimeters thick, of brown (10YR 5/3) silt loam between prisms; mildly alkaline; clear wavy boundary.

IIB21tb—55 to 78 inches; dark brown (7.5YR 4/4) loam; moderate coarse prismatic structure parting to moderate medium subangular blocky; friable; continuous distinct clay films on surfaces of peds; grayish brown (10YR 5/2) silt loam coatings between prisms; common black stains on surfaces of peds; mildly alkaline; clear smooth boundary.

IIB22tb—78 to 93 inches; dark brown (7.5YR 4/4) sandy clay loam; moderate medium subangular blocky structure; firm; continuous thin clay films on surfaces of peds; common black stains on surfaces of peds; mildly alkaline; clear smooth boundary.

The thickness of the solum above the lithologic discontinuity ranges from 40 to 60 inches. Depth to a subhorizon with more than 15 percent exchangeable sodium ranges from 16 to 32 inches.

The Ap horizon has hue of 10YR, value of 4 or 5, and chroma of 2 or 3. It is 3 to 8 inches thick and ranges from very strongly acid to slightly acid unless limed.

The A2 horizon has hue of 10YR, value of 5 to 7, and chroma of 2 or 3. It is silt loam or silt and ranges from very strongly acid to slightly acid.

The B2t horizon has hue of 10YR, value of 4 or 5, and chroma of 4 to 6 on the interior of peds. The exterior of peds dominantly have value of 4 or 5 and chroma of 2. The B2t horizon is silt loam or silty clay loam and ranges from strongly acid to slightly acid in the upper part and from neutral to moderately alkaline in the lower part.

The B3 and IIB2t horizons range from neutral to moderately alkaline. These horizons are silt loam, silty clay loam, sandy clay loam, or loam.

Dundee series

The Dundee series consists of somewhat poorly drained, moderately slowly permeable soils. These soils formed in loamy alluvium on the natural levees of former channels of the Mississippi River and its distributaries. The Dundee soils have a seasonal high water table at a depth of 1 1/2 to 3 1/2 feet during the months of January through April of most years. Slope ranges from 0 to 3 percent.

The soils of the Dundee series are fine-silty, mixed, thermic Aeric Ochraqualfs.

The Dundee soils commonly are near the Baldwin, Sharkey, and Tensas soils. The Baldwin and Tensas

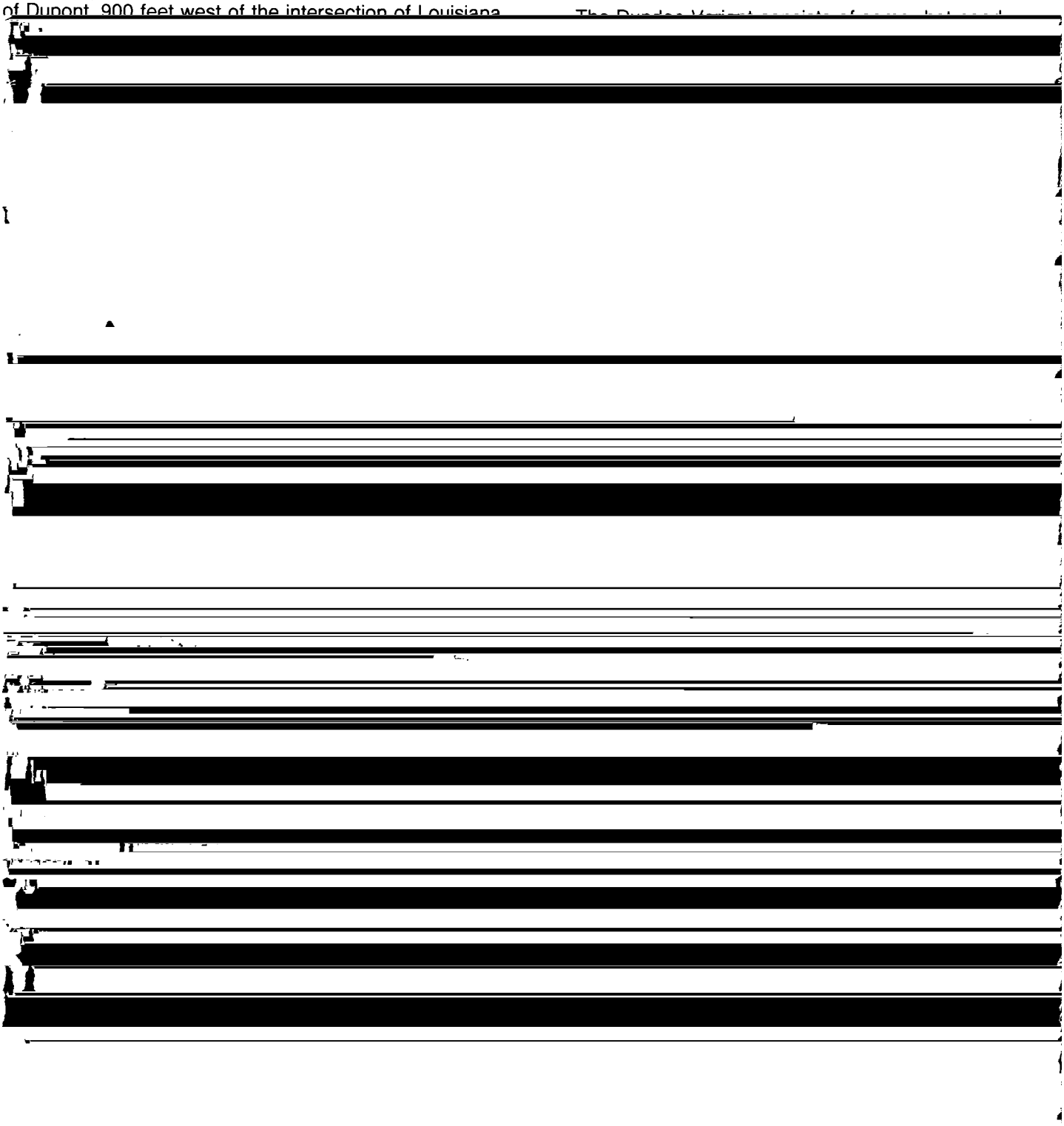
soils are in lower positions than the Dundee soils and are more clayey in the upper part of the profile. The Sharkey soils are in the lowest positions on the natural levees and are clayey throughout.

Typical pedon of Dundee silt loam, 0.2 mile northwest of Dupont, 900 feet west of the intersection of Louisiana

outside the defined range for the series but does not affect the use and management of these soils.

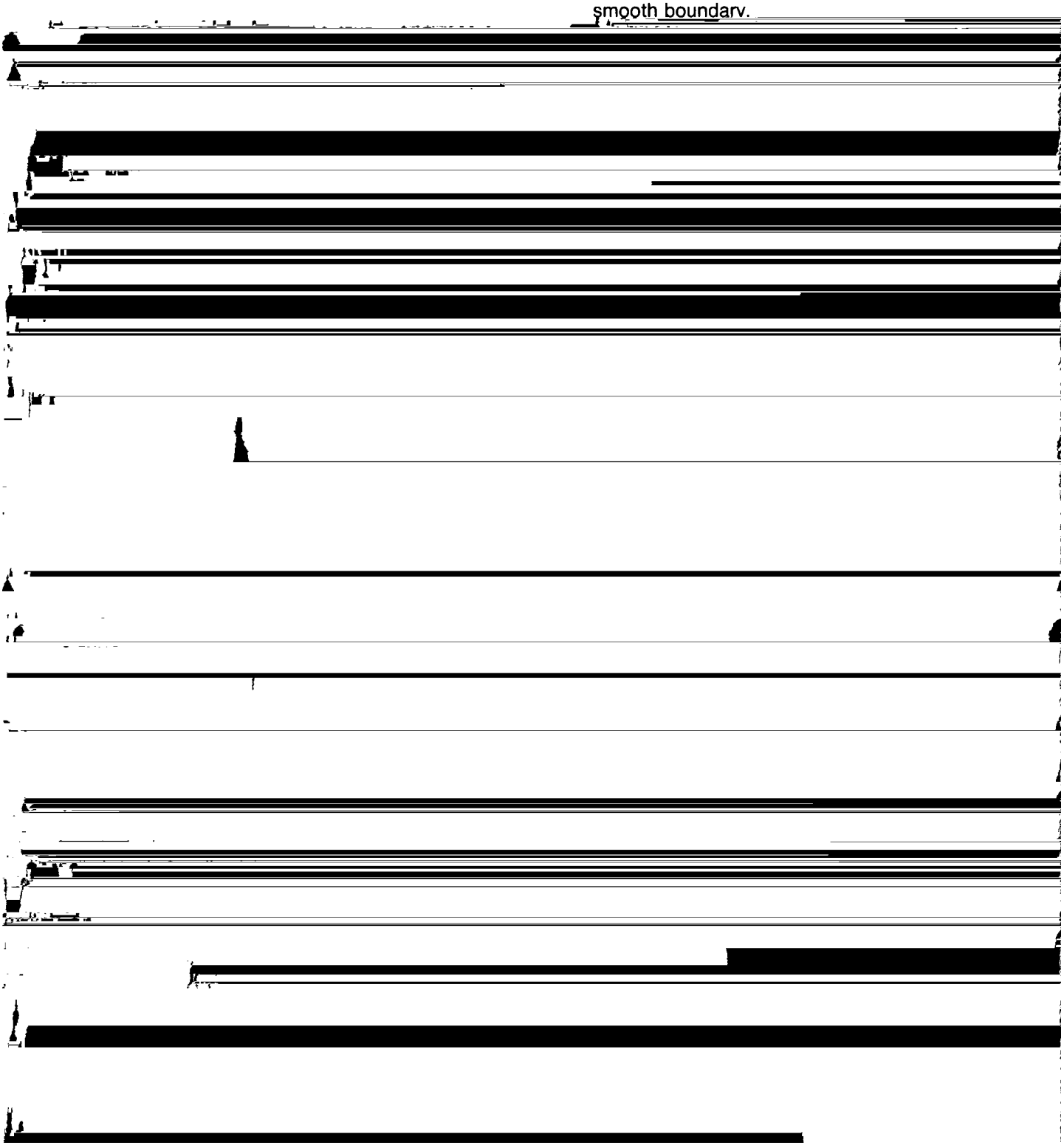
Dundee Variant

The Dundee Variant consists of [illegible]



IIB32b—52 to 72 inches; gray (10YR 5/1) silty clay; many fine distinct dark yellowish brown mottles; massive; very firm; common fine dark concretions; neutral.

IIB21g—13 to 22 inches; gray (5Y 5/1) clay; common medium distinct dark yellowish brown (10YR 4/6) mottles; weak medium angular blocky structure; plastic; few fine and coarse roots; slightly acid; clear smooth boundary.



Ap—0 to 8 inches; brown (10YR 4/3) silt loam; weak fine granular structure; friable; many fine and very fine roots; many fine pores; medium acid; clear smooth boundary.

B21t—8 to 15 inches; brown (7.5YR 4/4) silty clay loam; moderate medium subangular blocky structure; firm; common fine and very fine roots; common very fine tubular pores; thin nearly continuous clay films on surfaces of peds and in pores; medium acid; clear smooth boundary.

B22t—15 to 25 inches; yellowish red (5YR 4/6) silt loam; common medium distinct reddish yellow (7.5YR 6/8) mottles; moderate medium subangular blocky structure; friable; few fine roots; common very fine tubular pores; thin brown (7.5YR 4/4) clay films on surfaces of peds; few fine black masses; medium acid; clear smooth boundary.

B23t—25 to 37 inches; yellowish red (5YR 5/6) silt loam; common fine distinct reddish yellow mottles; weak medium subangular blocky structure; friable; common very fine tubular pores; thin nearly

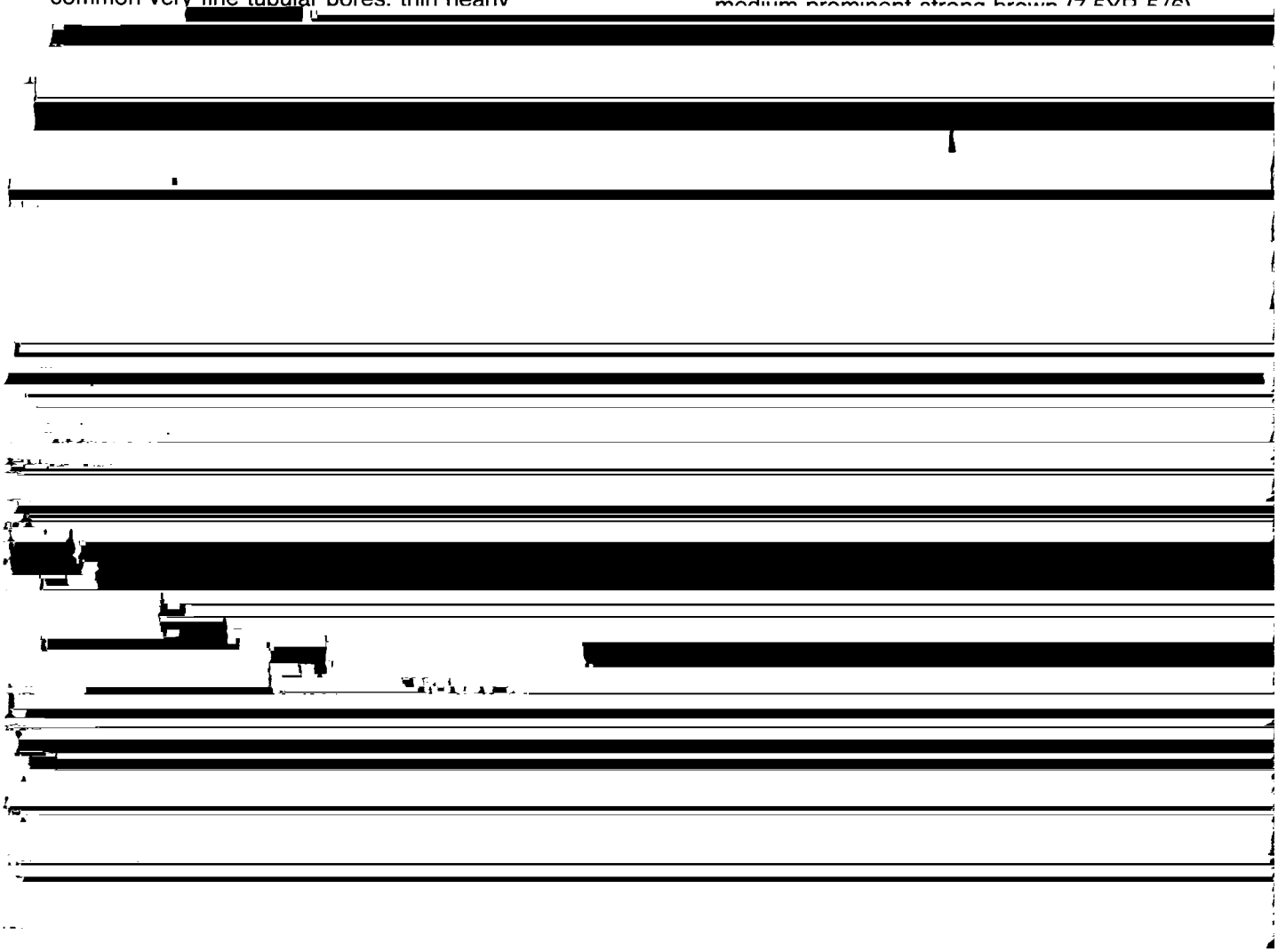
drainageways, have gray colors throughout and are fine-silty. The Kolin and Vick soils are in slightly higher positions than the Gore soil and are fine-silty. The well drained McKamie soils are in the steeper areas.

Typical pedon of Gore silt loam, 1 to 5 percent slopes, 4 miles south of Centerpoint, 2 miles east on A. B. Porter road from its intersection with Louisiana Highway 454, 1,050 feet south on pipeline, 10 feet from west edge of pipeline, NE1/4 sec. 36, T. 3 N., R. 2 E.

A1—0 to 4 inches; dark grayish brown (10YR 4/2) silt loam; weak fine granular structure; friable; many fine and very fine roots; strongly acid; clear smooth boundary.

A2—4 to 7 inches; brown (10YR 5/3) silt loam; few fine faint yellowish brown mottles; weak medium subangular blocky structure; friable; common fine and medium roots; many very fine pores; strongly acid; clear wavy boundary.

B21t—7 to 15 inches; red (2.5YR 4/6) silty clay; few medium prominent strong brown (7.5YR 5/6)



The A1 horizon has hue of 10YR, value of 4 or 5, and chroma of 2 or 3. It is 2 to 4 inches thick and is strongly acid or medium acid.

The A2 horizon has hue of 10YR, value of 5 or 6, and chroma of 2 or 3. It is strongly acid or medium acid.

The upper part of the B2t horizon has hue of 2.5YR or 5YR, value of 3 to 5, and chroma of 4 to 6. The lower part has hue of 10YR, value of 5 or 6, and chroma of 1 or 2. Both parts of the B2t horizon are mottled in shades of red, brown, and gray. Texture is clay or silty clay, and reaction ranges from very strongly acid to medium acid.

The B3 horizon has hue of 2.5YR or 5YR, value of 4 or 5, and chroma of 4 to 6. It is clay or silty clay and ranges from strongly acid in the upper part to moderately alkaline in the lower part.

The C horizon has color and texture similar to the B3 horizon. Reaction ranges from slightly acid to moderately alkaline.

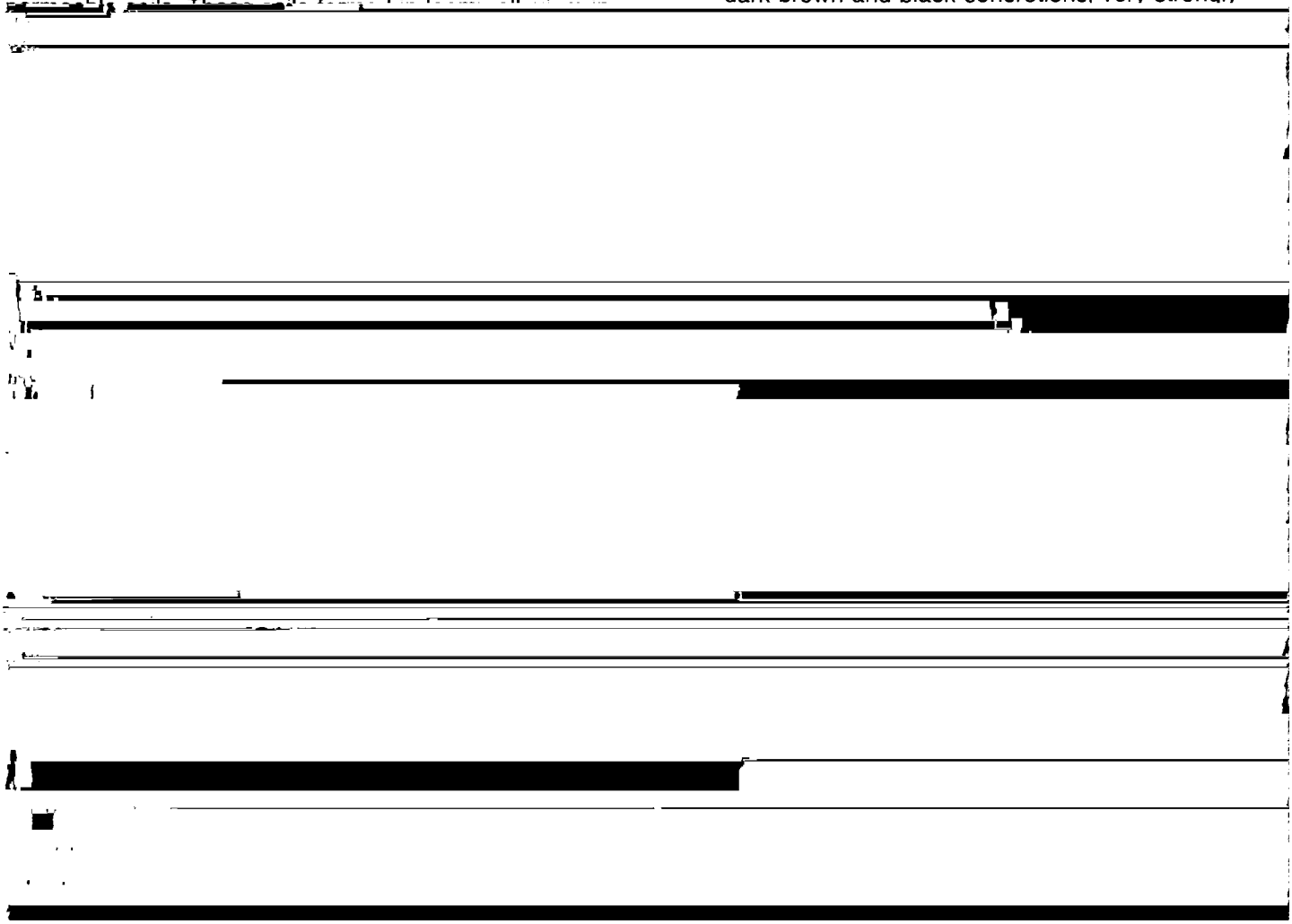
Guyton series

The Guyton series consists of poorly drained, slowly

A22g—14 to 29 inches; light brownish gray (10YR 6/2) silt loam; common medium distinct yellowish brown (10YR 5/6) mottles; weak medium subangular blocky structure; friable; few fine roots; few fine and medium dark brown concretions; very strongly acid; clear irregular boundary.

B&A—29 to 44 inches; light brownish gray (2.5Y 6/2) silt loam (B2t); 15 percent light gray (10YR 7/2) silt loam (A2); common medium distinct yellowish brown (10YR 5/6) mottles; weak medium subangular blocky structure; friable; few fine roots; discontinuous thin clay films on surfaces of peds; tongues of A2 material 1 to 3 inches thick extend to a depth of 44 inches; common fine dark brown concretions; very strongly acid; clear wavy boundary.

B22tg—44 to 54 inches; light brownish gray (10YR 6/2) silt loam; common medium distinct yellowish brown (10YR 5/4) mottles; moderate medium subangular blocky structure; friable; few fine roots; thin nearly continuous clay films on surfaces of peds; few thin silt coatings on surfaces of some peds; few fine dark brown and black concretions; very strongly



The soils of the Kolin series are fine-silty, siliceous, thermic Glossaquic Paleudalfs.

Kolin soils commonly are near Gore, Guyton, McKamie, and Vick soils. Gore and McKamie soils are on lower side slopes and have fine-textured control sections. The poorly drained Guyton soils are in drainageways and are dominantly gray in color. The somewhat poorly drained Vick soils are on less sloping areas in slightly higher positions and have low-chroma mottles in the upper part of the argillic horizon.

Typical pedon of Kolin silt loam, 1 to 5 percent slopes, 4 miles north of Centerpoint, 1.3 miles southeast on local road from northwest corner of parish, 150 feet north of road, sec. 31, T. 4 N., R. 2 E.

A1—0 to 4 inches; dark grayish brown (10YR 4/2) silt loam; weak fine granular structure; very friable; many fine and very fine roots; medium acid; clear smooth boundary.

B21t—4 to 13 inches; strong brown (7.5YR 5/6) silt loam; common fine distinct light yellowish brown mottles; moderate medium subangular blocky

The thickness of the solum is more than 60 inches. Depth to the clayey IIB horizon ranges from 20 to 40 inches. Exchangeable aluminum makes up 50 percent or more of the exchangeable cations within some part of the B horizon.

The A1 horizon has hue of 10YR, value of 3 or 4, and chroma of 2 or 3. It is 3 to 7 inches thick and ranges from strongly acid to slightly acid.

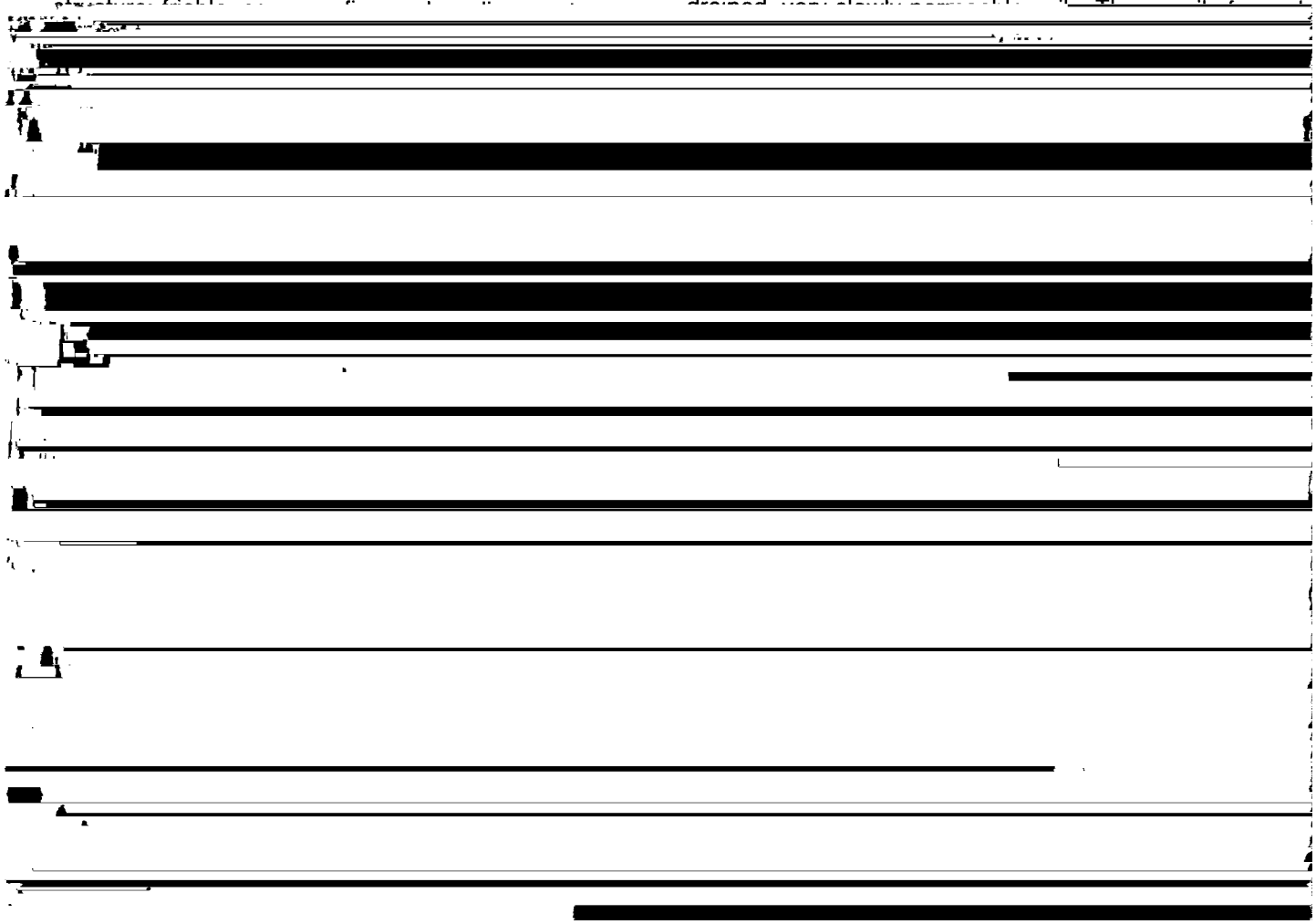
Some pedons have an A2 horizon. Where present, the A2 horizon has value of 5 or 6 and chroma of 2 or 3. It is silt loam and ranges from strongly acid to slightly acid.

The B2t horizon has hue of 10YR or 7.5YR, value of 5 or 6, and chroma of 4 to 8. It is silt loam or silty clay loam and ranges from very strongly acid to medium acid.

The IIB horizon has hue of 10YR, 7.5YR, 5YR, or 2.5YR; value of 4 or 5; and chroma of 6 or 8. It is clay or silty clay and ranges from very strongly acid to slightly acid.

Latanier series

The Latanier series consists of somewhat poorly



with hard centers; slight effervescence; abrupt smooth boundary.

IIAb—27 to 35 inches; brown (7.5YR 5/4) silt loam; weak medium subangular blocky structure; friable; few

B1—6 to 13 inches; brown (7.5YR 4/4) silt loam; weak medium subangular blocky structure; friable; many fine and very fine roots; many fine tubular pores; few

McKamie series

The McKamie series consists of well drained, very

The A horizon has hue of 10YR, value of 4 or 5, and chroma of 2 or 3. It is 3 to 6 inches thick and ranges from strongly acid to slightly acid. Some pedons have a

The B2t horizon has hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 4 or 6. It is silt loam or silty clay loam.

The C horizon has color and texture similar to those of the Bt horizon.

Moreland series

The Moreland series consists of somewhat poorly drained, very slowly permeable soils. These soils formed in clayey alluvium in low positions on the Red River alluvial plain. A seasonal high water table is within 1 1/2 feet of the soil surface during the months of December through April of most years. Slope ranges from 0 to 3 percent.

The soils of the Moreland series are fine, mixed, thermic Vertic Hapludolls.

Moreland soils commonly are near Gallion and [illegible] and are similar to [illegible]

The A horizon has hue of 5YR or 7.5YR, value of 3, and chroma of 2 or 3. It is 10 to 16 inches thick and ranges from slightly acid to mildly alkaline. Texture is silt loam or clay.

The B2 horizon has hue of 5YR or 2.5YR, value of 3 or 4, and chroma of 3 or 4. It is clay or silty clay and ranges from neutral to moderately alkaline. Some pedons have thin silt loam or silty clay loam strata in the B horizon.

The B3 horizon is clay, silty clay, or silty clay loam.

Moreland soils in map units Mo and Mr are taxadjuncts to the Moreland series because they have a surface horizon that has value and chroma of 4. This is outside the defined range for the series but does not affect the use and management of these soils.

Norwood series

[redacted]

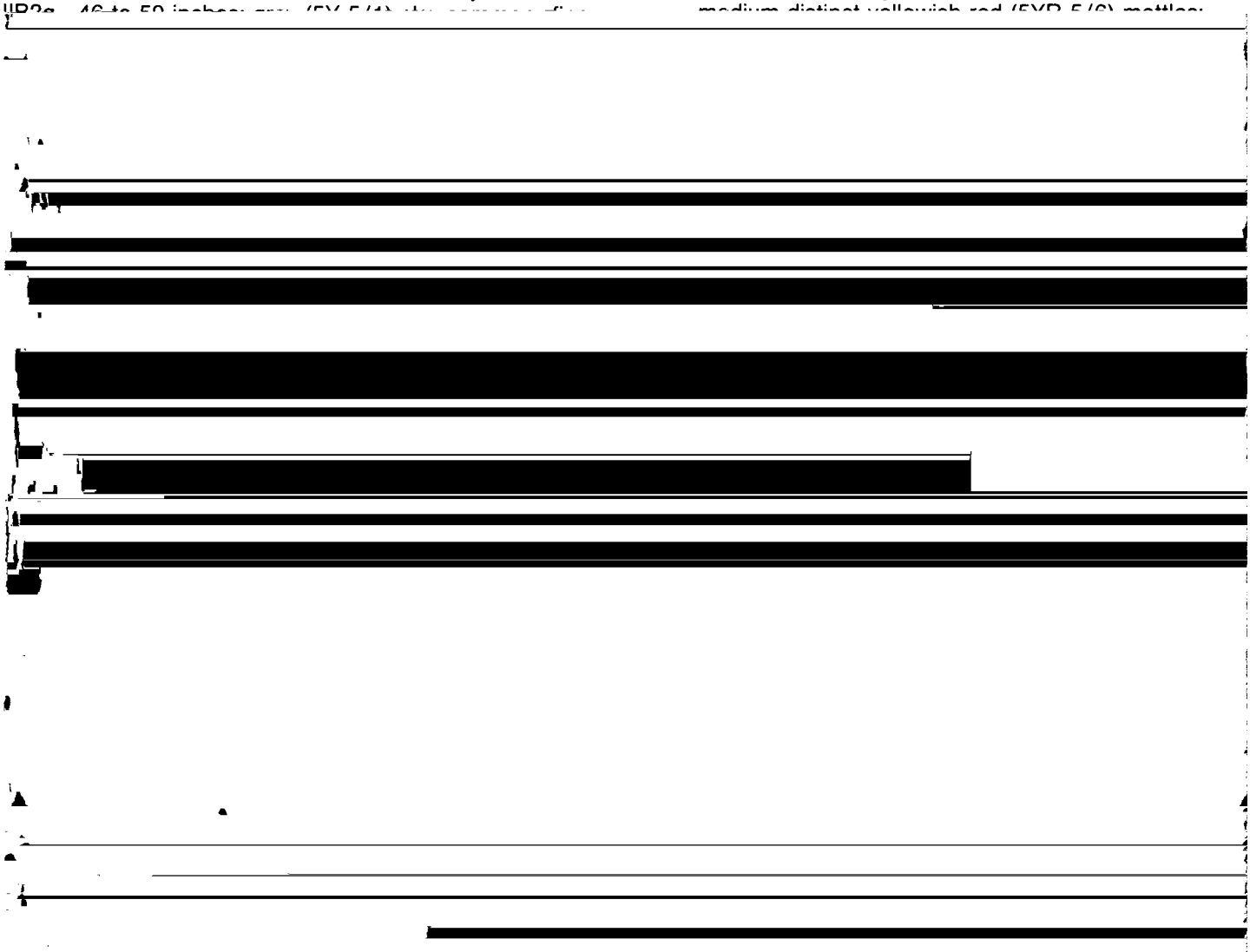
C3—50 to 65 inches; reddish brown (5YR 4/4) silty clay loam; few fine faint dark reddish gray mottles; massive; friable; thin stratum of silt loam; strong bedding planes; strong effervescence; moderately alkaline; clear smooth boundary.

C4—40 to 62 inches; stratified reddish brown (5YR 4/4)

moderate medium subangular blocky structure; very firm; few fine roots; thin dark reddish gray (5YR 4/2) coatings on vertical surfaces of peds; neutral; clear smooth boundary.

IIB2g—23 to 46 inches; olive gray (5Y 5/2) clay; many fine prominent yellowish brown (10YR 5/8) and few fine prominent strong brown mottles; moderate medium subangular blocky structure; very firm; few fine roots; neutral; clear smooth boundary.

IIB2g—46 to 59 inches; gray (5Y 5/1) clay; common



prominent yellowish brown mottles; massive; very firm; few fine masses of salt crystals; slightly acid; clear smooth boundary.

IICg—59 to 66 inches; gray (5Y 5/1) silty clay loam; common fine prominent strong brown and few fine prominent yellowish brown mottles; massive; firm; neutral.

The thickness of the solum ranges from 36 to 60 inches. Cracks 1 to 3 centimeters wide form to a depth of 20 inches or more during dry periods of most years.

Typical pedon of Solier clay, 6 miles northeast of Effie, 60 feet south and 60 feet west of the northeast corner of sec. 32, T. 4 N., R. 4 E.

Ap—0 to 6 inches; dark reddish brown (5YR 3/3) clay; moderate medium subangular blocky structure; very firm; common fine and very fine roots; common slickensides; neutral; clear smooth boundary.

B21—6 to 14 inches; gray (10YR 5/1) clay; common medium distinct yellowish red (5YR 5/6) mottles; moderate medium subangular blocky structure; very firm; common fine and very fine roots; distinct nearly continuous reddish brown (5YR 4/4) clay films on vertical surface of peds; neutral; clear wavy boundary.

B22—14 to 19 inches; yellowish red (5YR 4/6) clay; common medium distinct gray (10YR 5/1) mottles; moderate medium subangular blocky structure; very firm; few fine roots; neutral; abrupt wavy boundary.

IIA2bg—19 to 25 inches; gray (10YR 6/1) silt loam;

Vick soils are similar to Coteau soils and commonly are near Gore, Kolin, and Wrightsville soils. Coteau soils are on loess-mantled stream terraces but do not have the clayey IIB horizon of the Vick soils. The moderately well drained Gore soils are on side slopes and have fine-textured control sections. The moderately well drained Kolin soils are in more convex areas. The poorly drained Wrightsville soils are on flats and in depressional areas.

Typical pedon of Vick silt loam, 4 miles south of Centerpoint, from Ruby Post Office in Rapides Parish, 1.4 miles east on gravel road, 150 feet south on woods trail, 10 feet west of trail, NW1/4 sec. 36, T. 3 N., R. 2 E.

A1—0 to 3 inches; dark grayish brown (10YR 4/2) silt loam; weak fine granular structure; friable; many fine and medium roots; many fine black concretions; strongly acid; clear smooth boundary.

A2—3 to 7 inches; pale brown (10YR 6/3) silt loam; common medium distinct dark grayish brown (10YR 4/2) mottles; weak coarse subangular blocky structure; friable; many fine and medium roots; many very fine tubular pores; common fine black concretions; strongly acid; clear wavy boundary.

B1—7 to 14 inches; yellowish brown (10YR 5/4) silt loam; common medium distinct brownish yellow (10YR 6/6) and light brownish gray (10YR 6/2) mottles; weak medium subangular blocky structure; friable; many fine and medium roots; many very fine tubular pores; common fine black concretions; very strongly acid; clear wavy boundary.

IIB21t—14 to 24 inches; yellowish brown (10YR 5/4) silty clay loam; many medium distinct light brownish gray (10YR 6/2) and faint yellowish brown (10YR 5/6) mottles; weak medium subangular blocky structure; friable; many fine tubular pores; distinct clay films on surfaces of some peds and in pores; few thin silt coatings on surfaces of peds in upper part; strongly acid; clear wavy boundary.

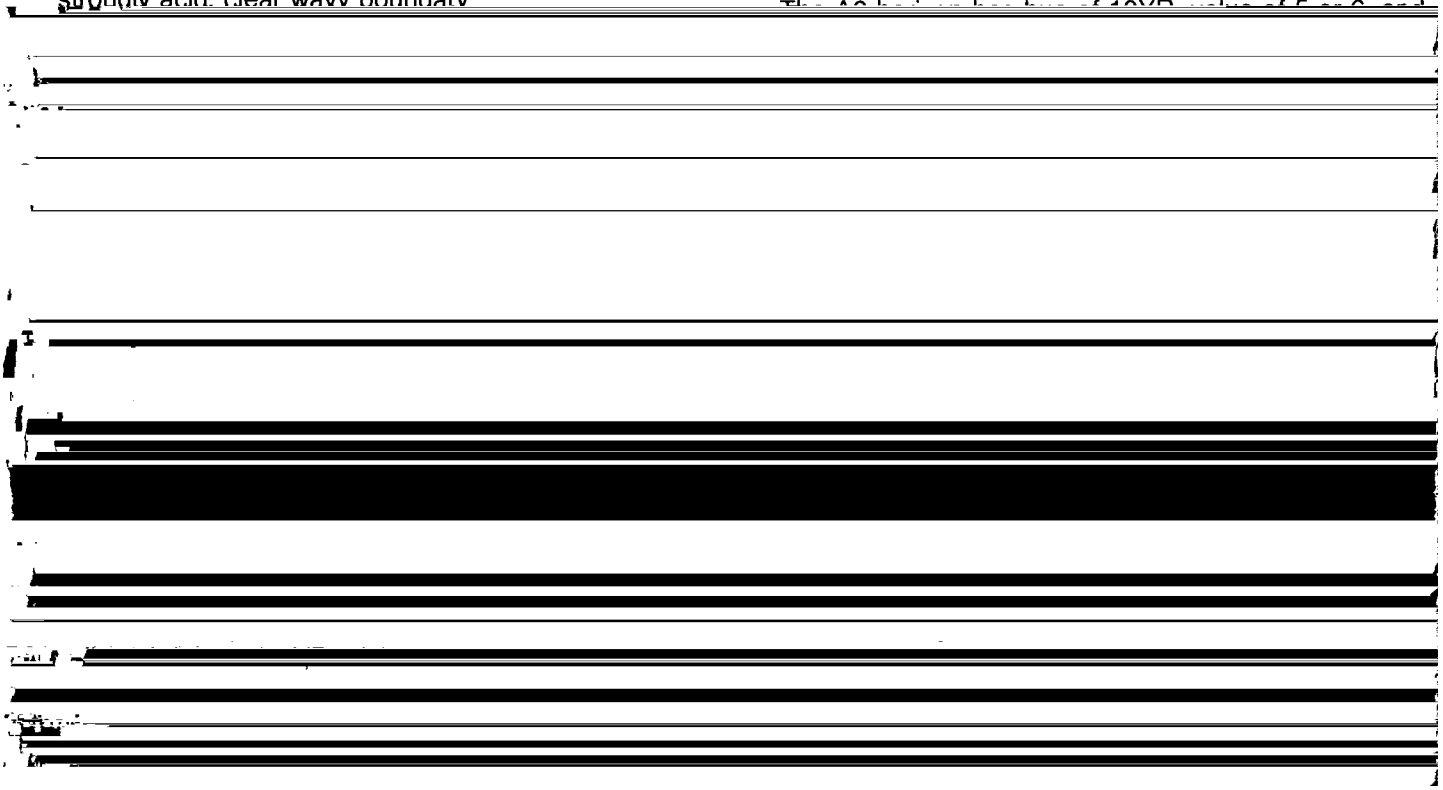
IIB22t—24 to 36 inches; yellowish brown (10YR 5/4) silty clay loam; many medium distinct light brownish gray (10YR 6/2) and faint yellowish brown (10YR 5/6) mottles; weak medium subangular blocky structure; friable; many fine tubular pores; distinct clay films on surfaces of some peds and in pores; few thin silt coatings on surfaces of peds in upper part; strongly acid; clear wavy boundary.

IIB23t—36 to 45 inches; yellowish brown (10YR 5/4) silty clay loam; many medium distinct light brownish gray (10YR 6/2) and faint yellowish brown (10YR 5/6) mottles; weak medium subangular blocky structure; friable; many fine tubular pores; distinct clay films on surfaces of some peds and in pores; few thin silt coatings on surfaces of some peds; strongly acid; clear wavy boundary.

IIIB3t—45 to 63 inches; brown (10YR 5/3) silt loam; common medium distinct yellowish brown (10YR 5/6) and faint light brownish gray (10YR 6/2) mottles; weak medium subangular blocky structure; friable; many fine tubular pores; few thin patchy clay films on surfaces of peds; few black web-shaped stains on surfaces of peds; strongly acid.

The thickness of the solum ranges from 50 to about 80 inches. Depth to the clayey IIB horizon ranges from 20 to 35 inches. The A and B horizons, above the IIB horizon, have 3 to 10 percent total sand content. Exchangeable aluminum makes up 50 percent or more of the exchangeable cations within some part of the B horizon.

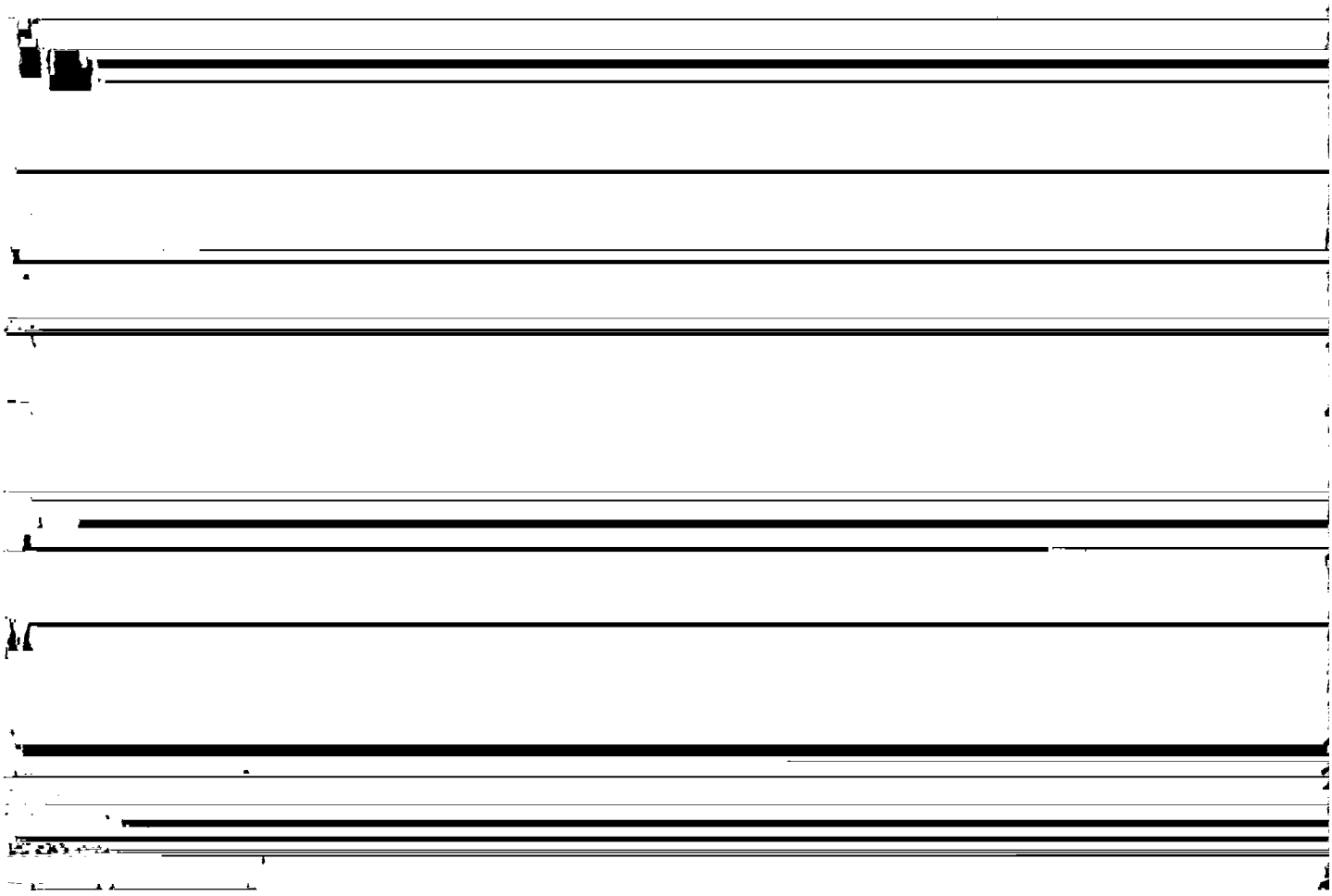
The A1 horizon has hue of 10YR, value of 3 to 5, and chroma of 2 to 4. It is 3 to 6 inches thick and ranges from very strongly acid to medium acid. The A2 horizon, where present, has hue of 10YR, value of 5 or 6, and chroma of 3 or 4.



The soils of the Wrightsville series are fine, mixed, thermic Typic Glossaqualfs.

Wrightsville soils are similar to Calhoun and Guyton soils and commonly are near Kolin and Vick soils.

structure parting to moderate medium subangular blocky; very firm; few medium and large roots; continuous thin dark grayish brown (10YR 4/2) clay



formation of the soils

By Bobby J. Miller, Department of Agronomy, Agricultural Experiment Station, Louisiana State University.

In this section, the processes and factors of soil formation are discussed and related to the soils in the survey area.

processes of soil formation

The processes of soil formation influence the kind and degree of development of soil horizons. The rate and relative effectiveness of different processes are determined by the factors of soil formation: climate, living organisms, relief, parent material, and time.

Important soil-forming processes include those that result in (1) additions of organic, mineral, and gaseous materials to the soil; (2) losses of these same materials from the soil; (3) translocation of materials from one point to another within the soil; and (4) physical and chemical transformation of mineral and organic materials within the soil (*25*). Typically, many processes take place simultaneously. Examples in the survey area include accumulation of organic matter, development of soil structure, formation and translation of clay, and leaching of bases from some soil horizons. The contribution of a particular process may change over a period of time. For example, installation of drainage and water control systems can change the length of time the soils are flooded or saturated with water. Some important processes that have contributed to the formation of soils in Avoyelles Parish are discussed in the following paragraphs.

Organic matter has accumulated, has partly decomposed, and has been incorporated into all the soils. Organic matter production is greatest in and above the surface horizon. This results in the formation of soils in which the surface horizon is higher in organic matter content than the deeper horizons. The decomposition and mixing of organic residues into the soil horizons is brought about largely by the activity of living organisms. Many of the more stable products of decomposition remain as finely divided materials that contribute to the soil, increase the available water and cation exchange capacities, contribute to granulation, and serve as a source of plant nutrients.

The addition of alluvial sediment at the surface has been important in the formation of some of the soils in that is altered by the processes of soil formation. In many places, new material accumulated faster than the processes of soil formation could appreciably alter it. The evident depositional strata in the Commerce, Convent, Norwood, and Roxana soils are a result of accumulation of this sort. Accumulation of sediments is also indicated by the contrasting textures in the Latanier soils and by thin lenses of silt loam or silty clay loam in lower horizons of some of the Fausse, Moreland, and Sharkey soils.

Processes resulting in development of soil structure have taken place in all the soils. Plant roots and other organisms are effective agents in the rearrangement of soil material into secondary aggregates. Decomposition products or organic residues, secretions of organisms, clays, and oxides of elements such as iron that form during soil development—all these serve as cementing agents that help stabilize structural aggregates. Alternate wetting and drying and shrinking and swelling contribute to the development of structural aggregates and are particularly effective in soils that have appreciable amounts of clay, for example, the Sharkey soil.

The poorly drained and very poorly drained soils in the survey area have horizons in which reduction and segregation of iron and manganese compounds have been important processes. Reduction conditions prevail for long periods of time in these poorly aerated horizons. Consequently, during these periods the somewhat soluble reduced forms of iron and manganese are predominant over the less soluble oxidized forms in the soil solution. Reduced forms of these elements can cause the gray colors that are characteristic of the Bg and Cg horizon in, for example, the Sharkey and Fausse soils. In the more soluble reduced forms, appreciable amounts of iron and manganese may be moved from the soils or translocated from one position to another within the soil by water. Brown mottles in predominantly gray horizons are indicative of segregation and the local concentration of oxidized iron compounds that results from alternate oxidizing and reducing conditions in the soils.

Loss of components has occurred to some extent during the formation of the soils. Water moving through the soil has leached soluble bases, and any free carbonates that may have been initially present, from some horizons of most of the soils. The effects of

Norwood, and Roxana soils. These soils formed in relatively young parent materials that initially contained free calcium carbonate. They all contain free calcium carbonate at some depth within the solum. The other soils in the survey area are more leached, and many are acid in the surface horizon and become neutral or alkaline at some depth within the solum. Only the Calhoun, Coteau, Dundee, Gore, Guyton, Kolin, Loring, McKamie, Memphis, Tensas, Vick, and Wrightsville soils are typically acid throughout the solum.

The formation, translocation, and accumulation of clay in the profile have been important processes during the development of all but the Commerce, Convent, Fausse, Latanier, Moreland, Norwood, Roxana, and Sharkey soils. Silicon and aluminum released as a result of weathering of such minerals as pyroxenes, amphiboles, and feldspar can recombine with the components of water to form secondary clay minerals such as kaolinite.

The interaction of five main factors influences the processes of soil formation and results in differences among the soils. These factors are the physical and chemical composition of the parent material, the climate during the formation of the soil from the parent material, the kind of plants and other organisms living in and on the soil, the relief of the land and its effect on runoff and soil moisture conditions, and the length of time it took the soil to form (*8,14*).

The effect of a factor can differ from place to place, but the interaction of all the factors determines the kind of soil that forms. Many of the differences in soils cannot be attributed to differences in only one factor. For example, organic matter content in the soils in the survey area is influenced by several factors, including relief, parent material, and living organisms. This does not diminish the importance of the influence of any given factor on a specific soil property. In the following

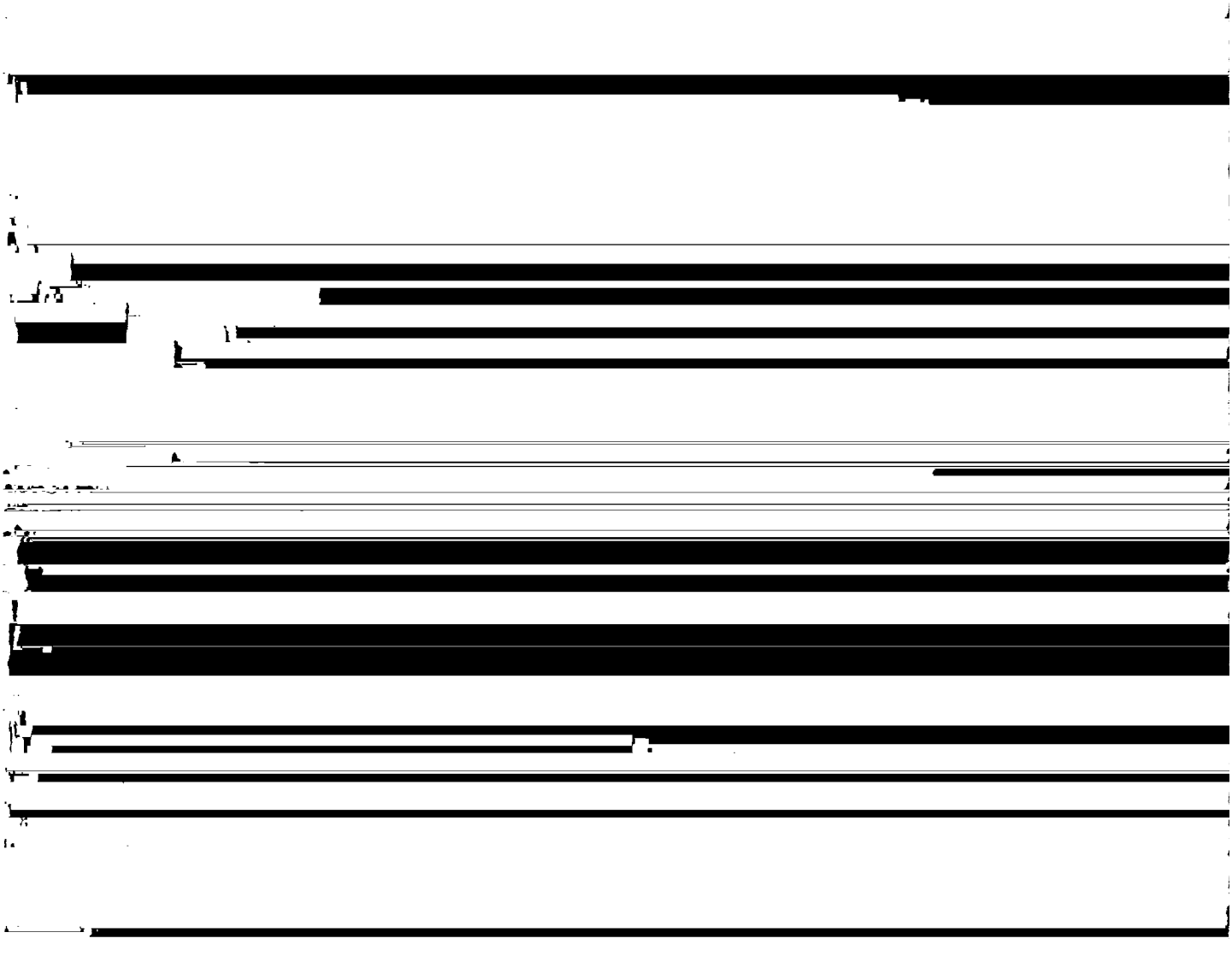
result in structural problems if the soils are used for buildings, roads, and other improvements. Formation of deep, wide cracks may shear roots of plants growing in the soil. If cracks are present, much of the water from rainfall or irrigation initially enters the soil through the cracks; once the soil has become wet, however, infiltration rates are slow or very slow. Cracks form extensively in the Sharkey, Gore, Latanier, McKamie, Moreland, and Tensas soils late in summer and early in fall when the soils are driest. Cracks an inch or more wide extend to a depth of more than 20 inches in most years. Cracks that are less extensive and less deep sometimes form in the more silty Commerce soils and the clayey Fausse soils. The Sharkey soils dry to greater depths than the Fausse soils and have deeper cracks.

living organisms

Living organisms affect the process of soil formation in

soils are baldcypress, water tupelo, and water hickory. The Baldwin soils, formed in Mississippi River alluvium, probably developed under grassland vegetation. The remaining soils developed under a mixed hardwood-pine vegetation.

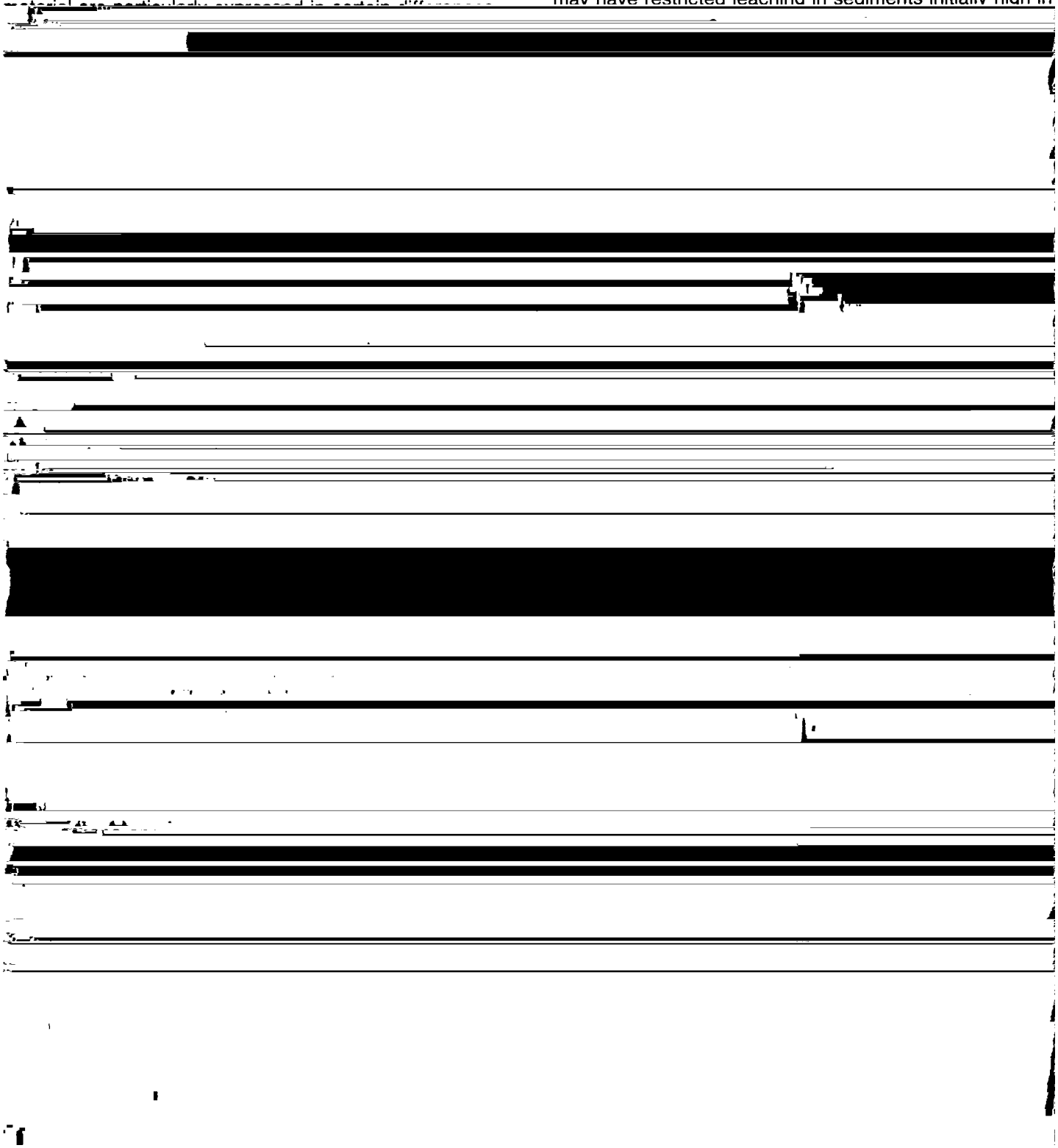
Differences in the amount of organic matter that has accumulated in and on the soils are greatly influenced by the kind and quantities of micro-organisms. Aerobic organisms utilize oxygen from the air and are chiefly responsible for organic matter decomposition through rapid oxidation of organic residue. These organisms are most abundant and prevail for longer periods in the better drained and better aerated Gallion, Norwood, Roxana, and Memphis soils. Anaerobic organisms do not require oxygen from the air, and they decompose organic residues very slowly. They are predominant throughout most or all of the year in the most poorly



parent material and time

The parent material is the material from which the soils developed. In the survey area the effects of parent material are particularly expressed in certain differences

formed in the oldest exposed sediments in the parish may be attributed, in part, to one or more of several factors: (1) Low permeability of the clayey sediments may have restricted leaching in sediments initially high in



increasing clay content. Consequently, the silty soils are generally more productive for crops.

The Fausse soils formed in clayey deposits similar in nature to the parent material of the Sharkey soils. The major differences between Fausse and Sharkey soils are caused by factors other than parent material differences.

The Baldwin, Dundee, Dundee Variant, and Tensas soils developed in old Mississippi River alluvium. Dundee and Dundee Variant soil developed in the less clayey sediments occupying higher positions on the flood plain than those in which the Baldwin and Tensas soils formed.

Initially, the parent materials of Dundee and Dundee Variant soils were somewhat better drained and more permeable than the more clayey sediments in lower parts of the landscape. Consequently, Dundee soils are generally more leached in horizons near the surface and have more distinct profile development than the more clayey soils. These soils have a B horizon characterized by an accumulation of translocated clays. Baldwin and Tensas soils formed in areas where this

imperceptibly where more recent alluvium overlies gently sloping, low-lying areas of the terrace upland. Each of the two general areas can be further subdivided into two or more subareas distinguished by differences in either soil parent material or physiographic features, or both.

The surface features of the land and the nature and distribution of the different sediments in which the soils have formed are a result of events during and since the late Pleistocene Epoch. The major surface features, geologic nature, and relative ages of these areas are discussed in the following paragraphs.

terrace upland

The terrace upland occurs as an intermittent band extending from the northwest corner to the south-central boundary of the parish and restricted almost entirely to the western half of the survey area. Maximum elevation on the terrace upland ranges from appoximately 100 feet in the northwest corner to about 75 feet near the south-central parish boundary. The intermittent nature of the

in the Kolin, Gore, and McKamie soils and by the red color of sediments beneath the solum in some areas of the Crowley Variant and Wrightsville soils. The Wrightsville soils occupy flat to depressional areas, the Crowley Variant soils occupy ridgetops and upper side slopes, and the Gore and McKamie soils are on the more steeply sloping side slopes.

Investigations conducted during the course of the survey indicated that throughout most of the area the terrace upland is mantled by uniform-textured, silty deposits that have very low sand content. These, in turn, are underlain by alluvial deposits of the Prairie Formation. The sediments in the Prairie Formation are generally clayey, but they have varying textures and are appreciably higher in sand content than the overlying loess. The silty deposits are thickest at the eastern edge of their area of occurrence and become progressively thinner to the west. They have texture, color, and distribution characteristics typically associated with loess (*9,11,26*).

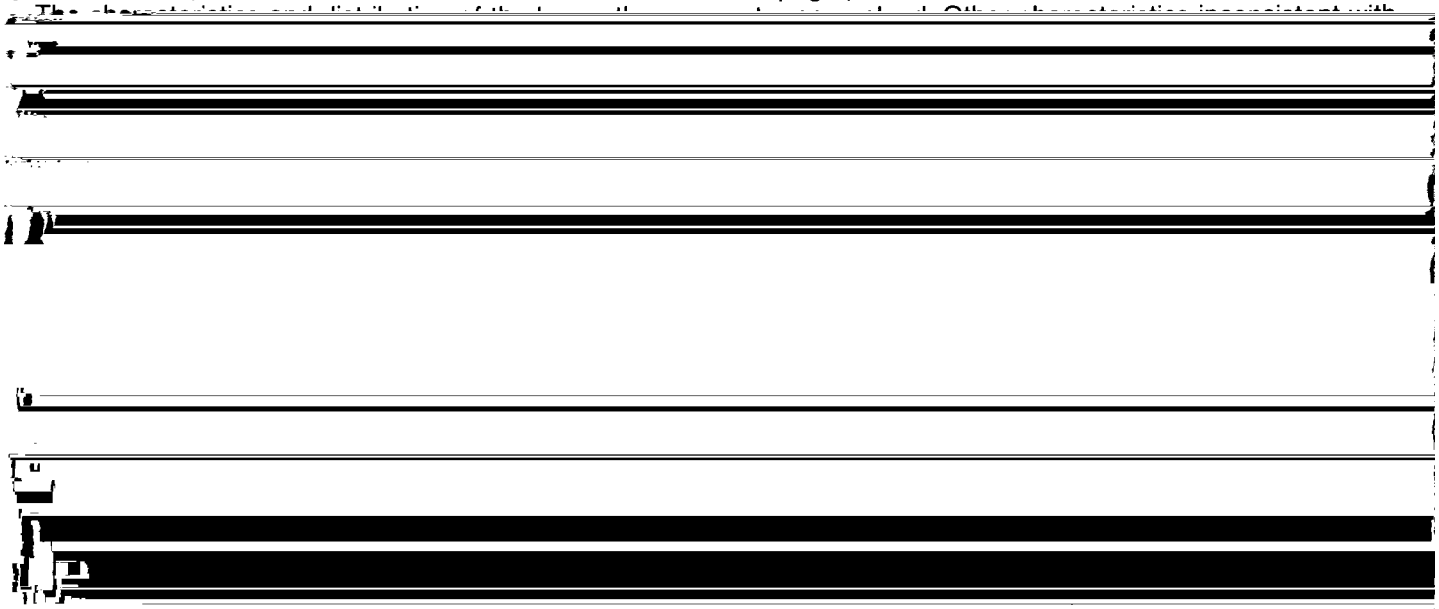
A loess-mantled terrace at a lower elevation than the upland terrace was identified in the northeast corner of the parish during the survey. It is the Calhoun-Coteau-Loring unit on the general soil map. Thickness and distribution patterns are similar to those described for the upland terrace. More recent Red River alluvial deposits bury the western edge of the loess in this area.

An appreciable period of time elapsed between the deposition of the alluvial sediments and the deposition of the overlying loess. This is indicated by the presence, in many places, of recognizable horizons of soils that developed in the alluvial deposits and were later buried by loess. The area covered by loess corresponds approximately to the Calhoun-Coteau-Loring, Memphis-Loring, and part of the Kolin-Vick units shown on the general soil map.

The characteristics and distribution of the [illegible] deposits are uniformly thinner with increasing distance from the source. Their maximum thickness in Avoyelles Parish is a little more than 10 feet along part of the eastern edge of the area, and they become progressively thinner to the west.

More than one interval of loess deposition has been indicated for some of the lower Mississippi Valley area, and somewhat differing times of deposition have been proposed. Saucier (*24*) indicates an age of about 20,000 years for loess in the area of Louisiana approximately 40 miles east of Avoyelles Parish. The loess in Avoyelles Parish covers most of the Prairie Formation terraces, which Saucier indicates are 80,000 to 100,000 years old. At lower elevations in the northeastern part of the parish, the loess is overlain by recent Red River alluvial deposits.

In most reports (*13,23,24*) these loessial deposits are either not described or are considered to be natural levee deposits of streams. A number of their characteristics, however, are inconsistent with those of natural levee deposits. Examples include the extreme width, uniform textures, and low sand content of the deposits. Throughout Avoyelles Parish the silty deposits are essentially uniform in texture, lack interstratified sand and clay lenses, typically have a sand content of less than 5 percent, and occur in a band several miles wide. This contrasts with the stratified natural levee deposits along the Mississippi River; those deposits range from sandy to clayey in texture within a band that generally extends less than 5 miles back from the river. In addition, the loess changes little in thickness across various kinds of topography except that it becomes thinner further from the source and forms a true mantle across the underlying topography (*10*). Alluvial deposits, on the other hand, tend to obliterate pre-existing topographic features, such as the meander belt of the [illegible] Other characteristics inconsistent with



accumulation of illuvial clays. Silt loam textures are in horizons higher and lower in the solum. Guyton soils formed in sediments that are late Pleistocene to mid-Holocene in age.

alluvial plain

The alluvial plain that makes up about 85 percent of the parish consists almost entirely of recent deposits of the Red and Mississippi Rivers. Sediments derived from

The Roxana soils are typically on the highest and sandiest parts of the natural levee nearest the river and contain less clay than other soils developed in these deposits. The Norwood soils formed in loamy deposits on the natural levee farther from the river and contain less sand and more silt and clay than the Roxana soils. Moreland soils formed in thick, clayey backswamp deposits. The Latanier soils are in places where thin, clayey deposits overlie loamy deposits of the Red River.

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glossary

Alluvium. Material such as sand, silt, or clay deposited [redacted] less than 45 percent sand and less than 40 percent [redacted]

[redacted]

on land by streams.

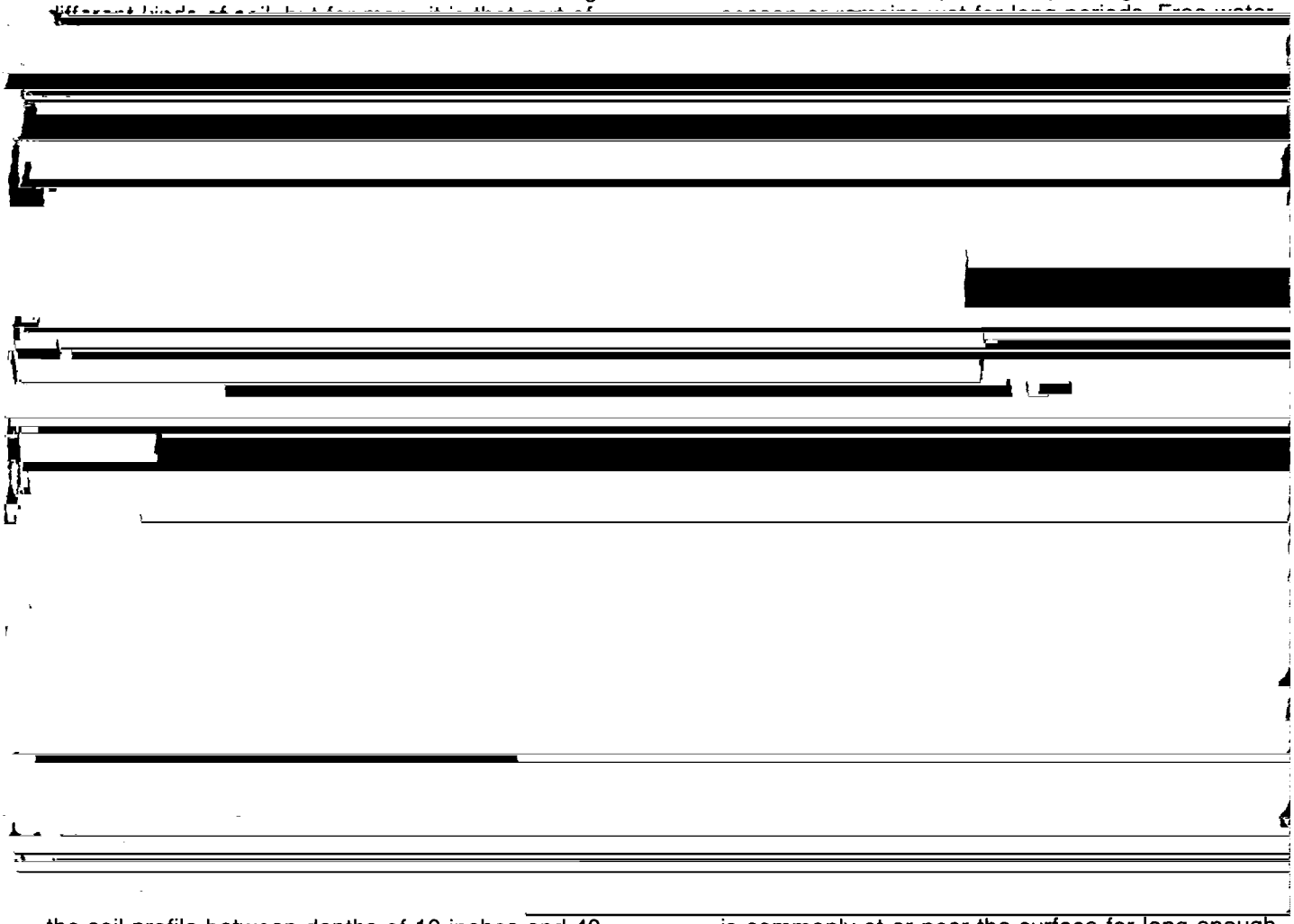
Available water capacity (available moisture capacity). The capacity of soils to hold water [redacted]

silt.

Clay film. A thin coating of oriented clay on the surface [redacted]

[redacted]

Control section. The part of the soil on which classification is based. The thickness varies among



the soil profile between depths of 10 inches and 40 or 80 inches.

Corrosive. High risk of corrosion to uncoated steel or deterioration of concrete.

Cover crop. A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

Cutbanks cave (in tables). The walls of excavations tend to cave in or slough.

Poorly drained.—Water is removed so slowly that the soil is saturated periodically during the growing

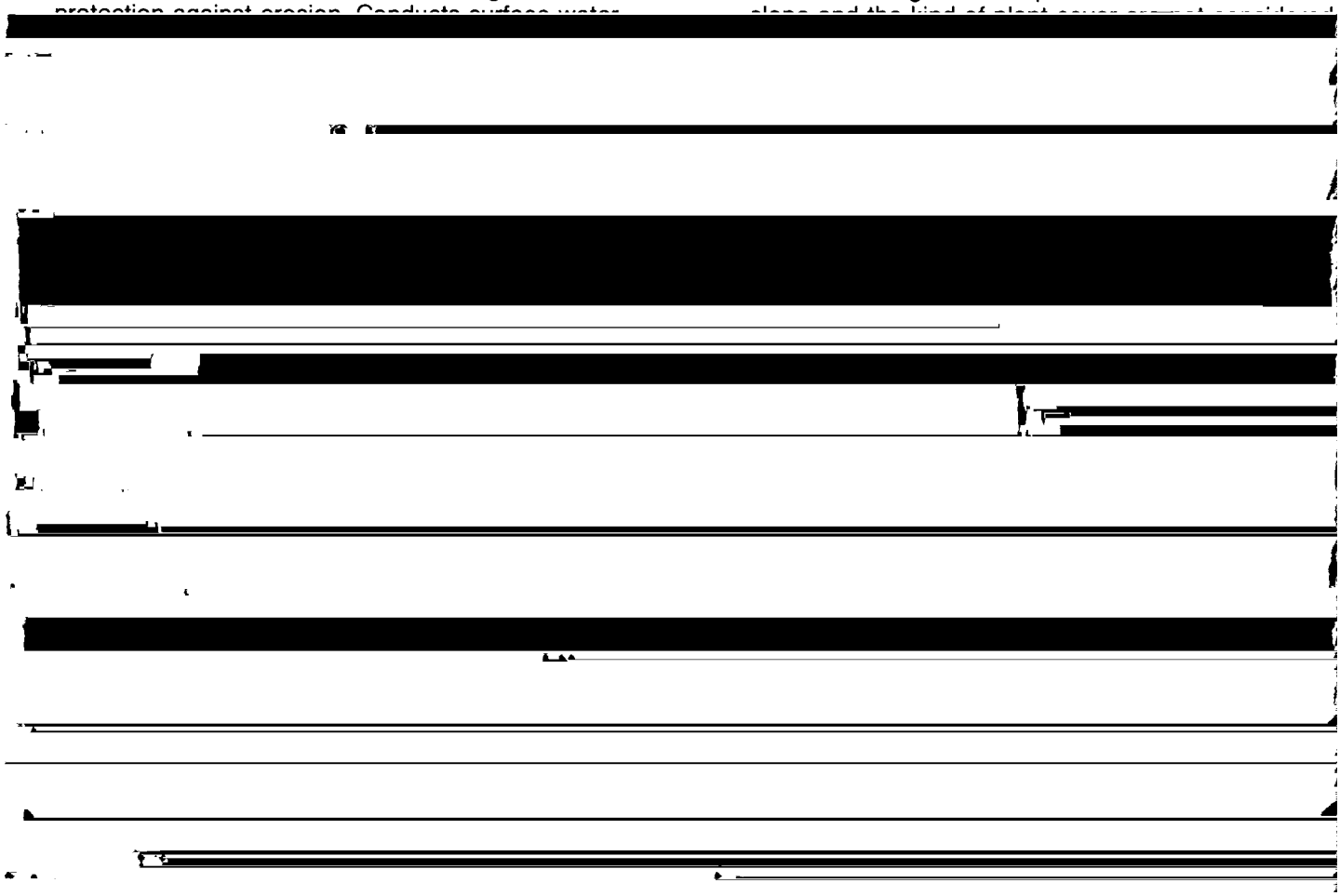
is commonly at or near the surface for long enough during the growing season that most mesophytic crops cannot be grown unless the soil is artificially drained. The soil is not continuously saturated in layers directly below plow depth. Poor drainage results from a high water table, a slowly pervious layer within the profile, seepage, nearly continuous rainfall, or a combination of these.

Very poorly drained.—Water is removed from the soil so slowly that free water remains at or on the

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.

Grassed waterway. A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water



away from cropland.

Ground water (geology). Water filling all the unblocked pores of underlying material below the water table.

Gully. A miniature valley with steep sides cut by running water and through which water ordinarily runs only after rainfall. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, the Arabic numeral 2 precedes the letter C.

R layer.—Consolidated rock beneath the soil. The rock commonly underlies a C horizon, but can be directly below an A or a B horizon.

Hydrologic soil groups. Refers to soils grouped according to their runoff-producing characteristics. The chief consideration is the inherent capacity of soil bare of vegetation to permit infiltration. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff. Soils are assigned to four groups. In group A are soils having a high infiltration rate when thoroughly wet and having a low runoff potential. They are mainly deep, well drained, and sandy or gravelly. In group D, at the other extreme, are soils having a very slow infiltration rate and thus a high runoff potential. They have a claypan or clay layer at or near the surface, have a permanent high water table, or are shallow over nearly impervious bedrock or other material. A soil is assigned to two hydrologic groups if part of the acreage is artificially drained and part is

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.

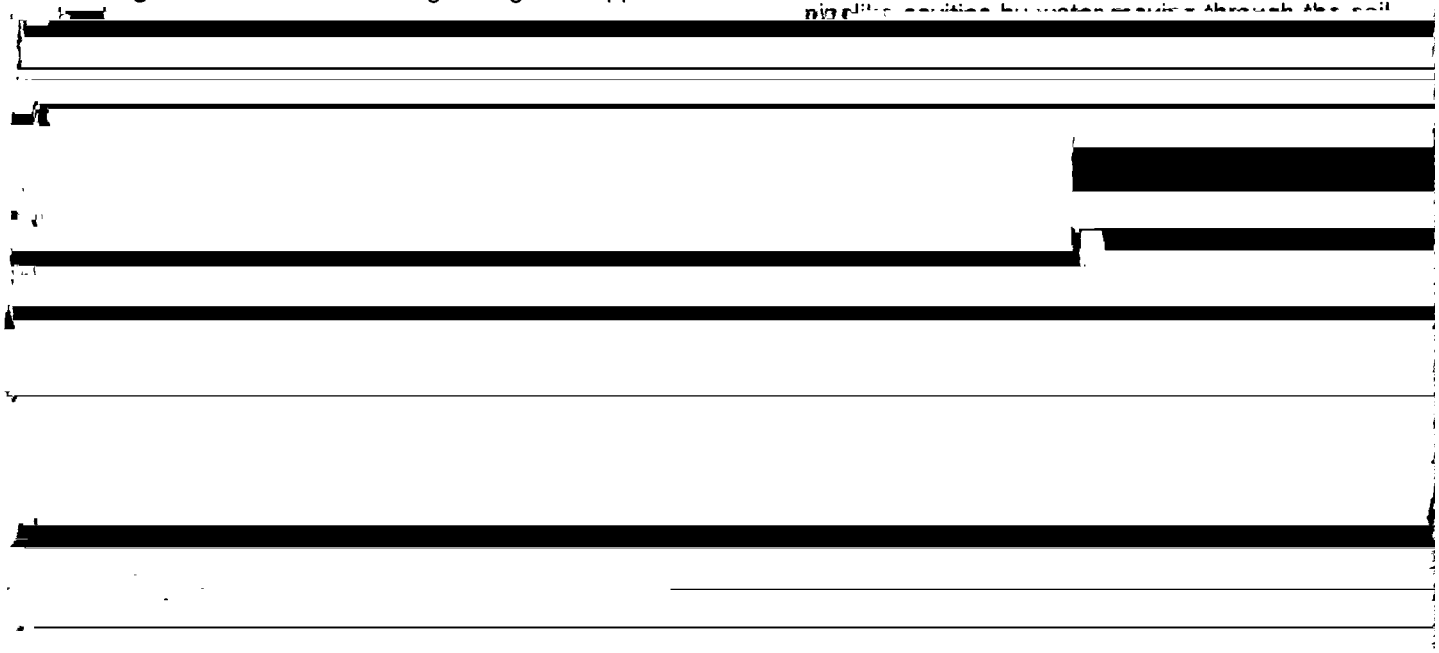
Low strength. The soil is not strong enough to support

Moderate.....0.6 inch to 2.0 inches
Moderately rapid.....2.0 to 6.0 inches
Rapid.....6.0 to 20 inches
Very rapid.....more than 20 inches

Phase, soil. A subdivision of a soil series based on features that affect its use and management. For example, slope, stoniness, and thickness.

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Piping (in tables). Formation of subsurface tunnels or



Minimum tillage. Only the tillage essential to crop production and prevention of soil damage.

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).

Neutral soil. A soil having a pH value between 6.6 and 7.3. (See Reaction, soil.)

Nutrient, plant. Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

Organic matter. Plant and animal residue in the soil in various stages of decomposition.

Parent material. The unconsolidated organic and

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 outlets (in tables). Refers to areas where surface or subsurface drainage outlets are difficult or expensive to install.

Productivity, soil. The capability of a soil for producing a specified plant or sequence of plants under specific management.

Profile, soil. A vertical section of the soil extending through all its horizons and into the parent material.

Reaction, soil. A measure of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degree of acidity or alkalinity is expressed as—

Sand. As a soil separates, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

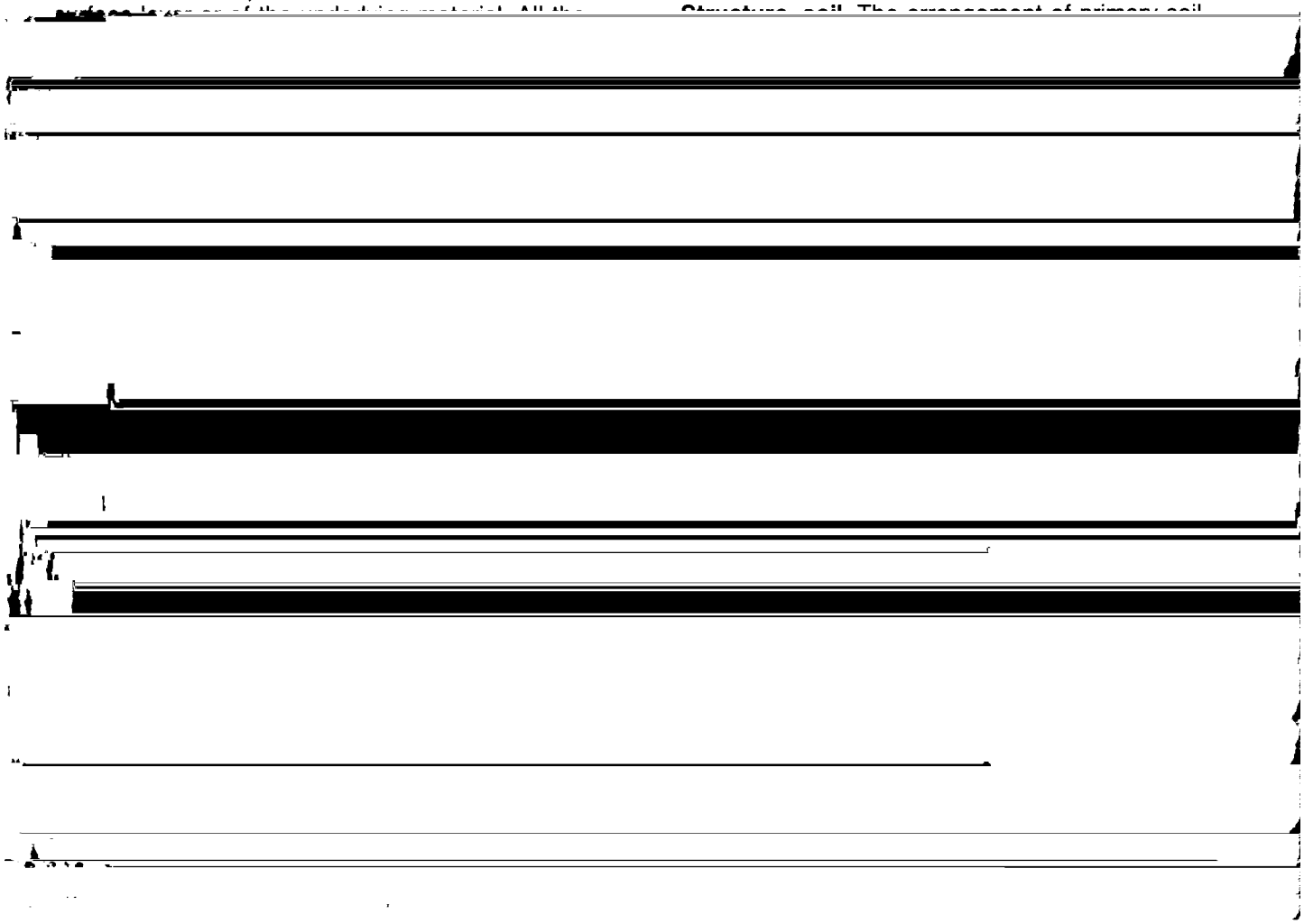
Seepage (in tables). The movement of water through the soil. Seepage adversely affects the specified use.

Series, soil. A group of soils that have profiles that are almost alike, except for differences in texture of the

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 and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the underlying material. The living roots and plant and animal activities are largely confined to the solum.

Structure, soil. The arrangement of primary soil



soils of a series have horizons that are similar in composition, thickness, and arrangement.

Shrink-swell. The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Site index. A designation of the quality of a forest site based on the height of the dominant stand at an

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 grain* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Subsoiling. Breaking up a compact subsoil by pulling a special chisel through the soil.

Topsoil. The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Upland (geology). Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

Variant, soil. A soil having properties sufficiently different from those of other known soils to justify a new series name, but occurring in such a limited geographic area that creation of a new series is not justified.

Weathering. All physical and chemical changes produced in rocks or other deposits at or near the earth's surface by atmospheric agents. These changes result in disintegration and decomposition of the material.

tables

TABLE 1.--TEMPERATURE AND PRECIPITATION

[Recorded in the period 1957-73 at Bunkie, Louisiana]

Month	Temperature						Precipitation				
	Average daily maximum	Average daily minimum	Average daily	2 years in 10 will have-- Maximum temperature higher than--	2 years in 10 will have-- Minimum temperature lower than--	Average number of growing degree days[1]	Average	2 years in 10 will have-- Less than--	2 years in 10 will have-- More than--	Average number of days with 0.10 inch or more	Average snowfall
	°F	°F	°F	°F	°F	Units	In	In	In		In
January	57.8	36.9	47.2	79	17	66	4.60	1.97	6.72	7	0.1
February	61.6	39.8	50.7	81	23	136	4.52	2.61	6.07	6	.5
March	68.7	45.8	57.3	84	27	261	5.23	2.02	7.82	7	.0
April	78.5	56.2	67.4	90	36	522	5.33	1.76	8.18	6	.0
May	84.8	62.5	73.6	94	47	732	5.22	2.50	7.44	6	.0
June	90.7	69.0	79.9	98	57	897	4.79	1.90	7.12	6	.0
July	92.3	71.5	81.9	100	63	989	5.27	2.39	7.61	7	.0
August	91.7	70.1	80.9	99	59	958	4.37	1.26	6.89	6	.0
September	87.6	65.7	76.9	96	49	807	5.18	1.86	7.84	6	.0
October	80.0	54.6	67.3	92	37	536	4.59	.89	7.49	4	.0
November	69.7	45.8	57.8	87	26	262	4.74	1.50	7.35	5	.0
December	61.9	39.6	50.7	79	19	141	7.41	3.87	10.30	7	.0
Yearly:											
Average	77.1	54.8	66.0	---	---	---	---	---	---	---	---
Extreme	---	---	---	101	17	---	---	---	---	---	---
Total	---	---	---	---	---	6,307	61.25	52.19	69.84	73	0.6

[1]A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (50° F).

TABLE 2.--FREEZE DATES IN SPRING AND FALL

[Recorded in the period 1957-73 at Bunkie, LA]

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--	February 11	March 8	March 19
2 years in 10 later than--	February 5	February 28	March 13
5 years in 10 later than--	January 22	February 13	March 1
First freezing temperature in fall:			
1 year in 10 earlier than--	December 2	November 17	October 27
2 years in 10 earlier than--	December 10	November 24	November 4
5 years in 10 earlier than--	December 28	December 7	November 19

TABLE 3.--GROWING SEASON

[Recorded in the period 1957-73 at Bunkie, LA]

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	303	267	234
8 years in 10	313	277	244
5 years in 10	340	297	262
2 years in 10	>365	316	281
1 year in 10	>365	326	290

TABLE 4.--SUITABILITY AND LIMITATIONS OF MAP UNITS ON THE GENERAL SOIL MAP FOR SPECIFIED USES

Map unit	Percent of area	Cultivated crops	Pasture	Woodland	Urban uses
1. Roxanna-Norwood	7	Well suited	Well suited	Well suited	Well suited.
2. Norwood	11	Well suited	Well suited	Well suited	Well suited.
3. Gallion	3	Well suited	Well suited	Well suited	Moderately well suited: shrink-swell, moderate permeability.
4. Convent-Commerce	1	Well suited	Well suited	Well suited	Moderately well suited: shrink-swell, wetness.
5. Dundee	3	Moderately well suited: wetness.	Well suited	Well suited	Moderately well suited: wetness, shrink-swell, moderately slow permeability.
6. Moreland-Latanier	22	Moderately well suited: wetness, poor tilth.	Well suited	Well suited	Poorly suited: wetness, flooding, shrink-swell, very slow permeability.
7. Moreland-Solier	5	Moderately well suited: wetness, poor tilth.	Well suited	Well suited	Poorly suited: wetness, flooding, shrink-swell, very slow permeability.
8. Sharkey	4	Moderately well suited: wetness, poor tilth.	Moderately well suited: wetness.	Well suited	Poorly suited: wetness, flooding, shrink-swell, very slow permeability.
9. Sharkey-Tensas	19	Moderately well suited: wetness, poor tilth, flooding.	Moderately well suited: flooding, wetness.	Well suited	Poorly suited: flooding, wetness, very slow permeability.
10. Sharkey-Fausse-Moreland	8	Poorly suited: flooding, wetness.	Poorly suited: flooding, wetness.	Poorly suited: flooding, wetness.	Poorly suited: wetness, flooding, shrink-swell, very slow permeability.
11. Calhoun-Coteau-Loring	10	Well suited	Well suited	Well suited	Moderately well suited: wetness, slow permeability.
12. Memphis-Loring	1.5	Well suited	Well suited	Well suited	Moderately well suited: slope, slow permeability.
13. Kolin-Vick	3	Moderately well suited: slope, wetness.	Well suited	Well suited	Moderately well suited: wetness, slow permeability.
14. Gore-McKamie-Guyton	2.5	Poorly suited: slope, flooding.	Moderately well suited: flooding.	Moderately well suited: flooding.	Poorly suited: slope shrink-swell, very slow permeability.

TABLE 5.--ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS

Map symbol	Soil name	Acres	Percent
Bd	Baldwin silty clay loam	813	0.1
Ca	Calhoun silt loam	23,399	4.3
Cm	Commerce silt loam	1,121	0.2
Cn	Convent very fine sandy loam	2,193	0.4
Cu	Convent very fine sandy loam, occasionally flooded	1,317	0.2
Cv	Coteau silt loam, 1 to 3 percent slopes	16,280	3.0
Cw	Crowley Variant silt loam	1,182	0.2
Da	Deerford silt loam	1,028	0.2
Dd	Dundee silt loam	3,040	0.6
De	Dundee silty clay loam	1,847	0.3
Dn	Dundee silty clay loam, occasionally flooded	5,475	1.0
Ds	Dundee-Sharkey complex, gently undulating	5,065	0.9
Dv	Dundee Variant clay	1,046	0.2
Fa	Fausse clay	13,862	2.5
Ga	Gallion silt loam	8,745	1.6
Go	Gallion silty clay loam	5,181	1.0
Gr	Gore silt loam, 1 to 5 percent slopes	6,110	1.1
Gy	Guyton silt loam, frequently flooded	3,491	0.6
Ko	Kolin silt loam, 1 to 5 percent slopes	9,389	1.7
La	Latanier clay	15,391	2.8
Ln	Latanier clay, occasionally flooded	2,004	0.4
Lo	Lorine silt loam, 0 to 2 percent slopes	7,156	1.3
Lr	Loring silt loam, 2 to 5 percent slopes	3,633	0.7
Ma	McKamie silt loam, 5 to 12 percent slopes	4,275	0.8
Me	Memphis silt loam, 0 to 2 percent slopes	2,156	0.4
Mh	Memphis silt loam, 2 to 5 percent slopes	1,546	0.3
Mm	Memphis silt loam, 8 to 20 percent slopes	2,628	0.5
Mo	Moreland silt loam	2,939	0.5
Mr	Moreland silt loam, occasionally flooded	731	0.1
Ms	Moreland clay	81,238	15.0
Mt	Moreland clay, occasionally flooded	23,772	4.4
Mu	Moreland clay, gently undulating, occasionally flooded	5,274	1.0
Mw	Moreland clay, frequently flooded	15,854	2.9
Nd	Norwood silt loam	35,515	6.6
No	Norwood silt loam, occasionally flooded	4,398	0.8
Nr	Norwood silty clay loam	16,819	3.1
Nw	Norwood silty clay loam, occasionally flooded	6,383	1.2
Ra	Roxana very fine sandy loam	5,325	1.0
Rn	Roxana very fine sandy loam, gently undulating	6,372	1.2
Ro	Roxana very fine sandy loam, undulating	4,486	0.8
Ru	Roxana very fine sandy loam, gently undulating, occasionally flooded	11,544	2.1
Rx	Roxana very fine sandy loam, frequently flooded	1,190	0.2
Sa	Sharkey clay	14,975	2.8
Se	Sharkey clay, overwash, occasionally flooded	29,591	5.4
Sh	Sharkey clay, overwash, gently undulating, occasionally flooded	21,315	3.9
Sk	Sharkey clay, overwash, frequently flooded	21,399	3.9
So	Solier clay	8,931	1.6
Sr	Solier clay, occasionally flooded	4,010	0.7
Ta	Tensas silty clay	3,673	0.7
Te	Tensas silty clay, overwash, occasionally flooded	10,004	1.8
Tn	Tensas-Sharkey complex, undulating	5,241	1.0
Ts	Tensas-Sharkey complex, overwash, undulating, occasionally flooded	26,836	5.0
Vk	Vick silt loam	5,882	1.1
Wr	Wrightsville silt loam	840	0.2
	Small water	2,532	0.5
	Large water*	17,558	3.2
	Total	544,000	100.0

*Bodies of water larger than 40 acres.

TABLE 6.--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	Sugarcane	Soybeans	Cotton lint	Rice	Common bermudagrass	Improved bermudagrass
	Ton	Bu	Lb	Bu	AUM*	AUM*
Bd---------- Baldwin	30	36	---	120	9.0	15.1
Ca---------- Calhoun	---	25	400	120	---	---
Cm---------- Commerce	35	40	900	---	9.3	16.7
Cn---------- Convent	32	40	875	---	9.3	16.7
Cu---------- Convent	---	35	---	---	8.5	15.5
Cv---------- Coteau	27	32	450	---	5.5	11.3
Cw---------- Crowley Variant	---	28	---	130	5.5	11.3
Da---------- Deerford	---	30	475	---	6.1	10.5
Dd, De---------- Dundee	---	40	750	---	9.0	15.1
Dn---------- Dundee	---	35	---	---	8.0	14.7
Ds---------- Dundee-Sharkey	---	33	662	---	7.5	12.5
Dv---------- Dundee Variant	---	40	750	---	8.2	15.5
Fa---------- Fausse	---	---	---	---	---	---
Ga---------- Gallion	33	40	875	---	9.0	15.2
Go---------- Gallion	33	40	825	---	8.0	13.0
Gr---------- Gore	---	23	---	---	4.5	10.1
Gy---------- Guyton	---	---	---	---	5.0	---
Ko---------- Kolin	---	25	---	---	5.5	12.6
La, Ln---------- Latanier	30	40	675	130	7.2	13.1
Lo---------- Loring	---	35	750	---	5.5	12.5
Lr---------- Loring	---	30	700	---	5.3	12.0

See footnote at end of table.

TABLE 6.--YIELDS PER ACRE OF CROPS AND PASTURE--Continued

Soil name and map symbol	Sugarcane	Soybeans	Cotton lint	Rice	Common bermudagrass	Improved bermudagrass
	Ton	Bu	Lb	Bu	AUM*	AUM*
Ma---------- McKamie	---	---	---	---	4.5	10.1
Me---------- Memphis	---	40	800	---	6.5	13.8
Mh---------- Memphis	---	35	750	---	6.0	13.5
Mm---------- Memphis	---	---	---	---	5.0	10.0
Mo---------- Moreland	30	37	625	130	6.0	12.0
Mr---------- Moreland	---	33	---	---	5.5	---
Ms---------- Moreland	30	37	625	130	6.0	12.0
Mt, Mu---------- Moreland	---	28	---	---	5.5	---
Mw---------- Moreland	---	---	---	---	4.3	---
Nd---------- Norwood	35	40	900	---	9.5	16.7
No---------- Norwood	---	37	850	---	8.0	14.7
Nr---------- Norwood	35	40	875	---	9.5	16.7
Nw---------- Norwood	---	37	850	---	8.0	14.7
Ra---------- Roxana	32	40	875	---	9.0	16.0
Rn---------- Roxana	30	40	850	---	8.5	15.5
Ro---------- Roxana	---	32	800	---	8.5	15.5
Ru---------- Roxana	---	37	800	---	8.5	15.5
Rx---------- Roxana	---	---	---	---	6.0	---
Sa---------- Sharkey	30	35	650	130	6.5	12.0
Se, Sh---------- Sharkey	---	25	---	---	6.0	---
Sk---------- Sharkey	---	---	---	---	5.0	---
So---------- Solier	---	40	---	130	6.0	12.0
Sr---------- Solier	---	35	---	130	6.0	---

TABLE 6.--YIELDS PER ACRE OF CROPS AND PASTURE--Continued

Soil name and map symbol	Sugarcane	Soybeans	Cotton lint	Rice	Common bermudagrass	Improved bermudagrass
	Ton	Bu	Lb	Bu	AUM*	AUM*
Ta---------- Tensas	---	40	600	130	6.5	12.5
Te---------- Tensas	---	30	---	---	6.0	---
Tn---------- Tensas-Sharkey	---	35	---	---	6.0	11.5
Ts---------- Tensas-Sharkey	---	30	---	---	6.0	---
Vk---------- Vick	---	28	---	---	6.1	10.0
Wr---------- Wrightsville	---	25	450	120	5.5	---

* 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.

TABLE 7.--CAPABILITY CLASSES AND SUBCLASSES

[Miscellaneous areas are excluded. Absence of an entry indicates no acreage]

Class	Total acreage	Major management concerns (Subclass)			
		Erosion (e)	Wetness (w)	Soil problem (s)	Climate (c)
		Acres	Acres	Acres	Acres
I	58,897	---	---	---	---
II	84,921	27,831	57,090	---	---
III	187,746	13,875	---	173,871	---
IV	129,647	6,110	123,537	---	---
V	41,934	---	41,934	---	---
VI	6,903	6,903	---	---	---
VII	13,862	---	13,862	---	---
VIII	---	---	---	---	---

TABLE 8.--WOODLAND MANAGEMENT AND PRODUCTIVITY

[Only the soils suitable for production of commercial trees are listed. Absence of an entry indicates that information was not available]

Soil name and map symbol	Ordination symbol	Management concerns				Potential productivity		Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Plant competition	Common trees	Site index	
Bd---------- Baldwin	2w6	Slight	Severe	Moderate	Severe	Green ash----------	80	Eastern cottonwood, sweetgum, American sycamore.
						Eastern cottonwood--	100	
						Water oak----------	90	
						Pecan----------	---	
						Sweetgum----------	90	
						American sycamore---	---	
						Sugarberry----------	---	
Ca---------- Calhoun	2w9	Slight	Severe	Moderate	Severe	Cherrybark oak------	---	Loblolly pine, slash pine.
						Water oak----------	---	
						Sweetgum----------	---	
						Loblolly pine-------	90	
						Slash pine----------	90	
Cm---------- Commerce	1w5	Slight	Moderate	Slight	Severe	Green ash----------	80	Eastern cottonwood, American sycamore.
						Eastern cottonwood--	120	
						Nuttall oak---------	90	
						Water oak----------	110	
						Pecan----------	---	
						American sycamore---	---	
						Sugarberry----------	---	
Cn, Cu---------- Convent	1w5	Slight	Moderate	Slight	Severe	Green ash----------	80	Eastern cottonwood, American sycamore.
						Eastern cottonwood--	120	
						Sweetgum----------	110	
						American sycamore---	---	
						Nuttall oak---------	90	
						Water oak----------	---	
						Pecan----------	---	
						Sugarberry----------	---	
Cv---------- Coteau	1w8	Slight	Moderate	Slight	Moderate	Loblolly pine-------	100	Loblolly pine, slash pine.
						Slash pine----------	---	
						Water oak----------	90	
						Cherrybark oak------	90	
Cw---------- Crowley Variant	2w9	Slight	Severe	Moderate	Severe	Loblolly pine-------	90	Loblolly pine.
Da---------- Deerford	2w8	Slight	Moderate	Slight	Severe	Sweetgum----------	86	Loblolly pine, slash pine.
						Loblolly pine-------	92	
						Slash pine----------	92	
						Water oak----------	82	
Dd, De, Dn---------- Dundee	2w5	Slight	Moderate	Slight	Moderate	Nuttall oak---------	105	Cherrybark oak, eastern cottonwood, sweetgum, water oak,
						Eastern cottonwood--	100	
						Sweetgum----------	100	
						Water oak----------	95	
Ds*:								
Dundee----------	2w5	Slight	Moderate	Slight	Moderate	Nuttall oak---------	105	Cherrybark oak, eastern cottonwood, sweetgum, water oak.
						Eastern cottonwood--	100	
						Sweetgum----------	100	
						Water oak----------	95	
Sharkey----------	2w6	Slight	Severe	Moderate	Severe	Green ash----------	85	Eastern cottonwood, American sycamore, sweetgum.
						Eastern cottonwood--	100	
						Nuttall oak---------	90	
						Sweetgum----------	90	
						Water oak----------	---	
						Pecan----------	---	
						American sycamore---	---	
						Sugarberry----------	---	

See footnote at end of table.

TABLE 8.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Ordination symbol	Management concerns				Potential productivity		Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Plant competition	Common trees	Site index	
Dv---------- Dundee Variant	2w6	Slight	Moderate	Slight	Moderate	Nuttall oak----------	---	Eastern cottonwood, sweetgum, water oak.
						Water oak----------	---	
						Sugarberry----------	---	
Fa---------- Fausse	4w6	Slight	Severe	Severe	Severe	Baldcypress----------	---	Baldcypress.
						Water hickory--------	---	
						Water tupelo---------	---	
						Overcup oak----------	---	
						Black willow---------	---	
Ga, Go---------- Gallion	2o4	Slight	Slight	Slight	Moderate	Green ash----------	80	Eastern cottonwood, American sycamore.
						Nuttall oak----------	95	
						Sweetgum-----------	83	
						Water oak----------	---	
						Pecan----------	---	
						American sycamore---	---	
						Eastern cottonwood--	100	
Gr---------- Gore	3c2	Slight	Moderate	Moderate	Moderate	Loblolly pine-------	78	Loblolly pine, slash pine.
						Longleaf pine-------	---	
						Slash pine----------	---	
Gy---------- Guyton	2w9	Slight	Severe	Moderate	Severe--	Loblolly pine-------	90	Loblolly pine, sweetgum.
						Slash pine----------	90	
						Sweetgum-----------	---	
						Green ash----------	---	
						Southern red oak-----	---	
						Water oak----------	---	
Ko---------- Kolin	3w8	Slight	Moderate	Slight	Moderate	Loblolly pine-------	85	Loblolly pine, slash pine.
						Longleaf pine-------	---	
						Slash pine----------	---	
						Sweetgum-----------	---	
La, Ln---------- Latanier	2w6	Slight	Moderate	Moderate	Severe	Green ash----------	80	Eastern cottonwood, American sycamore.
						Nuttall oak----------	90	
						Water oak----------	90	
						Pecan----------	---	
						Sweetgum-----------	90	
						Sugarberry----------	---	
Lo, Lr---------- Loring	2o7	Slight	Slight	Slight	Severe	Cherrybark oak------	86	Loblolly pine, shortleaf pine, cherrybark oak, sweetgum, yellow-poplar.
						Loblolly pine-------	95	
						Shortleaf pine------	90	
						Sweetgum-----------	90	
						Water oak----------	90	
Ma---------- McKamie	3c2	Slight	Moderate	Moderate	Moderate	Loblolly pine-------	85	Loblolly pine, slash pine.
						Slash pine----------	85	
						Longleaf pine-------	---	
Me, Mh, Mm---------- Memphis	1o7	Slight	Slight	Slight	Moderate	Cherrybark oak------	100	Cherrybark oak, loblolly pine, sweetgum, yellow-poplar.
						Loblolly pine-------	105	
						Sweetgum-----------	90	
						Water oak----------	90	
Mo---------- Moreland	2w6	Slight	Severe	Moderate	Severe	Green ash----------	75	Eastern cottonwood, American sycamore.
						Sweetgum-----------	90	
						Water oak----------	90	
						Nuttall oak----------	90	
						Sugarberry----------	---	
Mr---------- Moreland	3w5	Slight	Severe	Severe	Severe	Green ash----------	70	Eastern cottonwood, American sycamore.
						Sweetgum-----------	80	
						Water oak----------	80	
						Nuttall oak----------	80	
						Sugarberry----------	---	

See footnote at end of table.

TABLE 8.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Ordination symbol	Management concerns				Potential productivity		Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Plant competition	Common trees	Site index	
Ms---------- Moreland	2w6	Slight	Severe	Moderate	Severe	Green ash---------- Sweetgum---------- Water oak---------- Nuttall oak---------- Sugarberry----------	75 90 90 90 ---	Eastern cottonwood, American sycamore.

TABLE 8.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Ordination symbol	Management concerns				Potential productivity		Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Plant competition	Common trees	Site index	
Te Tensas	3w6	Slight	Severe	Severe	Severe	Green ash Nuttall oak Water hickory Sugarberry Honey locust Pecan	70 80 --- --- --- ---	Eastern cottonwood.
Tn*: Tensas	2w6	Slight	Severe	Moderate	Severe	Green ash Water oak Sweetgum Pecan Sugarberry	80 95 100 --- ---	Eastern cottonwood, American sycamore, sweetgum.
Sharkey	2w6	Slight	Severe	Moderate	Severe	Green ash Nuttall oak Sweetgum Water oak Pecan Sugarberry	85 90 90 --- --- ---	Eastern cottonwood, American sycamore, sweetgum.
Ts*: Tensas	3w6	Slight	Severe	Severe	Severe	Green ash Sugarberry Nuttall oak Pecan Honey locust	70 --- 80 --- ---	Eastern cottonwood, baldcypress, sweetgum.
Sharkey	3w6	Slight	Severe	Severe	Severe	Green ash Nuttall oak Sugarberry Honey locust	--- --- --- ---	Eastern cottonwood.
Vk Vick	2w8	Slight	Moderate	Moderate	Severe	Loblolly pine Shortleaf pine Southern red oak Water oak Sweetgum Slash pine	87 77 80 86 86 87	Loblolly pine, slash pine.
Wr Wrightsville	3w9	Slight	Severe	Moderate	Severe	Loblolly pine Sweetgum Water oak	80 80 80	Loblolly pine, sweetgum, water oak, willow oak.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 9.--RECREATIONAL DEVELOPMENT

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not rated]

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
Bd Baldwin	Severe: wetness, percs slowly.	Severe: wetness, percs slowly.	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.
Ca Calhoun	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
Cm Commerce	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.
Cn Convent	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.
Cu Convent	Severe: flooding.	Moderate: wetness.	Moderate: wetness, flooding.	Moderate: wetness.	Moderate: wetness, flooding.
Cv Coteau	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Moderate: slope, wetness, percs slowly.	Moderate: wetness.	Moderate: wetness.
Cw Crowley Variant	Severe: wetness, percs slowly.	Severe: wetness, percs slowly.	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.
Da Deerford	Severe: wetness, excess sodium.	Severe: wetness, excess sodium.	Severe: wetness, excess sodium.	Severe: wetness.	Severe: excess sodium, wetness.
Dd, De Dundee	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.
Dn Dundee	Severe: flooding.	Moderate: wetness, percs slowly.	Moderate: wetness, flooding.	Moderate: wetness.	Moderate: wetness, flooding.
Ds*:					

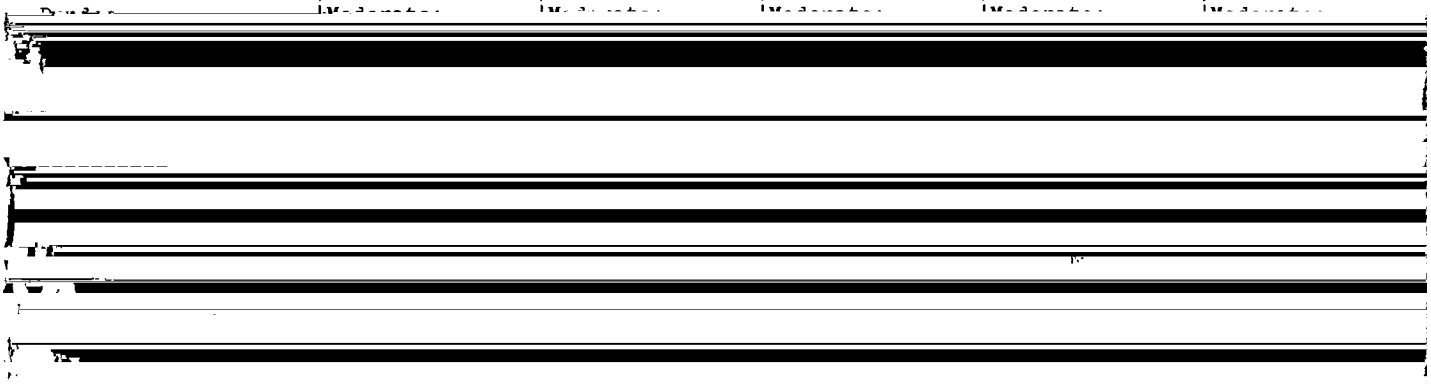


TABLE 9.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
Go Gallion	Slight	Slight	Slight	Slight	Slight.
Gr Gore	Severe: percs slowly.	Severe: percs slowly.	Severe: percs slowly.	Severe: erodes easily.	Slight.
Gy Guyton	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.	Severe: wetness, flooding.
Ko Kolin	Severe: percs slowly.	Severe: percs slowly.	Severe: percs slowly.	Slight	Moderate: wetness.
La Latanier	Severe: wetness, percs slowly, flooding.	Severe: too clayey, percs slowly.	Severe: too clayey, wetness.	Severe: too clayey.	Severe: too clayey.
Ln Latanier	Severe: flooding, wetness, percs slowly.	Severe: too clayey, percs slowly.	Severe: too clayey, wetness.	Severe: too clayey.	Severe: too clayey.
Lo Loring	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Slight	Slight.
Lr Loring	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Moderate: slope, wetness, percs slowly.	Slight	Slight.
Ma McKamie	Moderate: percs slowly, slope.	Moderate: slope.	Severe: slope.	Slight	Moderate: slope.
Me Memphis	Slight	Slight	Slight	Slight	Slight.
Mh Memphis	Slight	Slight	Moderate: slope.	Severe: erodes easily.	Slight.
Mm Memphis	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: erodes easily.	Moderate: slope.
Mo Moreland	Severe: wetness, percs slowly, flooding.	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.	Severe: wetness.
Mr Moreland	Severe: flooding, wetness, percs slowly.	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.	Severe: wetness.
Ms Moreland	Severe: wetness, percs slowly, flooding.	Severe: wetness, too clayey, percs slowly.	Severe: too clayey, wetness.	Severe: wetness, too clayey.	Severe: wetness, too clayey.
Mt, Mu Moreland	Severe: flooding, wetness, percs slowly.	Severe: wetness, too clayey, percs slowly.	Severe: too clayey, wetness.	Severe: wetness, too clayey.	Severe: wetness, too clayey.

TABLE 9.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
Mw Moreland	Severe: flooding, wetness, percs slowly.	Severe: wetness, too clayey, percs slowly.	Severe: too clayey, wetness, flooding.	Severe: wetness, too clayey.	Severe: wetness, flooding, too clayey.
Nd Norwood	Slight	Slight	Slight	Slight	Slight.
No Norwood	Severe: flooding.	Slight	Moderate: flooding.	Slight	Moderate: flooding.
Nr Norwood	Slight	Slight	Slight	Slight	Slight.
Nw Norwood	Severe: flooding.	Slight	Moderate: flooding.	Slight	Moderate: flooding.
Ra Roxana	Slight	Slight	Slight	Slight	Slight.
Rn, Ro Roxana	Slight	Slight	Moderate: slope.	Severe: erodes easily.	Slight.
Roxana	flooding.		slope, flooding.	erodes easily.	flooding.
Rx Roxana	Severe: flooding.	Moderate: flooding.	Severe: flooding.	Moderate: floods.	Severe: flooding.
Sa Sharkey	Severe: wetness, percs slowly, flooding.	Severe: wetness, too clayey, percs slowly.	Severe: too clayey, wetness.	Severe: wetness, too clayey.	Severe: wetness, too clayey.
Se, Sh Sharkey	Severe: flooding, wetness, percs slowly.	Severe: wetness, too clayey, percs slowly.	Severe: too clayey, wetness.	Severe: wetness, too clayey.	Severe: wetness, too clayey.
Sk Sharkey	Severe: flooding, wetness, percs slowly.	Severe: wetness, too clayey, percs slowly.	Severe: too clayey, wetness, flooding.	Severe: wetness, too clayey.	Severe: wetness, flooding, too clayey.
So, Sr Solier	Severe: flooding, wetness, percs slowly.	Severe: wetness, too clayey, percs slowly.	Severe: too clayey, wetness.	Severe: wetness, too clayey.	Severe: too clayey, wetness.
Ta Tensas	Severe: wetness.	Severe: too clayey.	Severe: too clayey	Severe: too clayey.	Severe: too clayey

TABLE 9.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
Tn*:					
Sharkey	Severe: wetness, percs slowly, flooding.	Severe: wetness, too clayey, percs slowly.	Severe: too clayey, wetness.	Severe: wetness, too clayey.	Severe: wetness, too clayey.
Ts*:					
Tensas	Severe: flooding, wetness, percs slowly.	Severe: too clayey, percs slowly.	Severe: too clayey, wetness.	Severe: too clayey.	Severe: too clayey.
Sharkey	Severe: flooding, wetness, percs slowly.	Severe: wetness, too clayey, percs slowly.	Severe: too clayey, wetness.	Severe: wetness, too clayey.	Severe: wetness, too clayey.
Vk	Severe: wetness, percs slowly.	Severe: wetness, percs slowly.	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.
Vick					
Wr	Severe: wetness, percs slowly.	Severe: wetness, percs slowly.	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.
Wrightsville					

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 10.--WILDLIFE HABITAT

[See text for definitions of "good," "fair," "poor," and "very poor." Absence of an entry indicates that the soil was not rated]

Soil name and map symbol	Potential for habitat elements								Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Shrubs	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
Bd---------- Baldwin	Fair	Fair	Fair	Good	---	Good	Good	Good	Fair	Good	Good
Ca---------- Calhoun	Fair	Fair	Fair	Good	Good	Good	Good	Good	Fair	Good	Good
Cm---------- Commerce	Good	Good	Good	Good	---	Good	Fair	Fair	Good	Good	Fair
Cn---------- Convent	Good	Good	Good	Good	---	Good	Fair	Fair	Good	Good	Fair
Cu---------- Convent	Fair	Good	Good	Good	---	Good	Fair	Fair	Good	Good	Fair
Cv---------- Coteau	Fair	Good	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
Cw---------- Crowley Variant	Fair	Fair	Fair	Good	---	Good	Fair	Fair	Fair	Fair	Good
Da---------- Deerford	Fair	Good	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
Dd, De---------- Dundee	Fair	Good	Good	Good	---	Good	Fair	Fair	Good	Good	Fair
Dn---------- Dundee	Fair	Good	Good	Good	---	Good	Fair	Fair	Good	Good	Fair
Ds*:											
Dundee----------	Fair	Good	Good	Good	---	Good	Fair	Fair	Good	Good	Fair
Sharkey----------	Fair	Fair	Fair	Good	---	Good	Good	Good	Fair	Good	Good
Dv---------- Dundee Variant	Fair	Good	Good	Good	---	Good	Fair	Fair	Good	Good	Fair
Fa---------- Fausse	Very poor.	Very poor.	Very poor.	Poor	---	Poor	Good	Good	Very poor.	Poor	Good
Ga, Go---------- Gallion	Good	Good	Good	Good	---	Good	Poor	Very poor.	Good	Good	Very poor.
Gr---------- Gore	Poor	Good	Good	---	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.

TABLE 10.--WILDLIFE HABITAT--Continued

Soil name and map symbol	Potential for habitat elements								Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Shrubs	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
Ma---------- McKamie	Poor	Fair	Good	---	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
Me, Mh---------- Memphis	Good	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
Mm---------- Memphis	Poor	Good	Good	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
Mo---------- Moreland	Fair	Fair	Fair	Good	---	Good	Good	Good	Fair	Good	Good
Mr---------- Moreland	Fair	Fair	Fair	Good	---	Good	Good	Good	Fair	Good	Good
Ms---------- Moreland	Fair	Fair	Fair	Good	---	Good	Good	Good	Fair	Good	Good
Mt, Mu---------- Moreland	Fair	Fair	Fair	Good	---	Good	Good	Good	Fair	Good	Good
Mw---------- Moreland	Poor	Fair	Fair	Good	---	Good	Good	Good	Poor	Fair	Good
Nd, No, Nr, Nw----- Norwood	Good	Good	Good	Good	---	Good	Poor	Very poor.	Good	Good	Very poor.
Ra, Rn, Ro---------- Roxana	Good	Good	Good	Good	---	Good	Poor	Very poor.	Good	Good	Very poor.
Ru---------- Roxana	Good	Good	Good	Good	---	Good	Poor	Very poor.	Good	Good	Very poor.
Rx---------- Roxana	Poor	Fair	Fair	Good	---	Good	Poor	Very poor.	Fair	Good	Very poor.
Sa---------- Sharkey	Fair	Fair	Fair	Good	---	Good	Good	Good	Fair	Good	Good
Se, Sh---------- Sharkey	Fair	Fair	Fair	Good	---	Good	Good	Good	Fair	Good	Good
Sk---------- Sharkey	Poor	Fair	Fair	Good	---	Good	Good	Good	Poor	Fair	Good
So, Sr---------- Solier	Fair	Fair	Fair	Good	---	Good	Good	Good	Fair	Good	Good
Ta---------- Tensas	Fair	Fair	Fair	Good	---	Good	Good	Good	Fair	Good	Good
Te---------- Tensas	Fair	Fair	Fair	Good	---	Good	Good	Good	Poor	Good	Good
Tn*: Tensas---------- Sharkey----------	Fair Fair	Fair Fair	Fair Fair	Good Good	--- ---	Good Good	Fair Good	Fair Good	Fair Fair	Good Good	Good Good
Ts*: Tensas---------- Sharkey----------	Fair Fair	Fair Fair	Fair Fair	Good Good	--- ---	Good Good	Fair Good	Fair Good	Poor Fair	Good Good	Good Good
Vk---------- Vick	Fair	Good	Good	Good	Fair	Good	Fair	Fair	Fair	Good	Fair

See footnote at end of table.

TABLE 10.--WILDLIFE HABITAT--Continued

Soil name and map symbol	Potential for habitat elements								Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Shrubs	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
Wr---------- Wrightsville	Fair	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 11.--BUILDING SITE DEVELOPMENT

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence indicates that the soil was not rated]

Soil name and map symbol	Shallow excavations	Dwellings without basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
Bd Baldwin	Severe: wetness.	Severe: wetness, shrink-swell.	Severe: wetness, shrink-swell.	Severe: low strength, wetness, shrink-swell.	Severe: wetness.
Ca Calhoun	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: low strength, wetness.	Severe: wetness.
Cm Commerce	Severe: wetness.	Moderate: wetness, shrink-swell.	Moderate: wetness, shrink-swell.	Severe: low strength.	Moderate: wetness.
Cn Convent	Severe: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.
Cu Convent	Severe: wetness.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Moderate: wetness, flooding.
Cv Coteau	Severe: wetness.	Moderate: wetness, shrink-swell.	Moderate: wetness, shrink-swell.	Severe: low strength.	Moderate: wetness.
Cw Crowley Variant	Severe: wetness.	Severe: wetness, shrink-swell.	Severe: wetness, shrink-swell.	Severe: low strength, wetness, shrink-swell.	Severe: wetness.
Da Deerford	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: low strength, wetness.	Severe: excess sodium, wetness.
Dd, De Dundee	Severe: wetness.	Moderate: wetness, shrink-swell.	Moderate: wetness, shrink-swell.	Severe: low strength.	Moderate: wetness.
Dn Dundee	Severe: wetness.	Severe: flooding.	Severe: flooding.	Severe: flooding, low strength.	Moderate: wetness, flooding.
Ds*:					
Dundee	Severe: wetness.	Moderate: wetness, shrink-swell.	Moderate: wetness, shrink-swell.	Severe: low strength.	Moderate: wetness.
Sharkey	Severe: wetness.	Severe: wetness, shrink-swell, flooding.	Severe: wetness, shrink-swell, flooding.	Severe: low strength, wetness.	Severe: wetness, too clayey.
Dv Dundee Variant	Severe: wetness.	Moderate: wetness, shrink-swell.	Moderate: wetness, shrink-swell.	Severe: low strength.	Severe: too clayey.
Fa Fausse	Severe: ponding.	Severe: flooding, ponding, shrink-swell.	Severe: flooding, ponding, shrink-swell.	Severe: low strength, ponding, flooding.	Severe: ponding, flooding, too clayey.
Ga, Go Gallion	Slight	Moderate: shrink-swell.	Moderate: shrink-swell.	Severe: low strength.	Slight.
Gr Gore	Moderate: too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: low strength, shrink-swell.	Slight.

TABLE 11.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
Gy---------- Guyton	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, wetness, flooding.	Severe: wetness, flooding.
Ko---------- Kolin	Severe: wetness.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: low strength, shrink-swell.	Moderate: wetness.
La---------- Latanier	Severe: wetness.	Severe: wetness, shrink-swell, flooding.	Severe: wetness, shrink-swell, flooding.	Severe: low strength, shrink-swell, flooding.	Severe: too clayey.
Ln---------- Latanier	Severe: wetness.	Severe: flooding, wetness, shrink-swell.	Severe: flooding, wetness, shrink-swell.	Severe: shrink-swell. flooding, shrink-swell.	Severe: too clayey.
Lo, Lr---------- Loring	Severe: wetness.	Moderate: wetness.	Moderate: wetness.	Severe: low strength.	Slight.
Ma---------- McKamie	Severe: too clayey.	Severe: shrink-swell.	Severe: slope, shrink-swell.	Severe: low strength, shrink-swell.	Moderate: slope.
Me, Mh---------- Memphis	Slight--------- slope.	Slight---------- slope.	Slight--------- slope.	Severe: low strength.	Slight. slope.
Mo---------- Moreland	Severe: wetness.	Severe: wetness, shrink-swell, flooding.	Severe: wetness, shrink-swell, flooding.	Severe: low strength, wetness.	Severe: wetness.
Mr---------- Moreland	Severe: wetness.	Severe: flooding, wetness, shrink-swell.	Severe: flooding, wetness, shrink-swell.	Severe: low strength, wetness, flooding.	Severe: wetness.
Ms----------	Severe:	Severe:	Severe:	Severe:	Severe:

TABLE 11.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
Ra, Rn, Ro--------- Roxana	Severe: cutbanks cave.	Slight----------	Slight----------	Slight----------	Slight.
Ru---------- Roxana	Severe: cutbanks cave.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Moderate: flooding.
Rx---------- Roxana	Severe: cutbanks cave.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.
Sa---------- Sharkey	Severe: wetness.	Severe: wetness, shrink-swell, flooding.	Severe: wetness, shrink-swell, flooding.	Severe: low strength, wetness.	Severe: wetness, too clayey.
Se, Sh---------- Sharkey	Severe: wetness.	Severe: flooding, wetness, shrink-swell.	Severe: flooding, wetness, shrink-swell.	Severe: low strength, wetness, flooding.	Severe: wetness, too clayey.
Sk---------- Sharkey	Severe: wetness.	Severe: flooding, wetness, shrink-swell.	Severe: flooding, wetness, shrink-swell.	Severe: low strength, wetness, flooding.	Severe: wetness, flooding, too clayey.
So---------- Solier	Severe: wetness.	Severe: flooding, wetness, shrink-swell.	Severe: flooding, wetness.	Severe: low strength, wetness.	Severe: too clayey, wetness.
Sr---------- Solier	Severe: wetness.	Severe: flooding, wetness, shrink-swell.	Severe: flooding, wetness.	Severe: flooding, low strength, wetness.	Severe: too clayey, wetness.
Ta---------- Tensas	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness, flooding.	Severe: low strength.	Severe: too clayey.
Te---------- Tensas	Severe: wetness.	Severe: flooding, wetness	Severe: flooding, wetness	Severe: low strength, flood	Severe: too clayey.

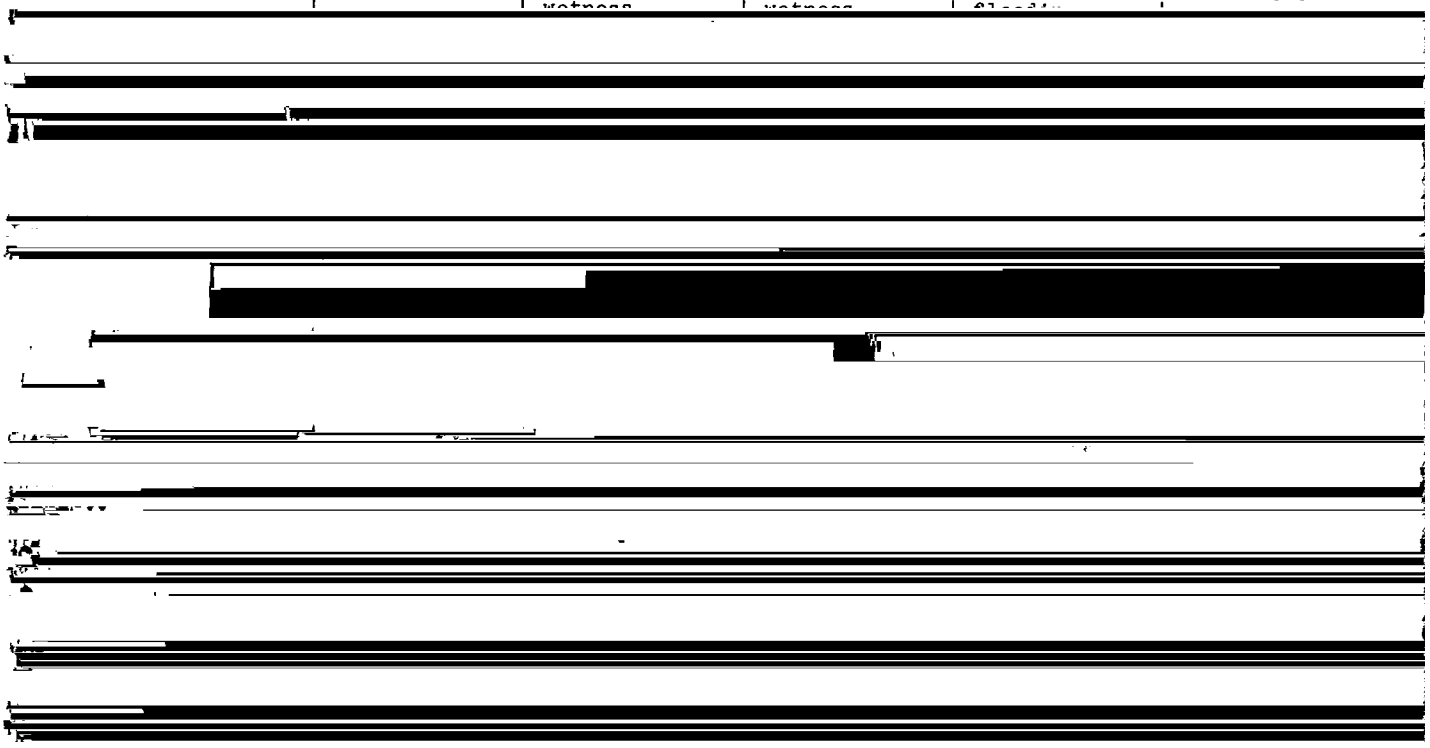


TABLE 12.--SANITARY FACILITIES

[illegible] "slight," "moderate," "good," "fair," and other terms. Absence of an entry indicates that the soil was not rated]

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
Bd: Baldwin	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness, too clayey.	Severe: wetness.	Poor: too clayey, hard to pack, wetness.
Ca: Calhoun	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
Cm: Commerce	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Fair: wetness.
Cn: Convent	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Fair: wetness.
Cu: Convent	Severe: flooding, wetness, percs slowly.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Fair: wetness.
Cv	Severe:	Severe:	Severe:	Moderate:	Fair:

TABLE 12.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
Ga, Go---------- Gallion	Moderate: percs slowly.	Moderate: seepage.	Slight----------	Slight----------	Good.
Gr---------- Gore	Severe: percs slowly.	Moderate: slope.	Severe: too clayey.	Slight----------	Poor: too clayey, hard to pack.
Gy---------- Guyton	Severe: flooding, wetness, percs slowly.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
Ko---------- Kolin	Severe: wetness, percs slowly.	Moderate: slope.	Severe: wetness, too clayey.	Moderate: wetness.	Poor: too clayey, hard to pack.
La---------- Latanier	Severe: wetness, percs slowly.	Severe: wetness, flooding.	Severe: wetness.	Severe: wetness.	Poor: wetness.
Ln---------- Latanier	Severe: flooding, wetness, percs slowly.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
Lo, Lr---------- Loring	Severe: wetness, percs slowly.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.	Fair: wetness.
Ma---------- McKamie	Severe: percs slowly.	Severe: slope.	Severe: too clayey.	Moderate: slope.	Poor: too clayey.
Me---------- Memphis	Moderate: percs slowly.	Moderate: seepage.	Slight----------	Slight----------	Good.
Mh---------- Memphis	Moderate: percs slowly.	Moderate: seepage, slope.	Slight----------	Slight----------	Good.
Mm---------- Memphis	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
Mo---------- Moreland	Severe: wetness, percs slowly.	Severe: flooding.	Severe: wetness, too clayey.	Severe: wetness.	Poor: too clayey, hard to pack, wetness.
Mr---------- Moreland	Severe: flooding, wetness, percs slowly.	Severe: flooding, wetness.	Severe: flooding, wetness, too clayey.	Severe: flooding, wetness.	Poor: too clayey, hard to pack, wetness.
Ms---------- Moreland	Severe: wetness, percs slowly.	Severe: flooding.	Severe: wetness, too clayey.	Severe: wetness.	Poor: too clayey, hard to pack, wetness.
Mt, Mu, Mw---------- Moreland	Severe: flooding, wetness, percs slowly.	Severe: flooding, wetness.	Severe: flooding, wetness, too clayey.	Severe: flooding, wetness.	Poor: too clayey, hard to pack, wetness.
Nd---------- Norwood	Moderate: percs slowly.	Moderate: seepage.	Slight----------	Slight----------	Good.

See footnote at end of table.

TABLE 12.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
No Norwood	Severe: flooding.	Moderate: seepage.	Severe: flooding.	Severe: flooding.	Good.
Nr Norwood	Moderate: percs slowly.	Moderate: seepage.	Slight	Slight	Good.
Nw Norwood	Severe: flooding.	Moderate: seepage.	Severe: flooding.	Severe: flooding.	Good.
Ra Roxana	Moderate: wetness, percs slowly.	Moderate: seepage.	Severe: wetness.	Moderate: wetness.	Good.
Rn, Ro Roxana	Moderate: wetness, percs slowly.	Moderate: seepage, slope.	Severe: wetness.	Moderate: wetness.	Good.
Ru, Rx Roxana	Severe: flooding.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding.	Good.
Sa Sharkey	Severe: wetness, percs slowly.	Severe: wetness. flooding.	Severe: wetness, too clayey.	Severe: wetness.	Poor: too clayey, hard to pack, wetness.
Se, Sh, Sk Sharkey	Severe: flooding, wetness, percs slowly.	Severe: flooding, wetness.	Severe: flooding, wetness, too clayey.	Severe: flooding, wetness.	Poor: too clayey, hard to pack, wetness.
So Solier	Severe: wetness, percs slowly.	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
Sr Solier	Severe: flooding, wetness, percs slowly.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
Ta Tensas	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
Te Tensas	Severe: flooding, wetness, percs slowly.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
Tn*: Tensas	Severe: wetness, percs slowly.	Severe: wetness, flooding.	Severe: wetness.	Severe: wetness.	Poor: wetness.
Sharkey	Severe: wetness, percs slowly.	Severe: wetness, flooding.	Severe: wetness, too clayey.	Severe: wetness.	Poor: too clayey, hard to pack, wetness.
Ts*: Tensas	Severe: flooding, wetness, percs slowly.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.

See footnote at end of table.

TABLE 12.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
Ts*: Sharkey----------	Severe: flooding,	Severe: flooding,	Severe: flooding,	Severe: flooding,	Poor: too clayey,

TABLE 13.--WATER MANAGEMENT

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not evaluated]

Soil name and map symbol	Limitations for--		Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Drainage	Irrigation	Terraces and diversions	Grassed waterways
Bd---------- Baldwin	Slight---------	Severe: wetness.	Percs slowly---	Wetness, percs slowly, erodes easily.	Erodes easily, wetness, percs slowly.	Wetness, erodes easily, percs slowly.
Ca---------- Calhoun	Slight---------	Severe: piping, wetness.	Percs slowly---	Wetness, percs slowly, erodes easily.	Erodes easily, wetness.	Wetness, erodes easily, percs slowly.
Cm---------- Commerce	Moderate: seepage.	Severe: wetness.	Favorable------	Wetness, erodes easily.	Erodes easily, wetness.	Erodes easily.
Cn---------- Convent	Moderate: seepage.	Severe: piping, wetness.	Favorable------	Wetness, erodes easily.	Erodes easily, wetness.	Erodes easily.
Cu---------- Convent	Moderate: seepage.	Severe: piping, wetness.	Flooding-------	Wetness, erodes easily.	Erodes easily, wetness.	Erodes easily.
Cv---------- Coteau	Slight---------	Moderate: piping, wetness.	Favorable------	Wetness, erodes easily.	Erodes easily, wetness.	Erodes easily.
Cw---------- Crowley Variant	Slight---------	Severe: wetness.	Percs slowly---	Wetness, percs slowly, erodes easily.	Erodes easily, wetness, percs slowly.	Wetness, erodes easily, percs slowly.
Da---------- Deerford	Slight---------	Severe: wetness, excess sodium.	Percs slowly, excess sodium.	Wetness, percs slowly, erodes easily.	Erodes easily, wetness, percs slowly.	Wetness, excess sodium, erodes easily.
Dd, De---------- Dundee	Moderate: seepage.	Severe: piping, wetness.	Favorable------	Wetness.	Erodes easily, wetness.	Erodes easily.
Dn---------- Dundee	Moderate: seepage.	Severe: piping, wetness.	Flooding-------	Wetness.	Erodes easily, wetness.	Erodes easily.
Ds*:						
Dundee----------	Moderate: seepage.	Severe: piping, wetness.	Favorable------	Wetness.	Erodes easily, wetness.	Erodes easily.
Sharkey----------	Slight---------	Severe: hard to pack, wetness.	Percs slowly---	Wetness, slow intake, percs slowly.	Wetness, percs slowly.	Wetness, percs slowly.
Dv---------- Dundee Variant	Moderate: seepage.	Severe: wetness, piping.	Favorable------	Slow intake, percs slowly.	Wetness, percs slowly.	Percs slowly.
Fa---------- Fausse	Slight---------	Severe: hard to pack, ponding.	Ponding, percs slowly, flooding.	Ponding, slow intake, percs slowly.	Ponding, percs slowly.	Wetness, percs slowly.
Ga---------- Gallion	Moderate: seepage.	Moderate: piping.	Deep to water	Erodes easily	Erodes easily	Erodes easily.
Go---------- Gallion	Moderate: seepage.	Moderate: piping.	Deep to water	Favorable------	Favorable------	Favorable.

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	Drainage	Irrigation	Terraces and diversions	Grassed waterways
Gr---------- Gore	Moderate: slope.	Moderate: hard to pack.	Deep to water	Percs slowly, slope.	Erodes easily, percs slowly.	Erodes easily, percs slowly.
Gy---------- Guyton	Moderate: seepage.	Severe: piping, wetness.	Percs slowly, flooding.	Wetness, percs slowly, erodes easily.	Erodes easily, wetness, percs slowly.	Wetness, erodes easily, percs slowly.
Ko---------- Kolin	Slight---------	Moderate: hard to pack, wetness.	Percs slowly, slope.	Wetness, percs slowly, slope.	Erodes easily, wetness, percs slowly.	Erodes easily, percs slowly.
La---------- Latanier	Moderate: seepage.	Severe: piping, wetness.	Percs slowly---	Wetness, slow intake, percs slowly.	Erodes easily, wetness, percs slowly.	Wetness, erodes easily, percs slowly.
Ln---------- Latanier	Moderate: seepage.	Severe: piping, wetness.	Percs slowly, flooding.	Wetness, slow intake, percs slowly.	Erodes easily, wetness, percs slowly.	Wetness, erodes easily, percs slowly.
Lo---------- Loring	Moderate: seepage.	Moderate: piping.	Favorable------	Wetness, rooting depth.	Erodes easily, wetness.	Erodes easily, rooting depth.
Lr---------- Loring	Moderate: seepage.	Moderate: piping.	Slope----------	Wetness, rooting depth, slope.	Erodes easily, wetness.	Erodes easily, rooting depth.
Ma---------- McKamie	Severe: slope.	Moderate: hard to pack.	Deep to water	Slope, erodes easily, slow intake.	Slope, erodes easily, percs slowly.	Slope, erodes easily, percs slowly.
Me---------- Memphis	Moderate: seepage.	Severe: piping.	Deep to water	Erodes easily	Erodes easily	Erodes easily.
Mh---------- Memphis	Moderate: seepage, slope.	Severe: piping.	Deep to water	Slope, erodes easily.	Erodes easily	Erodes easily.
Mm---------- Memphis	Severe: slope.	Severe: piping.	Deep to water	Slope, erodes easily.	Slope, erodes easily.	Slope, erodes easily.
Mo---------- Moreland	Slight---------	Severe: hard to pack, wetness.	Percs slowly---	Wetness, percs slowly.	Erodes easily, wetness, percs slowly.	Wetness, erodes easily, percs slowly.
Mr---------- Moreland	Slight---------	Severe: hard to pack, wetness.	Percs slowly, flooding.	Wetness, percs slowly.	Erodes easily, wetness, percs slowly.	Wetness, erodes easily, percs slowly.
Ms---------- Moreland	Slight---------	Severe: hard to pack, wetness.	Percs slowly---	Wetness, slow intake, percs slowly.	Wetness, percs slowly.	Wetness, percs slowly.
Mt, Mu, Mw-------- Moreland	Slight---------	Severe: hard to pack, wetness.	Percs slowly, flooding.	Wetness, slow intake, percs slowly.	Wetness, percs slowly.	Wetness, percs slowly.
Nd, No---------- Norwood	Moderate: seepage.	Severe: piping.	Deep to water	Erodes easily	Erodes easily	Erodes easily.
Nr, Nw---------- Norwood	Moderate: seepage.	Severe: piping.	Deep to water	Favorable------	Erodes easily	Erodes easily.
Ra, Rn---------- Roxana	Moderate: seepage.	Severe: piping.	Deep to water	Erodes easily	Erodes easily	Erodes easily.
Ro---------- Roxana	Moderate: seepage.	Severe: piping.	Deep to water	Slope, erodes easily.	Erodes easily	Erodes easily.

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	Drainage	Irrigation	Terraces and diversions	Grassed waterways
Ru, Rx---------- Roxana	Moderate: seepage.	Severe: piping.	Deep to water	Erodes easily	Erodes easily	Erodes easily.
Sa---------- Sharkey	Slight---------	Severe: hard to pack, wetness.	Percs slowly---	Wetness, slow intake, percs slowly.	Wetness, percs slowly.	Wetness, percs slowly.
Se, Sh, Sk-------- Sharkey	Slight---------	Severe: hard to pack, wetness.	Percs slowly, flooding.	Wetness, slow intake, percs slowly.	Wetness, percs slowly.	Wetness, percs slowly.
So---------- [illegible]	Moderate:	Severe:	Percs slowly---	Wetness,	Erodes easily,	Wetness,

TABLE 14.--ENGINEERING INDEX PROPERTIES

[The symbol < means less than; > means more than. Absence of an entry indicates that data were not estimated]

Soil name and map symbol	Depth	USDA texture	Classification		Fragments > 3 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
Bd---------- Baldwin	0-8	Silty clay loam	CL, CH	A-7-6, A-6	0	100	100	100	95-100	35-55	15-28
	8-29	Clay, silty clay	CH	A-7-6	0	95-100	95-100	95-100	90-100	51-75	25-45
	29-60	Silty clay, silty clay loam, loam.	CH, CL	A-7-6, A-6	0	95-100	95-100	95-100	90-100	35-65	15-35
Ca---------- Calhoun	0-20	Silt loam--------	CL-ML, ML, CL	A-4	0	100	100	100	95-100	<31	NP-10
	20-35	Silty clay loam, silt loam.	CL	A-6, A-7-6	0	100	100	95-100	95-100	30-45	11-24
	35-76	Silt loam--------	CL, CL-ML	A-6, A-4	0	100	100	100	90-100	25-40	5-20
Cm---------- Commerce	0-12	Silt loam--------	CL-ML, CL, ML	A-4	0	100	100	100	75-100	<30	NP-10
	12-22	Silty clay loam, silt loam, loam.	CL	A-6, A-7-6	0	100	100	100	85-100	32-45	11-23
	22-68	Stratified very fine sandy loam to silty clay.	CL-ML, CL, ML	A-4, A-6, A-7-6	0	100	100	100	75-100	23-45	3-23
Cn---------- Convent	0-10	Very fine sandy loam.	ML, CL-ML	A-4	0	100	100	95-100	85-100	<27	NP-7
	10-60	Silt loam, very fine sandy loam.	ML, CL-ML	A-4	0	100	100	95-100	75-100	<27	NP-7
Cu---------- Convent	0-11	Very fine sandy loam.	ML, CL-ML	A-4	0	100	100	95-100	85-100	<27	NP-7
	11-60	Silt loam, very fine sandy loam.	ML, CL-ML	A-4	0	100	100	95-100	75-100	<27	NP-7
Cv---------- Coteau	0-6	Silt loam--------	ML, CL-ML	A-4	0	100	100	100	95-100	<27	NP-7
	6-37	Silty clay loam, silt loam.	CL	A-6	0	100	100	100	95-100	33-40	12-18
	37-60	Silt loam--------	CL-ML, CL	A-4, A-6	0	100	100	100	95-100	25-37	5-15
Cw---------- Crowley Variant	0-16	Silt loam--------	ML, CL-ML	A-4	0	100	100	95-100	90-100	<27	NP-7
	16-47	Silty clay, clay	CH	A-7-6	0	100	100	95-100	85-100	41-65	20-40
	47-96	Silty clay, clay, silty clay loam.	CH	A-7-6, A-6	0	100	100	95-100	85-100	38-65	18-40
Da---------- Deerford	0-7	Silt loam--------	ML, CL-ML	A-4	0	100	100	100	95-100	<28	NP-7
	7-55	Silty clay loam, silt loam.	CL	A-6, A-7-6	0	100	100	100	95-100	32-49	11-25
	55-93	Loam, sandy clay loam.	CL, SM-SC, SC	A-6, A-4, A-7-6	0	100	100	80-100	50-95	25-49	5-25
Dd---------- Dundee	0-6	Silt loam--------	CL, CL-ML, ML	A-4, A-6	0	100	100	90-100	75-98	20-35	3-11
	6-45	Loam, silty clay loam, clay loam.	CL	A-6, A-7	0	100	100	90-100	70-95	28-44	12-22
	45-63	Loam, very fine sandy loam, silt loam.	CL, CL-ML, ML	A-4	0	100	100	85-100	60-90	<30	NP-8
De---------- Dundee	0-7	Silty clay loam	CL, CL-ML, ML	A-4, A-6	0	100	100	90-100	75-98	20-35	3-11
	7-32	Loam, silty clay loam, clay loam.	CL	A-6, A-7	0	100	100	90-100	70-95	28-44	12-22
	32-60	Loam, very fine sandy loam, silt loam.	CL, CL-ML, ML	A-4	0	100	100	85-100	60-90	<30	NP-8
Dn---------- Dundee	0-8	Silty clay loam	CL, CL-ML, ML	A-4, A-6	0	100	100	90-100	75-98	20-35	3-11
	8-35	Loam, silty clay loam, clay loam.	CL	A-6, A-7	0	100	100	90-100	70-95	28-44	12-22
	35-65	Loam, very fine sandy loam, silt loam.	CL, CL-ML, ML	A-4	0	100	100	85-100	60-90	<30	NP-8

See footnote at end of table.

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Fragments > 3 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
Ds*:											
Dundee	0-8	Silt loam	CL, CL-ML, ML	A-4, A-6	0	100	100	90-100	75-98	20-35	3-11
	8-48	Loam, silty clay loam, clay loam.	CL	A-6, A-7	0	100	100	90-100	70-95	28-44	12-22
	48-60	Very fine, sandy loam, silt loam, clay loam.	CL, CL-ML, ML	A-4	0	100	100	85-100	60-90	<30	NP-8
Sharkey	0-9	Clay	CH, CL	A-7-6, A-7-5	0	100	100	100	95-100	46-85	22-50
	9-60	Clay, silty clay.	CH	A-7-6, A-7-5	0	100	100	100	95-100	56-85	30-50
Dv	0-7	Clay	CH	A-7	0	100	100	100	95-100	51-75	26-45
Dundee Variant	7-14	Silty clay loam, silt loam.	CL, CL-ML, ML	A-4, A-6	0	100	100	90-100	75-98	20-35	3-11
	14-30	Silty clay loam, clay loam, loam.	CL	A-6, A-7	0	100	100	90-100	70-95	28-44	12-22
	30-52	Loam, very fine sandy loam, silt loam.	CL, CL-ML, ML	A-4	0	100	100	85-100	60-90	<30	NP-8
	52-72	Loam, very fine sandy loam, silty clay.	CL, ML, CH	A-4, A-7	0	100	100	85-100	60-95	20-60	NP-45
Fa	0-13	Clay	CH, OH, MH	A-7-6, A-7-5	0	100	100	100	95-100	50-100	21-71
Fausse	13-37	Clay	CH	A-7-6, A-7-5	0	100	100	100	95-100	60-100	31-71
	37-66	Clay, silty clay, silty clay loam.	CH, MH, CL, ML	A-7-6, A-7-5	0	100	100	100	95-100	45-100	16-71
Ga	0-8	Silt loam	ML, CL-ML, CL	A-4, A-6	0	100	100	100	90-100	<28	NP-11
Gallion	8-37	Silt loam, silty clay loam, clay loam.	CL	A-6	0	100	100	100	90-100	28-40	11-17
	37-66	Stratified silty clay loam to very fine sandy loam.	CL, CL-ML	A-6, A-4	0	100	100	100	90-100	23-34	4-12
Go	0-6	Silty clay loam	CL	A-6	0	100	100	100	90-100	33-40	15-20
Gallion	6-54	Silt loam, silty clay loam, clay loam.	CL	A-6	0	100	100	100	90-100	28-40	11-17
	54-60	Stratified silty clay loam to very fine sandy loam.	CL, CL-ML	A-6, A-4	0	100	100	100	90-100	23-34	4-12
Gr	0-7	Silt loam	ML, CL-ML	A-4	0	100	100	95-100	60-90	<27	NP-7
Gore	7-47	Clay, silty clay	CH	A-7-6, A-7-5	0	100	100	95-100	85-100	53-65	28-40
	47-66	Clay	CH	A-7-6, A-7-5	0	100	100	95-100	85-100	51-83	25-53
Gy	0-29	Silt loam	ML, CL-ML	A-4	0	100	100	95-100	65-90	<27	NP-7
Guyton	29-54	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
	54-63	Silt loam, silty clay loam, clay loam.	CL, CL-ML, ML	A-6, A-4	0	100	100	95-100	51-95	<40	NP-18
Ko	0-4	Silt loam	ML, CL-ML	A-4	0	100	100	85-100	60-85	<27	NP-7
Kolin	4-27	Silty clay loam, silt loam.	CL	A-6	0	100	100	95-100	85-95	30-40	11-18
	27-60	Clay, silty clay	CH	A-7-6	0	100	100	90-100	75-95	50-63	25-35

See footnote at end of table.

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Fragments > 3 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
La	0-5	Clay	CH	A-7-6	0	100	100	100	95-100	51-75	26-45
Latanier	5-27	Clay, silty clay	CH	A-7-6	0	100	100	100	95-100	51-75	26-45
	27-60	Silt loam, silty clay loam, very fine sandy loam.	CL-ML, CL, ML	A-4, A-6	0	100	100	100	80-100	<40	NP-17
Ln	0-6	Clay	CH	A-7-6	0	100	100	100	95-100	51-75	26-45
Latanier	6-27	Clay, silty clay	CH	A-7-6	0	100	100	100	95-100	51-75	26-45
	27-60	Silt loam, silty clay loam, very fine sandy loam.	CL-ML, CL, ML	A-4, A-6	0	100	100	100	80-100	<40	NP-17
Lo	0-6	Silt loam	ML, CL-ML, CL	A-4, A-6	0	100	100	95-100	90-100	<35	NP-15
Loring	6-25	Silt loam, silty clay loam.	CL, ML	A-6, A-7, A-4	0	100	100	95-100	90-100	32-48	8-20
	25-61	Silt loam, silty clay loam.	CL, ML	A-4, A-6, A-7	0	100	100	95-100	90-100	30-45	8-22
Lr	0-6	Silt loam	ML, CL-ML, CL	A-4, A-6	0	100	100	95-100	90-100	<35	NP-15
Loring	6-19	Silt loam, silty clay loam.	CL, ML	A-6, A-7, A-4	0	100	100	95-100	90-100	32-48	8-20
	19-57	Silt loam, silty clay loam.	CL, ML	A-4, A-6, A-7	0	100	100	95-100	90-100	30-45	8-22
	57-65	Silt loam	CL, ML	A-4, A-6, A-7	0	100	100	95-100	70-100	28-45	7-20
Ma	0-6	Silt loam	CL, CL-ML	A-6, A-4	0	100	100	95-100	80-100	20-40	5-22
McKamie	6-38	Clay, silty clay	CH, CL	A-7-6	0	100	100	95-100	80-100	45-70	22-40
	38-71	Silty clay loam, silt loam, very fine sandy loam.	CL, CL-ML	A-4, A-6	0	100	100	95-100	50-95	20-40	5-22
Me	0-6	Silt loam	ML, CL-ML, CL	A-4	0	100	100	100	90-100	<30	NP-10
Memphis	6-22	Silt loam, silty clay loam.	CL	A-6, A-7	0	100	100	100	90-100	35-48	15-25
	22-68	Silt loam	ML, CL	A-4, A-6	0	100	100	100	90-100	30-40	6-15
Mh	0-6	Silt loam	ML, CL-ML, CL	A-4	0	100	100	100	90-100	<30	NP-10
Memphis	6-26	Silt loam, silty clay loam.	CL	A-6, A-7	0	100	100	100	90-100	35-48	15-25
	26-72	Silt loam	ML, CL	A-4, A-6	0	100	100	100	90-100	30-40	6-15
Mm	0-5	Silt loam	ML, CL-ML, CL	A-4	0	100	100	100	90-100	<30	NP-10
Memphis	5-28	Silt loam, silty clay loam.	CL	A-6, A-7	0	100	100	100	90-100	35-48	15-25
	28-60	Silt loam	ML, CL	A-4, A-6	0	100	100	100	90-100	30-40	6-15
Mo	0-10	Silt loam	CL, CL-ML	A-4, A-6	0	100	100	95-100	85-100	18-31	3-13
Moreland	10-60	Clay, silty clay	CH	A-7-6	0	100	95-100	90-100	90-100	51-74	25-45
Mr	0-10	Silt loam	CL, CL-ML	A-4, A-6	0	100	100	95-100	85-100	18-31	3-13
Moreland	10-60	Clay, silty clay	CH	A-7-6	0	100	95-100	90-100	90-100	51-74	25-45
Ms, Mt	0-13	Clay	CH	A-7-6	0	100	95-100	90-100	90-100	51-74	25-45
Moreland	13-60	Clay, silty clay	CH	A-7-6	0	100	95-100	90-100	90-100	51-74	25-45
Mu	0-13	Clay	CH	A-7-6	0	100	95-100	90-100	90-100	51-74	25-45
Moreland	13-60	Clay, silty clay	CH	A-7-6	0	100	95-100	90-100	90-100	51-74	25-45
Mw	0-12	Clay	CH	A-7-6	0	100	95-100	90-100	90-100	51-74	25-45
Moreland	12-60	Clay, silty clay	CH	A-7-6	0	100	95-100	90-100	90-100	51-74	25-45

See footnote at end of table.

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Fragments > 3 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
Nd Norwood	0-9	Silt loam	CL, CL-ML	A-4, A-6	0	100	100	95-100	51-90	20-35	4-15
	9-16	Silt loam, silty clay loam, loam.	CL	A-6, A-7, A-4	0	100	100	90-100	60-98	25-46	7-26
	16-80	Silt loam, very fine sandy loam, silty clay loam.	CL, ML, CL-ML	A-4, A-6, A-7	0	100	100	90-100	70-98	20-45	2-25
No Norwood	0-6	Silt loam	CL, CL-ML	A-4, A-6	0	100	100	95-100	51-90	20-35	4-15
	6-33	Silt loam, silty clay loam.	CL	A-6, A-7, A-4	0	100	100	90-100	60-98	25-46	7-26
	33-60	Silt loam, very fine sandy loam, silty clay loam.	CL, ML, CL-ML	A-4, A-6, A-7	0	100	100	90-100	70-98	20-45	2-25
Nr Norwood	0-4	Silty clay loam	CL, CH	A-6, A-7	0	100	100	95-100	85-98	30-55	15-35
	4-16	Silt loam, silty clay loam, loam.	CL	A-6, A-7, A-4	0	100	100	90-100	60-98	25-46	7-26
	16-75	Silt loam, very fine sandy loam, silty clay loam.	CL, ML, CL-ML	A-4, A-6, A-7	0	100	100	90-100	70-98	20-45	2-25
Nw Norwood	0-6	Silty clay loam	CL, CH	A-6, A-7	0	100	100	95-100	85-98	30-55	15-35
	6-17	Silt loam, silty clay loam, loam.	CL	A-6, A-7, A-4	0	100	100	90-100	60-98	25-46	7-26
	17-60	Silt loam, very fine sandy loam, silty clay loam.	CL, ML, CL-ML	A-4, A-6, A-7	0	100	100	90-100	70-98	20-45	2-25
Ra Roxana	0-5	Very fine sandy loam.	ML, CL-ML	A-4	0	100	100	85-100	50-75	<27	NP-7
	5-62	Silt loam, very fine sandy loam, loamy very fine sand.	ML, CL-ML	A-4	0	100	100	85-100	50-85	<27	NP-7
Rn Roxana	0-5	Very fine sandy loam.	ML, CL-ML	A-4	0	100	100	85-100	50-75	<27	NP-7
	5-40	Silt loam, very fine sandy loam, loamy very fine sand.	ML, CL-ML	A-4	0	100	100	85-100	50-85	<27	NP-7
	40-62	Variable	---	---	---	---	---	---	---	---	---
Ro Roxana	0-6	Very fine sandy loam.	ML, CL-ML	A-4	0	100	100	85-100	50-75	<27	NP-7
	6-63	Silt loam, very fine sandy loam, loamy very fine sand.	ML, CL-ML	A-4	0	100	100	85-100	50-85	<27	NP-7
Ru Roxana	0-6	Very fine sandy loam.	ML, CL-ML	A-4	0	100	100	85-100	50-75	<27	NP-7
	6-64	Silt loam, very fine sandy loam, loamy very fine sand.	ML, CL-ML	A-4	0	100	100	85-100	50-85	<27	NP-7
Rx Roxana	0-6	Very fine sandy loam.	ML, CL-ML	A-4	0	100	100	85-100	50-75	<27	NP-7
	6-60	Silt loam, very fine sandy loam, loamy very fine sand.	ML, CL-ML	A-4	0	100	100	85-100	50-85	<27	NP-7

See footnote at end of table.

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Fragments > 3 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
Sa---------- Sharkey	0-6	Clay----------	CH, CL	A-7-6, A-7-5	0	100	100	100	95-100	46-85	22-50
	6-35	Clay----------	CH	A-7-6, A-7-5	0	100	100	100	95-100	56-85	30-50
	35-60	Clay, silty clay loam, silt loam.	CL, CH	A-6, A-7-6, A-7-5	0	100	100	100	95-100	32-85	11-50
Se---------- Sharkey	0-12	Clay----------	CH, CL	A-7-6, A-7-5	0	100	100	100	95-100	46-85	22-50
	12-46	Clay----------	CH	A-7-6, A-7-5	0	100	100	100	95-100	56-85	30-50
	46-66	Clay, silty clay loam, silt loam.	CL, CH	A-6, A-7-6, A-7-5	0	100	100	100	95-100	32-85	11-50
Sh---------- Sharkey	0-6	Clay----------	CH, CL	A-7-6, A-7-5	0	100	100	100	95-100	46-85	22-50
	6-42	Clay----------	CH	A-7-6, A-7-5	0	100	100	100	95-100	56-85	30-50
	42-80	Clay, silty clay loam, silt loam.	CL, CH	A-6, A-7-6, A-7-5	0	100	100	100	95-100	32-85	11-50
Sk---------- Sharkey	0-11	Clay----------	CH, CL	A-7-6, A-7-5	0	100	100	100	95-100	46-85	22-50
	11-39	Clay----------	CH	A-7-6, A-7-5	0	100	100	100	95-100	56-85	30-50
	39-64	Clay, silty clay loam, silt loam.	CL, CH	A-6, A-7-6, A-7-5	0	100	100	100	95-100	32-85	11-50
So---------- Solier	0-6	Clay----------	CH	A-7-6, A-7-5	0	100	100	100	95-100	51-75	26-46
	6-19	Clay, silty clay	CH	A-7-6, A-7-5	0	100	100	100	95-100	51-75	26-46
	19-25	Silt loam--------	ML, CL, CL-ML	A-4	0	100	100	95-100	90-100	23-31	3-10
	25-60	Silty clay loam, silt loam.	CL	A-6, A-7-6	0	100	100	95-100	90-100	32-45	11-22
	60-84	Silt loam, silty clay loam.	CL	A-6, A-7-6	0	100	100	95-100	90-100	32-45	11-22
Sr---------- Solier	0-5	Clay----------	CH	A-7-6, A-7-5	0	100	100	100	95-100	51-75	26-46
	5-13	Clay, silty clay	CH	A-7-6, A-7-5	0	100	100	100	95-100	51-75	26-46
	13-24	Silt loam--------	ML, CL, CL-ML	A-4	0	100	100	95-100	90-100	23-31	3-10
	24-60	Silt loam, silty clay loam.	CL	A-6, A-7-6	0	100	100	95-100	90-100	32-45	11-22
Ta---------- Tensas	0-8	Silty clay-------	CH, CL	A-7-6	0	100	100	100	95-100	46-70	22-40
	8-33	Clay, silty clay	CH	A-7-6	0	100	100	100	95-100	51-75	26-45
	33-60	Very fine sandy loam, silty clay loam, loam.	CL-ML, CL	A-4, A-6	0	100	100	100	80-100	25-40	5-17
Te---------- Tensas	0-4	Silty clay-------	CH, CL	A-7-6	0	100	100	100	95-100	46-70	22-40
	4-27	Clay, silty clay	CH	A-7-6	0	100	100	100	95-100	51-75	26-45
	27-60	Very fine sandy loam, silty clay loam, silt loam.	CL-ML, CL	A-4, A-6	0	100	100	100	80-100	25-40	5-17
Tn*:											
Tensas----------	0-5	Silty clay-------	CH, CL	A-7-6	0	100	100	100	95-100	46-70	22-40
	5-25	Clay, silty clay	CH	A-7-6	0	100	100	100	95-100	51-75	26-45
	25-60	Very fine sandy loam, silty clay loam, loam.	CL-ML, CL	A-4, A-6	0	100	100	100	80-100	25-40	5-17

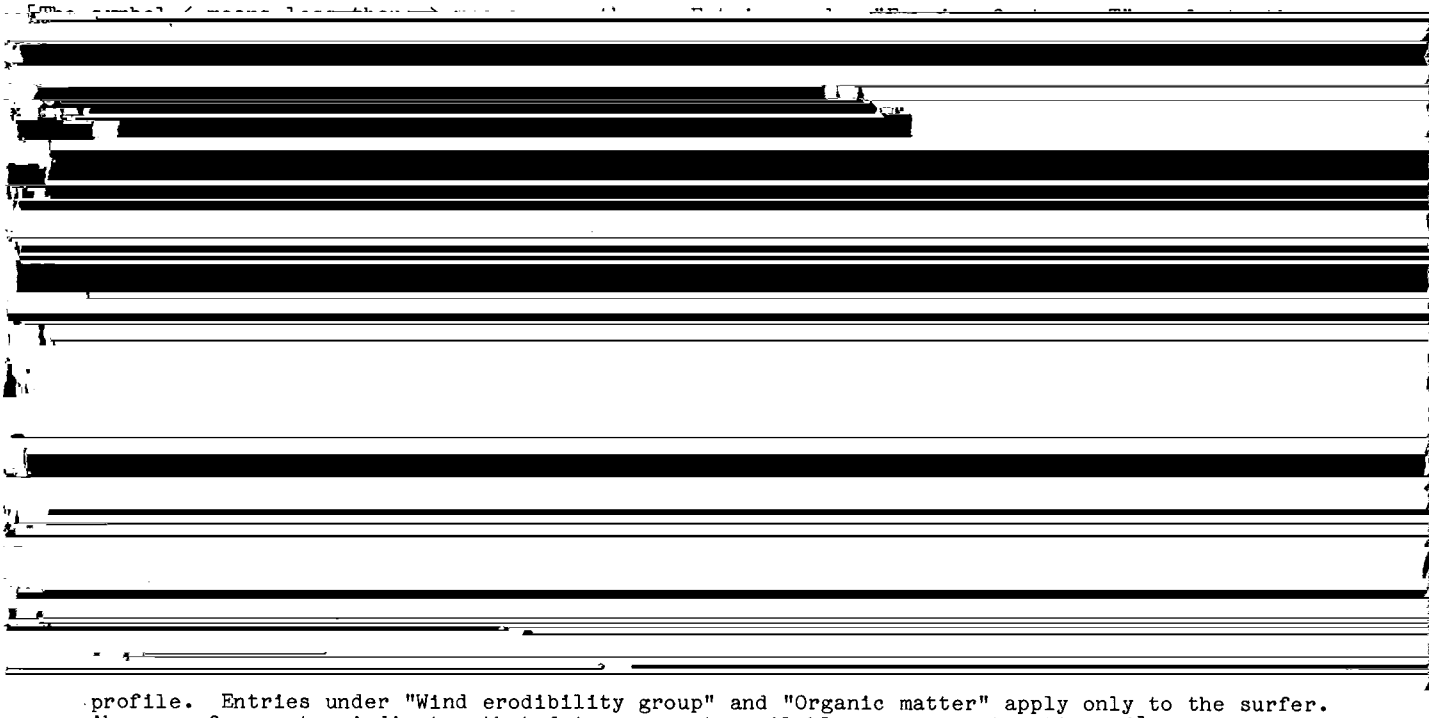
See footnote at end of table.

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Fragments > 3 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
Tn*:											
Sharkey	0-8	Clay	CH, CL	A-7-6, A-7-5	0	100	100	100	95-100	46-85	22-50
	8-47	Clay	CH	A-7-6, A-7-5	0	100	100	100	95-100	56-85	30-50
	47-60	Clay, silty clay loam, silt loam.	CL, CH	A-6, A-7-6, A-7-5	0	100	100	100	95-100	32-85	11-50
Ts*:											
Tensas	0-4	Silty clay	CH, CL	A-7-6	0	100	100	100	95-100	46-70	22-40
	4-28	Clay, silty clay	CH	A-7-6	0	100	100	100	95-100	51-75	26-45
	28-60	Very fine sandy loam, silty clay loam, loam.	CL-ML, CL	A-4, A-6	0	100	100	100	80-100	25-40	5-17
Sharkey	0-10	Clay	CH, CL	A-7-6, A-7-5	0	100	100	100	95-100	46-85	22-50
	10-48	Clay	CH	A-7-6, A-7-5	0	100	100	100	95-100	56-85	30-50
	48-60	Clay, silty clay loam, silt loam.	CL, CH	A-6, A-7-6, A-7-5	0	100	100	100	95-100	32-85	11-50
Vk	0-7	Silt loam	ML, CL-ML	A-4	0	100	100	95-100	90-100	<27	NP-7
Vick	7-25	Silt loam, silty clay loam.	CL	A-6, A-7-6	0	100	100	95-100	90-100	32-45	11-22
	25-45	Clay, silty clay, silty clay loam.	CH, CL	A-7-6	0	100	100	95-100	95-100	41-60	20-35
	45-63	Silt loam, loam, silty clay loam.	CL, CL-ML, ML	A-6, A-4, A-7-6	0	100	100	90-100	85-100	25-45	3-20
Wr	0-15	Silt loam	ML, CL, CL-ML	A-4	0	100	95-100	90-100	75-100	<31	NP-10
Wrightsville	15-68	Silty clay, clay, silty clay loam.	CH, CL	A-7	0	100	100	95-100	90-100	41-65	22-40

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 15.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS



profile. Entries under "Wind erodibility group" and "Organic matter" apply only to the surfer. 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	Salinity	Shrink-swell potential	Erosion factors		Organic matter
	In	Pct	G/cm³	In/hr	In/in	pH	Mmhos/cm		K	T	Pct
Bd	0-8	27-39	1.35-1.65	0.06-0.2	0.18-0.22	4.5-6.5	<2	Moderate	0.37	5	.5-4
Baldwin	8-29	40-55	1.20-1.60	<0.06	0.12-0.18	5.6-7.8	<2	Very high	0.32		
	29-60	25-55	1.20-1.65	<0.2	0.12-0.21	6.1-8.4	<2	High	0.32		
Ca	0-20	10-27	1.30-1.65	0.2-0.6	0.21-0.23	4.5-7.3	<2	Low	0.49	5	.5-2
Calhoun	20-42	10-35	1.30-1.70	0.06-0.2	0.20-0.22	4.5-5.5	<2	Moderate	0.43		
	35-76	10-27	1.40-1.70	0.2-0.6	0.21-0.23	4.5-7.8	<2	Low	0.43		
Cm	0-12	14-27	1.35-1.65	0.6-2.0	0.21-0.23	5.6-7.8	<2	Low	0.43	5	.5-2
Commerce	12-22	14-39	1.35-1.70	0.2-0.6	0.20-0.22	6.1-8.4	<2	Moderate	0.32		
	22-68	14-60	1.35-1.75	0.2-2.0	0.20-0.23	6.6-8.4	<2	Low	0.37		
Cn	0-10	0-18	1.30-1.65	0.6-2.0	0.18-0.23	5.6-8.4	<2	Low	0.43	5	.5-2
Convent	10-60	0-18	1.30-1.65	0.6-2.0	0.20-0.23	6.1-8.4	<2	Low	0.43		
Cu	0-11	0-18	1.30-1.65	0.6-2.0	0.18-0.23	5.6-8.4	<2	Low	0.37	5	.5-2
Convent	11-60	0-18	1.30-1.65	0.6-2.0	0.20-0.23	6.1-8.4	<2	Low	0.37		
Cv	0-6	5-18	1.35-1.65	0.2-0.6	0.21-0.23	5.1-6.5	<2	Low	0.37	5	.5-2
Coteau	6-37	18-32	1.35-1.65	0.2-0.6	0.20-0.23	5.1-6.5	<2	Moderate	0.32		
	37-60	8-27	1.35-1.65	0.2-0.6	0.20-0.23	5.1-7.3	<2	Low	0.37		
Cw	0-16	8-20	1.35-1.65	0.6-2.0	0.21-0.23	4.5-5.5	<2	Low	0.43	5	.5-2
Crowley Variant	16-47	45-60	1.20-1.55	<0.06	0.14-0.18	5.1-7.3	<2	Very high	0.32		
	47-96	30-60	1.20-1.65	0.06-0.2	0.14-0.20	6.1-8.4	<2	High	0.32		
Da	0-7	5-27	1.30-1.70	0.6-2.0	0.21-0.23	4.5-6.5	<2	Low	0.49	3	.5-4
Deerford	7-55	10-35	1.30-1.80	0.06-0.2	0.12-0.18	5.1-8.4	<2	Moderate	0.49		
	55-93	10-35	1.30-1.80	0.2-0.6	0.12-0.18	6.6-8.4	<2	Moderate	0.49		
Dd	0-6	10-30	1.30-1.70	0.6-2.0	0.15-0.20	4.5-6.5	<2	Low	0.43	5	.5-2
Dundee	6-46	18-34	1.30-1.80	0.2-0.6	0.15-0.20	4.5-6.0	<2	Moderate	0.32		
	46-60	18-25	1.30-1.80	0.6-2.0	0.15-0.20	4.5-7.3	<2	Low	0.32		
De	0-7	10-30	1.30-1.70	0.6-2.0	0.15-0.20	4.5-6.0	<2	Low	0.37	5	.5-2
Dundee	7-32	18-34	1.30-1.80	0.2-0.6	0.15-0.20	4.5-6.0	<2	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	Salinity	Shrink-swell potential	Erosion factors		Organic matter
									K	T	
	In	Pct	G/cm^3	In/hr	In/in	pH	Mmhos/cm				Pct
Go	0-6	27-35	1.35-1.65	0.6-2.0	0.20-0.22	5.6-7.3	<2	Moderate	0.37	5	.5-2
Gallion	6-54	14-35	1.35-1.75	0.6-2.0	0.20-0.22	5.6-7.8	<2	Moderate	0.32		
	54-60	14-35	1.35-1.75	0.6-2.0	0.20-0.23	6.1-8.4	<2	Low	0.37		
Gr	0-7	5-15	1.30-1.50	0.6-2.0	0.20-0.22	5.1-6.0	<2	Low	0.49	5	.5-2
Gore	7-47	40-60	1.30-1.75	<0.06	0.14-0.18	4.5-7.3	<2	High	0.32		
	47-66	40-80	1.30-1.75	<0.06	0.14-0.18	5.6-7.8	<2	High	0.32		
Gy	0-29	7-25	1.35-1.65	0.6-2.0	0.20-0.23	3.6-6.0	<2	Low	0.43	5	.5-2
Guyton	29-54	20-35	1.35-1.70	0.06-0.2	0.15-0.22	3.6-6.0	<2	Low	0.37		
	54-63	20-35	1.35-1.70	0.06-2.0	0.15-0.22	3.6-8.4	<2	Low	0.37		
Ko	0-4	10-27	1.35-1.65	0.6-2.0	0.18-0.22	5.1-6.5	<2	Low	0.49	5	.5-2
Kolin	4-27	20-35	1.35-1.65	0.2-0.6	0.12-0.18	4.5-6.0	<2	Moderate	0.37		
	27-60	40-55	1.20-1.65	<0.06	0.15-0.18	4.5-6.5	<2	High	0.32		
La	0-5	40-55	1.20-1.70	<0.06	0.12-0.18	6.6-8.4	<2	Very high	0.32	5	.1-4
Latanier	5-27	40-55	1.20-1.70	<0.06	0.12-0.18	6.6-8.4	<2	Very high	0.32		
	27-60	10-27	1.30-1.65	0.06-2.0	0.12-0.22	6.6-8.4	<2	Low	0.37		
Ln	0-6	40-55	1.20-1.70	<0.06	0.12-0.18	6.6-8.4	<2	Very high	0.32	5	1-4
Latanier	6-27	40-55	1.20-1.70	<0.06	0.12-0.18	6.6-8.4	<2	Very high	0.32		
	27-60	10-27	1.30-1.65	0.06-2.0	0.18-0.22	6.6-8.4	<2	Low	0.37		
Lo	0-6	8-18	1.30-1.50	0.6-2.0	0.20-0.23	4.5-6.0	<2	Low	0.49	3	.5-2
Loring	6-25	18-35	1.40-1.50	0.6-2.0	0.20-0.22	4.5-6.0	<2	Low	0.43		
	25-61	12-25	1.50-1.70	0.06-0.2	0.06-0.13	4.5-6.0	<2	Low	0.43		
Lr	0-6	8-18	1.30-1.50	0.6-2.0	0.20-0.23	4.5-6.0	<2	Low	0.49	3	.5-2
Loring	6-19	18-35	1.40-1.50	0.6-2.0	0.20-0.22	4.5-6.0	<2	Low	0.43		
	19-57	12-25	1.50-1.70	0.06-0.2	0.06-0.13	4.5-6.0	<2	Low	0.43		
	57-65	10-25	1.30-1.60	0.2-2.0	0.06-0.13	4.5-6.5	<2	Low	0.43		
Ma	0-6	18-35	1.42-1.76	0.6-2.0	0.16-0.22	5.1-6.5	<2	Moderate	0.37	5	.5-2
McKamie	6-38	35-60	1.20-1.45	<0.06	0.12-0.18	4.5-6.0	<2	High	0.32		
	38-71	14-35	1.40-1.76	0.2-2.0	0.14-0.22	4.5-8.4	<2	Moderate	0.37		
Me	0-6	8-22	1.30-1.50	0.6-2.0	0.20-0.23	4.5-6.0	<2	Low	0.49	5	1-2
Memphis	6-22	20-35	1.30-1.50	0.6-2.0	0.20-0.22	4.5-6.0	<2	Low	0.37		
	22-68	12-25	1.30-1.50	0.6-2.0	0.20-0.23	4.5-6.0	<2	Low	0.37		
Mh	0-6	8-22	1.30-1.50	0.6-2.0	0.20-0.23	4.5-6.0	<2	Low	0.49	5	1-2
Memphis	6-26	20-35	1.30-1.50	0.6-2.0	0.20-0.22	4.5-6.0	<2	Low	0.37		
	26-72	12-25	1.30-1.50	0.6-2.0	0.20-0.23	4.5-6.0	<2	Low	0.37		
Mm	0-5	8-22	1.30-1.50	0.6-2.0	0.20-0.23	4.5-6.0	<2	Low	0.49	5	1-2
Memphis	5-28	20-35	1.30-1.50	0.6-2.0	0.20-0.22	4.5-6.0	<2	Low	0.37		
	28-60	12-25	1.30-1.50	0.6-2.0	0.20-0.23	4.5-6.0	<2	Low	0.37		
Mo	0-10	18-27	1.40-1.65	0.6-2.0	0.21-0.23	6.1-7.8	<2	Low	0.43	5	1-4
Moreland	10-60	39-60	1.20-1.45	<0.06	0.12-0.18	6.6-8.4	<2	Very high-	0.32		
Mr	0-10	18-27	1.40-1.65	0.6-2.0	0.21-0.23	6.1-7.8	<2	Low	0.43	5	1-4
Moreland	10-60	39-60	1.20-1.45	<0.06	0.12-0.18	6.6-8.4	<2	High	0.32		
Ms, Mt	0-13	39-50	1.20-1.50	<0.06	0.12-0.18	6.1-7.8	<2	Very high	0.32	5	1-4
Moreland	13-60	39-60	1.20-1.45	<0.06	0.12-0.18	High 8.4	<2	Very High	0.32		
Mu	0-13	39-50	1.20-1.50	<0.06	0.12-0.18	6.1-7.8	<2	Very high	0.32	5	1-4
Moreland	13-60	39-60	1.20-1.45	<0.06	0.12-0.18	6.6-8.4	<2	Very high	0.32		
Mw	0-12	39-50	1.20-1.50	<0.06	0.12-0.18	6.1-7.8	<2	Very high	0.32	5	1-4
Moreland	12-60	39-60	1.20-1.45	<0.06	0.12-0.18	6.6-8.4	<2	High	0.32		
Nd	0-9	10-27	1.35-1.65	0.6-2.0	0.17-0.21	7.4-8.4	<2	Low	0.43	5	.5-2
Norwood	9-16	18-35	1.35-1.65	0.6-2.0	0.15-0.22	7.9-8.4	<2	Low	0.43		
	16-80	10-35	1.35-1.65	0.6-2.0	0.15-0.22	7.9-8.4	<2	Low	0.43		

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	Salinity	Shrink-swell potential	Erosion factors		Organic matter
									K	T	
	In	Pct	G/cm³	In/hr	In/in	pH	Mmhos/cm				Pct
No---------- Norwood	0-6 6-33 33-60	10-27 18-35 10-35	1.35-1.65 1.35-1.65 1.35-1.65	0.6-2.0 0.6-2.0 0.6-2.0	0.17-0.21 0.15-0.22 0.15-0.22	7.4-8.4 7.9-8.4 7.9-8.4	<2 <2 <2	Low------- Low------- Low-------	0.43 0.43 0.43	5	.5-2
Nr---------- Norwood	0-4 4-16 16-75	27-40 18-35 10-35	1.35-1.65 1.35-1.65 ---	0.6-2.0 0.6-2.0 0.6-2.0	0.18-0.22 0.15-0.22 0.15-0.22	7.4-8.4 7.9-8.4 7.9-8.4	<2 <2 <2	Moderate Low------- Low-------	0.37 0.43 0.43	5	.5-2
Nw---------- Norwood	0-6 6-17 17-60	27-40 18-35 10-35	1.35-1.65 1.35-1.65 1.35-1.65	0.6-2.0 0.6-2.0 0.6-2.0	0.18-0.22 0.15-0.22 0.15-0.22	7.4-8.4 7.9-8.4 7.9-8.4	<2 <2 <2	Moderate Low------- Low-------	0.37 0.43 0.43	5	.5-2
Ra---------- Roxana	0-5 5-62	5-27 10-18	1.35-1.80 1.35-1.80	0.6-2.0 0.6-2.0	0.10-0.21 0.10-0.19	6.1-8.4 6.6-8.4	<2 <2	Low------- Low-------	0.43 0.37	5	.5-2
Rn---------- Roxana	0-5 5-40 40-62	5-27 10-18 ---	1.35-1.80 1.35-1.80 ---	0.6-2.0 0.6-2.0 ---	0.10-0.21 0.10-0.19 ---	6.1-8.4 6.6-8.4 ---	<2 <2 ---	Low------- Low------- ----------	0.43 0.37 ----	5	.5-2
Ro---------- Roxana	0-6 6-63	5-27 10-18	1.35-1.80 1.35-1.80	0.6-2.0 0.6-2.0	0.10-0.21 0.10-0.19	6.1-8.4 6.6-8.4	<2 <2	Low------- Low-------	0.43 0.37	5	.5-2
Ru---------- Roxana	0-6 6-64	5-27 10-18	1.35-1.80 1.35-1.80	0.6-2.0 0.6-2.0	0.10-0.21 0.10-0.19	6.1-8.4 6.6-8.4	<2 <2	Low------- Low-------	0.43 0.37	5	.5-2
Rx---------- Roxana	0-12 12-60	5-27 10-18	1.35-1.80 1.35-1.80	0.6-2.0 0.6-2.0	0.10-0.21 0.10-0.19	6.1-8.4 6.6-8.4	<2 <2	Low------- Low-------	0.43 0.37	5	.5-2
Sa---------- Sharkey	0-6 6-35 35-60	40-60 60-90 25-90	1.20-1.50 1.20-1.50 1.20-1.75	<0.06 <0.06 0.06-0.2	0.12-0.18 0.12-0.18 0.12-0.22	5.1-8.4 5.6-8.4 6.6-8.4	<2 <2 <2	Very high Very high High------	0.32 0.28 0.28	5	.5-4
Se---------- Sharkey	0-12 12-46 46-66	40-60 60-90 25-90	1.20-1.50 1.20-1.50 1.20-1.75	<0.06 <0.06 0.06-0.2	0.12-0.18 0.12-0.18 0.12-0.22	5.1-8.4 5.6-8.4 6.6-8.4	<2 <2 <2	Very high Very high High------	0.32 0.28 0.28	5	.5-4
Sh---------- Sharkey	0-6 6-42 42-80	40-60 60-90 25-90	1.20-1.50 1.20-1.50 1.20-1.75	<0.06 <0.06 0.06-0.2	0.12-0.18 0.12-0.18 0.12-0.22	5.1-8.4 5.6-8.4 6.6-8.4	<2 <2 <2	Very high Very high High------	0.32 0.28 0.28	5	.5-4
Sk---------- Sharkey	0-11 11-39 39-64	40-60 60-90 25-90	1.20-1.50 1.20-1.50 1.20-1.75	<0.06 <0.06 0.06-0.2	0.12-0.18 0.12-0.18 0.12-0.22	5.1-8.4 5.6-8.4 6.6-8.4	<2 <2 <2	Very high Very high High------	0.32 0.28 0.28	5	.5-4
So---------- Solier	0-6 6-19 19-25 25-60 60-84	40-60 40-60 8-25 18-35 18-38	1.20-1.50 1.20-1.50 1.35-1.65 1.35-1.65 1.35-1.65	<0.06 <0.06 0.6-2.0 0.06-0.2 0.2-0.6	0.18-0.20 0.14-0.20 0.15-0.22 0.15-0.22 0.15-0.22	6.1-7.8 6.1-7.8 6.6-8.4 6.6-8.4 6.6-8.4	<2 <2 <2 <2 <2	Very high Very high Low------- Moderate Moderate	0.32 0.32 0.43 0.37 0.37	5	---
Sr---------- Solier	0-5 5-13 13-24 24-60	40-60 40-60 8-25 18-38	1.20-1.50 1.20-1.50 1.35-1.65 1.35-1.65	<0.06 <0.06 0.6-2.0 0.2-0.6	0.18-0.20 0.14-0.20 0.15-0.22 0.15-0.22	6.1-7.8 6.1-7.8 6.6-8.4 6.6-8.4	<2 <2 <2 <2	Very high Very high Low------- Moderate	0.32 0.32 0.43 0.37	5	.5-4
Ta---------- Tensas	0-8 8-33 33-60	40-60 40-60 10-39	1.20-1.50 1.20-1.50 1.30-1.80	<0.06 <0.06 0.2-2.0	0.12-0.18 0.12-0.18 0.20-0.23	4.5-6.0 4.5-6.0 5.1-6.5	<2 <2 <2	High------ Very high Low-------	0.32 0.32 0.37	5	.5-4
Te---------- Tensas	0-4 4-27 27-60	40-60 40-60 10-39	1.20-1.50 1.20-1.50 1.30-1.80	<0.06 <0.06 0.2-2.0	0.12-0.18 0.12-0.18 0.20-0.23	4.5-6.0 4.5-6.0 5.1-6.5	<2 <2 <2	High------ Very high Low-------	0.32 0.32 0.37	5	.5-4
Tn*: Tensas----------	0-5	40-60	1.20-1.50	<0.06	0.12-0.18	4.5-6.0	<2	High-	0.32	5	.5-4

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	Salinity	Shrink-swell potential	Erosion factors		Organic matter
									K	T	
	In	Pct	G/cm³	In/hr	In/in	pH	Mmhos/cm				Pct
Tn*:											
Sharkey	0-8	40-60	1.20-1.50	<0.06	0.12-0.18	5.1-8.4	<2	Very high	0.32	5	.5-4
	8-47	60-90	1.20-1.50	<0.06	0.12-0.18	5.6-8.4	<2	Very high	0.28		
	47-60	25-90	1.20-1.75	0.06-0.2	0.12-0.22	6.6-8.4	<2	High	0.28		
Ts*:											
Tensas	0-4	40-60	1.20-1.50	<0.06	0.12-0.18	4.5-6.0	<2	High	0.32	4	.5-2
	4-28	40-60	1.20-1.50	<0.06	0.12-0.18	4.5-6.0	<2	Very high	0.32		
	28-60	10-39	1.30-1.80	0.2-2.0	0.20-0.23	5.1-6.5	<2	Low	0.37		
Sharkey	0-10	40-60	1.20-1.50	<0.06	0.12-0.18	5.1-8.4	<2	Very high	0.32	5	.5-4
	10-48	60-90	1.20-1.50	<0.06	0.12-0.18	5.6-8.4	<2	Very high	0.28		
	48-60	25-90	1.20-1.75	0.06-0.2	0.12-0.22	6.6-8.4	<2	High	0.28		
Vk	0-7	8-20	1.35-1.65	0.6-2.0	0.21-0.23	4.5-6.0	<2	Low	0.49	5	.5-2
Vick	7-25	15-35	1.35-1.65	0.2-0.6	0.15-0.20	4.5-6.0	<2	Low	0.43		
	25-45	35-55	1.20-1.60	0.06-0.2	0.15-0.18	4.5-6.0	<2	High	0.32		
	45-63	15-35	1.35-1.65	0.2-0.6	0.15-0.20	5.1-7.3	<2	Low	0.37		
Wr	0-15	10-25	1.25-1.50	0.2-0.6	0.16-0.24	3.6-5.5	<2	Low	0.49	5	.5-2
Wrightsville	15-68	35-55	1.20-1.45	<0.06	0.14-0.22	3.6-6.0	<2	High	0.37		

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 16.--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		
		Frequency	Duration	Months	Depth	Kind	Months
					Ft		
Bd---------- Baldwin	D	None----------	---	---	0-2.0	Apparent	Dec-Apr
Ca---------- Calhoun	D	None----------	---	---	0-2.0	Perched	Dec-Apr
Cm---------- Commerce	C	None----------	---	---	1.5-4.0	Apparent	Dec-Apr
Cn---------- Convent	C	None----------	---	---	1.5-4.0	Apparent	Dec-Apr
Cu---------- Convent	C	Occasional------	Brief to long	Dec-Jul	1.5-4.0	Apparent	Dec-Apr
Cv---------- Coteau	C	None----------	---	---	1.5-3.0	Perched	Dec-Apr
Cw---------- Crowley Variant	D	None----------	---	---	0.5-1.5	Perched	Dec-Apr
Da---------- Deerford	D	None----------	---	---	0.5-1.5	Perched	Dec-Apr
Dd, De---------- Dundee	C	None----------	---	---	1.5-3.5	Apparent	Jan-Apr
Dn---------- Dundee	C	Occasional------	Long to very long.	Dec-Jun	1.5-3.5	Apparent	Jan-Apr
Ds*:							
Dundee----------	C	None----------	---	---	1.5-3.5	Apparent	Jan-Apr
Sharkey----------	D	Rare----------	---	---	0-2.0	Apparent	Dec-Apr
Dv---------- Dundee Variant	C	None----------	---	---	1.5-3.5	Apparent	Jan-Apr
Fa---------- Fausse	D	Frequent--------	Brief to long	Jan-Dec	+1.0-1.5	Apparent	Jan-Dec
Ga, Go---------- Gallion	B	None----------	---	---	>6.0	---	---
Gr---------- Gore	D	None----------	---	---	>6.0	---	---
Gy---------- Guyton	D	Frequent--------	Very brief to long.	Jan-Dec	0-1.5	Perched	Dec-May
Ko---------- Kolin	C	None----------	---	---	1.5-3.0	Perched	Dec-Apr
La---------- Latanier	D	Rare----------	---	---	1.0-3.0	Apparent	Dec-Apr
Ln---------- Latanier	D	Occasional------	Brief---------	Nov-Jul	1.0-3.0	Apparent	Dec-Apr
Lo, Lr---------- Loring	C	None----------	---	---	2.0-3.0	Perched	Dec-Mar

See footnote at end of table.

TABLE 16.--WATER FEATURES--Continued

Soil name and map symbol	Hydrologic group	Flooding			High water table		
		Frequency	Duration	Months	Depth	Kind	Months
					Ft		
Ma---------- McKamie	D	None----------	---	---	>6.0	---	---
Me, Mh, Mm---------- Memphis	B	None----------	---	---	>6.0	---	---
Mo---------- Moreland	D	Rare----------	=--	---	0-1.5	Perched	Dec-Apr
Mr---------- Moreland	D	Occasional------	Brief to long	Dec-Jun	0-1.5	Perched	Dec-Apr
Ms---------- Moreland	D	Rare----------	---	---	0-1.5	Perched	Dec-Apr
Mt, Mu---------- Moreland	D	Occasional------	Brief to long	Dec-Jun	0-1.5	Perched	Dec-Apr
Mw---------- Moreland	D	Frequent--------	Brief to long	Dec-Jun	0-1.5	Perched	Dec-Apr
Nd---------- Norwood	B	None----------	---	---	>6.0	---	---
No---------- Norwood	B	Occasional------	Brief to long	Dec-Jun	>6.0	---	---
Nr---------- Norwood	B	None----------	---	---	>6.0	---	---
Nw---------- Norwood	B	Occasional------	Brief to long	Dec-Jun	>6.0	---	---
Ra, Rn, Ro---------- Roxana	B	None----------	---	---	4.0-6.0	Apparent	Dec-Apr
Ru---------- Roxana	B	Occasional------	Brief to long	Dec-Jun	4.0-6.0	Apparent	Dec-Apr
Rx---------- Roxana	B	Frequent--------	Brief to long	Dec-Jun	4.0-6.0	Apparent	Dec-Apr
Sa---------- Sharkey	D	Rare----------	---	---	0-2.0	Apparent	Dec-Apr
Se, Sh---------- Sharkey	D	Occasional------	Brief to very long.	Dec-Jun	0-2.0	Apparent	Dec-Apr
Sk---------- Sharkey	D	Frequent--------	Brief to very long.	Dec-Jun	0-2.0	Apparent	Dec-Apr
So---------- Solier	D	Rare----------	---	---	0-1.5	Perched	Dec-Apr
Sr---------- Solier	D	Occasional------	Long----------	Dec-Jun	0-1.5	Perched	Dec-Apr
Ta---------- Tensas	D	Rare----------	---	---	1.0-3.0	Apparent	Dec-Apr
Te---------- Tensas	D	Occasional------	Brief to long	Dec-Jun	1.0-3.0	Apparent	Dec-Apr
Tn*: Tensas----------	D	Rare----------	---	---	1.0-3.0	Apparent	Dec-Apr
Sharkey----------	D	Rare----------	---	---	0-2.0	Apparent	Dec-Apr

See footnote at end of table.

[redacted]

TABLE 16.--WATER FEATURES--Continued

Soil name and map symbol	Hydrologic group	Flooding			High water table		
		Frequency	Duration	Months	Depth	Kind	Months
					Ft		

TABLE 17.--CHEMICAL TEST DATA FOR SELECTED SOILS

[Analysis by Soils Laboratory of the Louisiana Agricultural Experiment Station]

th om ace	Horizon	pH	Organic matter	Avail-able P	Exchangeable cations						Exch. acid-ity	C.E.C.*	Saturation			Ca/Mg ratio
					Ca	Mg	K	Na	Al	H			Base	Al	Na	
h			Pct	Ppm	Meq/100g							Sum	Pct	Pct	Pct	
	A1	6.1	2.69	28	19.8	6.9	0.7	0.1	0.0	0.0	8.8	36.3	76	0.0	0.3	2.9
8	B21tg	6.3	0.91	9	20.0	8.1	0.3	0.3	0.0	0.0	6.9	35.8	81	0.0	0.8	2.5
9	B22tg	7.8	0.43	24	20.0	8.1	0.6	0.6	0.0	0.0	6.4	35.6	82	0.0	1.7	2.5
0	B3tg	7.6	0.29	140	19.5	8.1	0.4	0.4	0.0	0.0	3.9	32.3	88	0.0	1.2	2.4
0	IICg	7.2	0.19	219	12.5	5.5	0.2	0.2	0.0	0.0	2.5	20.9	88	0.0	1.0	2.3
	Ap	6.8	0.87	105	6.9	0.4	0.1	0.1	0.0	0.1	2.0	9.5	79	0.0	1.0	17.2
2	A21g	6.8	0.39	56	6.1	0.9	0.1	0.1	0.0	0.0	3.0	10.2	70	0.0	1.0	6.8
0	A22g	5.8	0.34	97	5.5	1.7	0.1	0.1	0.2	0.2	4.9	12.3	60	2.6	0.8	3.2
5	B2tg	5.5	0.24	54	6.2	2.7	0.2	0.2	0.7	0.4	6.4	15.7	59	6.7	1.3	2.3
5	B3g	5.7	0.19	58	6.5	2.8	0.2	0.2	0.4	0.3	5.9	15.6	62	3.8	1.3	2.3
6	C	5.7	0.15	113	7.4	3.8	0.2	0.3	0.4	0.3	6.4	18.1	65	3.2	1.6	1.9
	Ap1	7.5	1.54	272	12.1	4.7	0.5	0.1	0.0	0.0	2.5	19.9	87	0.0	0.5	2.6
2	Ap2	7.5	1.20	260	12.5	4.7	0.3	0.1	0.0	0.0	2.0	19.6	90	0.0	0.5	2.6
2	B2	7.9	0.58	215	13.9	4.7	0.2	0.1	0.0	0.0	2.0	20.9	90	0.0	0.5	3.0
2	B3	7.9	0.53	232	12.0	4.3	0.2	0.2	0.0	0.0	2.0	18.7	89	0.0	1.1	2.8
1	C1	7.7	0.67	252	14.1	5.1	0.2	0.2	0.0	0.0	2.5	22.1	89	0.0	0.9	2.8
8	C2	7.4	0.72	158	20.0	7.7	0.5	0.2	0.0	0.0	3.9	32.3	88	0.0	0.6	2.6
	Ap1	5.8	1.59	124	6.1	2.8	0.4	0.1	0.0	0.2	4.4	13.8	68	0.0	0.7	2.2
0	Ap2	6.4	0.91	165	7.1	3.1	0.2	0.1	0.0	0.0	3.4	13.9	76	0.0	0.7	2.3
0	C1	7.8	0.34	184	8.1	4.0	0.1	0.1	0.0	0.0	1.5	13.8	89	0.0	0.7	2.0
5	C2	7.9	0.34	193	7.4	3.4	0.1	0.1	0.0	0.0	1.0	12.0	92	0.0	0.8	2.2
0	C3	7.9	0.87	203	8.9	3.8	0.1	0.1	0.0	0.0	0.0	12.9	100	0.0	0.8	2.3
	Ap	5.6	1.01	17	3.1	1.2	0.3	0.1	0.0	0.2	3.0	7.7	61	0.0	1.3	2.6
2	B21t	5.1	0.43	5	3.3	2.0	0.4	0.1	2.1	0.5	7.9	13.7	42	25.0	0.7	1.6
5	B22t	5.1	0.10	5	2.2	2.4	0.4	0.3	5.0	0.0	11.8	17.1	31	48.5	1.8	0.9
5	B&A'2	5.4	0.04	5	2.2	2.7	0.2	0.4	4.4	0.4	11.8	17.3	32	42.7	2.3	0.8
7	B24t	5.5	0.10	5	3.2	3.5	0.2	0.7	4.2	0.2	9.3	16.9	45	35.0	4.1	0.9
0	B3	5.5	0.04	5	4.8	4.5	0.2	1.0	2.8	0.3	5.9	16.4	64	20.6	6.1	1.1
	Ap	5.4	1.59	18	2.1	1.4	0.1	0.3	0.6	0.4	5.9	9.8	40	12.2	3.1	1.5
5	A2	5.4	0.96	6	1.5	1.1	0.1	0.4	2.3	0.4	6.9	10.0	31	39.6	4.0	1.4
5	IIB21t	5.8	0.87	5	5.8	4.9	0.1	2.4	2.7	0.3	9.3	22.5	59	16.7	10.7	1.2
5	IIB22t	5.8	0.72	5	7.0	5.7	0.1	3.8	0.6	0.4	8.8	25.4	65	3.4	15.0	1.2
7	IIB23t	6.4	0.43	5	8.4	6.8	0.1	4.8	0.0	0.0	4.9	25.0	80	0.0	19.2	1.2
	IIB3	7.7	0.04	6	8.4	6.6	0.1	5.0	0.0	0.0	1.5	21.6	93	0.0	23.1	1.3
5	IIC	8.4	0.04	67	15.1	8.1	0.2	6.7	0.0	0.0	0.0	30.1	100	0.0	22.2	1.9
	Ap	5.8	3.18	37	8.2	4.5	0.2	0.4	0.1	0.2	5.4	18.7	71	0.7	2.1	1.8
	A2	6.0	0.87	6	9.3	4.0	0.1	0.2	0.0	0.0	3.4	17.0	80	0.0	1.2	2.3
3	B21t	5.4	0.43	5	8.7	6.1	0.1	2.1	0.2	0.4	6.9	24.0	71	1.1	8.8	1.4
	B22t	6.6	0.29	29	12.8	5.4	0.1	3.8	0.0	0.0	3.0	25.1	88	0.0	15.1	2.4
	B23t	7.4	0.15	76	7.6	5.6	0.1	3.4	0.0	0.0	2.5	19.2	87	0.0	17.7	1.4
	B3	7.5	0.15	72	6.8	5.3	0.1	4.1	0.0	0.0	1.5	17.8	92	0.0	23.0	1.3
	IIB21tb	7.6	0.15	60	5.3	4.4	0.1	3.6	0.0	0.0	1.0	14.4	93	0.0	25.0	1.2

d of table.

TABLE 17.--CHEMICAL TEST DATA FOR SELECTED SOILS--Continued

Soil sample and number	Depth from surface	Horizon	pH	Organic matter	Available P	Exchangeable cations						Exch. acidity	C.E.C.*	Saturation			Ca/Mg ratio
						Ca	Mg	K	Na	Al				Base	Al	Na	
	In			Pct	Ppm	Meq/100g							Sum	Pct	Pct	Pct	
Dundee Variant clay: (S79LA-9-8)	0-4	Ap1	6.2	2.50	59	18.9	8.1	0.8	0.1	0.0	0.0	5.4	33.3	84	0.0	0.3	2.3
	4-7	Ap2	6.4	1.11	81	20.0	8.1	0.6	0.1	0.0	0.0	6.9	35.7	81	0.0	0.3	2.5
	7-14	IIAb	6.3	0.87	15	13.0	7.0	0.2	0.1	0.0	0.0	6.9	24.2	84	0.0	0.4	1.8
	14-25	IIB21tb	6.2	0.43	9	13.0	7.0	0.2	0.1	0.0	0.0	3.9	24.2	84	0.0	0.4	1.8
	25-30	IIB22tb	6.3	0.37	31	10.8	5.8	0.2	0.1	0.0	0.0	3.0	19.9	85	0.0	0.5	1.9
	30-52	IIB31b	0.19	0.19	104	9.4	4.7	0.1	0.2	0.0	0.0	2.0	16.4	88	0.0	1.2	2.0
	52-72	IIB32b	6.8	0.24	178	20.0	8.1	0.5	0.9	0.0	0.0	5.4	34.9	84	0.0	2.6	2.5
Fausse clay: (S79LA-9-9)	0-7	A1	5.7	3.27	83	20.0	8.1	0.8	0.2	0.2	0.2	15.2	44.3	66	0.7	0.4	2.5
	7-13	IIA	6.3	1.35	85	20.0	8.1	0.6	0.3	0.0	0.0	12.8	41.8	69	0.0	0.7	2.5
	13-22	IIB21g	6.5	1.35	65	20.0	8.1	0.7	0.5	0.0	0.0	9.8	39.1	75	0.0	1.3	2.5
	22-37	IIB22g	6.7	1.11	94	20.0	8.1	0.6	0.6	0.0	0.0	10.3	39.6	74	0.0	1.5	2.5
	37-49	IIC1g	7.1	1.06	130	20.0	8.1	0.6	1.1	0.0	0.0	9.3	39.1	76	0.0	2.8	2.5
	49-66	IIC2g	7.3	0.34	123	20.0	8.1	0.6	1.2	0.0	0.0	8.4	38.3	78	0.0	3.1	2.5
Gallion silt loam: (S80LA-9-1)	0-8	Ap	5.6	1.97	38	5.6	3.3	0.4	0.1	0.0	0.2	4.5	13.9	68	0.0	0.7	1.7
	8-15	B21t	5.6	1.15	10	6.8	4.1	0.2	0.2	1.0	0.4	5.0	16.3	69	7.9	1.2	1.7
	15-25	B22t	5.6	0.72	19	5.7	3.9	0.2	0.1	0.8	0.4	4.5	14.6	69	7.1	0.7	1.5
	25-37	B23t	5.8	0.53	21	4.8	4.5	0.2	0.1	0.2	0.4	1.5	11.1	86	2.0	0.9	1.1
	37-48	B3	5.9	0.37	46	4.0	4.0	0.2	0.1	0.0	0.2	0.0	8.3	100	0	1.2	1.0
	48-66	C	6.2	0.34	81	3.6	4.2	0.2	0.1	0.0	0.0	0.0	8.1	100	0	1.2	0.9
Gore silt loam: (S79LA-9-10)	0-4	A1	5.4	4.18**	16	5.4	2.0	0.2	0.1	0.2	0.3	7.8	15.5	50	2.4	0.6	2.7
	4-7	A2	5.1	0.96	6	1.2	0.5	0.1	0.1	2.2	0.4	2.5	4.4	43	48.9	2.3	2.4
	7-15	B21t	5.1	0.53	5	2.4	1.8	0.1	0.1	7.2	0.8	13.8	18.2	24	58.1	0.5	1.3
	15-29	B22t	5.1	0.39	5	3.4	2.4	0.2	0.3	7.4	0.9	13.5	19.8	32	50.7	1.5	1.4
	29-36	B23t	5.4	0.15	5	7.4	4.5	0.2	0.6	4.1	0.7	11.3	24.0	53	23.4	2.5	1.6
	36-47	B31	5.4	0.04	5	11.0	3.6	0.2	0.9	0.2	0.2	8.3	24.0	65	1.2	3.8	3.0
	47-57	B32	5.7	0.04	51	18.8	8.1	0.3	1.7	0.2	0.3	2.0	30.9	94	0.7	5.5	2.3
	57-66	C	6.7	0.10	105	20.0	8.1	0.4	2.3	0.0	0.0	3.4	34.2	90	0.0	6.7	2.5
Kolin silt loam: (S79LA-9-11)	0-4	A1	5.8	3.56**	8	4.8	1.4	0.1	0.1	0.0	0.4	11.3	17.7	36	0.0	0.6	3.4
	4-13	B21t	5.2	0.39	5	2.4	1.7	0.1	0.1	6.9	2.3	10.8	15.1	28	51.1	0.7	1.4
	13-22	B22t	5.3	0.24	5	1.9	2.1	0.1	0.2	5.0	0.9	13.8	18.1	24	49.0	1.1	0.9
	22-27	B&A'2	5.4	0.19	5	1.4	4.3	0.1	0.3	8.2	0.0	12.8	19.0	33	56.9	1.6	0.3
	27-39	IIB24t	5.6	0.10	5	4.7	4.9	0.2	0.6	6.8	1.1	13.3	23.7	44	37.2	2.5	1.0
	39-60	IIB25t	5.7	0.10	5	8.1	7.4	0.2	0.9	2.7	0.8	9.3	25.9	64	13.4	3.5	1.1
Latanier clay: (S79LA-9-12)	0-5	Ap	6.6	3.75	118	19.4	8.1	0.8	0.1	0.0	0.0	6.4	34.8	82	0.0	0.3	2.4
	5-14	B21	7.7	0.91	161	20.0	8.1	0.7	0.5	0.0	0.0	3.5	32.8	89	0.0	1.5	2.5
	14-27	B22	8.0	0.43	95	20.0	8.1	0.5	0.9	0.0	0.0	3.9	33.4	88	0.0	2.7	2.5
	27-35	IIAb	7.9	0.15	86	9.8	4.0	0.1	0.2	0.0	0.0	0.0	14.1	100	0.0	1.4	2.4
	35-53	IIB21tb	8.1	0.04	149	9.6	5.5	0.2	0.3	0.0	0.0	1.5	17.1	91	0.0	1.8	1.7
	53-60	IIB3b	8.1	0.10	104	5.6	4.2	0.1	0.2	0.0	0.0	1.0	11.1	91	0.0	1.8	1.3
Loring silt loam: (S79LA-9-13)	0-6	Ap	6.0	2.00	36	8.0	2.8	0.6	0.1	0.0	0.0	5.9	17.4	66	0.0	0.6	2.8
	6-13	B1	5.7	0.58	14	7.1	3.0	0.2	0.2	0.2	0.4	7.4	17.9	59	1.8	1.1	2.4
	13-25	B2t	5.5	0.29	17	5.1	2.9	0.1	0.3	0.9	0.5	7.4	15.8	53	9.2	1.9	1.8
	25-40	Bx1	5.4	0.19	7	4.6	2.9	0.1	0.4	1.1	0.5	5.9	13.9	58	11.4	2.9	1.6
	40-49	Bx2	5.5	0.10	35	6.2	3.7	0.2	0.4	0.4	0.4	6.4	16.9	62	3.5	2.4	1.7
	49-61	Bx3	5.7	0.10	109	6.3	3.8	0.2	0.4	0.4	0.3	5.4	16.6	67	3.4	2.4	1.8

See footnotes at end of table.

TABLE 17.--CHEMICAL TEST DATA FOR SELECTED SOILS--Continued

Soil sample and number	Depth from surface	Horizon	pH	Organic matter	Available P	Exchangeable cations						Exch. acidity	C.E.C.*	Saturation			Ca/Mg ratio
						Ca	Mg	K	Na	Al	H			Base	Al	Na	
	In			Pct	Ppm	Meq/100g							Sum	Pct	Pct	Pct	
McKamie silt loam: (S79LA-9-14)	0-3	A11	5.2	4.42**	13	4.4	2.5	0.3	0.1	0.5	0.5	12.3	19.6	37	6.0	0.5	1.8
	3-6	A12	5.2	2.16	6	2.7	1.9	0.1	0.1	1.4	0.4	10.8	15.6	31	21.2	0.6	1.4
	6-18	B21t	5.2	0.34	5	7.8	6.4	0.3	0.2	9.2	0.1	19.2	33.9	43	33.3	0.6	1.2
	18-38	B22t	5.2	0.15	5	10.7	8.1	0.3	0.7	3.4	0.6	12.3	32.1	62	14.3	2.2	1.3
	38-49	B3	5.9	0.19	150	15.8	8.1	0.4	1.9	0.1	0.2	5.9	32.1	82	0.4	5.9	1.9
	49-71	IIC	5.7	0.10	207	8.7	7.6	0.2	1.0	0.0	0.2	2.5	20.0	88	0.0	5.0	1.1
Memphis silt loam: (S79LA-9-15)	0-6	Ap	6.0	2.00	71	3.2	0.5	0.2	0.1	0.0	0.0	3.0	7.0	57	0.0	1.4	6.4
	6-22	B21t	5.9	0.43	81	10.4	2.7	0.2	0.1	0.2	0.1	6.4	19.8	68	1.4	0.5	3.8
	22-47	B22t	5.5	0.48	88	8.7	3.0	0.2	0.1	0.3	0.3	6.9	18.9	63	2.4	0.5	2.9
	47-68	C	5.6	0.15	98	7.8	3.1	0.2	0.1	0.3	0.3	4.9	16.1	70	2.5	0.6	2.5
Moreland clay: (S79LA-9-16)	0-6	Ap	6.9	1.00	74	20.0	8.1	1.0	0.3	0.0	0.0	7.4	36.8	80	0.0	0.8	2.5
	6-13	A1	7.7	0.53	170	20.0	8.1	0.6	1.0	0.0	0.0	3.0	32.7	91	0.0	3.0	2.5
	13-24	B21	8.0	0.58	103	20.0	8.1	0.5	2.0	0.0	0.0	1.5	32.1	95	0.0	6.2	2.5
	24-42	B22	7.8	0.48	117	20.0	8.1	0.6	3.9	0.0	0.0	2.0	34.6	94	0.0	11.3	2.5
	42-60	B3	7.7	0.58	119	20.0	8.1	0.7	3.4	0.0	0.0	2.5	34.7	93	0.0	9.8	2.5
Norwood silt loam: (S79LA-9-17)	0-9	Ap	7.4	0.67	311	8.7	3.0	0.1	0.1	0.0	0.0	1.0	12.9	92	0.0	0.8	2.9
	9-16	B2	7.7	0.39	298	20.0	4.6	0.2	0.1	0.0	0.0	0.5	25.4	98	0.0	0.4	4.3
	16-31	C1	7.9	0.34	128	20.0	2.8	0.1	0.1	0.0	0.0	1.0	24.0	96	0.0	0.4	7.1
	31-50	C2	7.9	0.29	156	17.5	3.6	0.2	0.1	0.0	0.0	1.0	22.4	96	0.0	0.4	4.9
	50-65	C3	7.0	0.39	117	13.7	3.8	0.2	0.1	0.0	0.0	2.0	19.8	90	0.0	0.5	3.6
	65-80	C4	7.9	0.00	131	11.5	3.0	0.2	0.1	0.0	0.0	1.0	15.8	94	0.0	0.6	3.8
Roxana very fine sandy loam: (S79LA-9-18)	0-5	Ap	6.1	1.59	72	3.1	1.1	0.1	0.0	0.0	0.2	2.4	6.7	64	0.0	0.0	2.1
	5-14	C1	6.6	0.10	72	2.3	1.1	0.1	0.0	0.0	0.0	0.0	3.5	100	0.0	0.0	2.1
	14-35	C2	7.9	0.19	71	2.6	1.3	0.1	0.0	0.0	0.0	0.0	4.0	100	0.0	0.0	2.0
	35-40	C3	8.2	0.15	105	8.3	1.5	0.1	0.0	0.0	0.0	0.0	9.9	100	0.0	0.0	5.5
	40-62	C4	8.0	0.24	110	14.1	1.9	0.1	0.0	0.0	0.0	0.0	16.1	100	0.0	0.0	7.4
Sharkey clay: (S79LA-9-19)	0-6	Ap	6.1	2.94	61	20.0	8.1	0.9	0.2	0.0	0.0	11.8	41.8	71	0.0	0.5	2.5
	6-16	B21g	6.3	0.77	45	20.0	8.1	0.7	0.3	0.0	0.0	9.3	38.4	76	0.0	0.8	2.5
	16-24	B22g	6.7	0.63	86	20.0	8.1	0.7	0.4	0.0	0.0	7.4	36.6	80	0.0	1.1	2.5
	24-35	B23g	7.0	0.43	87	20.0	8.1	0.5	0.6	0.0	0.0	4.9	34.1	86	0.0	1.8	2.5
	35-60	B3g	7.6	0.15	124	20.0	8.1	0.5	1.6	0.0	0.0	3.0	33.2	91	0.0	4.8	2.5
Sharkey clay, overwash: (S79LA-9-20)	0-12	Ap	7.2	1.59	120	20.0	8.1	0.7	0.2	0.0	0.0	5.9	34.9	83	0.0	0.6	2.5
	12-23	IIA	7.0	0.67	24	20.0	8.1	0.5	0.4	0.0	0.0	7.4	36.4	80	0.0	1.1	2.5
	23-46	IIB2g	6.8	0.39	8	20.0	8.1	0.4	0.6	0.0	0.0	6.4	35.5	82	0.0	1.7	2.5
Solier clay: (S79LA-9-21)	0-6	Ap	6.9	1.06	104	20.0	8.1	0.6	0.2	0.0	0.0	6.4	35.3	82	0.0	0.6	2.5
	6-14	B21	6.9	0.72	12	20.0	8.1	0.4	0.3	0.0	0.0	4.4	33.2	87	0.0	0.9	2.5
	14-19	B22	6.8	0.63	5	20.0	8.1	0.4	0.4	0.0	0.0	3.4	32.3	89	0.0	1.2	2.5
	19-25	IIA2bg	7.0	0.24	5	8.1	3.6	0.1	0.2	0.0	0.0	0.0	12.0	100	0.0	1.7	2.2
	25-42	IIB23tbg	7.0	0.29	5	12.4	5.7	0.2	0.4	0.0	0.0	2.0	20.7	90	0.0	1.9	2.2
	42-60	IIB24tbg	7.1	0.10	5	13.5	5.9	0.2	0.7	0.0	0.0	2.5	22.8	89	0.0	3.1	2.3
	60-77	IIB3bg	7.5	0.04	18	11.9	5.4	0.1	1.3	0.0	0.0	0.0	18.7	100	0.0	7.0	2.2
	77-84	IIC	7.8	0.04	13	11.5	5.5	0.1	1.6	0.0	0.0	1.0	18.7	95	0.0	8.6	2.1
Tensas silty clay, overwash: (S79LA-9-22)	0-4	A1	6.0	1.97	81	20.0	8.1	0.8	0.1	0.0	0.0	7.4	36.4	80	0.0	0.3	2.5
	4-14	IIB21t	5.1	0.58	48	18.4	8.1	0.5	0.2	0.2	0.3	12.8	40.0	68	0.7	0.5	2.3
	14-28	IIB22t	5.4	0.24	105	18.8	8.1	0.4	0.3	0.3	0.3	10.3	37.9	73	1.1	0.8	2.3
	28-36	IIIB31	6.1	0.34	159	18.8	7.6	0.4	0.3	0.0	0.0	7.4	33.8	78	0.0	0.9	2.4
	36-51	IIIB32	6.2	0.29	132	14.9	6.6	0.3	0.2	0.0	0.0	4.9	26.9	82	0.0	0.7	2.2
	51-60	IIIC	6.4	0.19	187	9.3	4.0	0.1	0.1	0.0	0.0	2.5	16.0	84	0.0	0.6	2.3

See footnotes at end of table.

TABLE 17.--CHEMICAL TEST DATA FOR SELECTED SOILS--Continued

Soil sample and number	Depth from surface	Horizon	pH	Organic matter	Available P	Exchangeable cations						Exch. acidity	C.E.C.*	Saturation			Ca/Mg ratio
						Ca	Mg	K	Na	Al	H			Base	Al	Na	
	In			Pct	Ppm	Meq/100g							Sum	Pct	Pct	Pct	
ak silt loam:	0-3	A1	5.2	1.78	7	1.7	0.7	0.1	0.1	0.7	0.4	9.3	11.9	22	18.9	0.8	2.4
379La-9-23)	3-7	A2	5.1	0.63	5	2.0	0.5	0.1	0.1	1.8	0.2	5.9	8.6	31	38.2	1.2	4.0
	7-14	B1	5.0	0.19	5	0.3	0.5	0.1	0.1	5.2	0.4	7.9	8.9	11	78.8	1.1	0.6
	14-21	B21t	5.2	0.15	5	0.6	1.1	0.1	0.2	8.1	0.2	11.8	13.8	14	78.6	1.4	0.5
	21-25	B&A	5.4	0.15	5	1.4	1.9	0.1	0.4	7.8	0.0	11.3	15.1	25	67.8	2.6	0.7
	25-36	IIB22t	5.4	0.15	5	4.2	4.2	0.2	1.1	101	0.0	15.2	24.9	39	51.0	4.4	1.0
	36-45	IIB23t	5.3	0.15	5	4.1	3.6	0.1	1.0	5.0	0.2	7.9	16.7	53	35.7	6.0	1.1
	45-63	IIIB3t	5.3	0.10	5	5.4	3.9	0.1	1.4	1.0	0.4	3.9	14.7	73	8.2	9.5	1.4
ghtsville	0-3	A1	5.5	2.67**	14	4.6	1.4	0.1	0.1	0.1	0.2	6.9	13.1	47	1.5	0.8	3.3
lit loam:	3-8	A21g	5.1	0.58	5	3.5	1.1	0.1	0.1	1.5	0.3	3.4	8.2	58	22.7	1.2	3.2
379LA-9-24)	8-15	A22g	4.8	0.24	5	2.0	0.8	0.1	0.1	4.3	0.1	5.4	8.4	36	58.1	1.2	2.5
	15-35	B&A	4.9	0.10	5	3.5	2.5	0.1	0.8	7.2	0.3	11.8	18.7	37	50.0	4.3	1.4
	35-50	B2tg	4.9	0.19	5	7.4	4.7	0.1	1.5	3.2	0.5	7.4	21.1	65	18.4	7.1	1.6
	50-68	B3g	5.1	0.04	10	9.9	5.6	0.1	2.1	0.6	0.4	3.9	21.6	82	3.2	9.7	1.8

*Cation-exchange capacity.

**The average content of organic matter in the plow layer is interpreted to be 2.0 percent or less. Therefore, this pedon is within the range of the series.

TABLE 18.--CLASSIFICATION OF THE SOILS

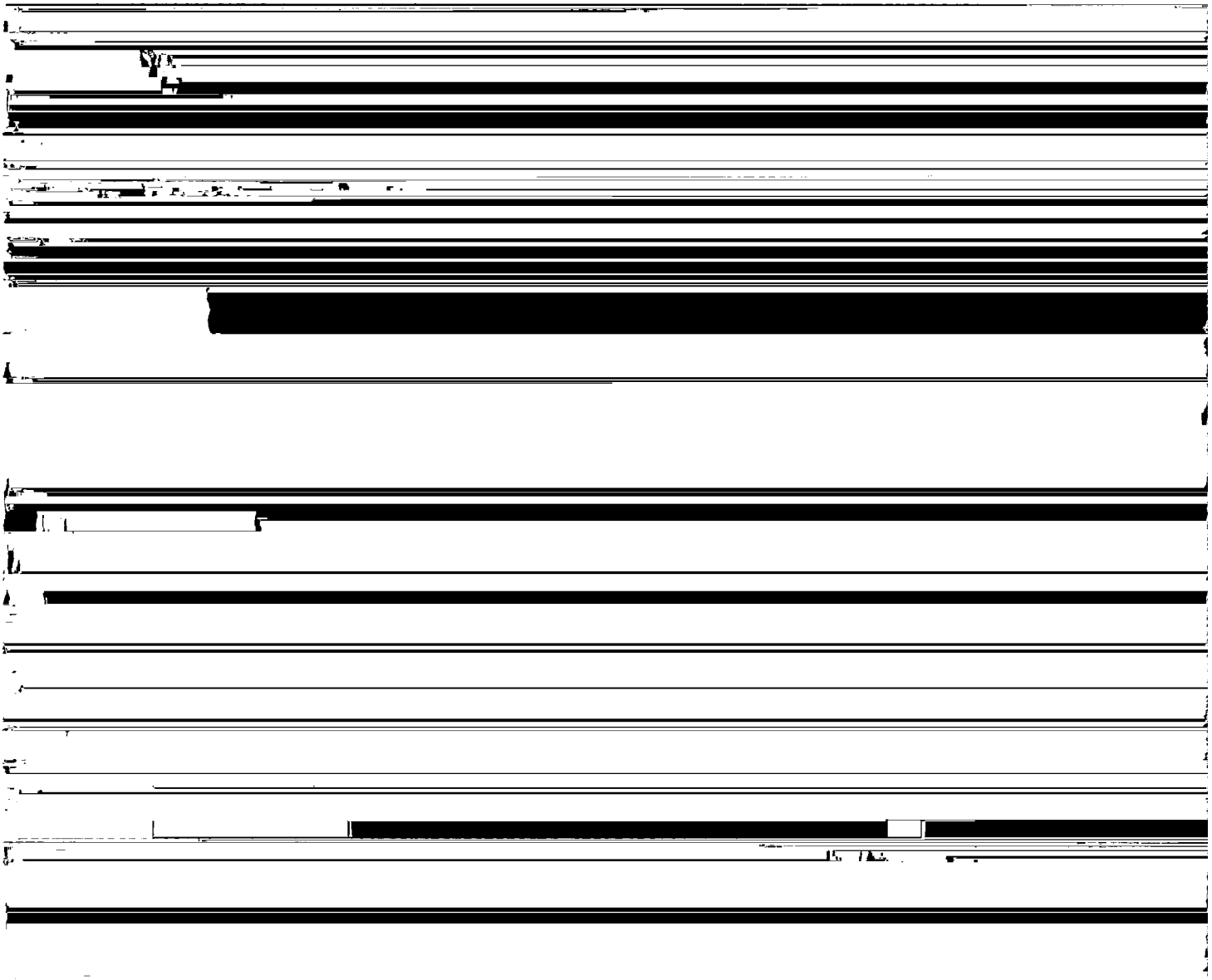
Soil name	Family or higher taxonomic class
Baldwin	Fine, montmorillonitic, thermic Vertic Ochraqualfs
Calhoun	Fine-silty, mixed, thermic Typic Glossaqualfs
Commerce	Fine-silty, mixed, nonacid, thermic Aeric Fluvaquents
Convent	Coarse-silty, mixed, nonacid, thermic Aeric Fluvaquents
Coteau	Fine-silty, mixed, thermic Glossaquic Hapludalfs
Crowley Variant	Fine, montmorillonitic, thermic, Typic Natraqualfs
Deerford	Fine-silty, mixed, thermic Albic Glossic Natraqualfs
Dundee	Fine-silty, mixed, thermic Aeric Ochraqualfs
Dundee Variant	Fine-silty, mixed, thermic Aeric Ochraqualfs
*Fausse	Very fine, montmorillonitic, nonacid, thermic Typic Fluvaquents
Gallion	Fine-silty, mixed, thermic Typic Hapludalfs
Gore	Fine, mixed, thermic Vertic Paleudalfs
Guyton	Fine-silty, siliceous, thermic Typic Glossaqualfs
Kolin	Fine-silty, siliceous, thermic Glossaquic Paleudalfs
Latanier	Clayey over loamy, mixed, thermic Vertic Hapludolls
Loring	Fine-silty, mixed, thermic Typic Fragiudalfs
McKamie	Fine, mixed, thermic Vertic Hapludalfs
Memphis	Fine-silty, mixed, thermic Typic Hapludalfs
Moreland	Fine, mixed, thermic Vertic Hapludolls
Norwood	Fine-silty, mixed (calcareous), thermic Typic Udifluvents
Roxana	Coarse-silty, mixed, nonacid, thermic Typic Udifluvents
Sharkey	Very fine, montmorillonitic, nonacid, thermic Vertic Haplaquepts
Solier	Clayey over fine-silty, mixed, nonacid, thermic Aeric Haplaquepts
Tensus	Fine, montmorillonitic, thermic Vertic Ochraqualfs
Vick	Fine-silty, siliceous, thermic Glossaquic Hapludalfs
Wrightsville	Fine, mixed, thermic Typic Glossaqualfs

*The soil is a taxadjunct to the series. See text for a description of those characteristics of the soil that are outside the range of the series.

TABLE 19.--PARENT MATERIAL AND SOILS RELATED TO SLOPE, RUNOFF, DRAINAGE, AND WATER TABLE

Parent material and soil series	Slope	Runoff	Internal drainage	Seasonal high water table	
				Depth	Duration
				Ft	Months
Red River alluvium:					
Gallion	Level	Slow	Well drained	>6.0	None.
Latanier	Level	Slow	Somewhat poorly drained.	1.0-3.0	Dec. to April.
Moreland	Level and gently undulating.	Very slow	Somewhat poorly drained.	0.0-1.5	Dec. to April.
Norwood	Level	Slow	Well drained	>6.0	None.
Roxana	Level, gently undulating, and undulating.	Slow	Well drained	4.0-6.0	Dec. to April.
Solier	Level	Slow	Poorly drained	0.0-1.5	Dec. to April.
Local stream alluvium:					
Guyton	Level	Slow	Poorly drained	0.0-1.5	Dec. to May.
Mississippi River alluvium:					
Baldwin	Level	Slow	Poorly drained	0.0-2.0	Dec. to April.
Commerce	Level	Slow	Somewhat poorly drained.	1.5-4.0	Dec. to April.
Convent	Level	Slow	Somewhat poorly drained.	1.5-4.0	Dec. to April.
Dundee	Level and gently undulating.	Slow and medium.	Somewhat poorly drained.	1.5-3.5	Jan. to April.
Fausse	Level or depressional.	Ponded	Very poorly drained.	+1.0-1.5	Jan. to Dec.
Sharkey	Level and gently undulating.	Very slow and slow.	Poorly drained	0.0-2.0	Dec. to April.
Tensas	Level and undulating.	Slow and medium.	Somewhat poorly drained.	1.0-3.0	Dec. to April.
Loess:					
Calhoun	Level	Slow	Poorly drained	0.0-2.0	Dec. to April.
Coteau	Gently sloping	Slow and medium.	Somewhat poorly drained.	1.5-3.0	Dec. to April.
Deerford	Nearly level	Slow	Somewhat poorly drained.	0.5-1.5	Dec. to April.
Loring	Nearly level and gently sloping.	Slow and medium.	Moderately well drained.	2.0-3.0	Dec. to March.

TABLE 19.--PARENT MATERIAL AND SOILS RELATED TO SLOPE, RUNOFF, DRAINAGE, AND WATER SUPPLY--Continued



Memphis	Nearly level, gently sloping, and moderately steep.	Slow, medium, and rapid.	Well drained	>6.0	None.
Prairie Formation terrace deposits:					
Crowley Variant	Level	Slow	Somewhat poorly drained.	0.5-1.5	Dec. to April.
Gore	Gently sloping	Medium	Moderately well drained.	>6.0	None.
Kolin	Gently sloping	Medium	Moderately well drained.	1.5-3.0	Dec. to April.
McKamie	Moderately sloping and strongly sloping.	Rapid	Well drained	>6.0	None.